CALIFORNIA HIGH-SPEED TRAIN

Technical Report

DRAFT

Fresno to Bakersfield Section

Community Impact Assessment Technical Report

July 2012

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

California High-Speed Train Project

Community Impact Assessment Technical Report

Prepared by:

URS/HMM/Arup Joint Venture

July 2012

Table of Contents

Page

Appendices

Tables

Figures

This page intentionally left blank

Acronyms and Abbreviations

AB 8	Assembly Bill 8
ACS	U.S. Census Bureau, American Community Survey
Authority	California High-Speed Rail Authority
BEA	U.S. Department of Commerce Bureau of Economic Analysis
BNSF	BNSF Railway
Caltrans	California Department of Transportation
C.C.R.	Code of California Regulations
CDP	Census designated place
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
CRLA	California Rural Legal Assistance Inc.
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EJ	environmental justice
FRA	Federal Railroad Administration
GIS	Geographic Information System
HMF	heavy maintenance facility
HST	high-speed train
HUD	U.S. Department of Housing and Urban Development
IT&TC	International Trade and Transportation Center
NEPA	National Environmental Protection Act
Ord.	Ordinance
OSHPD	Office of Statewide Health Planning and Development
PIM	public information meeting
Region	the four-county study region: Fresno, Kings, Tulare, and Kern counties
RIMS II	Regional Input-Output Modeling System
ROD	Record of Decision
RTP	Regional Transportation Plan
SR	State Route

TPS	traction power substation
UPRR	Union Pacific Railroad
USDOT	U.S. Department of Transportation
USPS	U.S. Postal Service

Chapter 1
Introduction

1.0 Introduction

1.1 Background

This *Community Impact Assessment Technical Report* is prepared in support of the Fresno to Bakersfield Section Environmental Impact Report/Environmental Impact Statement (EIR/EIS), under the direction of the California High-Speed Rail Authority (Authority). The Fresno to Bakersfield Project EIR/EIS will be developed as a stand-alone, second-tier, project-level environmental document. It will be tiered from and will incorporate by reference the certified *Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System* (Statewide Program EIR/EIS) (Authority and FRA 2005) in accordance with Council on Environmental Quality (CEQ) regulations (40 C.F.R. Part 1508.28) and California Environmental Quality Act (CEQA) Guidelines (14 C.C.R. Section 15168[b]).

The analysis contained in this report references and uses information contained in the Statewide Program EIR/EIS (Authority and FRA 2005) and in the *Project-Level Environmental Impact Report / Environmental Impact Statement: Project-Level Environmental Analysis Methodologies* (Authority and FRA 2009c) to ensure consistency with previous decisions and guidance provided by the Authority and the Federal Railroad Administration (FRA).

1.2 Approach

This technical report provides information on the socioeconomics, communities, and environmental justice baseline conditions and estimates the impacts occurring in the study area. Chapter 2 provides the project description summary. Chapter 3 provides regulatory information and a summary of relevant elements in the general plans, including land use, transportation and circulation, housing, open space and conservation, community facilities and services, and economic development. Chapter 4 provides a description of the affected environment, including population and demographics, income, environmental justice populations, housing, economic and fiscal conditions, community facilities and non-motorized circulation and access (pedestrian and bicycle) for the region as a whole and the counties and cities within the study area. Chapter 5 provides an examination of the environmental consequences to character and cohesion in communities and neighborhoods; residential, commercial, industrial, and agricultural property through acquisition; environmental justice populations as well as sensitive populations of elderly, disabled, linguistically isolated and female head of household; school districts; agricultural access and fiscal implications for county and city governments. Due to the length of the project corridor, this effort required compilation of a large amount of data examining baseline conditions and impacts across many communities. The majority of the data are presented in the report appendices, while the report itself focuses on summarizing and analyzing the data. Appendix A provides details on the methodologies used to collect data and examines potential impacts. Appendix B provides a summary of the detailed community data collected to describe the affected environment in Chapter 4. Appendix C provides a detailed presentation of the analysis conducted to estimate dollar value impacts to agricultural operations in the study area. Appendix D provides a list of the past, present, and future development projects in the vicinity of the Fresno to Bakersfield Section for use in the cumulative impact analysis.

1.3 Study Area Definition

The study region is composed of the four counties that make up the southern San Joaquin Valley: Fresno, Kings, Tulare, and Kern. Within these counties, the project directly affects six urban areas – the cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield. The study area is defined as the project corridor within this region running from Amador Street, north of the station location in the city of Fresno, to Union Street, east of the proposed station location in

Bakersfield. The study area for this baseline report for socioeconomics, communities, and environmental justice is the area within a 0.5-mile radius from the centerline of the project alignment and a 0.5-mile radius from each station location. Outside this study area, the introduction of the California High-Speed Train (HST) system is not likely to result in a substantial change to socioeconomics, communities, and environmental justice conditions. An exception to this standard 0.5-mile radius study area is the area examined for property acquisition and relocation. This particular study area is defined as those privately held residential, commercial, and industrial properties (or parcels) that fall within the project footprint defined as the alignment right-of-way, construction areas, borrow sites, and road crossings.

For examination of impacts on community facilities, all of these facilities within the cities of Corcoran, Wasco, and Shafter were examined given the smaller overall geographic area, the fact that the key downtown areas are almost entirely contained in the 0.5 mile study area and the more homogeneous populations. Although the project passes outside of the incorporated area of Hanford, given its size and importance in the region, it is also examined as a whole.

The cities of Fresno and Bakersfield were determined to be too large and composed of too many distinct neighborhoods and heterogeneous populations to be examined as a whole. Therefore, study area profiles for these cities also include data by district to create more project-focused areas for analysis. Data for the city of Fresno are presented for the city as a whole, but also for the Central, Edison, and Roosevelt districts. For Bakersfield, data are presented for the city as a whole, and for the Northwest, Central, and Northeast districts. The project alternative alignments would traverse these districts in the two major cities. The Northeast District of Bakersfield is not completely contained within the project study area. This neighborhood, which lies south of East Truxtun Avenue between Union Avenue and Oswell Street, is only partially within the defined project study area for the Fresno to Bakersfield Section, but is examined as a whole community in this document. This approach is taken because the Bakersfield to Palmdale Section of the HST project will continue on from the Bakersfield Station and continue to bisect this neighborhood. Therefore, it is important to examine potential impacts to this cohesive community as a whole rather than have the analysis split between the two projects' environmental documents. District boundaries were determined based on current definitions used by city staff (Fresno), interviews with local planners (Bakersfield), and examination of census boundaries (tract, block group, and block) to approximate the district boundaries as closely as possible. The district boundaries are not drawn exactly to meet the 0.5-mile study area radius but rather to identify the relevant area based on demographics and cohesion that needs to be examined in the context of a community.

1.4 Informational Sources

Information for this report was obtained from a variety of reports and data sources provided by federal, state, and local agencies. All collected data were the most recently available at the time the analysis was performed. The information for Chapter 2 was derived from county and city general plans as well as other relevant plans for the study area. The information and data for Chapter 3 were obtained from the U.S. Census Bureau, the California Employment Development Department, the California State Board of Equalization, the California Department of Finance, county and city planning agencies and county council of governments. (In addition, information on community facilities was verified through the use of aerial photographs, Geographic Information System (GIS) data sets, and field investigations.) All information and data sources are cited when used in this report and are also provided in the methodologies in Appendix A.

Chapter 2
Project Description

2.0 Project Description

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).

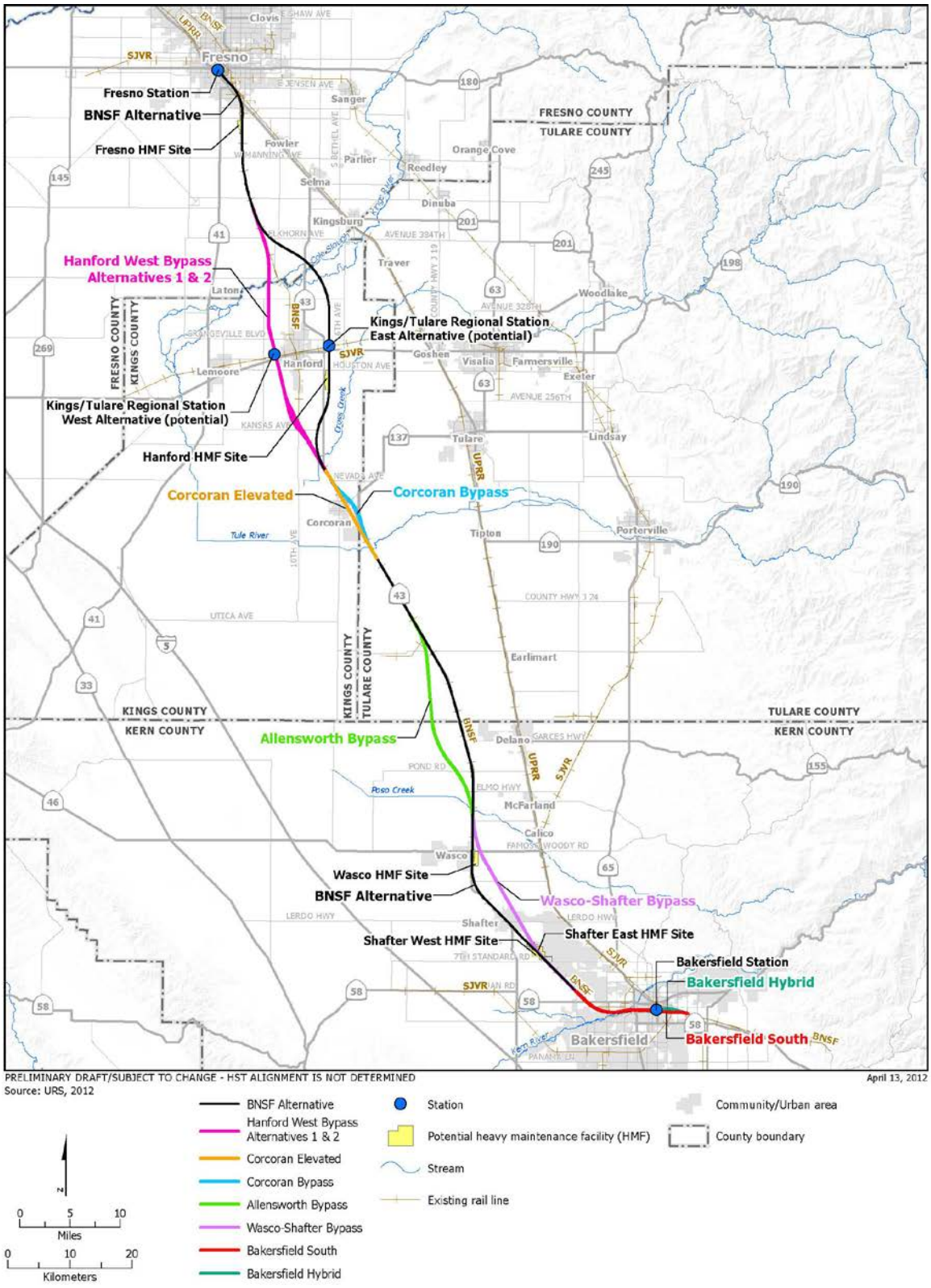

Figure 2-1
Fresno to Bakersfield HST alignments

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.

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,

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

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.

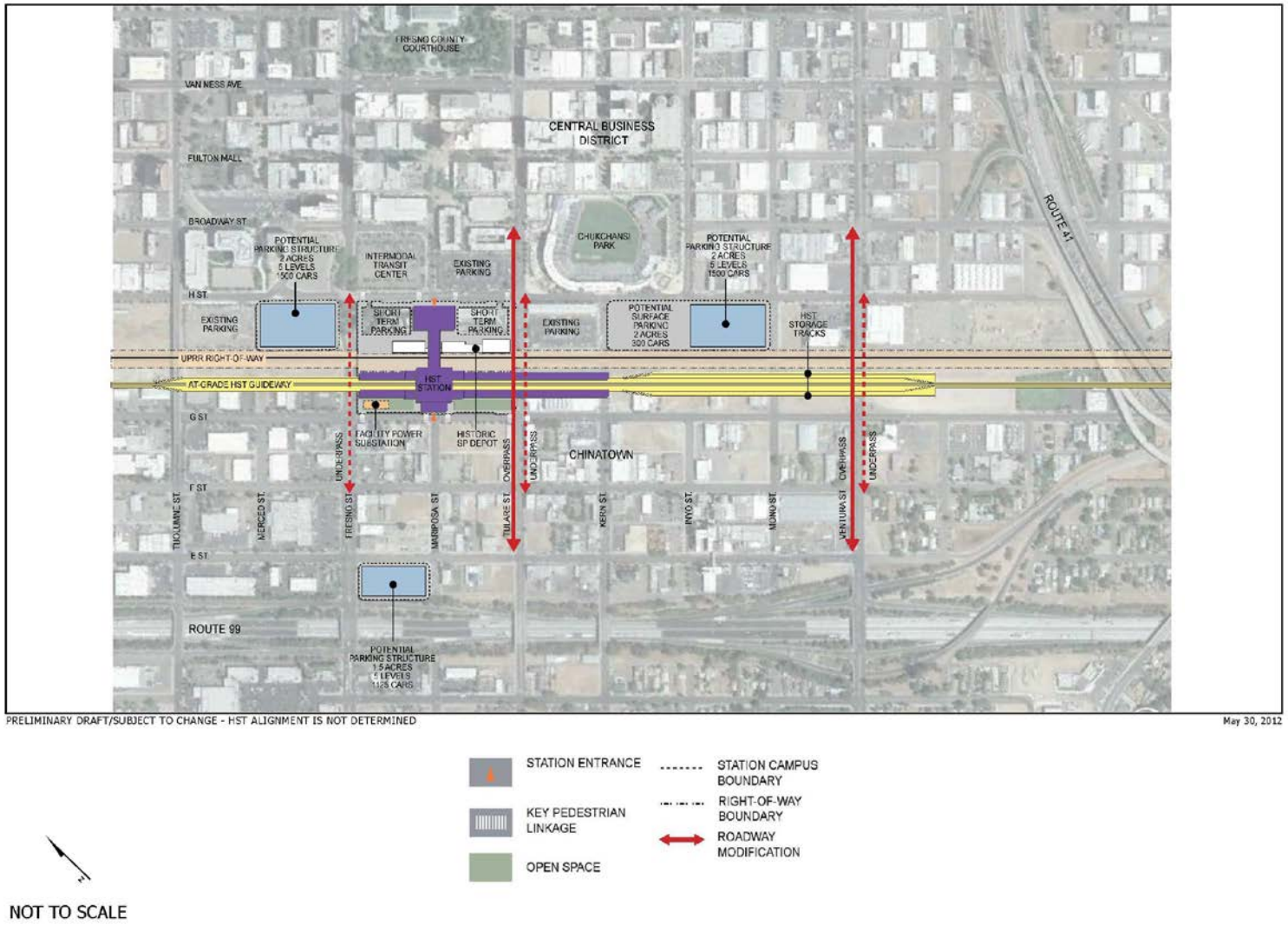

Figure 2-2
Fresno Station–Mariposa Alternative

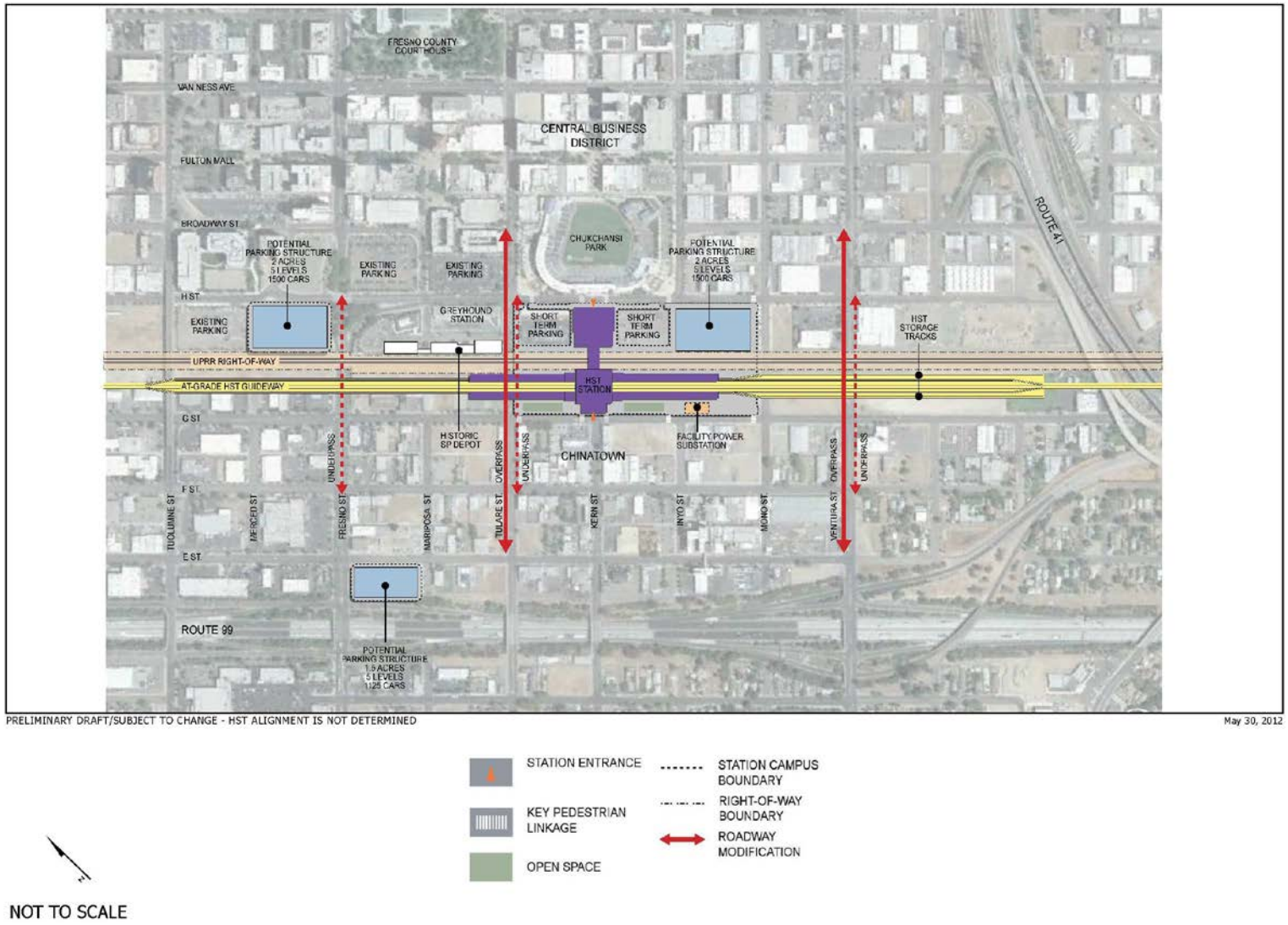

Figure 2-3
Fresno Station–Kern Alternative

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).

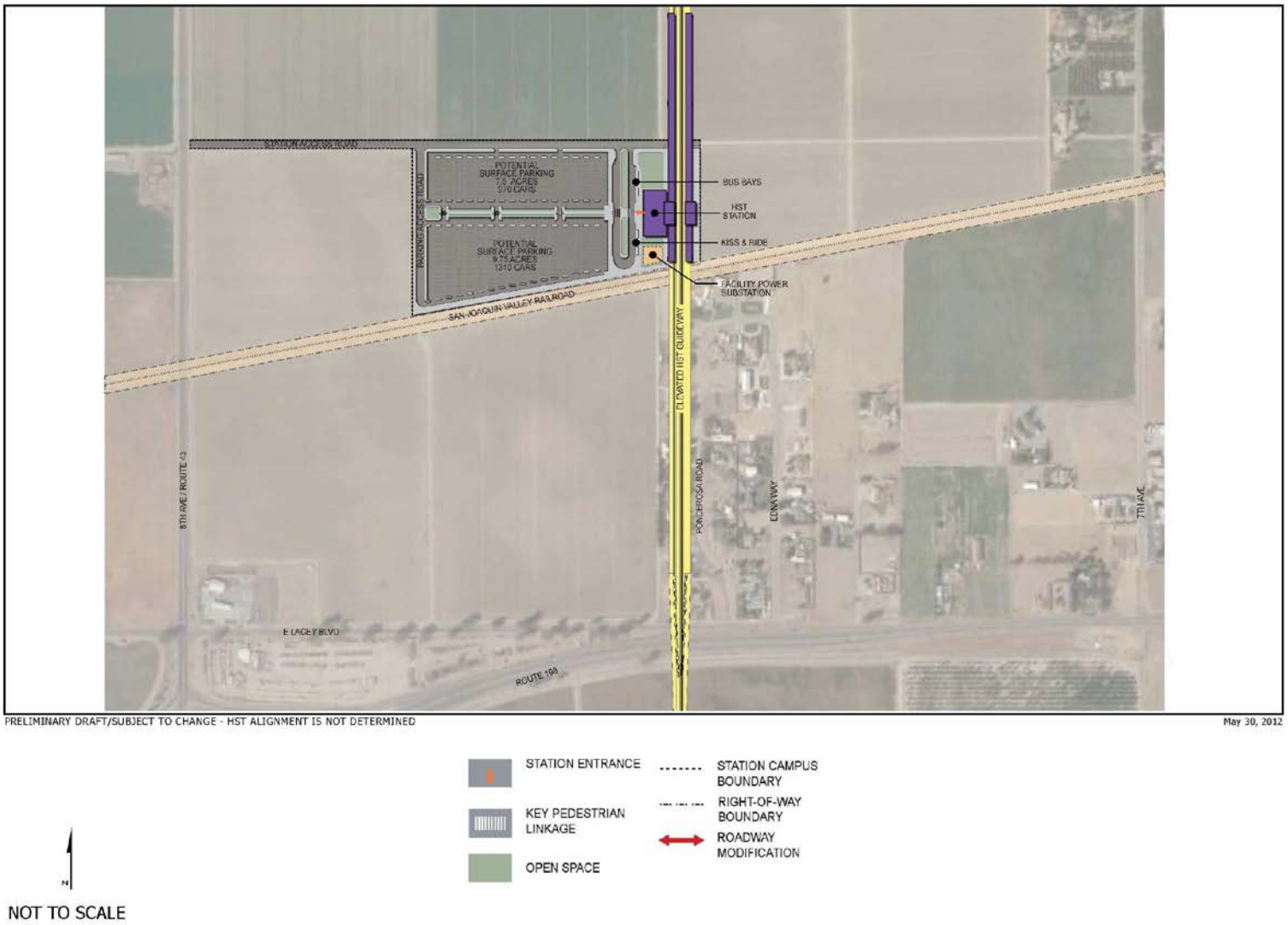

Figure 2-4
Kings/Tulare Regional Station–East Alternative

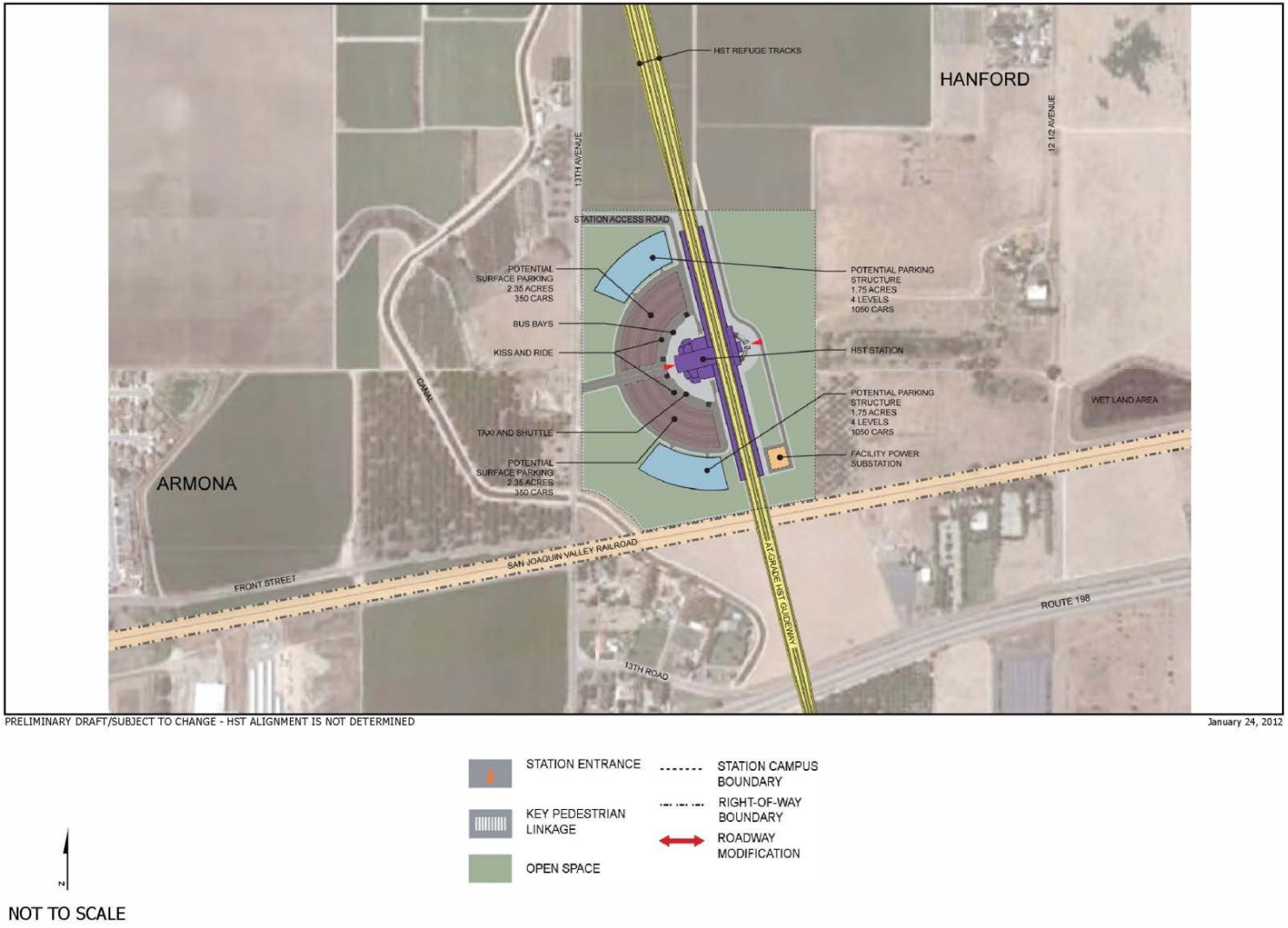

Figure 2-5
Kings/Tulare Regional Station–West Alternative (at-grade option)

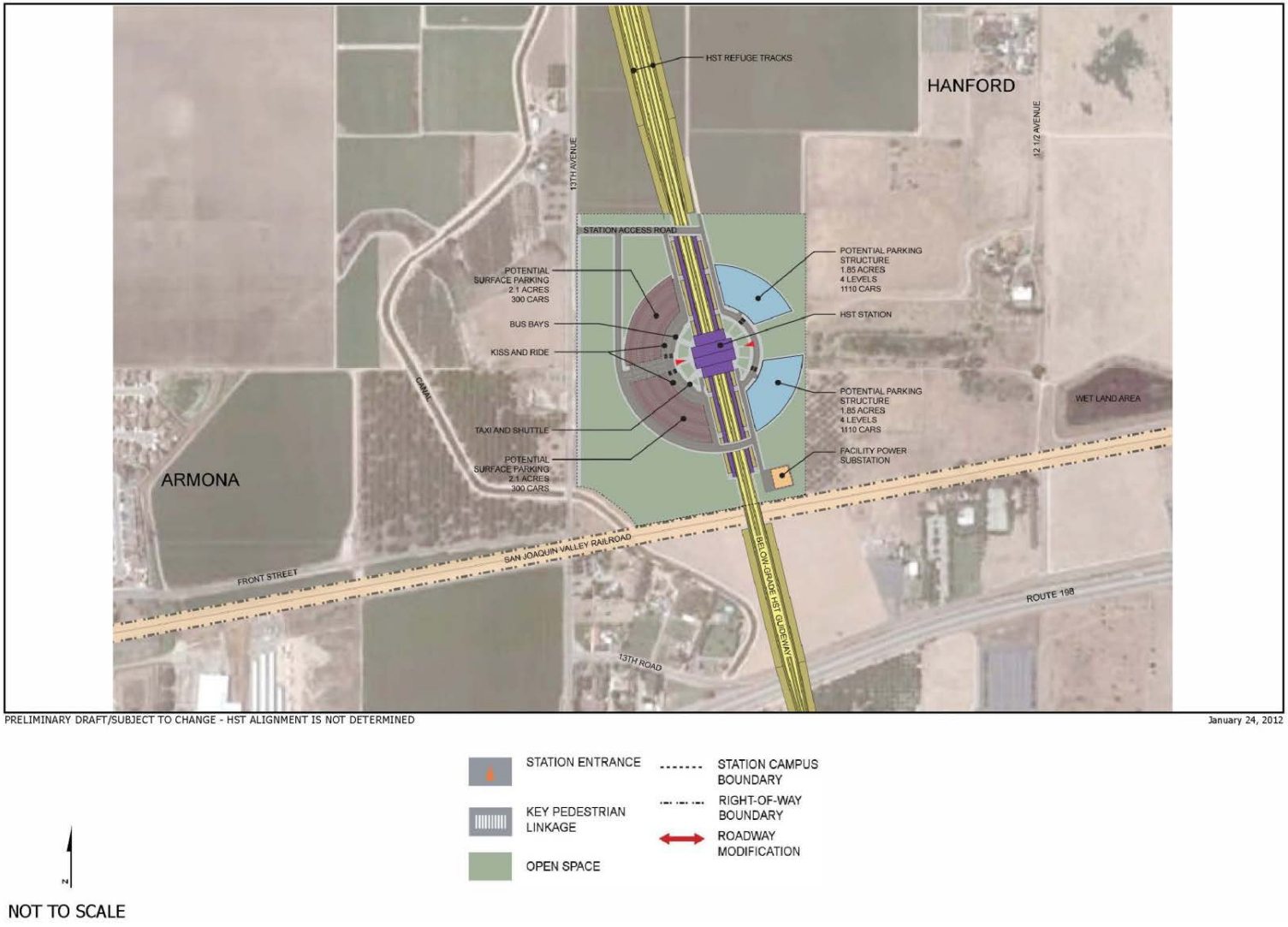

Figure 2-6
Kings/Tulare Regional Station–West Alternative (below-grade option)

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.

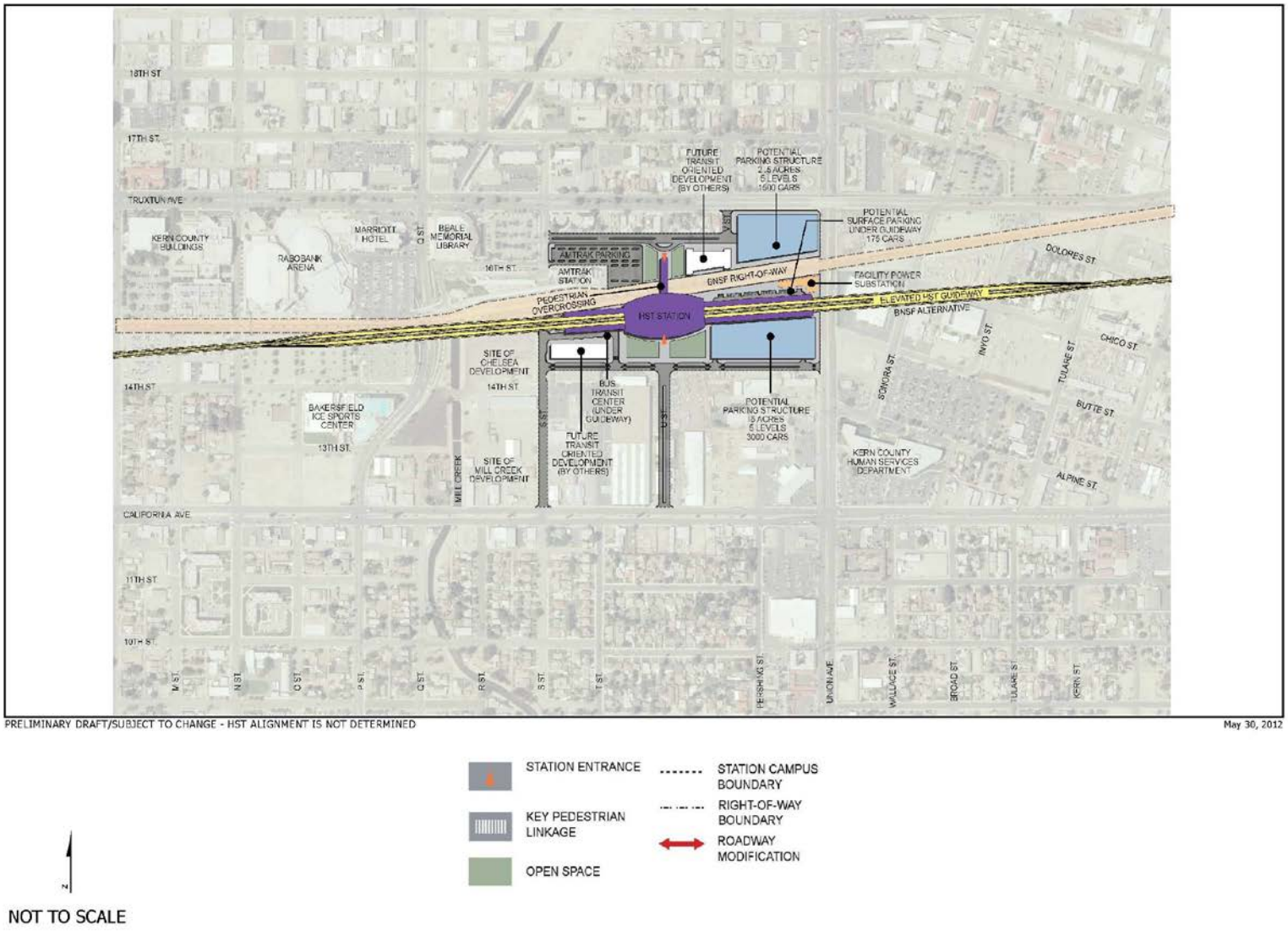

Figure 2-7
Bakersfield Station–North Alternative

Figure 2-8
Bakersfield Station–South Alternative

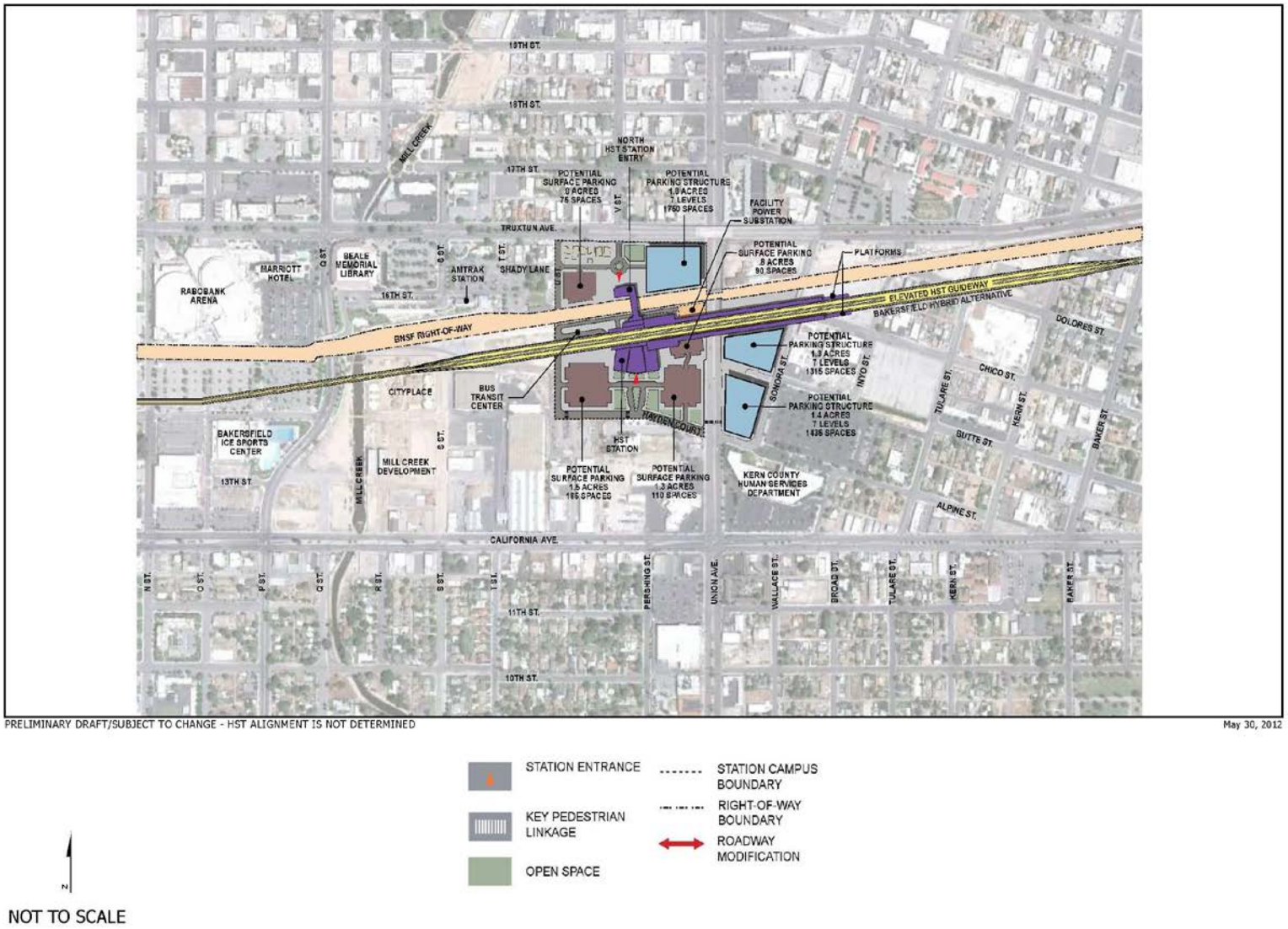

Figure 2-9
Bakersfield Station–Hybrid Alternative

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

This page intentionally left blank

Chapter 3
Regulatory Setting

3.0 Regulatory Setting

This section provides a summary of the federal, state, and local regulatory setting. Local considerations for socioeconomic, community, and environmental justice issues surround general plans and other local planning documents and reports.

3.1 Federal Regulations

National Environmental Policy Act (NEPA) [42 U.S.C. Section 4321 et seq.]

NEPA requires the consideration of potential environmental impacts, including potential socioeconomic impacts, in the evaluation of any proposed federal agency action. NEPA also obligates federal agencies to consider the environmental consequences and costs in their projects and programs as part of the planning process. General NEPA procedures are set forth in the CEQ regulations at 23 C.F.R. 771.

Title VI of the Civil Rights Act [42 U.S.C. Section 2000(d) et seq.]

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs and activities receiving federal financial assistance.

Executive Order 12898

Executive Order 12898, known as the federal environmental justice policy, requires federal agencies to address to the greatest extent practicable and permitted by law the disproportionately high adverse human health and environmental impacts of their programs, policies, and activities, on minority and low income populations in the United States. Federal agency responsibilities under this EO also apply to Native American programs. U.S. Department of Transportation (USDOT) Order 5610.2 on environmental justice defines “disproportionately high and adverse effect on minority and low-income populations” to mean an adverse effect that is predominately borne by a minority population and/or a low-income population or that would be suffered by the minority population and/or low-income population and that is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the nonminority population and/or non-low-income population (Department of Transportation 1997).

Executive Order 13166

Executive Order 13166 requires each federal agency to ensure that recipients of federal financial assistance provide meaningful access to their programs and activities by Limited English Proficiency applicants and beneficiaries.

Executive Order 13045

Executive Order 13045 requires federal agencies to minimize environmental health and safety risks to children, and to prioritize the identification and assessment of environmental health and safety risks that may have a disproportionate impact on children.

Americans with Disabilities Act [42 U.S.C. Sections 12101 to 12213]

The Americans with Disabilities Act prohibits discrimination based on disability.

Uniform Relocation Assistance and Real Property Acquisition Policies Act [42 U.S.C. Chapter 61]

The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a federal action or an undertaking involving federal funds, are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

3.2 State Regulations

California Environmental Quality Act [Section 21000 et seq.] and CEQA Guidelines [Section 15000 et seq.]

CEQA requires state and local agencies to identify the significant environmental impacts of their actions, including potential significant impacts on established communities, and to avoid or mitigate those impacts, when feasible.

Pursuant to CEQA Guidelines Section 15131(b), economic and social impacts of a project that are not related to physical changes in the environment are not treated as significant effects on the environment, but may be used to determine the significance of physical changes caused by the project.

California Government Code Section 65040.12(e)

Government Code Section 65040.12(e) defines environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

California Relocation Act [Government Code Section 7260 et seq.]

In parallel with the federal law, the act requires state and local governments to provide relocation assistance and benefits to displaced persons due to projects undertaken by state and local which do not involve federal funds.

California High-Speed Rail Authority Title VI Plan

In March 2012, the Authority adopted a Title VI policy and plan. The policy states:

- The Authority is committed to ensuring that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and Related Statutes.
- The Authority, as a federal grant recipient, is required by the Federal Railroad Administration to conform to Title VI of the Civil Rights Act of 1964 and related statutes. The Authority's sub-recipients and contractors are required to prevent discrimination and ensure non-discrimination in all of their programs, activities, and services.
- As permitted and authorized by Title VI, the Authority will administer a Title VI Program in accordance with the spirit and intent of the non-discrimination laws and regulations.

The Title VI Plan includes a commitment to inclusive public involvement of all persons affected by the high-speed train project (Authority and FRA 2012a).

California High-Speed Rail Authority Limited English Proficiency Policy and Plan

In May 2012, the Authority adopted a Limited English Proficiency policy and plan. The policy states:

- It is the policy of the Authority to communicate effectively and provide meaningful access to limited English proficient (LEP) individuals to all the Authority's programs, services, and activities. The Authority will provide free language assistance services to LEP individuals encountered or whenever an LEP individual requests language assistance services.
- The Authority will treat LEP individuals with dignity and respect. Language assistance will be provided through a variety of methods, including staff interpreters, translation and interpreter service contracts, and formal arrangements with local organizations providing interpretation or translation services or telephonic interpreter services.

The LEP Policy and the Limited English Proficiency Plan (Authority and FRA 2012b) supplement the Title VI Plan.

3.3 Local Considerations

3.3.1 Local and Regional Plans

This section addresses local regulations pertaining to socioeconomics, communities, and environmental justice in each of the four counties and the cities within their jurisdiction that lie along the alternative alignments. As this is a state project, there is no commitment on the part of the state to be 100% in compliance with local regulations. Rather, local and regional plans are reviewed to ensure compatibility.

Local regulations related to socioeconomics, communities, and environmental justice are generally included in general plans, ordinance codes, local housing assessments, and part of a county transportation plan. General plans were reviewed for those elements relevant to socioeconomics, communities, and environmental justice, including land use, transportation and circulation, housing, open space and conservation, community facilities and services, and economic development. Other local plans are also summarized to the extent that they relate to these elements within the study area. In addition, municipal zoning ordinances are cited with respect to land use regulations that promote the character, health, safety, and the general welfare of communities. Plans and policies are also included from regional bodies such as local Councils or Associations of Government and the California Department of Transportation (Caltrans). The Councils or Associations of Government are the designated regional transportation authorities, and Caltrans is the state body with a mission to improve mobility across California.

Table 3-1 identifies local regulations associated with socioeconomics, communities and environmental justice from those agencies that are applicable to the project.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Fresno County	
Fresno County General Plan, Economic Development Element, Goal ED-A, Policies ED-A.1 to 25, Goal ED-B, Policies ED-B.1 to 21, Goal ED-C, Policies ED-C.1 to 4 (Fresno County 2000b)	Economic development focuses on three priorities: job creation, diversification of the economic base, and labor force preparedness. The element aims to promote job growth and reduce unemployment through the enhancement and expansion of the county's traditional agricultural economic base, the diversification of its economic base, and the expansion of such business clusters as information technology, industrial machinery, and tourism.
Fresno County General Plan, Agriculture and Land Use Element, Goal LU-A, Policies LU-A.1 to 20, Goal LU-C, Policies LU-C.1 to 10, Goal LU-F, Policies LU-F.1 to 42, Goal LU-G, Policies LU-G.1 to 23, Goal LU-H, Policies LU-H.1 to 15 (Fresno County 2000a)	The element calls for keeping growth out of the urban fringe areas and directs intensive development into the incorporated communities. The intent is to direct growth to the appropriate areas to minimize loss of valuable open space.
Fresno County General Plan, Transportation and Circulation Element, Goal TR-A, Policies TR-A.1 to 19, Goal TR-B, Policies TR-B.1 to 6, Goal TR-C, Policies TR-C.1 to 3, Goal TR-D, Policies TR-D.1 to 8, Goal TR-E, Policies TR-E.1 to 6, Goal TR-F, Policy TR-E.3 (Fresno County 2000f)	The element calls for an increase in adequate facilities for bicyclists because of the growing use of bicycles for both transportation and recreation. The potential for transit use (buses and rail) in Fresno County will increase as Fresno County grows. Policies seek to promote transit services within urban corridors of dense population and employment; address user needs, develop convenient transfers between transportation systems, and ensure adequate funding.
Fresno County General Plan, Public Facilities and Services Element, Goal PF-G, Policies PF-G.1 to 6, Goal PF-H, Policies PF-H.1 to 11, Goal PF-I, Policies PF-I.1 to 9 (Fresno County 2000e)	The element calls for law enforcement, fire, and emergency medical services to be maintained at levels that protect life and property and ensure the prompt and efficient provision of these services meet the growing demand associated with an increasing population. School and library facilities are to provide for the educational needs of Fresno County and provide libraries for the educational, recreational, and literary needs of Fresno County residents.
Fresno County General Plan, Open Space and Conservation Element, Goal OS-A, Policies OS-A.1 to 30, Goal OS-B, Policies OS-B.1 to 11, Goal OS-C, Policies OS-C.1 to 20, Goal OS-G, Policies OS-G.1 to 16, Goal OS-H, Policies OS-H.1 to 15, Goal OS-I, Policies OS-I.1 to 16, Goal OS-J (Fresno County 2000d)	The element addresses the goals associated with productive resources (water, forest, and mineral resources) and recreational and cultural resources (parks, trails, and scenic areas).
Fresno County General Plan, Housing Element, Goal HA-A, Policies HA-A.1 to 8, Goal HA-C, Policies HA-C.1 to 8, Goal HA-D, Policies HA-D.1 to 5, Goal HA-E, Policies HA-E.1 to 7, Goal HA-F, Policies HA-F.1 to 3, Goal HA-G, Goal HA-H, Goal HA-I, Goal HA-J (Fresno County 2000c)	Goals are set forth in unincorporated areas to promote livable communities, expand housing choice to meet the needs of all residents, place residential development in areas near employment opportunities, and ensure an adequate supply of housing for those with special needs and migrant and non-migrant farm workers in the county. A major goal is to increase the supply of housing, with priority given to the development of affordable housing.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Fresno County Bicycle Transportation Master Plan (Fresno County 2010a)	The Bicycle Transportation Master Plan will list existing and proposed facilities, and identifies deficiencies, community concerns, and Fresno County Goals and Policies. Guidance will be provided in establishing bicycle facilities, directing long range planning, and identifying funding and prioritization methods for future bicycle facilities.
2007 Fresno County Regional Housing Needs Allocation Plan (Council of Fresno County Governments 2007)	This plan determines housing allocations specific to jurisdictions, including consideration of the housing needs of all income levels. Furthermore, consideration of housing needs and subsequent housing allocations must seek to reduce the concentration of lower income households in cities or counties that are affected by disproportionately high proportions of lower income households.
Fresno Public Transportation Infrastructure Study (Council of Fresno County Governments 2006)	The Fresno Public Transportation Infrastructure Study evaluates transportation needs throughout Fresno County and identifies ways that transit can play an effective role in serving the region's growth. The objectives include providing reasonable mobility for residents and businesses throughout the county, reducing associated environmental impacts, and making it easier for people to walk, bike and use public transit.
Updated Route 99 Business Plan (Caltrans Districts 6 and 10 2009)	The Business Plan was developed to provide a guide for decision makers as they address the needs of this developing corridor. State Route 99 is the transportation backbone of the San Joaquin Valley and a substantial investment is needed to improve the corridor in order to maintain the corridor's ability to support ongoing development, facilitate efficient goods movement, and improve the quality of life in this fast-growing region.
City of Fresno	
2025 Fresno General Plan, Urban Form Element, Policy C.2-c, Objective C.3 to 4, Policy C.4.a to d, Objective C.5, Policy C.5.a to b, Objective C.7, Policy C.7.a, Objective C.8 to 12, Policy C.12.a, Objective C.13 to 14, Policy C.14.a to c, Objective C.15 to 16, Policy C.16.a, Policy C.16.f, Objective C.17, Policy C.17.b, Objective C.18, Policy C.18.a to b, Policy C.18.j (City of Fresno Planning and Development Department 2002)	This element calls for residential uses to support balanced growth and allow for efficient use of community facilities. It indicates that commercial uses should be easily accessible from the residential areas of the population they serve. Industrial uses should be adjacent to transportation networks while minimizing adverse effects on neighboring uses. Community facilities are to be in areas where they can contribute to positive community identity.
2025 Fresno General Plan, Economic Development Element, Objective D.1, Policy D.1.b, Policies D.1.g to h, Objective D.2 (City of Fresno Planning and Development Department 2002)	The element calls for industrial development to promote job growth while enhancing Fresno's urban environment. Attracting, retaining, and expanding businesses are key objectives and providing infrastructure and amenities are key policies.

Table 3-1
Local Land Use Policies

Policy Title	Summary
2025 Fresno General Plan, Public Facilities Element, Objective E.1, Objective E.4, Policies E.4.a to c, Policies E.5.g to j, Objectives E.6 to 7, Policy E.7.c, Objective E.8, Policy E.8.b, Objective E.9, Policy E.9.aa, Objective E.10, Objective E.13, Policy E.13.b, Objectives E.14 to 15, Objectives E.24 to 25, Policy E.26.b, Objective E.27 (City of Fresno Planning and Development Department 2002)	The element calls for improved streets and highways to avoid increases in traffic. It calls for a continuous and easily accessible bikeway and trail system throughout the metropolitan area.
2025 Fresno General Plan, Open Space and Recreation Element, Objective F.1 (City of Fresno Planning and Development Department 2002)	Planning to ensure a sufficient number of city park facilities and to maintain a variety of meaningful and balanced recreational programs for residents and neighborhoods. Agricultural land on the outskirts of the city is identified as a valuable resource for conservation, and any development in these areas that would convert this land from its current use or reduce the buffer between urban and agricultural uses is discouraged.
2025 Fresno General Plan, Resource Conservation Element, Objective G-5, Policies G-5 B, C, D and F, Objective G-6, Policies G-5 A, B and D, Objective G-7, Policies G-7 B, D and E, Objective G-11 (City of Fresno Planning and Development Department 2002)	The element addresses the goals associated with productive resources (water, forest, and mineral resources) and protecting their use.
2025 Fresno General Plan, Safety Element, Objective I-7, Policy I-7-f (City of Fresno Planning and Development Department 2002)	The element calls for law enforcement and crime prevention necessary to maintain a safe, secure, and stable urban living environment. An average response time of 5 minutes for fire and emergency medical services within the metropolitan area is required. In addition, schools are to be located and maintained to serve as focal points of the community.
Fresno General Plan, Housing Element, Goal 2, Objective 2.1, Goal 3.1, Objectives 3.1 to 3.2 (City of Fresno Planning and Development Department 2009)	The element sets out goals to increase affordable housing and improve existing housing for low- to very-low-income individuals, with an emphasis on housing for large families. The element calls for neighborhood revitalization designs through improved facilities and infrastructure, enhanced police service to high-crime neighborhoods, and housing rehabilitation and replacement.
Central Area Community Plan (City of Fresno Planning and Development Department 1989)	The Central Area Plan is an important document for directing the revitalization of the entire Central Area (1,500 acres) bounded by Freeways 41, 99, and 180. It includes goals, policies, and implementation actions in the areas of Land Use, Housing, Transportation and Circulation, Urban Design, Economic Development and Marketing, Public Safety, and Historic Preservation.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Destination Downtown Action Strategy (City of Fresno Redevelopment Agency 2006)	This Action Strategy outlines many current and proposed projects designed to revitalize the downtown area. It is not a plan, but an achievable action strategy with identified financial resources. The Action Strategy was developed by the Fresno Redevelopment Agency in collaboration with the Mayor, City Council, and downtown stakeholders.
Downtown Transportation and Infrastructure Study (City of Fresno 2007)	This study addresses a wide range of transportation issues including automobile circulation and parking; integration of bus and other types of transit; freight, passenger and high speed rail; pedestrian facilities and traffic calming; bicycle circulation; and way finding. The Department of Telecommunications and Information Services provides recommendations to support desired economic and livability visions for Downtown Fresno.
Fulton-Lowell Specific Plan (City of Fresno Planning and Development Department 1992)	The Fulton Lowell Area is approximately 493 acres in size, and is located within Fresno's Central Area. Physical and economic blight are evident. Two major goals of this plan are to improve the image, perception, and physical environment of the area, and to change the residential mix and density to afford a healthy socioeconomic balance and full range of housing for neighborhood stability.
Roosevelt Community Plan (City of Fresno Planning and Development Department 1996a)	This plan was developed when the area was in a transitional stage and about to experience dramatic new growth. The purpose of this Plan was to identify and address those issues and concerns adversely affecting the community's growth and vitality, to anticipate the need for and impacts of new public facilities, and to stimulate the development of well-balanced quality neighborhoods.
West Area Community Plan (City of Fresno Planning and Development Department 1996b)	Included as an appendix to the 2025 Fresno General Plan, the goal of this community plan is to develop the West Area as a planned community with a complete range of services and facilities for the needs of community residents, in adherence to a set of specific standards for residential, commercial, industrial, and public infrastructure development, with special emphasis on minimization of land use conflict between agriculture and urban uses.
City of Fresno Municipal Code, Chapter 12, Land Use Planning and Zoning (City of Fresno 2010)	The purpose of this Zoning Ordinance is to encourage, classify, designate, regulate, restrict, and segregate the highest and best location for, and use of, buildings, structures, and land for agriculture, residence, commerce, trade, industry, water conservation, or other purposes in appropriate places; to regulate and limit the height, number of stories, and size of buildings and other structures hereafter designed, erected or altered; to regulate and determine the size of yards and other open spaces; and to regulate and limit the density of population, and for said purposes to divide the city of Fresno, California, into districts of such number, shape and area as may be deemed best suited to carry out these regulations and provide for their enforcement.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Community of Laton	
Laton Community Plan Update (Fresno County 2011)	The Laton Community Plan Update was prepared to revise the 1976 Laton Community Plan, including updates to the Land Use, Transportation, and Public Facilities and Services elements. These changes make the plan consistent with the Fresno County 2000 General Plan. Also, the plan update developed new goals, policies, and implementation programs to address community needs.
Kings County	
2035 Kings County General Plan, Land Use Element, Goal A.1, Objectives A.1.1 to 2, Goal B.1, Objective B.1.1, Goal B.2, Objectives B.2.1 to 2, Goal B.3, Objective B.3.1, Goal B.4, Objectives B.4.1 to 3, Goal B.6, Objectives B.6.1 to 2, Goal B.7, Objective B.7.1, Goal C.1, Objective C.1.1, Goal E.1, Objectives E.1.1 to 2, Goal F.1 (Kings County Planning Department 2010d)	The element covers the general distribution, location, and intensity of land uses throughout the unincorporated territory of the county, and establishes policies to guide future land use decisions. The element focuses on three distinctive land use categories: agriculture open space, rural interface, and urban fringe. The plan, has made strides to guide urban growth decisions in a more orderly and efficient manner, while focusing compact growth around existing urban commercial core areas.
2035 Kings County General Plan, Circulation Element, Goal A.1, Objectives A.1.1 to 3, Goal C.1, Objectives C.1.1 to 4, Goal D.1, Objective D.1.1 (Kings County Planning Department 2010b)	An objective is to integrate non-motorized transportation system alternatives into the layout of Community District plans to promote bicycling and walking as alternatives to the automobile, and interconnect those routes where practical into larger regional efforts with cities. Also of importance to communities are public transportation options and opportunities.
2035 Kings County General Plan, 2009–2014 Housing Element, Goal 2, Objectives 2.1 to 4, Goal 4, Objectives 4.1 to 4 (Kings County Planning Department 2010a)	The element encourages the provision of a range of housing types and prices to meet the diverse needs of residents, while ensuring that adequate housing assistance is available to very low, low, and moderate income households and those with special housing needs. This element applies to Kings County as well as the cities of Hanford and Corcoran.
2035 Kings County General Plan, Open Space Element, Goal A.1, Objective A.1.1, Goal B.1, Objectives B.1.1 to 3, Goal C.1, Goal D.1 Objectives D.1.1 to 2 (Kings County Planning Department 2010e)	Policies protect agricultural resources, scenic resources, community character, outdoor recreation, and open space lands to maintain the economy, scenic beauty, visual identity, and recreational needs of communities. Conservation of resources, specifically agricultural farmlands, is a key objective.
2035 Kings County General Plan, Health and Safety Element, Goal B.1, Objective B.1.1 to 4, Goal C.1, Objective C.1.1, Objective C.2.1 to 4, Goal C.3, Objective C.3.1 to 3 (Kings County Planning Department 2010c)	The element promotes community safety by ensuring communities have sufficient sheriff coverage to provide 20-minute or faster response times to priority emergency calls and maintenance and upkeep of key emergency access routes, and critical facilities and infrastructure to minimize delays or disruptions in emergency response.

Table 3-1
Local Land Use Policies

Policy Title	Summary
2005 Kings County Regional Bicycle Plan (Kings County Association of Governments 2005)	The Kings County Regional Bicycle Plan provides a single document to guide the development and integration of bicycle facilities in the county. It focuses on the implementation of prioritized projects, identifies potential funding sources, estimates the number of bicycle commuters in the county, and identifies bicycle facilities.
2008 Kings County Regional Housing Needs Allocation Plan (Kings County Association of Governments 2008)	This plan guides the county and cites to meet their fair share of the regional housing need. Regional housing goals are provided by the State Department of Housing and Community Development to the regional planning agencies, which must then allocate and distribute amongst the jurisdictions within its area of responsibility.
Kings County 2010 Regional Transportation Plan (Kings County Association of Governments 2010b)	The purpose of the plan is to provide goals, polices, and objectives for meeting transportation needs; to document mobility needs and issues; to provide the foundation for transportation decisions, and to identify and attempt to resolve regional transportation issues. The Kings County Association of Governments does not have local land use authority.
Kings County Transit Development Plan (Kings County Association of Governments 2003)	The purpose of this plan is to be a blueprint to provide a comprehensive view of public transit operation in the county. This plan will be used to determine future service performance requirements in order to make public transit more efficient and accessible to all county residents.
Community of Armona	
Armona Community Plan, Land Use Element, Objective 2B.1, Chapter 11 (Kings County Association of Governments 2010a)	The goal of the Land Use Element is to establish the Downtown Area of Armona as designated for mixed commercial and residential uses to revitalize the community core and enhance the visual distinction of Armona.
City of Hanford	
City of Hanford General Plan, Land Use Element, Objectives LU 1 to 8, 17, 20, 24, and 28; Policies LU 1.1, 1.2, 7.1, 7.2, 8.1, 8.2, 8.3, 9.5, 24.1, and 28.1; Programs LU 1.1-A and LU 8.1-A (City of Hanford 2002c)	The goals of the Land Use Element are to preserve and enhance the quality of life for Hanford residents without significant degradation to the natural or man-made environment; provide for a balance of housing, public services and facilities, and jobs for all who choose to live in Hanford; and revitalize and preserve the historic character of the original town site while planning for growth to support increases in the demand for city services. A key objective is to protect community character and promote economic development by minimizing conflicts between residential uses and other incompatible land uses.

Table 3-1
Local Land Use Policies

Policy Title	Summary
City of Hanford General Plan Circulation Element, Objectives CI 2, 3, 5, 7, 8, 9, and 10; Policies CI 1.6, 2.1, 2.3, 3.1, 3.3, 3.5, 7.1, 8.1, 8.4, 9.3, and 10.1; Programs CI 5.1-A, 7.1-A, 9.3-A and 9.3-B (City of Hanford 2002a)	The goal of the Circulation Element is to plan for, create, and maintain an efficient, cost effective, safe, and coordinated multi-modal circulation system, serving the needs of a variety of users. Of primary concern to the socioeconomics, communities and environmental justice analysis are non-motorized circulation issues association with pedestrian and bicycle transportation. The city recognizes the importance of bicycle facilities and has adopted a comprehensive bicycle plan as part of the Kings County Regional Transportation Plan. The need to improve existing pedestrian facilities within the city is acknowledged.
City of Hanford General Plan, Open Space, Conservation and Recreation Element, Objectives OCR 1, 2, 3, 6, 7, 11, 13, 14, and 16; Policies OCR 1.1, 6.1, 7.1, 7.3, 11.1, 14.1, 14.2, and 16.1; Programs OCR 7.3-A and 16.1-A (City of Hanford 2002d)	The goals of the Land Use Element are to preserve and enhance the quality of life for Hanford residents without significant degradation to the natural or man-made environment; provide for a balance of housing, public services and facilities, and jobs for all who choose to live in Hanford; and revitalize and preserve the historic character of the original town site while planning for growth to support increases in the demand for city services. A key objective is to protect community character and promote economic development by minimizing conflicts between residential uses and other incompatible land uses.
City of Hanford General Plan, Hazards Management Element, Objectives HZ 3 and 4; Policies HZ 3.1, 4.1, and 4.2; Program HZ 3.1-A (City of Hanford 2002b)	The goal of the Circulation Element is to plan for, create, and maintain an efficient, cost effective, safe, and coordinated multi-modal circulation system, serving the needs of a variety of users. Of primary concern to the socioeconomics, communities and environmental justice analysis are non-motorized circulation issues associated with pedestrian and bicycle transportation. The city recognizes the importance of bicycle facilities and has adopted a comprehensive bicycle plan as part of the Kings County Regional Transportation Plan. The need to improve existing pedestrian facilities within the city is acknowledged.
Hanford Parks, Recreation and Open Space Master Plan (**C**ity of Hanford 2009a)	The purpose of this Plan is to evaluate the city's existing facilities, programs, and services; assess the community's needs and desires; and to provide recommendations to improve the services provided to residents and visitors.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Hanford Municipal Code, Title 17, Zoning (City of Hanford 2009b)	This Zoning Code is adopted to achieve the following objectives: to provide a zone plan to guide the physical development of the city; to foster a wholesome, serviceable and attractive living environment; to prevent excessive population densities and the overcrowding of land with structures; to promote a safe, effective traffic circulation system, the provision of adequate off-street parking and truck loading facilities, and the appropriate location of community facilities; to protect and promote appropriately located commercial and industrial activities; to protect and enhance real property values and the city's natural assets; to ensure unimpeded development of new urban expansion that is logical, desirable and in conformance with the objectives and policies of the general plan; and to provide and protect open space.
City of Corcoran	
Corcoran General Plan 2025 Policies Statement, Land Use Element, Goal 1; Community Identity Objective C, Residential Land Use Objectives A and B, Commercial Land Use Objectives A and B, Industrial Land Use Objective A, Public and Quasi-Public Land Use Objective A, Growth Management Objective A; Policies 1.2, 1.4, 1.16, 1.17, 1.18, 1.19, 1.27, 1.28, 1.36, 1.37, 1.40, 1.47, 1.49, 1.57, 1.59, and 1.60 (City of Corcoran 2007)	The plan calls for land use policies that preserve and enhance Corcoran's unique character and achieve an optimal balance of residential, commercial, industrial, and open space land uses. Gateways to the city should reflect favorably on the image and character of the community. Communities are to be designed to preserve and promote community character and improve the appearance of city streets and residential areas.
Corcoran General Plan 2025 Policies Statement, Circulation Element, Goal 1; Objectives B, D, E, and F; Policies 2.3, 2.13, 2.20, 2.64, 2.66, 2.67, 2.72, 2.73, 2.74, 2.75, 2.76, 2.78, 2.79, 2.84, 2.85, 2.86, and 2.87 (City of Corcoran 2007)	The element calls for enhanced availability and accessibility of alternative modes of transportation, including walking and bicycling. In addition, streets should be developed to promote safe and pleasant conditions for residents, pedestrians, and bicyclists.
Corcoran General Plan 2025 Policies Statement, Safety Element, Emergency Planning and Response Objectives A and B, Fire Protection Objective A; Policies 4.4, 4.7, and 4.13 (City of Corcoran 2007)	The element sets response time goals for fire protection response and addresses those features or characteristics existing in or near Corcoran that represent a potential hazard.
Corcoran General Plan 2025 Policies Statement, Open Space, Conservation and Recreation Element, Natural Resources Objectives A and B, Recreation Objectives A and B, Open Space Objective A, and Cultural Resources Objectives A; Policies 5.10, 5.15, 5.17, 5.18, 5.19, 5.21, and 5.22 (City of Corcoran 2007)	The element calls for provision of adequate leisure, recreation, and cultural programs; facilities that are accessible and affordable to all segments of the community; and conservation and protection of open space and natural resources.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Corcoran General Plan 2025 Policies Statement, Community Design Element, Gateways/ Streetscape Design Objective A, Residential Development Objective A, Commercial Development Objective A; Policies 7.9, 7.22, 7.23, 7.46, and 7.47 (City of Corcoran 2007)	One of the goals of this element is to preserve and improve the quality of life in Corcoran by addressing the following: the protection of natural resources; the preservation and enhancement of the historical character; the harmonious incorporation of new development; and the maintenance of the community's "small-town, rural atmosphere."
Corcoran Municipal Code, Title 11, Zoning Regulations (City of Corcoran 2009b)	The Zoning Code is adopted to achieve the following objectives: to provide a zone plan to guide the physical development of the city; to foster beneficial development of areas which exhibit conflicting patterns of use; to prevent excessive population densities and overcrowding of land with structures; to promote a safe, effective traffic circulation system, the provision of adequate off-street parking and truck loading facilities, and the appropriate location of community facilities; to protect and promote appropriately located commercial and industrial activities; to protect and enhance real property values and the city's natural assets; to ensure unimpeded development of such new urban expansion that is logical, desirable, and in conformance with objectives and policies of the General Plan; and to provide and protect open space.
Tulare County	
Tulare County General Plan, Land Use Element, Concept 2, Principles 1, 2, 3, 4, and 5, Goal LU-1, Policy LU-1.1, Goal LU-2, Policies LU-2.1 and 2.3, Goals LU-3, 4, 5, 6, and 7, Policies LU-7.9 and 7.10 (Tulare County 2010a)	The element sets out land use policies that promote the principles of smart growth and healthy communities by creating walkable neighborhoods; creating a strong sense of place; and maintaining distinctive communities, rural development patterns, and character that is compatible with the best features of Tulare County's traditional community centers and agricultural landscapes. In addition, the importance of new commercial development is highlighted by encouraging neighborhood convenience stores but limiting big box development to maintain community character, and by providing for commercial service businesses where they will not adversely affect surrounding properties.
Tulare County General Plan, Transportation and Circulation Element, Concept 1, Principles 1, 2, 3, and 4, Goal TC-1, Policies TC-1.1, 1.6, 1.9, and 1.14, Goal TC-2, Policies TC-2.1, 2.2. and 2.4, Goal TC-4, Policies TC-4.1, 4.2, and 4.3, Goal TC-5, Policies TC-5.1, 5.2, and 5.3 (Tulare County 2010a)	A principle of the element calls for the County to support the enhancement of recreational bikeways and promote the bikeway network as a component of the county's tourism program. In addition, the element calls for development and expansion of pedestrian paths and bicycle facilities that provide residents with alternative modes of travel.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Tulare County General Plan, Housing Element (Tulare County 2010b)	The Housing Element calls for a sufficient supply and range of housing types that meet the economic and social needs of present and future residents of the Tulare County unincorporated area, particularly persons with special needs, including but not limited to low-income households, the elderly, persons with disabilities, female headed households, large families, farm workers, and persons & families in need of emergency shelters, in order to provide equal housing opportunities for all.
Tulare County General Plan, Scenic Landscapes Element, Concept 1, Principles 1, 2, 3, 4, and 5, Goal SL-1, Policies SL-1.1 and 1.2, Goal SL-2, Policies SL-2.1 and 2.3, Goal SL-3, Policy SL-3.1, Goal SL-4, Policies SL-4.1 and 4.3 (Tulare County 2010a)	The element calls for designation, conservation, and protection of open space, peripheral agricultural areas, recreational, and historic/cultural resources to maintain the scenic landscapes throughout the county.
Tulare County General Plan, Environmental Resource Management Element, Concept 2, Principle 3, Goals ERM-1, 2, 3, 4, and 5, Policies ERM-5.1, 5.5, 5.7, and 5.20, Goals ERM-6 and 7 (Tulare County 2010a)	The element recognizes that the scenic landscapes in Tulare County will continue to be one of the county's most visible assets and emphasizes the enhancement and preservation of these resources as critical to the future of the county. The County will continue to assess the recreational, tourism, quality of life, and economic benefits that scenic landscapes provide and implement programs that preserve and use this resource to the fullest extent.
Tulare County General Plan, Health and Safety Element, Concept 4, Principles 3 and 4, Goal HS-7, Policies HS-7.1 and 7.3 (Tulare County 2010a)	The element sets response time goals for fire protection and addresses those features or characteristics that represent a potential hazard.
Tulare County General Plan, Public Facilities and Services Element, Concept 2, Principles 1, 2, and 3, Goal PFS-1, Policies PFS-1.1 and 1.3, Goal PFS-7, and Policies PFS-7.1, 7.5, 7.8, and 7.9 (Tulare County 2010a)	The element is focused on providing adequate public safety and emergency response system throughout the county as well as studying the impacts new projects will have on the current infrastructure within the county.
Tulare County General Plan, Economic Development Element, Concept 3, Principles 1, 2, 3 and 4, Goal ED-1, Policies ED-1.3 and 1.8, Goal ED-2, Policy ED-2.14, Goal ED-3, Policies ED-3.1 and 3.5, Goals ED-4 and 5, Policies ED-5.1, 5.2, 5.3, 5.4, 5.9, and 5.12, Goal ED-6, Policies ED-6.1, 6.4, 6.5, 6.6, and 6.7 (Tulare County 2010a)	A primary goal is to promote the long-term preservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and related activities that support the viability of agriculture and further the county's economic development goals. It is expected that industries will play an increasingly larger role in the local economy. Thus, the element helps to diversify economic opportunities in the county's unincorporated communities, hamlets, and incorporated cities. The element identifies the need to support development of the HST.
2007 Tulare County Regional Bicycle Transportation Plan (Tulare County Association of Governments 2007b)	The Regional Plan is organized into nine sections, one for each jurisdiction, to prioritize, plan, estimate, and coordinate bicycle activities. The plan includes, among other items, maps and descriptions of existing and planned bikeways and various types of bicycle facilities.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Kern County	
Kern County General Plan, Land Use, Conservation, and Open Space Element, Goal 1.4-2, Policies 1.4-1, 3, 5 and 6, Goal 1.5-1, Policies 1.5-1 and 3, Goals 1.6-1, 2, 4, and 7, Policies 16-4, 5, 7, and 9, Goal 1.7-2 and 4, Policies 1.7-1 and 3, Goal 1.8-2, Policies 1.8-5 and 11, Policies 1.9-2, 4, 5, and 7, Goal 1.10-1, Policies 1.10-50, 54, 57, 63, and 64 (Kern County Planning Department 2007b)	This a majority of this element deals with managing residential, commercial, industrial and resource land uses, which includes discussions on housing. However it also provides guidance for the conservation of resources focusing on both agricultural lands and mineral extraction. With respect to uses in open space, this element encourages the provision of parks and recreational facilities of varying size, function, and location to serve county residents. Finally several policies are set forth directing the county's economic development effort.
Kern County General Plan, Circulation Element, Goals 2–1, 2, 3, 4, and 7, Goals 2.3.3-1, 2, 3, 4, and 5 (Kern County Planning Department 2007a)	The element incorporates the findings related to bicycle and pedestrian policies from the Kern County Federal Transportation Improvement Program. The Kern Federal Transportation Improvement Program recognizes the need for mixed land use development that encourages non-motorized trips. In addition, specific bike path and pedestrian sidewalk projects are listed that are being implemented to improve non-motorized transportation in the county.
County of Kern Housing Element,2008–2013, Goal 1, Policy 1.2, Program 1.2.1, Policy 1.4, Program 1.4.2, Goal 2, Program 2.1.3 and 2.1.6, Policy 2.2, Program 2.2.1, Goal 4, Policy 4.1, Goal 5, Policy 5.1, Program 5.1.1 and 5.1.5 (Kern County Planning Department 2008)	The element recognizes the need for incentives for residential projects that provide affordable housing along with other desired elements including infrastructure, day care, and clustered development. It further identifies strategies and programs that focus on improving housing and neighborhoods, assisting in the provision of affordable housing and promoting fair and equitable housing opportunities.
Economic Development Strategy (ICF Consulting 2005)	The Plan seeks to identify ways to strengthen existing industries in the county, provide demonstrable career opportunities for young people, accommodate changing demographics, and effectively plan for the rapid population growth. The strategy recommends particular industries for focused economic development activities and proposes new programs from workforce development to business attraction and retention.
Kern County Bicycle Facilities Plan (Kern Council of Governments 2001)	The purpose this plan is to simplify and clarify bicycle travel facilities planning and serve as a basis for understanding existing facilities. The Plan describes existing systems, planned systems that have been constructed, and projects where additional funding may be used, on a regional basis, to improve and enhance the existing system. The plan also identifies where the system needs to be expanded.

Table 3-1
Local Land Use Policies

Policy Title	Summary
2007 Regional Housing Needs Assessment (Kern Council of Governments 2007)	Government Code Section 65584 requires the Department of Housing and Community Development to provide its determination of the region's projected housing needs to the Kern Council of Governments. It is Kern Council of Governments' responsibility to allocate the projected needs for the unincorporated County of Kern and to each of the 11 incorporated cities. This document examines the status of housing in Kern County and proposes a housing allocation based upon market forces consistent with Kern Council of Governments traffic and air pollution analysis databases for Kern County.
Kern River Specific Trails Plan (Kern County Planning Department 2003)	The Kern River Specific Trails Plan is a comprehensive plan to guide the planning and development of multi-use trails along the Kern River corridor. The alignment of the trail system is from the Manor Street over crossing in Bakersfield, traversing easterly along the Kern River to the eastern side of the Kern County Golf Course. This plan examines the unincorporated portions of the open space that lie entirely outside the study area.
City of Wasco	
City of Wasco General Plan, Land Use Element, Principles 2, 3, and 6, Objective 2.2-A, Objective 2.4-A, Objective 2.5-A (City of Wasco 2010d)	This element sets as an objective planning land use to preserve the small town character and quality of life through preservation of the downtown area (Central Business District) and the preservation and enlargement of community meeting spaces. Further, the element calls for the development of residential, commercial, industrial sites as well as community facilities (including public buildings, schools, and parks) to meet the city's anticipated needs.
City of Wasco General Plan, Circulation Element, Principles 7 and 9, Goal 5.1-1, Goal 5.3-1, Policies 5.3-1, 6, 12, and 13, Goal 5.3-2, Policies 5.3-2, 3, and 4, Goal 5.4-1, Policies 5.3-1, 2, 3, and 6, Goals 5.5-1 and 2, Policies 5.5-1 and 3 (City of Wasco 2010b)	This element recognizes the importance of increasing the connectivity of neighborhoods and minimizing divisions of the community caused by major transportation facilities such as railroads. Of primary concern are non-motorized circulation issues associated with pedestrian and bicycle transportation. It calls for pedestrian friendly features to define and create neighborhoods and for the development of an integrated Bicycle Access Plan for the city.
City of Wasco General Plan, Housing Element, Policies H-8 and H-9 (City of Wasco 2010c)	The separate Housing Element calls for expansion of housing opportunities for both low- and moderate-income households. In addition, the need to focus on special needs housing for large families, the elderly, disabled and homeless is identified
City of Wasco General Plan, Safety Element, Objectives 7.1-A and B, Objective 7.2-A, Policies 7.2-1 and 2, Objectives 7.4-A and B (City of Wasco 2010e)	The element identifies the need to maintain an effective and well-trained fire department able to respond to the scene within 6 minutes as well as protecting the citizens by reducing the likelihood of a hazard that has the potential of losing life or property.

Table 3-1
Local Land Use Policies

Policy Title	Summary
City of Wasco General Plan, Agricultural Element, Objective 4.1-B, Policies 4.1-6, 7, and 15 (City of Wasco 2010a)	The objective of the element is to provide a greenbelt around the city providing enough farmland to support agricultural activities while additionally supporting development within the city.
Five Year Implementation Plan, 2009–2010 through 2013–2014 (City of Wasco 2009)	This Plan was created for the City of Wasco Redevelopment Agency. It is a 5 year plan covering 2009-2014. The Implementation Plan was prepared in compliance with Section 33490 et seq. of California Community Redevelopment Law and applies to the Wasco Redevelopment Project Original Area and Added Territory. Redevelopment programs and project activities to be implemented by the Wasco Redevelopment Agency over the next five years are identified, including housing activities targeted for individuals and families of very low-, low-, and moderate-income.
Downtown Revitalization Study and Downtown Business District Marketing Plan (City of Wasco 2008b)	The ultimate goal of the city is to implement a plan to revitalize and improve the downtown area, hence creating a destination area where a mix of commercial, retail, dining, entertainment, residential and transit uses are carefully planned to create a pedestrian friendly environment that is warm and inviting. The Revitalization Study and Marketing Plan look at what resources are needed to attract and improve business in the downtown area.
City of Wasco Municipal Code, Title 17, Zoning (City of Wasco 2010f)	The Zoning Ordinance of the city of Wasco is adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses. Its regulations are imposed to provide the economic and social advantage resulting for tan orderly planned use of land resources; guide development; prescribe and apply zoning districts of a number, size and location deemed necessary; regulate the size and use of lots, yards and other spaces; regulate the use, location, height, bulk and size of buildings and structures; regulate the intensity of land use; regulated the density of residential areas; establish requirements for off-street parking; regulate signs and billboards; maintain and enhance significant environmental resources; and proved for enforcement of regulations.
City of Shafter	
City of Shafter General Plan, Land Use Element, Objective 2.3, Policies 2.3-1, 2, 3, 4, 5, 6, and 7, Objective 2.4, Policies 2.4-2 and 8, Objective 2.5, Policy 2.5-3, Objective 2.6, Policy 2.6-1, Objective 2.7, Policy 2.7-1 (City of Shafter 2005a)	This element addresses agricultural, residential, commercial, industrial, and public areas. It calls for the recognition and retention of commercial agriculture as a desirable land use and as a major segment of the community's identity and economic base; providing a variety of housing types suitable to a broad range of socioeconomic groups; retention of commercial uses targeted to serve regional, community, and neighborhood functions; and retention of industrial uses that expand employment opportunities, increase the personal income of local resident, and strengthen Shafter's economic base. Public uses should also provide ample area for the conduct of public business and recreation.

Table 3-1
Local Land Use Policies

Policy Title	Summary
City of Shafter General Plan, Transportation Element, Objective 3.4, Policies 3.4-1, 2, 6, 7, and 11 (City of Shafter 2005a)	The element discusses non-motorized circulation issues associated with pedestrian and bicycle transportation. It sets out policies to support alternatives to automotive transport, including pedestrian and bicycle travel between residential and commercial areas.
City of Shafter General Plan, Housing Element, Goal 5.1, Policy 5.1.1, Goal 5.2, Policy 5.2.3 (City of Shafter 2005a)	Housing policies include increasing the number and diversity of housing and providing equal housing opportunities to all residents. The element lays out the challenges of meeting this goal through new housing development within the city. A combination of large tracts of Williamson Act lands and housing density policies limit potential development areas.
City of Shafter General Plan, Public Services and Facilities Element, Objective 4.7, Policy 4.7-6, Objective 4.8, Policies 4.8-1 and 2, Objective 4.10, Policy 4.10-2 (City of Shafter 2005a)	The General Plan calls for new fire stations to be constructed to meet a target of 5 minute response times for 80% of all service calls. The need for new development of police service stations is also identified.
Orchard Park Specific Plan (City of Shafter 2006)	The Orchard Park Specific Plan is intended to provide for the orderly and efficient development of the Specific Plan area in accordance with the provisions of the City of Shafter General Plan. It will establish the type, location, intensity and character of development, and the required infrastructure to support planned land uses.
Mission Lakes Specific Plan (City of Shafter 2005b)	Mission Lakes is designed as a planned community on 1,356.8 acres of unincorporated territory in the City of Shafter sphere of influence The development of Mission Lakes will proceed as an orderly conversion of agricultural land to urban uses characterized predominantly by suburban-type residential densities. This Specific Plan document is intended to serve as the City of Shafter's long-range plan for the physical development of the Mission Lakes community and a guide to all future development proposals within the boundaries of the Specific Plan area.
City of Shafter Municipal Code, Title 17, Zoning (City of Shafter 2010)	The City Council has established this Development Code (Shafter, California, Municipal Code § 17-01-10) with these standards, guidelines, and procedures to protect and promote the public health, safety, convenience, and welfare of present and future citizens of the city.

Table 3-1
Local Land Use Policies

Policy Title	Summary
City of Bakersfield	
Metropolitan Bakersfield General Plan, Land Use Element, Goals 1 through 8, Policies 1, 3, 4, 10, 15, 16, 39, 40, 42, 43, 44, 47, 48, 49, 50, 51, and 67 (City of Bakersfield 2002)	Policies are identified for residential, commercial, industrial community facilities and open space. The element designates two primary types of development: "Centers" (either Mixed Use or Intense Activity Centers) which are planned high density residential and commercial developments, meant to minimize sprawl and maximize infrastructure use; and "Resources" which are planned to emphasize and protect linkages to the area's natural resources, such as the Kern River, canals, and foothills. The General Plan calls for future high and high medium density residential development adjacent to existing and planned commercial and transportation corridors as well as in the downtown "Centers" section of Bakersfield. Key objectives are preservation and conservation of neighborhoods whose identity is characterized as special places in the community.
Metropolitan Bakersfield General Plan, Circulation Element, Goal ST-2, Policies ST-22 and 33, Goals TR-1, 2, 3, and 4, Policies TR-1, 7, and 12 (City of Bakersfield 2002)	The element calls for improving biking and bikeways within Metropolitan Bakersfield and for safe and efficient motorized, non-motorized, and pedestrian traffic movement.
Metropolitan Bakersfield General Plan, Housing Element, Goals 1 through 5, Objectives 1-6, 3-1, and 3-2 (City of Bakersfield 2002)	The Housing Element sets out some broad housing priorities, including the following: to provide housing opportunities and accessibility for all economic segments of the city; to provide and maintain an adequate supply of sites for the development of affordable new housing; and to preserve, rehabilitate, and enhance existing housing and neighborhoods.
Metropolitan Bakersfield General Plan, Conservation Element, Goal MR-3, Goals AG-1 , Policies AG-4 and 10 (City of Bakersfield 2002)	Agricultural land on the outskirts of the city is identified as a valuable resource for conservation, and any development in these areas that would convert this land from its current use or reduce the buffer between urban and agricultural uses is discouraged.
Metropolitan Bakersfield General Plan, Open Space Element, Goals 5 and 6.	The element identifies open space and establishes guiding policies for the preservation and conservation of land that is essentially unimproved and devoted to open space use.
Metropolitan Bakersfield General Plan, Safety Element, Goals PS-1 through 4, Policies PS-1 through 16 (City of Bakersfield 2002)	The element calls for law enforcement, fire, and emergency medical services to be maintained at levels that protect life and property by deterring crime, protecting property from fire damage, ensuring the prompt and efficient provision of public safety services, and providing facilities to meet the growing demand associated with an increasing population.
Metropolitan Bakersfield General Plan, Parks Element, Goal 4, Policies 16, 71, 18, and 19 (City of Bakersfield 2002)	The element recognizes a shortage of parks with the city and calls for an increase in the number of parks, access to parks, and open space linkages where feasible to the Kern River and foothill areas. It also calls on the city to capitalize on the Kern River, parks, steep hills, and canals as organizational elements for the Bakersfield area.

Table 3-1
Local Land Use Policies

Policy Title	Summary
Downtown Bakersfield Redevelopment Plan (City of Bakersfield 2005a)	The implementation plan contains goals and objective for the project area; proposed projects, programs, and estimated expenditures proposed during the five year period; how the goals, objectives, projects, and expenditure will eliminate blight in the project area; and housing related requirements.
Old Town Kern-Pioneer Redevelopment Plan (City of Bakersfield 2005b)	The area covered in this implementation plan is generally located north of California Avenue and south of Columbus Street, between Oak Street on the west and Virginia Street on the east. Some of the primary goals of the redevelopment plan are to promote rehabilitation of existing structures; improve the physical appearance of the area; retain and promote the expansion of existing businesses; eliminate deficiencies; and provide and assist low and moderate income housing.
Southeast Bakersfield Redevelopment Plan (City of Bakersfield 2005c)	This area was once a thriving part of the city but has declined in recent years due to the construction of the freeway portion of State Route 99, coupled with aging buildings in the area. The goals of this implementation plan are to promote rehabilitation of existing structures; improve the physical appearance of the area; retain and promote the expansion of existing businesses; eliminate deficiencies; and provide and assist low and moderate income housing.
Title 17, Zoning, Bakersfield Zoning Plan (City of Bakersfield 2010)	This Zoning Plan is adopted to implement the goals and policies of the general plan of the city which serve to promote and protect the public health, safety, peace, morals, comfort, convenience, and general welfare. The purpose of the zoning code is to assist in providing a definite plan of development for the city; to guide, control and regulate the future growth of the city in accordance with this plan; to protect the established character and the social and economic stability of agricultural, residential, commercial, industrial and other areas within the city; and to assure the orderly and beneficial development of these areas.

3.3.2 Local Jurisdiction Ordinances and Code

Municipal zoning ordinances are cited with respect to land use regulations that impact issues for socioeconomics, communities, and environmental justice. Specifically, these ordnances promote the character, health, safety, and the general welfare of communities.

City of Fresno Zoning Ordinance

The purpose of this Zoning Ordinance (Fresno, California, Municipal Code § 12-101) is to encourage, classify, designate, regulate, restrict, and segregate the highest and best location for, and use of, buildings, structures, and land for agriculture, residence, commerce, trade, industry, water conservation, or other purposes in appropriate places; to regulate and limit the height, number of stories, and size of buildings and other structures hereafter designed, erected or altered; to regulate and determine the size of yards and other open spaces; and to regulate and

limit the density of population, and for said purposes to divide the city of Fresno, California, into districts of such number, shape and area as may be deemed best suited to carry out these regulations and provide for their enforcement. Further, such regulations are deemed necessary in order to encourage the most appropriate use of land; to conserve and stabilize the value of property; to provide adequate open spaces for light and air and to prevent and fight fires; to prevent undue concentration of population; to lessen congestion of streets; to facilitate adequate provisions for community utilities such as transportation, water, sewerage, schools, parks and other public requirements; and to promote the public health, safety and general welfare. (Rep. and Added Ordinance [Ord.] 5748, 1960).

City of Hanford Zoning Code

This Zoning Code (Hanford, California, Municipal Code § 17-02-020) is adopted to preserve, protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. More specifically, the zoning code is adopted to achieve the following objectives:

- To provide a zone plan to guide the physical development of the city in such a manner as to achieve progressively the general arrangement of the land uses described and depicted in the general plan.
- To foster a wholesome, serviceable and attractive living environment, the beneficial development of areas which exhibit conflicting patterns of use, and the stability of existing land uses which conform with the objectives, policies, principles and standards of the general plan.
- To prevent excessive population densities and the overcrowding, of land with structures.
- To promote a safe, effective traffic circulation system, the provision of adequate off-street parking and truck loading facilities, and the appropriate location of community facilities.
- To protect and promote appropriately located commercial and industrial activities in order to preserve and strengthen the city's economic base.
- To protect and enhance real property values and the city's natural assets.
- To ensure unimpeded development of such new urban expansion that is logical, desirable and in conformance with the objectives and policies of the general plan.
- To provide and protect open space in accordance with the policies of the open space element of the general plan. (Ord. 94-12 [part], 1994: prior code § 9-4.102).

City of Corcoran Zoning Code

The Zoning Code (Corcoran, California, Municipal Code § 11-1-2) is adopted to preserve, protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. More specifically, the code is adopted to achieve the following objectives:

- To provide a zone plan to guide the physical development of the city in such a manner as to achieve progressively the general arrangement of land uses described and depicted in the General Plan.
- To foster a wholesome, serviceable and attractive living environment, the beneficial development of areas which exhibit conflicting patterns of use, and the stability of existing land uses which conform with objectives, policies, principles and standards of the General Plan.

- To prevent excessive population densities and overcrowding of land with structures.
- To promote a safe, effective traffic circulation system, the provision of adequate off-street parking and truck loading facilities, and the appropriate location of community facilities.
- To protect and promote appropriately located commercial and industrial activities in order to preserve and strengthen the city's economic base.
- To protect and enhance real property values and the city's natural assets.
- To ensure unimpeded development of such new urban expansion that is logical, desirable and in conformance with objectives and policies of the General Plan.
- To provide and protect open space in accordance with policies of the open space element of the General Plan. (Ord. 527, 8-4-1997).

City of Wasco Zoning Ordinance

The Zoning Ordinance (Wasco, California, Municipal Code § 17-01-020) of the City of Wasco is adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses. Its regulations are imposed to:

- Provide the economic and social advantages resulting from an orderly planned use of land resources.
- Guide development so that it is consistent with the City of Wasco general plan.
- Prescribe and apply zoning districts of a number, size, and location deemed necessary to carry out the purposes of the City of Wasco general plan and this title.
- Regulate the size and use of lots, yards, and other spaces.
- Regulate the use, location, height, bulk, and size of buildings and structures.
- Regulate the intensity of land use.
- Regulate the density in residential areas to conform to the general plan.
- Establish requirements for off-street parking.
- Regulate signs and billboards.
- Maintain and enhance significant environmental resources.
- Provide for the enforcement of the regulations of this title. (Ord. 486 § 1 [Exh. A (part)], 2003).

City of Shafter Development Code

The City Council has established this Development Code (Shafter. California, Municipal Code § 17-01-10) with these standards, guidelines, and procedures to protect and promote the public health, safety, convenience, and welfare of present and future citizens of the city, specifically to:

- Implement the goals, objectives, policies, and programs of the General Plan and to manage future growth and change in accordance with that plan.
- Protect the physical, social, and economic stability and vitality of residential, commercial, industrial, public, institutional and open space uses within the city to assure their orderly development.
- Reduce or eliminate hazards to the public resulting from potentially inappropriate location, use, or design of buildings and other improvements.
- Attain the physical, social, and economic advantages resulting from comprehensive and orderly land use and resource planning.

City of Bakersfield Zoning Plan

This Zoning Plan (Bakersfield, California, Municipal Code § 17-02-030) is adopted to implement the goals and policies of the general plan of the city which serve to promote and protect the public health, safety, peace, morals, comfort, convenience and general welfare, and for the accomplishment thereof is adopted, among other purposes for the following more particularly specified purposes:

- To assist in providing a definite plan of development for the city and to guide, control and regulate the future growth of the city in accordance with said plan.
- To protect the established character and the social and economic stability of agricultural, residential, commercial, industrial and other areas within the city, and to assure the orderly and beneficial development of such areas. (Ord. 2693, 1982: prior code § 17.04.020).

Chapter 4
Affected Environment

4.0 Affected Environment

This section discusses the affected environment related to population, communities, and environmental justice in the region and study area for the Fresno to Bakersfield Section of the HST project. The region is defined as the four counties of Fresno, Kings, Tulare, and Kern. The study area is defined as the 0.5-mile radius from the centerline of the HST project alignment, as well as the 0.5-mile radius around the parcels comprising station and heavy maintenance facility locations.

Within the four counties, the study area crosses six cities (Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield) as well as several smaller communities in between. The cities of Corcoran, Wasco, and Shafter were examined as whole cities, given their smaller overall geographic area, the fact that the key downtown areas are almost entirely contained in the 0.5 mile study area and their more homogeneous populations. Although the project passes outside of the incorporated area of Hanford, given its size and importance in the region, it is also examined as a whole. Laton, Grangeville, and Armona are three small rural communities between Fresno and Hanford in unincorporated Fresno and Kings counties that each have a population of approximately 3,000 or less. The cities of Fresno and Bakersfield were determined to be too large and composed of too many distinct neighborhoods and heterogeneous populations to be examined as a whole. Therefore, study area profiles for these cities also include data by district to create more project-focused areas for analysis.

For the city of Fresno, data are presented for the city as a whole, but also for the Central, Edison, and Roosevelt districts. For Bakersfield, data are presented for the city as a whole, and for the Northwestern, Central, and Northeastern districts. These are the districts in the two major cities that the project alignment would traverse. District boundaries were determined based on current definitions used by city staff (Fresno), interviews with local planners (Bakersfield), and examination of U.S. Census boundaries (tract, block group, and block) to approximate the district boundaries as closely as possible.

The affected environment is presented in terms of population characteristics including population demographics, age, income, household characteristics, linguistic isolation, and disabilities; housing; environmental justice populations; local economy; community facilities; and non-motorized circulation. These various aspects of the affected environment are presented in geographical order from north to south along the project alignment. Data sources for counties and urban areas include the U.S. Census, American Community Survey, the California Department of Finance, the California Employment Development Division, the California State Board of Equalization, as well as local data sources. The rural areas that lie between the urban cities along the alignment were identified by reviewing maps, through discussion with local officials, and through site visits to identify existing conditions. The methodologies used to collect and compile all the data for this affected-environment description are detailed in Appendix A. The detailed data used to develop this description of the affected environment are presented in the community profiles provided in Appendix B.

4.1 Population Characteristics

Population characteristics presented in this section include total population and ethnicity, age distribution, income, household types, linguistic isolation, and disabilities.

4.1.1 Population and Ethnicity

4.1.1.1 Region

The population in the four-county region of Fresno, Kings, Tulare, and Kern counties (region) has continued to increase in the last decade and is projected to increase substantially over the next 25 years, with some county populations expected to nearly double by 2035 (Table 4-1).

Table 4-1
Existing and Projected County Populations

Location	2010 [a]	2035 [b]	Change (%)
Fresno County	953,761	1,547,582	62.3
Kings County	156,289	274,576	75.7
Tulare County	447,814	809,789	80.8
Kern County	839,587	1,523,934	81.5
Regional Total	**2,397,451**	**4,155,881**	**73.3**

[a] California Department of Finance 2010.
[b] California Department of Finance, Demographic Research Unit 2007.

Minorities, in this analysis, are defined as all individuals not identified as White only in the Census, including those identified as Hispanic. Individuals of a non-Hispanic White background made up approximately 43% of the region's population in 2000, while persons of Hispanic ethnicity of any race made up approximately 43% of the population. Between 2000 and 2008, the percentages of these two groups shifted substantially, with the total non-Hispanic White population decreasing to about 38% and the population of Hispanics of all races growing by almost 7%, or 289,916 people. Persons of Hispanic ethnicity now represent approximately half the population of the region (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively).

A large percentage of the regional population is institutionalized in one of the several prisons in the area. In 2009, 3.68% of the regional population was institutionalized, compared with the 2.24% of the statewide population in the same year. The regional population is expected to nearly double by 2035, to over 4.1 million people. In line with current trends, it is expected that the Hispanic population will continue to grow at a faster rate than other groups in the region and will represent nearly 60% of the population in 2035.

Table 4-2
Minority Group Representation in the Region (2000)

Location	Percentage of Population					
	Hispanic of All Races	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic African American	Non-Hispanic Other	Total
Fresno County	**44.0**	**0.9**	**7.9**	**5.0**	**2.5**	**60.3**
City of Fresno	39.9	0.9	11.0	8.0	2.9	62.7
Community of Laton	68.9	0.6	0.6	0.4	1.5	72.0
Kings County	**43.6**	**1.2**	**3.0**	**8.0**	**2.6**	**58.4**
City of Hanford	38.7	0.8	2.8	4.8	3.0	50.1
Community of Grangeville	18.7	0.3	2.8	0.2	4.9	26.9
Community of Armona	48.6	1.2	1.3	4.0	3.2	58.3
City of Corcoran	59.6	0.5	0.7	14.0	1.1	75.9
Tulare County	**50.8**	**0.9**	**3.1**	**1.4**	**2.0**	**58.2**
Kern County	**38.4**	**1.0**	**3.2**	**5.7**	**2.2**	**50.5**
City of Wasco	66.7	0.6	0.6	9.8	0.7	78.4
City of Shafter	68.1	0.6	0.3	1.4	0.6	71.0
City of Bakersfield	32.5	0.9	4.1	8.9	2.5	48.9
Regional Total	**43.3**	**0.9**	**5.1**	**4.8**	**2.4**	**56.5**

Source: U.S. Census Bureau 2000e.

Note: Census racial and ethnicity characteristics data include institutionalized populations, of which Corcoran and Wasco have a large number given the presence of state prison facilities.

Table 4-3
Minority Group Representation in the Region (2008)

Location	Percentage of Population					
	Hispanic of All Races	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic African American	Non-Hispanic Other	Total
Fresno County	**48.7**	**0.6**	**8.4**	**4.9**	**2.3**	**65.0**
City of Fresno	46.6	0.3	9.9	7.5	2.4	66.7
Community of Laton [b]	N/A	N/A	N/A	N/A	N/A	N/A
Kings County	**49.3**	**1.2**	**3.1**	**7.5**	**1.7**	**62.8**
City of Hanford [a]	45.5	0.8	4.2	7.3	0.9	58.8
Community of Grangeville [b]	N/A	N/A	N/A	N/A	N/A	N/A
Community of Armona [b]	N/A	N/A	N/A	N/A	N/A	N/A
City of Corcoran [a]	62.6	1.5	2.0	12.8	0.9	80.8
Tulare County	**57.5**	**0.6**	**2.8**	**1.3**	**2.2**	**64.4**
Kern County	**47.1**	**0.5**	**3.6**	**5.4**	**2.5**	**59.0**
City of Wasco [a]	74.4	0.4	1.7	7.5	1.2	85.2
City of Shafter [b]	68.1	0.5	0.3	1.4	0.7	71.0
City of Bakersfield	43.3	0.5	4.8	8.6	3.0	60.2
Regional Total	**49.8**	**0.6**	**5.3**	**4.6**	**2.3**	**62.6**

Source: U.S. Census Bureau, American Community Survey 2008a.

[a] Data for cities of Hanford, Corcoran, and Wasco provided by U.S. Census Bureau, American Community Survey 2006–2008a.

[b] Data for city of Shafter and communities of Laton, Grangeville, and Armona provided by U.S. Census Bureau, 2000e; more recent data are not available.

Note: The California Department of Finance does not provide annual racial and ethnicity characteristics estimates, so the most current American Community Survey data are used. This use of two sources explains the difference between the 2009 total population estimates presented above and the 2008 or 2006–2008 totals in this table. Also, U.S. Census racial and ethnicity characteristics data include institutionalized populations, of which Corcoran and Wasco have a large number given the presence of state prison facilities.

N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000 persons)

4.1.1.2 City of Fresno

Fresno's population of 427,652 residents in 2000 had grown to 502,303 by 2010, resulting in an annual average growth rate of 1.7%. This is lower than the growth rates of Fresno County (1.9%) and the region (2.2%) during the same period (California Department of Finance 2010).

Fresno's minority population, which represented 63% of all residents in 2000, increased to almost 67% of all residents in 2008 (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively). This

total percentage of minority population is similar to that of Fresno County (65%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a)[2].

The data available to examine the three bisected city districts within the study area are Census 2000 data aggregated at the Census tract level to match district boundaries as closely as possible (see Figure 4-1 for districts within the city of Fresno). Please refer to the community and neighborhoods methodology in Appendix A, Section A.2, for more detail on the development of these boundaries and the specific Census tracts involved. The Census 2000 populations of the neighborhoods vary widely, ranging from 16,754 people in the Central District to 102,489 people in the Roosevelt District. All of the districts have very high concentrations of minority populations, with each district having a minority population of at least 85%, which is much higher than the city as a whole (63%).

4.1.1.3 City of Fresno to Community of Laton

The five small communities of Malaga, Oleander, Bowles, Monmouth, and Conejo are interspersed along this section of the alignment. All of these communities are unincorporated—and therefore data on population characteristics are limited—and Bowles was classified as a Census designated place (CDP) by the Census Bureau in 2000. Community population estimates obtained through field visits and examination of aerial images of communities range from fewer than 100 people in the smallest communities of Oleander and Conejo to approximately 1,500 residents in the largest community of Malaga.

4.1.1.4 Community of Laton

Laton had a population of 1,236 residents in 2000; however, no 2010 data were available to calculate an average annual growth rate.

The minority population of Laton represented 72% of the residents in 2000 (see Table 4-2). This total percentage of minority population is higher than that of both Fresno County (60.3%) and the region (56.5%) (U.S. Census Bureau 2000e).[3]

4.1.1.5 Community of Laton to City of Hanford

The communities of Hamblin and Ponderosa are in between the community of Laton and the city of Hanford. Neither of these communities is an incorporated city, so the available data are limited; not even the Census Bureau defines them as communities. Through field visits and examination of aerial images, the populations of these two communities were estimated as 200 people for Hamblin and 150 people for Ponderosa.

[2] U.S. Census Bureau American Community Survey (ACS) single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter and the communities of Laton, Grangeville, and Armona, each of which has a population of less than 20,000, currently have no recent estimates available from the ACS.

[3] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of more than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. Laton has a population was less than 20,000, so currently no recent estimates are available from the ACS.

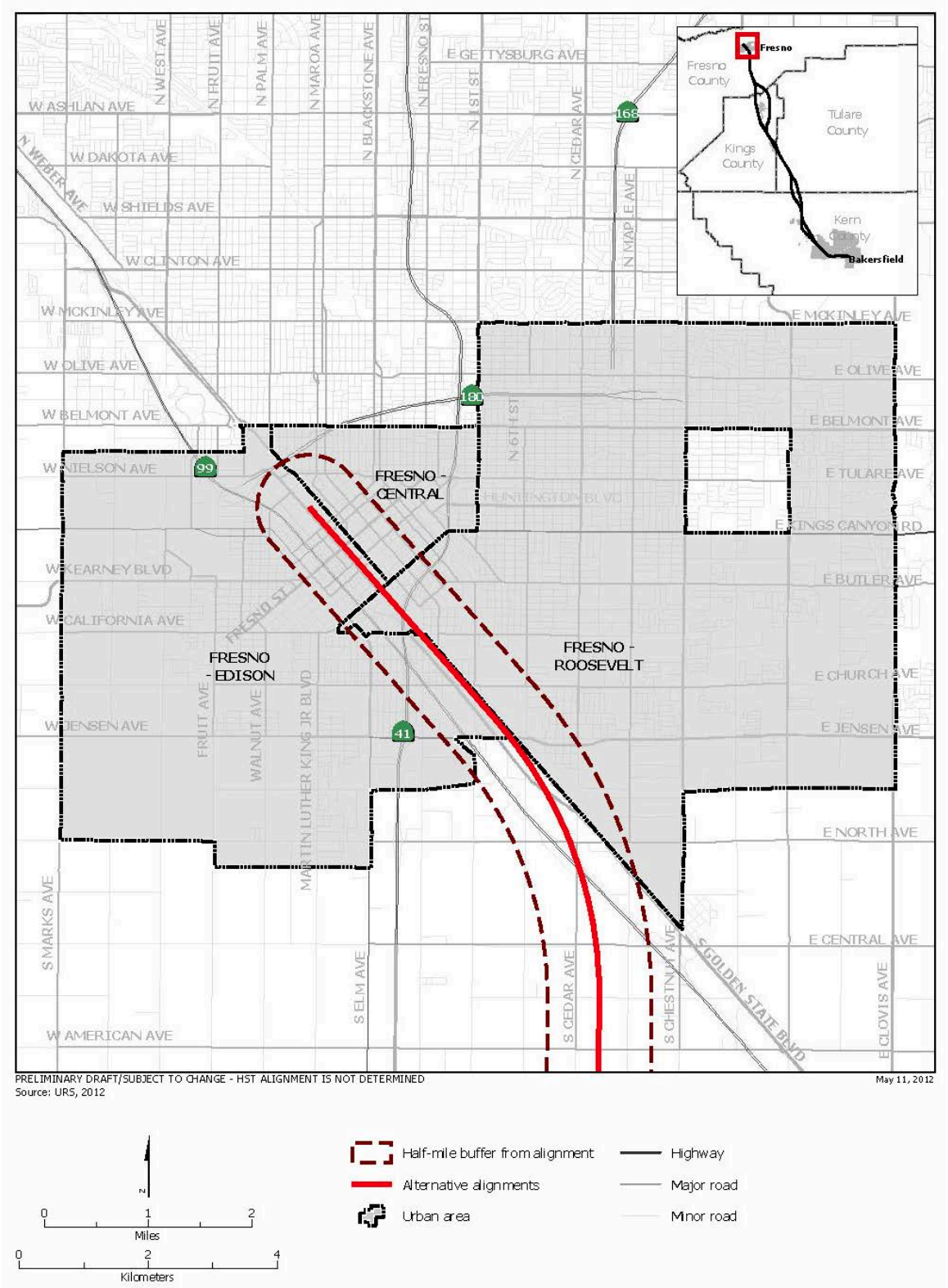

Figure 4-1
Districts within the City of Fresno

4.1.1.6 City of Hanford

Hanford's population of 41,686 residents in 2000 had grown to 53,266 in 2010, resulting in an average annual growth rate of 2.8%. This growth rate was higher than the growth rates seen in both Kings County (2.1%) and the region (2.2%) during the same period (California Department of Finance 2010).

Hanford's minority population, which represented approximately half the residents in 2000, increased to approximately 60% of all residents by 2006–2008 (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively). This total percentage of minority population is similar to that of Kings County (59%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a).[4]

4.1.1.7 Community of Grangeville

Grangeville had a population of 638 residents in 2000; however, no 2010 data were available to calculate an average annual growth rate. The minority population of Grangeville represented approximately a quarter of the residents in 2000 (see Table 4-2). This percentage of minority population is significantly lower than that of Kings County (59%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a).[5]

4.1.1.8 Community of Armona

Armona had a population of 3,239 residents in 2000; however, no 2009 data were available to calculate an average annual growth rate.

The minority population of Armona represented 58.3% of the residents in 2000 (see Table 4-2). This total percentage of minority population is similar to that of Kings County (59%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a).

4.1.1.9 City of Hanford to City of Corcoran

The study area between the cities of Hanford and Corcoran is in Kings County. El Ranchero is the one community identified in this segment of the project. El Ranchero lies south of Lacey Boulevard, 1 mile west of Hanford, with an estimated population of 400 residents. According to a county official, this community is quickly being surrounded by the development of the city of Hanford, and it is expected that it will eventually become incorporated into the city (Kinney 2010, personal communication).

4.1.1.10 City of Corcoran

In 2000, Corcoran had a population of 20,843 residents; by 2010 the population had grown to 25,692 people, for an average annual growth rate of 2.3%. This growth rate is higher than the

[4] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter and the communities of Laton, Grangeville, and Armona, with populations less than 20,000, currently has no recent estimates available from the ACS.

[5] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of more than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. Grangeville has a population of less than 20,000, so currently no recent estimates are available from the ACS.

growth rates seen in Kings County (2.1%) and the region (2.2%) during the same period (California Department of Finance 2010).

Corcoran's minority population, which represented approximately 76% of all residents in 2000, increased to nearly 81% of all residents by 2006–2008 (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively). This total percentage of minority population is much higher than that of Kings County (59%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a).[6] Not only does Corcoran have a higher-than-average number of individuals of Hispanic background, but also it has a higher percentage of individuals of African-American descent, as compared with the county and region.

4.1.1.11 City of Corcoran to City of Wasco

None of the eight unincorporated communities identified in the study area between the cities of Corcoran and Wasco are CDPs. The communities of Blanco, Angiola, Stoil, and Allensworth are located in Tulare County, while Kernell, Pond, Elmo, and Neufeld are located in Kern County. None of these places have experienced large growth in the past several years, and no growth is anticipated in the foreseeable future (Kinney 2010, personal communication; Smith 2010, personal communication; Waters 2010, personal communication).

Population estimates for these communities range from zero in the abandoned community of Neufeld to around 400 residents in the largest community of Allensworth.

4.1.1.12 City of Wasco

Wasco had a population of 21,263 residents in 2000; by 2010, the population had grown to 25,541, resulting in an average annual growth rate of 2.0% (California Department of Finance 2010). This growth rate is lower than the growth rate seen in the county (2.7%) but similar to the growth rate seen in the region (2.2%) during the same period.

Wasco's minority population, which represented approximately 80% of all residents in 2000, increased to over 85% of all residents by 2006–2008 (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively). The total percentage of the minority population in Wasco is substantially higher than that of the county (59%) and the region (63%) (U.S. Census Bureau, American Community Survey 2008a).[7]

4.1.1.13 City of Wasco to City of Shafter

The three communities identified in the study area between the cities of Wasco and Shafter are Palmo, the North Shafter Labor Camp, and Myricks Corner. These communities are unincorporated in Kern County, and none are classified as a CDP. Palmo is the smallest of the communities in this area, with an estimated population of fewer than 25 people. There are approximately 300 residents at the North Shafter Labor Camp, and approximately 250 residents in Myricks Corner.

---

[9] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter, with a population of less than 20,000, currently has no recent estimates available from the ACS.

[9] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter, with a population of less than 20,000, currently has no recent estimates available from the ACS.

4.1.1.14 City of Shafter

Shafter's population of 12,736 residents in 2000 had grown to 16,208 by 2010, which amounts to an average annual growth rate of 2.7% (California Department of Finance 2010). This was higher than seen in the region (2.2%), but similar to the county's growth rate (2.7%) during the same period.

Shafter's minority population, which represented approximately 70% of all residents in 2000, is a higher percentage of the population than is seen in either the county (50.5%) or the region (56.5%). Note that throughout Shafter's profile, no Census data are available after 2000 due to the smaller size of the city (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively) (U.S. Census Bureau, American Community Survey 2008a).[8]

4.1.1.15 City of Shafter to City of Bakersfield

The one identified community in the study area between the cities of Shafter and Bakersfield is Crome. This community is unincorporated and is not a CDP. Crome has an estimated population of about 75 people.

4.1.1.16 City of Bakersfield

In 2000, Bakersfield had a population of 247,057 residents, growing to 338,952 in 2010, for an average annual growth rate of 3.7% (California Department of Finance 2010). This growth rate is higher than the growth rates of the county (2.7%) and the region (2.2%) during the same period.

Bakersfield's minority population, which represented approximately half of all residents in 2000, increased to 60% of all residents in 2008 (see Table 4-2 and Table 4-3 for 2000 and 2008, respectively). This total percentage of minority population is similar to that of Kern County (59%) and the region as a whole (63%) (U.S. Census Bureau, American Community Survey 2008a).[9] See Table B-118 of Appendix B for a detailed breakdown of Bakersfield racial and ethnicity characteristics.

The population data available to examine the three bisected districts in Bakersfield are Census 2000 data aggregated at the Census tract level to match district boundaries as closely as possible (see Figure 4-2 for districts within the city of Bakersfield). Please refer to the community and neighborhoods methodology in Appendix A, Section A.2, for more detail on the development of these boundaries and the specific Census tracts involved. The Census 2000 populations of the three districts vary widely, ranging from 27,466 people in the Central District to 137,928 people in the Northeastern District. Both the Central and Northeastern districts had similar percentages

[9] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter, with a population of less than 20,000, currently has no recent estimates available from the ACS.

[9] The ACS single-year estimates for 2008 are available for Bakersfield and Fresno, because both of these cities have a population of greater than 65,000. By contrast, Hanford, Corcoran, and Wasco each have a population of less than 65,000 but greater than 20,000, and therefore 2006–2008 average estimates are available. The city of Shafter, with a population of less than 20,000, currently has no recent estimates available from the ACS.

[10] According to the U.S. Census Bureau, a household is linguistically isolated if "no member 14 years old and over speaks only English or speaks a non-English language and speaks English very well. In other words, all members 14 years old and over have at least some difficulty with English."

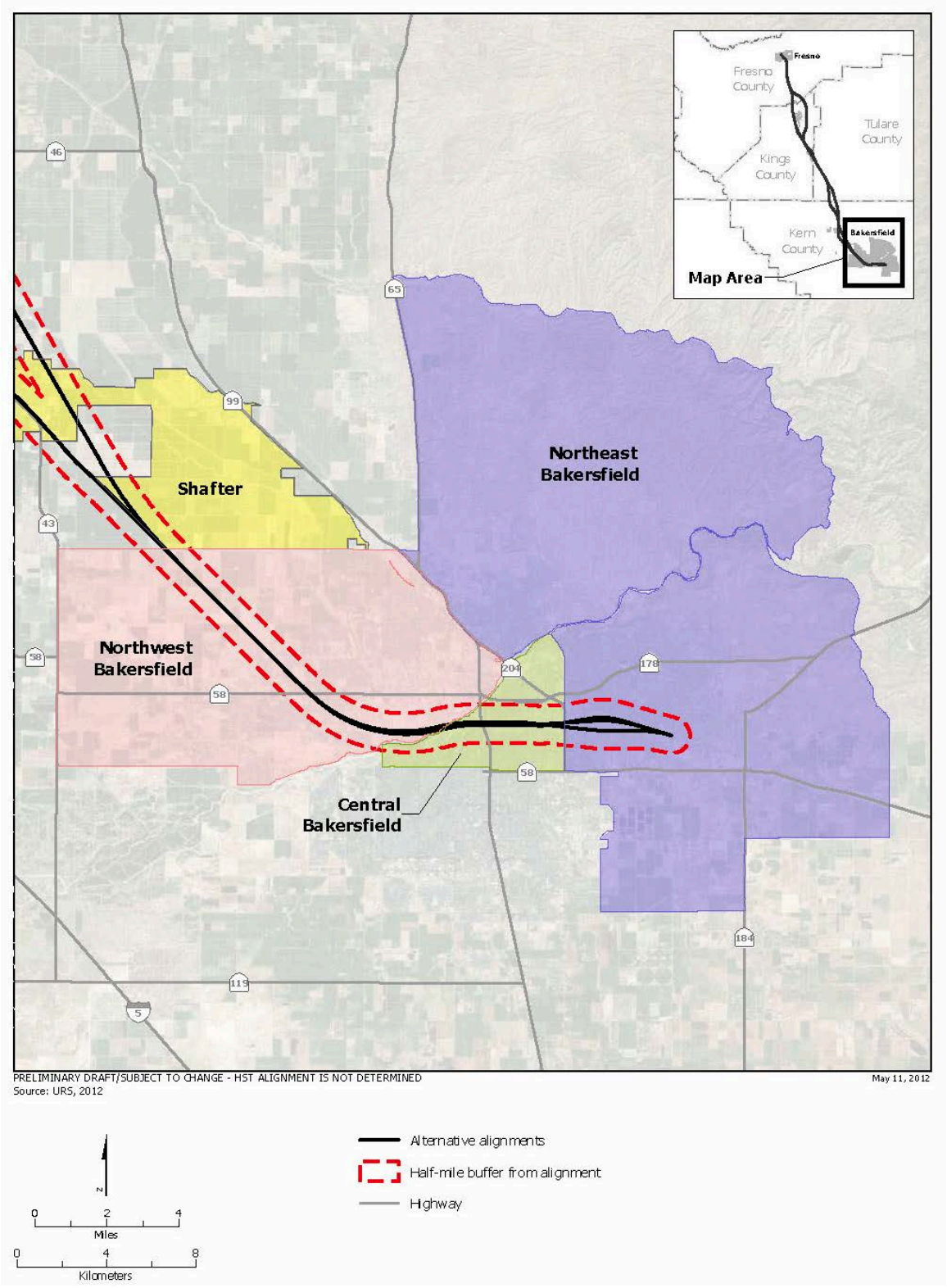

Figure 4-2
Districts within the City of Bakersfield

of minorities (58.7% and 55.7%, respectively) when compared with Bakersfield as a whole, while the Northwestern District had a much lower percentage of minorities (18.7%).

4.1.2 Age Distribution

Age distributions across the counties are similar, and middle-age groups make up the highest concentration of the population. Data across the four counties as well as many of the cities in the study area show that the largest age cohort of the population has shifted to being somewhat younger between 2000 and 2008, reflecting recent growth trends in the area. When compared with the other cities of the region, Corcoran and Wasco had higher percentages of the population in the middle-age groups in 2008 (see Table 4-4 and Table 4-5 for 2000 and 2008, respectively). This is likely due to the portion of the institutionalized population housed in the state prison facilities located within their city limits.

Table 4-4
Population Age Distribution (2000)

Location	% Under 18	% 18 to 64	% 65 and Over
Fresno County	**32.1**	**58.0**	**9.9**
City of Fresno	32.9	57.8	9.3
Community of Laton	35.9	57.1	7.0
Kings County	**29.0**	**63.6**	**7.4**
City of Hanford	31.6	58.1	10.3
Community of Grangeville	24.3	62.4	13.3
Community of Armona	35.4	57.5	7.1
City of Corcoran	24.4	70.2	5.4
Tulare County	**33.8**	**56.4**	**9.8**
Kern County	**31.9**	**58.7**	**9.4**
City of Wasco	27.4	67.2	5.4
City of Shafter	36.6	55.4	8.1
City of Bakersfield	32.7	58.5	8.8
Regional Total	**32.1**	**58.4**	**9.5**

Source: U.S. Census Bureau 2000a.

Table 4-5
Population Age Distribution (2008)

Location	% Under 18	% 18 to 64	% 65 and Over
Fresno County	**29.7**	**60.5**	**9.8**
City of Fresno	29.4	61.5	9.1
Community of Laton [a]	N/A	N/A	N/A
Kings County	**27.1**	**65.2**	**7.7**
City of Hanford	29.7	60.7	9.6
Community of Grangeville [a]	N/A	N/A	N/A
Community of Armona [a]	N/A	N/A	N/A
City of Corcoran	15.7	79.4	4.9
Tulare County	**31.8**	**58.6**	**9.6**
Kern County	**29.8**	**61.3**	**8.9**
City of Wasco	26.5	68.1	5.4
City of Shafter[a]	36.6	55.3	8.1
City of Bakersfield	30.6	60.9	8.5
Regional Total	**30.0**	**60.7**	**9.3**

Sources: U.S. Census Bureau, American Community Survey 2006–2008e, 2008e.

[a] Data for the cities of Shafter, Laton, Grangeville, and Armona provided by U.S. Census Bureau 2000a, because more recent data are not available.

N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

4.1.3 Income

Median annual household income is summarized in Table 4-6. While the table shows that incomes in the region increased between 1999 and 2008, the recent economic downturn and resulting impacts on the local economy erased some of these gains. In 2008, the median annual household income across the four counties was highest in Kings County, at $50,962, and lowest in Fresno County, at $43,737. By comparison, the median annual household income for the state of California was $61,062 in the same year. The cities of Hanford, Grangeville, and Bakersfield had higher incomes than the other cities in the study area over the 1999–2008 period.

In 1999, all three of Fresno's districts were very much below the city as a whole, in terms of income. Central ($12,085) was the lowest, with Edison ($16,437) and Roosevelt ($24,023) higher but still well below the citywide median household income. Bakersfield districts had lower median incomes when compared with Bakersfield as a whole in 1999, with the exception of the Northwest District, which had a median income well above that of the city, county, and region as a whole, at $61,910.

Table 4-6
Median Annual Household Income (1999 and 2008)

Location	1999	2008	% Increase
State of California	**$47,493**	**$61,021**	**28.5**
Fresno County	**$34,725**	**$43,737**	**26.0**
City of Fresno	$32,236	$40,134	24.5
Central District	$12,085	N/A	N/A
Edison District	$16,437	N/A	N/A
Roosevelt District	$24,023	N/A	N/A
Community of Laton [a]	$35,408	N/A	N/A
Kings County	**$35,749**	**$50,962**	**42.6**
City of Hanford	$37,582	$51,520	37.1
Community of Grangeville [a]	$50,917	N/A	N/A
Community of Armona [a]	$32,790	N/A	N/A
City of Corcoran	$30,783	$35,340	14.8
Tulare County	**$33,983**	**$45,117**	**32.8**
Kern County	**$35,446**	**$44,733**	**26.2**
City of Wasco	$28,997	$34,976	20.6
City of Shafter [a]	$29,515	N/A	N/A
City of Bakersfield	$39,982	$50,409	26.1
Northwest District	$61,910	N/A	N/A
Central District	$27,291	N/A	N/A
Northeast District	$30,885	N/A	N/A

Sources: U.S. Census Bureau 2000c; U.S. Census Bureau, American Community Survey 2008f; data for cities of Hanford, Corcoran, and Wasco provided by U.S. Census Bureau, American Community Survey 2006–2008f.

[a] Data for the cities of Shafter, Laton, Grangeville, and Armona provided by U.S. Census Bureau 2000a, because more recent data are not available.

Note: The 2008 data are not available at the district level for Fresno, Bakersfield, or Shafter. Also, the 2000 Census data on income are representative of 1999 conditions.

N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with populations of less than 20,000)

4.1.4 Households

4.1.4.1 Region

According to the California Department of Finance, 606,395 households were present in the region in 2000, with an average household size of 3.11 persons. In 2009, the number of households grew to 715,664, and the average household size increased to 3.18 persons (California Department of Finance 2009). Approximately 75% of all households in the region are family households; however, the percentage of married-couple households has decreased across all four counties since 2000, with an increase in the percentage of households headed by a single female or a single male (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

Table 4-7
Type of Household in the Region (2000)

Location	% of Total Households					
	% Family Household	% Married Couple Family	% Female Householder (No Husband Present)	% Male Householder (No Wife Present)	% Non-Family Household	% Householder Living Alone
Fresno County	**74.3**	**53.4**	**15.1**	**5.8**	**25.7**	**20.6**
City of Fresno	70.4	47.3	17.4	5.7	29.6	23.3
Central District	64.8	33.2	22.6	9.1	35.2	18.6
Edison District	75.9	37.1	31.6	7.2	24.1	8.0
Roosevelt District	78.9	49.9	20.5	8.5	21.1	7.1
Community of Laton	91.7	78.2	8.3	5.2	8.3	6.6
Kings County	**78.6**	**58.6**	**14.2**	**5.8**	**21.4**	**17.0**
City of Hanford	74.5	54.8	15.0	4.7	25.5	20.6
Community of Grangeville	87.7	69.6	8.8	9.3	12.3	12.3
Community of Armona	81.7	58.3	13.9	9.5	18.3	13.9
City of Corcoran	80.1	53.2	16.7	10.2	19.9	16.2
Tulare County	**79.3**	**59.1**	**14.1**	**6.2**	**20.7**	**17.1**
Kern County	**75.4**	**55.7**	**14.1**	**5.7**	**24.6**	**20.3**
City of Wasco	86.2	62.4	17.3	6.5	13.8	11.9
City of Shafter	84.3	62.9	15.1	6.3	15.7	13.2

Table 4-7
Type of Household in the Region (2000)

Location	% of Total Households					
	% Family Household	% Married Couple Family	% Female Householder (No Husband Present)	% Male Householder (No Wife Present)	% Non-Family Household	% Householder Living Alone
City of Bakersfield	73.7	53.6	14.6	5.5	26.3	21.5
Northwest District	84.1	73.0	7.9	3.2	15.9	6.0
Central District	62.5	37.5	18.9	6.0	37.5	12.9
Northeast District	73.8	49.1	17.8	7.0	26.2	8.8
Regional Total	**75.8**	**55.5**	**14.5**	**5.8**	**24.2**	**19.7**

Source: U.S. Census Bureau 2000h.

Note: Rows do not necessarily add to 100%, because the percentage presented is total households, and a household can be accounted for in more than one column.

Table 4-8
Type of Household in the Region (2008)

Location	% of Total Households					
	% Family Household	% Married Couple Family	% Female Householder (No Husband Present)	% Male Householder (No Wife Present)	% Non-Family Household	% Householder Living Alone
Fresno County	**71.7**	**48.5**	**16.4**	**6.8**	**28.3**	**22.0**
City of Fresno	68.4	43.7	17.8	7.0	31.6	23.2
Community of Laton [a]	N/A	N/A	N/A	N/A	N/A	N/A
Kings County	**75.5**	**54.4**	**12.9**	**8.2**	**24.5**	**18.2**
City of Hanford	74.0	53.3	14.7	6.0	26.0	21.1
Community of Grangeville [a]	N/A	N/A	N/A	N/A	N/A	N/A
Community of Armona [a]	N/A	N/A	N/A	N/A	N/A	N/A
City of Corcoran	81.7	45.7	24.0	12.0	18.3	17.7

Table 4-8
Type of Household in the Region (2008)

Location	% of Total Households					
	% Family Household	% Married Couple Family	% Female Householder (No Husband Present)	% Male Householder (No Wife Present)	% Non-Family Household	% Householder Living Alone
Tulare County	**80.9**	**56.9**	**16.3**	**7.7**	**19.1**	**16.4**
Kern County	**73.3**	**51.1**	**15.0**	**7.2**	**26.7**	**21.1**
City of Wasco	80.3	52.2	17.1	11.0	19.7	16.7
City of Shafter [a]	N/A	N/A	N/A	N/A	N/A	N/A
City of Bakersfield	71.6	50.4	14.2	7.0	28.4	21.7
Regional Total	**74.1**	**51.3**	**15.7**	**7.2**	**25.9**	**20.4**

Sources: U.S. Census Bureau, American Community Survey 2006–2008b, 2008b.

[a] Data for cities of Shafter, Laton, Grangeville, and Armona provided by U.S. Census Bureau 2000a, because more recent data are not available.

Note: California Department of Finance does not provide number of households by type for 2009, so ACS 2006–2008 and 2008 data were used. This use of sources explains the difference between the 2009 total household estimates presented above and the 2008 totals in this table.

N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

4.1.4.2 City of Fresno

In 2000, 140,079 households were present in Fresno, with an average household size of 2.99 people. By 2009, both the number of households and the average household size had increased, to 159,523 and 3.05 people, respectively. (California Department of Finance 2009).The average household size for Fresno is less than that of the county (3.15) and the region (3.18).

The makeup of households in Fresno has changed somewhat since 2000. Approximately 70% of the households were family households in 2000, but that percentage decreased to 68.4% in 2008. The percentage of married-family couples also decreased by 3.6% during the same period, and the number of male householder and non-family households has increased (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

In 2000, the average household size was similar in the districts of Edison (3.74) and Roosevelt (3.75), but the average household size in Central (3.33) was smaller (California Department of Finance 2009).This difference could be due to the urban nature of the area and the lower percentage of family households in and around the downtown.

The three Fresno districts had a different household makeup in 2000, with the Central District having a lower percentage of family households (64.8%) than the city average (70.4%), and Edison and Roosevelt having higher percentages of 75.9% and 78.9%, respectively. Similar trends were observed for married-couple families; thus, single-parent and non-family percentages were highest in Central (66.8%), and lower in Edison (60.2%) and Roosevelt (50.1%).

4.1.4.3 Community of Laton

Laton had 363 households in 2000, with an average household size of 3.72 persons. Average household size for Laton is higher than that of both Kings County (3.30) and the region (3.18). Laton had a higher percentage of family households (91.7 percent) than Fresno County (74.3 percent).

4.1.4.4 City of Hanford

There were 13,913 households in Hanford, with an average household size of 2.93 persons per household in 2000. By 2009, both the number of households and the average household size had increased, to 17,015 and 3.05, respectively (California Department of Finance 2009). The 2009 average household size for Hanford is lower than that of either Kings County (3.30) or the region (3.18).

The makeup of households in Hanford has changed little since 2000. Approximately 74.5% of the households were family households in 2000, similar to the 2006–2008 estimates of 74.0%. Also similar to trends seen in both the county and region were decreases in the percentage of married-couple families and increases in single-parent households in Hanford (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

4.1.4.5 Community of Grangeville

In 2000, Grangeville had 227 households, with an average household size of 2.8 persons. The 2000 average household size for Grangeville is significantly lower than that of both Kings County (3.30) and the region (3.18), and the community had a much higher percentage of family households than either the county or the region.

4.1.4.6 Community of Armona

In 2000, Armona had 961 households, with an average household size of 3.37 persons. The 2000 average household size for Armona is higher than that of both Kings County (3.30) and the region (3.18). The makeup of households in Armona is similar to that of both the county and the region.

4.1.4.7 City of Corcoran

Corcoran had 2,722 households in 2000, with an average household size of 3.44 people. Both the number of households and the average household size had increased by 2009, to 3,653 and 3.58, respectively (California Department of Finance 2009). The average household size for Corcoran remains higher than that of either Kings County (3.30) or the region (3.18).

Corcoran's makeup of households has remained steady since 2000. Approximately 80% of the households were family households in 2000, which is similar to the 2006–2008 estimate. The decreases in the percentage of married-couple families and the increases in single-parent households are similar in both the county and the region. Of note is the large increase (almost 50%) in the number of female-headed households in Corcoran, which is not reflected at the county or regional level and may be the result of the families of prisoners in Corcoran State Prison moving to the community to be close by (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

4.1.4.8 City of Wasco

There were 3,983 households in Wasco in 2000, with an average household size of 3.79 people. By 2009, both the number of households and the average household size had increased, to 4,882

and 3.92, respectively (California Department of Finance 2009). The average household size for Wasco is higher than that of either the county (3.13) or the region (3.18).

Approximately 86% of Wasco households were family households in 2000, decreasing to 80% by 2006–2008. As with trends seen in both the county and region, Wasco experienced a decrease in the percentage of married-couple families and an increase in single-parent households over this period (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

4.1.4.9 City of Shafter

The 3,293 households present in Shafter in 2000 had an average household size of 3.67 people. By 2009, both the number of households and the average household size had increased, to 4,000 and 3.80, respectively (California Department of Finance 2009). The average household size for Shafter is higher than that of either the county (3.13) or the region (3.18). The makeup of households is similar to that in the county and region, with family households making up 84.3% of all households in 2000 (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

4.1.4.10 City of Bakersfield

Bakersfield had 83,428 households in 2000, with an average household size of 2.92 people. By 2009, both the number of households and the average household size had increased to 109,449 and 3.02, respectively (California Department of Finance 2009). Bakersfield's average household size is smaller than that of either the county (3.13) or the region (3.18).

The makeup of households in Bakersfield has changed since 2000, with family households decreasing from approximately 74% of the total to 71.6% by 2008. Furthermore, the percentage of married-family couples decreased by approximately 3% during this period, and there were increases in both the number of non-family households and male-householder-family households (see Table 4-7 and Table 4-8 for 2000 and 2008, respectively).

Average household size was similar in the Northwestern (3.03) and Northeastern (3.07) districts, while the Central District's average household size (2.57) was smaller (U.S. Census Bureau 2000h).This could be due to the urban nature of the area as well as the lower percentage of family households in and around the downtown area.

The differences in the makeup of households across Bakersfield districts in 2000 showed that the Central District had a percentage of family households (62.5%) below the city average (73.7%). Northeast was similar to the city average (73.9%), while Northwest had a higher-than-average family household percentage (84.2%). The same trend in percentages was true for married-couple families. Single-parent and non-family percentages were highest in Central (62.5%), similar to the city average in Northeast (50.9%), and lowest in the Northwest (27%).

4.1.5 Linguistic Isolation

4.1.5.1 Region

Linguistic isolation among households in the region was similar to that of the state in 2000, as 9.4% of regional households and 9.6% of California households did not have someone over the age of 14 with the ability to speak English very well (U.S. Census Bureau 2000f).[10] This percentage has increased in the region since 2000, with 11.0% of the households estimated to be linguistically isolated in 2008 (U.S. Census Bureau 2000f). This percentage has increased in

[10] According to the U.S. Census Bureau, a household is linguistically isolated if "no member 14 years old and over speaks only English or speaks a non-English language and speaks English very well. In other words, all members 14 years old and over have at least some difficulty with English."

Tulare County at a slightly faster rate than in the region as a whole, with 13.4% of households identified as linguistically isolated in 2008 (see Table 4-9).

Table 4-9
Linguistic Isolation (2000 and 2008)

Location	% of Total Population 2000	% of Total Population 2008	% Increase
Fresno County	**9.79**	**10.36**	**0.57**
City of Fresno	9.22	9.69	0.47
Central District	25.79	N/A	N/A
Edison District	16.67	N/A	N/A
Roosevelt District	18.66	N/A	N/A
Community of Laton [a]	2.0	N/A	N/A
Kings County	**8.67**	**12.29**	**3.62**
City of Hanford	5.24	9.17	3.93
Community of Grangeville [a]	4.0	N/A	N/A
Community of Armona [a]	9.0	N/A	N/A
City of Corcoran	12.12	N/A	N/A
Tulare County	**11.07**	**13.45**	**2.38**
Kern County	**8.15**	**10.13**	**1.98**
City of Wasco	20.19	N/A	N/A
City of Shafter [a]	20.22	N/A	N/A
City of Bakersfield	5.75	6.81	1.06
Northwest District	1.24	N/A	N/A
Central District	5.59	N/A	N/A
Northeast District	8.88	N/A	N/A
Regional Total	**9.40**	**11.00**	**1.60**

Sources: U.S. Census Bureau 2000f; U.S. Census Bureau, American Community Survey 2006–2008c, 2008c.

[a] Data for the cities of Shafter, Laton, Grangeville, and Armona provided by U.S. Census Bureau 2000a, because more recent data are not available.

N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

4.1.5.2 City of Fresno

Linguistic isolation in the city of Fresno affected 9.2% of households in 2000. This percentage was slightly lower than the corresponding percentage for the county (9.8%) and the region (9.4%). Fresno experienced an increase in the percentage of households that are linguistically

isolated in 2008, to 9.7%; however, this percentage was still below that of the county and the region in the same year (U.S. Census Bureau 2000f; U.S. Census Bureau, American Community Survey 2006–2008c, 2008c).

In the three districts, linguistic isolation was much higher than in the city as a whole: 25.8% in Central, 18.7% in Roosevelt, and 16.7% in Edison (see Table 4-9) (U.S. Census Bureau 2000f).

4.1.5.3 Community of Laton

In 2000, 2% of households in Laton did not have someone over the age of 14 with the ability to speak English very well, a lower percentage than that of Kings County (8.7%) and the region (9.4%). More recent information is not available from the U.S. Census Bureau, American Community Survey for 2006–2008; however, as discussed previously, it can be assumed that linguistic isolation has not decreased and has likely increased since 2000, due to the increasing minority population in the area and trends observed in both the county and the region (see Table 4-9).

4.1.5.4 City of Hanford

In 2000, 5.2% of households did not have someone over the age of 14 with the ability to speak English very well, a lower percentage than that in the county (8.7%) and region (9.4%). The city has experienced an increase in linguistic isolation since 2000 that is similar to that of the county as a whole, with 9.2% of Hanford households linguistically isolated in 2008. This percentage is still below that of the county (12.3%) and the region (11.0%) (see Table 4-9) (U.S. Census Bureau, American Community Survey 2006–2008c).

4.1.5.5 Community of Grangeville

In 2000, 4% of households in Grangeville did not have someone over the age of 14 with the ability to speak English very well, a lower percentage than that of Kings County (8.7%) and the region (9.4%). Linguistic isolation was also lower in Grangeville than in Hanford (5.24%) in 2000. More recent information is not available from the U.S. Census Bureau, American Community Survey for 2006–2008; however, as discussed previously, it can be assumed that linguistic isolation has not decreased and has likely increased since 2000, due to the increasing minority population in the area and trends observed in both the county and the region (see Table 4-9).

4.1.5.6 Community of Armona

In 2000, 9% of households in Armona did not have someone over the age of 14 with the ability to speak English very well, an equivalent percentage compared with that of Kings County (8.7%) and the region (9.4%). Linguistic isolation in Armona is also greater than that of Hanford (5.24%) in 2000. More recent information is not available from the U.S. Census Bureau, American Community Survey for 2006–2008; however, as discussed previously, it can be assumed that linguistic isolation has not decreased and has likely increased since 2000, due to the increasing minority population in the area and trends observed in both the county and the region (see Table 4-9).

4.1.5.7 City of Corcoran

In 2000, 12.1% of the city's households did not have someone over the age of 14 with the ability to speak English very well, a higher percentage than that in the county (8.7%) and the region (9.4%) (U.S. Census Bureau 2000f). More recent data are not available from the Census American Community Survey for 2006–2008; however, with the increase in minority population and the trends seen in both the county and the region, it can be assumed that linguistic isolation

has not decreased and more than likely has increased since 2000, and remains above county and regional levels (see Table 4-9).

4.1.5.8 City of Wasco

Wasco had a higher percentage of linguistic isolation among households in 2000 at 20.2%, compared with 8.2% of the county and 9.4% of the region (U.S. Census Bureau 2000f; U.S. Census Bureau, American Community Survey 2008c). More recent data are not available from the Census American Community Survey for 2006–2008; however, as with the Corcoran, because of the increase in minority population, along with trends seen in both the county and region, it can be assumed that linguistic isolation has not decreased since 2000 and more than likely has increased, and remains above county and regional levels (see Table 4-9).

4.1.5.9 City of Shafter

The percentage of Shafter families that did not have someone in the household over the age of 14 with the ability to speak English very well was 17.1% in 2000. This is a higher rate of linguistic isolation than either the county (8.2%) or region (9.4%) (U.S. Census Bureau 2000f). More recent information is not available from the Census American Community Survey for 2006–2008; however, as discussed previously, it can be assumed that linguistic isolation has not decreased and more than likely has increased since 2000, due to the increasing minority population in the area and trends observed in both the county and region (see Table 4-9).

4.1.5.10 City of Bakersfield

In 2000, 5.8% of families did not have someone in the household over the age of 14 with the ability to speak English very well, a lower percentage than that in the county (8.2%) and region (9.4%). Similar to the county and region in 2008, Bakersfield experienced an increase (to 6.8%) in families that are linguistically isolated, but this was still below the comparable county and region percentages (U.S. Census Bureau and American Community Survey 2008).

Among the districts, the Northeast District (8.9%) had a higher percentage of linguistic isolation than the city (5.8%), but the rate was similar to those of the county (8.2%) and region (9.4%). The Northwest had a very low percentage (1.2%), while Central (5.6%) was similar to the city average (see Table 4-9) (U.S. Census Bureau 2000f).

4.1.6 Disabilities

Disabled populations tend to rely more heavily on community services due to issues with mobility and accessibility. Table 4-10 shows the percentage of individuals reporting some sort of disability, self-care limitation, or low-mobility issue in the counties and cities in the region. The data show that disabilities increase greatly in the 65 and older population. Among seniors in Tulare and Kern counties in 2007, almost 50% reported a disability, giving these counties the highest disability rates in the age group in the region. Of the cities within the study area, Corcoran, Shafter, and Bakersfield have the highest percentages of their seniors reporting disabilities in 2007, at over 50% of their respective populations (U.S. Census Bureau, American Community Survey 2005–2007, 2007).[11]

[11] Data on disability is collected by the U.S. Census for sensory disability, mental disability, self-care disability, going outside the home disability, and employment disability. Individuals can be identified as having more than one type of disability, and therefore there is the potential of double counting of individuals in this data.

Table 4-10
County and City Disability Status (2007)

Location	% Population with Disability Status	
	Age 5 to 64 years	Age 65 years and over
Fresno County	**11.8**	**45.0**
City of Fresno	12.3	48.8
Community of Laton	14.4	65.6
Kings County	**10.1**	**43.6**
City of Hanford	13.5	39.6
Community of Grangeville	31.7	44.8
Community of Armona	22.2	46.0
City of Corcoran	14.5	54.3
Tulare County	**11.8**	**49.7**
Kern County	**13.4**	**49.6**
City of Wasco	11.8	47.5
City of Shafter [a]	18.8	52.5
City of Bakersfield	13.1	52.3

Sources: U.S. Census Bureau, American Community Survey 2005–2007, 2007.

[a] Comparisons between 2000 Census and 2007 U.S. Census Bureau, American Community Survey disability data are not recommended due to a change in the definition of "disabled." Year 2000 data are presented for Shafter, Laton, Grangeville, and Armona to illustrate conditions in 2000 but should not be compared with 2007 data for other communities.

4.2 Housing

Housing characteristics are presented for the region as a whole as well as for the counties and cities along the project alternatives.

4.2.1 Region

The predominant housing type across the four counties is single-family homes, accounting for 73% of existing units in the region in 2010. Multifamily units and mobile homes account for 20% and 7% of the remaining housing stock, respectively. Table 4-11 and Table 4-12 provide a summary of housing characteristics for 2000 and 2010, respectively, including vacancy rates for the region. Kings County is unique because approximately 14% of the population is housed in group quarters, including the three state prison facilities located at Avenal and Corcoran (two facilities), and numerous military housing units at NAS Lemoore. Household characteristics exclude these group quarters. The rate of home ownership for the region as a whole has decreased from 59.3% of all occupied housing units in 2000 to 56.8% in 2008. Table 4-13 provides a summary of home ownership in the region for 2000 and 2008.

Table 4-11
Housing Characteristics (2000)

Location	Single-Family Housing Units		Multifamily Housing Units		Mobile Homes	Occupied	Percent Vacant
	Detached	Attached	2 to 4	5 Plus			
Fresno County	**175,370**	**10,063**	**24,162**	**47,830**	**13,342**	**252,940**	**6.58**
City of Fresno	86,592	6,028	16,308	36,174	3,923	140,079	6.00
Central District	1,277	248	986	2,244	8	4,165	12.56
Edison District	4,593	354	1,138	603	49	6,231	7.51
Roosevelt District	16,768	1,058	3,561	6,944	572	26,807	7.25
Community of Laton	350	7	4	0	12	363	2.7
Kings County	**25,393**	**2,144**	**2,722**	**4,226**	**2,078**	**34,418**	**5.87**
City of Hanford	10,401	552	1,387	2,041	341	13,932	5.37
Community of Grangeville	172	13	18	12	27	242	4.2
Community of Armona	878	41	59	36	28	1,042	4.9
City of Corcoran	2,144	180	270	303	123	2,772	8.21
Tulare County	**87,838**	**4,740**	**8,514**	**7,819**	**10,728**	**110,385**	**7.73**
Kern County	**156,361**	**8,383**	**20,462**	**23,308**	**23,053**	**208,652**	**9.89**
City of Wasco	3,069	326	413	318	130	3,971	6.70
City of Shafter	2,718	177	280	237	211	3,292	9.14
City of Bakersfield	57,582	3,221	9,993	14,855	2,538	83,428	5.46
Northwest District	15,502	131	478	1,068	800	17,298	3.79
Central District	7,848	775	2,944	3,651	451	14,447	7.80
Northeast District	32,917	2,027	5,436	5,262	3,183	44,989	7.86
Regional Total	**439,645**	**23,719**	**54,035**	**79,761**	**57,341**	**606,395**	**7.35**

Source: California Department of Finance 2009.

N/A = not available (American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

Table 4-12
Housing Characteristics (2010)

Location	Single-Family Housing Units		Multifamily Housing Units		Mobile Homes	Occupied	Percent Vacant
	Detached	Attached	2 to 4	5 Plus			
Fresno County	**210,874**	**10,083**	**25,755**	**53,912**	**14,134**	**294,547**	**6.42**
City of Fresno	103,640	6,028	17,142	40,301	3,923	160,763	6.01
Central District[a]	1,277	248	986	2,244	8	4,165	12.6
Edison District[a]	4,593	354	1,138	603	49	6,231	7.5
Roosevelt District[a]	16,768	1,058	3,561	6,944	572	26,807	7.3
Community of Laton[a]	350	7	4	0	12	363	2.7
Kings County	**30,227**	**2,637**	**3,011**	**4,624**	**2,278**	**40,347**	**5.68**
City of Hanford	13,212	864	1,538	2,082	343	17,070	5.37
Community of Grangeville[a]	172	13	18	12	27	242	4.2
Community of Armona[a]	878	41	59	36	28	1,042	4.9
City of Corcoran	2,970	180	373	334	164	3,690	8.23
Tulare County	**106,474**	**4,917**	**10,320**	**9,001**	**11,812**	**131,915**	**7.44**
Kern County	**196,958**	**8,536**	**23,912**	**25,929**	**26,400**	**253,957**	**9.86**
City of Wasco	3,861	361	445	441	134	4,892	6.68
City of Shafter	3,512	177	278	283	209	4,052	9.13
City of Bakersfield	83,006	3,224	11,658	16,055	2,749	110,316	5.46
Central District[a]	7,848	775	2,944	3,651	451	14,447	7.8
Northeast District[a]	32,352	1,999	5,426	5,262	3,099	44,351	7.9
Northwest District[a]	16,067	159	488	1,068	884	17,936	3.0
Regional Total	**544,533**	**26,173**	**62,998**	**93,466**	**54,624**	**720,766**	**7.81**

Source: California Department of Finance 2010.

[a] Housing data not available at the district level in Fresno and Bakersfield or in smaller communities for 2010, so 2000 Census data are presented.

Table 4-13
Housing Ownership (2000 and 2008)

Location	% of Total Occupied Units Owned	
	2000	2008
Fresno County	**56.5**	**53.7**
City of Fresno	50.7	47.8
Central District	13.8	N/A
Edison District	40.5	N/A
Roosevelt District	43.6	N/A
Community of Laton	51.6	N/A
Kings County	**55.9**	**55.3**
City of Hanford	59.3	58.7
Community of Grangeville	73.6	N/A
Community of Armona	61.3	N/A
City of Corcoran	57.2	60.2
Tulare County	**61.5**	**58.9**
Kern County	**62.1**	**59.6**
City of Wasco	57.6	50.8
City of Shafter	60.2	N/A
City of Bakersfield	60.4	57.2
Northwest District	85.4	N/A
Central District	42.5	N/A
Northeast District	56.7	N/A

Sources: U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey 2006–2008g, 2008g.
N/A = not available (U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

4.2.2 City of Fresno

As is the case in Fresno County and the region overall, the largest increase in the Fresno housing stock occurred in single-family detached homes between 2000 and 2010, accounting for 77.5% of the housing stock growth. Given the recent economic recession, the majority of this growth occurred before 2008, with little occurring since. Housing inventory is different in the city than in either the county or the region, with a larger percentage of housing units being multifamily residences. These characteristics reflect the more urban nature of the city of Fresno compared with the unincorporated areas in the region.

The composition of the housing stock in 2000 varied substantially among the three affected districts. The Central District had a much higher percentage of multifamily units when compared with either the Edison District or the Roosevelt District. When compared with the city as a whole, the Roosevelt District reflected the citywide housing stock very closely, whereas the Central District had a much higher percentage of multifamily units and the Edison District had a high percentage of single-family homes (see Table 4-11 and Table 4-12).

The rate of homeownership in Fresno has decreased since 2000, and home ownership across the three districts varied widely. In 2000, the Central District, which is the most urban of the three, had the highest percentage of individuals who rent (86.2%), making its residents about twice as likely to rent as the city residents as a whole (43.2%). Edison (59.5%) and Roosevelt (56.4%) had lower percentages of renters, but these percentages were still above that of the city as a whole (see Table 4-13). In 2008, housing unit turnover in Fresno was higher and the percentage of more established residents was lower (69.4% and 13.6%) than in the county (64.7% and 15.9%) and the region (66% and 15.2%) (U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey 2006–2008g, 2008g).

In 2000, the Edison District had a higher percentage of housing units with the same residents for 20 years or more than either the Central District or the Roosevelt District. Slightly more than a quarter of the housing units in the Edison District had been occupied by the same residents for at least 20 years, while in the Central and Roosevelt districts, 81.6% and 73.1% of units, respectively, had turned over in the past 10 years (U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey 2006–2008g, 2008g).

4.2.3 City of Fresno to Community of Laton

The community of Malaga has an estimated 450 homes, with the main residential area completely surrounded by an industrial park. Census data show that Bowles had an estimated 35 housing units in 2000, of this total 23 are owner-occupied (U.S. Census Bureau 2000d; California Department of Finance 2009). The remaining communities had between 20 and 50 identified residences.

4.2.4 Community of Laton

The community of Laton had a total of 373 homes in 2000, with an estimated 51.6% of these homes being owner-occupied (see Table 4-13). The housing stock was primarily single-family homes, with 95.7% of the homes being single family, a percentage that is much higher than that of either Fresno County (62.2%) or the region (71.4%) (U.S. Census Bureau 2000d).

4.2.5 Community of Laton to City of Hanford and Communities of Grangeville and Armona

Hamblin and Ponderosa, two communities in Kings County, both have between 20 and 50 residences. Both communities have experienced growth over the past several years, and this growth is expected to continue (Kinney 2010, personal communication).

4.2.6 City of Hanford

The largest increase in Hanford housing stock occurred in single-family detached homes between 2000 and 2010, which accounted for 84.8% of the housing stock growth. The composition of the housing stock in Hanford is similar to that of the county and the region, except for a smaller percentage of mobile homes (see Table 4-11 and Table 4-12).

Home ownership in Hanford has decreased slightly from 59.3% in 2000 to 58.7% in 2008, which is similar to decreases experienced by the county and region (see Table 4-13). As of 2008, residents of 62.5% of the occupied housing units in Hanford had moved into their homes since 2000, while 14.5% of households were more established, having lived in the same residences since at least 1990. These percentages are similar to those of the county (67% and 14.5%) and the region (66% and 15.2%) as a whole (U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey 2006–2008g, 2008g).

4.2.7 Community of Grangeville

The community of Grangeville has an estimated 237 homes, with the main residential area completely surrounded by agricultural fields (see Table 4-11). Census data show that an estimated 73.6% of homes in Grangeville are owner occupied (see Table 4-13). The two other affected communities in Kings County (Hamblin and Ponderosa) have experienced growth in the past several years, with continued growth expected. However, because of the rural qualities of Grangeville, growth has not occurred there.

As of 2000, 54.9% of Grangeville residents living in owner-occupied housing units moved into their homes between 1990 and 2000, and the other 45.2% have been in the community longer, having moved into their homes before 1990 (U.S. Census Bureau 2000d).

4.2.8 Community of Armona

The community of Armona has an estimated 1,042 homes, with the main residential area completely surrounded by agricultural fields. Census data show that an estimated 61.3% of homes in Armona are owner occupied (see Table 4-13). The two other affected communities in Kings County (Hamblin and Ponderosa) have experienced growth in the past several years, with continued growth expected.

As of 2000, 62.2% of Armona residents living in owner-occupied housing units moved into their homes between 1990 and 2000, and the other 37.8% have been in the community longer, having lived in the same residences since at least 1990 (U.S. Census Bureau 2000d).

4.2.9 City of Hanford to City of Corcoran

The study area between the cities of Hanford and Corcoran is entirely in Kings County. El Ranchero is the only community identified in this segment of the project. El Ranchero lies south of Lacey Boulevard, 1 mile west of Hanford, with approximately 125 homes in the community (Kinney 2010, personal communication).

4.2.10 City of Corcoran

The composition of the housing stock in Corcoran is very similar to that in the county and region except for the smaller percentage of mobile homes. Single-family detached homes accounted for 82.5% of the housing stock growth between 2000 and 2010. Housing vacancy rates in the city were higher than the rates of both the county (5.7%) and the region (7.4%) (see Table 4-11 and Table 4-12) (California Department of Finance 2010).

The rate of homeownership in Corcoran has increased from 57.2% in 2000 to 60.2% between 2006 and 2008. This increase is counter to trends observed in the county and region, which both experienced decreases over this period (see Table 4-13). In 2008, residents of over half of the occupied housing units in Corcoran (55.4%) had moved into their homes since 2000, while 22.8% of these households were more established, having lived in the same unit since at least 1990. The percentage of housing units that turned over in the past 8 years is substantially less

than in the county (67%) and region (66%). Similarly, the percentage of units with the same residents since at least 1990 is substantially higher, suggesting that the population of Corcoran is more stable than those in the surrounding areas (U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey 2006–2008g, 2008g).

4.2.11 City of Corcoran to City of Wasco

All eight communities identified in the study area between the cities of Corcoran and Wasco are unincorporated, and none are CDPs. The communities of Blanco, Angiola, Stoil, and Allensworth are located in Tulare County; and Kernell, Pond, Elmo, and Neufeld are located in Kern County. None have experienced large growth in the past several years, and no growth is anticipated in the foreseeable future (Kinney 2010, personal communication; Smith 2010, personal communication; Waters 2010, personal communication).

The community of Allensworth is home to approximately 120 households, and most of the housing stock is mobile homes. The remaining seven communities are quite small, and have between zero and approximately 20 residences.

4.2.12 City of Wasco

As with the county and region, the largest increase in the Wasco housing stock was also in single-family detached homes between 2000 and 2010, accounting for 80.3% of the housing stock growth. The composition of the housing inventory is similar to that in the county and region, although Wasco has a smaller percentage of mobile homes (see Table 4-11 and Table 4-12).

The rate of homeownership in Wasco has decreased from 57.6% in 2000 to 50.8% between 2006 and 2008, consistent with changes seen in the county and region over this same period (see Table 4-13). Residents of 61.3% of the occupied housing units in Wasco in 2008 moved into their homes since 2000, while 19.8% of households in the city were more established, having lived in the same home since 1990 or earlier. The percentage of recent turnover is lower and the percentage of more established residents is higher in Wasco than in the county (68.6% and 13.6%, respectively) and regionally (66% and 15.2%, respectively), suggesting a somewhat more stable community than is typical of the area (U.S. Census Bureau 2000d; U.S. Census Bureau, American Community Survey, 2006–2008).

4.2.13 City of Wasco to City of Shafter

The three communities identified in the study area between the cities of Wasco and Shafter are Palmo, North Shafter Labor Camp, and Myricks Corner. These communities are unincorporated, none are classified as a CDP, and all are in Kern County. Palmo has the fewest residences of the communities in this area, with approximately five homes in the community. There are approximately 45 duplexes at the North Shafter Labor Camp and approximately 75 residences in Myricks Corner (Smith 2010, personal communication).

4.2.14 City of Shafter

The largest increase in the Shafter housing stock between 2000 and 2010 is consistent with that in the region, with single-family detached homes accounting for 95% of the housing stock growth. The composition of the local housing stock is similar to that in the county and region. Housing vacancy rates in the city were 9.1% in 2000 and remained approximately the same in 2010 (California Department of Finance 2010). These rates are higher than those observed in the region (7.8%) but lower than in the county (9.8%) (see Table 4-11 and Table 4-12).

The rate of home ownership in 2000 in Shafter was 60.2%, which was similar to that of both the county and the region (see Table 4-13). Residents of 66.2% of the occupied housing units in Shafter had moved into their homes between 1990 and 2000, while 18.6% of households were more established, having lived in the same residence since at least 1980.[12] These values are similar for the county (71.2% and 13.9%) and the region (70.4% and 16%) for the same period (U.S. Census Bureau 2000d).

4.2.15 City of Shafter to City of Bakersfield

The one identified community in the study area between the cities of Shafter and Bakersfield is Crome. This community is unincorporated and is not a CDP. There are approximately 20 homes in the community, with no growth anticipated in the foreseeable future (Smith 2010, personal communication).

4.2.16 City of Bakersfield

Although the observed growth in the housing units in Bakersfield of 32.2% between 2000 and 2010 was very much greater than that of the county (21.7%) and the region (18.7%), similarities between the city and its surrounding areas can be observed. As with the county and region, the largest increase in the Bakersfield housing stock occurred in single-family detached homes, which accounted for 89.3% of the housing stock growth. The composition of the city's housing stock is also similar except for the smaller percentage of mobile homes. Housing vacancy rates in the city were 5.5% in 2000 and remained stable into 2010 (California Department of Finance 2010). These 2010 vacancy rates are lower than the rates of both the county (9.8%) and the region (7.8%).

A comparison of the 2000 housing stock by district shows some large differences in terms of numbers and types of housing units. The Central District had the lowest percentage of single-family homes and a very high percentage of multifamily housing, while the Northeast District showed a higher percentage of single-family homes. The Northwestern District had the highest percentage of single-family homes, making up 86.2% of the total housing stock (see Table 4-11 and Table 4-12).

The rate of homeownership in Bakersfield has decreased from 60.4% in 2000 to 57.2% in 2008. This decrease is consistent with changes seen in the county and region over this period. The rate of homeownership across districts varied widely in 2000. The Central District, which is the most urban of the districts, had the highest percentage of individuals who rent (57.5%), which is substantially higher than for the city as a whole (39.6%). In contrast, the Northwestern District had the lowest percentage of renters (14.6%), greatly below the city average. The Northeastern District had rates more similar to the city averages, with 56.7% of individuals owning homes and 43.3% of individuals renting (see Table 4-13) (U.S. Census Bureau 2000d).

Residents of 75.4% of the 2008 occupied housing units in Bakersfield had moved into their homes after 2000, while only 9.4% of the households had lived in the same residences since at least 1990. The rate of recent turnover is higher and the percentage of more established residents is lower in Bakersfield than in the county (68.6% and 13.6%) and region (66% and 15.2%) (U.S. Census Bureau 2000d). This may suggest a newer population and a potentially less stable community base.

In 2000, both the Central District and the Northeastern District had a higher percentage of housing units with the same residents for at least 10 years than the Northwestern District. About

[12] Because Shafter data are not available for years after 2000, the analysis was adjusted to compare 1990–2000 and pre-1980 data to identify community stability of and length of residency trends.

30% of the housing units in these two districts were occupied by residents who had moved in prior to 1990; in the Northwestern District, almost 80% of the district's units had new residents in the past 10 years, a much higher rate of population turnover than observed in the other two districts (U.S. Census Bureau 2000d).

The Northeastern District of Bakersfield is home to several established homes and businesses. The neighborhood that lies south of East Truxtun Avenue and between Union Avenue and Oswell Street lies partially in the project study area but is examined as a whole community in this document because the Bakersfield to Palmdale section of the HST project will bisect this neighborhood. This neighborhood has a relatively high density of small churches, a community dental clinic, schools, markets, and a veterinary hospital. A relatively high level of pedestrian and bicycle travel in the neighborhood was observed, and community organization activities have been held in response to the proposed HST project. Neighborhood characteristics indicate that there is a shared sense of community, as well as interest in this project.

The Northwestern District of Bakersfield is residential in character, with many single-family, ranch-style homes constructed before the 1990s. The rate of homeownership in this area (81%) is substantially higher than the citywide average (57.2%), and Census information indicates that there is considerable racial and socioeconomic homogeneity. The relatively large yards surrounding the modest single-family homes appear to be meticulously landscaped, and residents were observed actively engaged in yard maintenance—one potential indicator of a shared sense of community pride and commitment to place. There have also been recent community organizing activities conducted specifically to raise awareness about the proposed HST project and its potential impacts on the neighborhood, an indication of the level of shared community interest associated with this proposed project. These factors indicate a relatively high degree of community cohesion in this area.

4.3 Environmental Justice

The environmental justice (EJ) populations within the region are identified and presented below. These communities have a substantial population of minority and/or low-income residents and were identified through the use of 2000 Census data and consultation with local experts on demographic trends over the last decade. A summary of the environmental justice outreach conducted is also presented.

4.3.1 Identification of Environmental Justice Areas

EJ areas are defined as Census block and block group populations that meet either or both of the following criteria:

- The Census block contains 50% or more minority persons, and/or the block group contains 25% or more low-income persons.
- The percentage of minority and/or low-income persons in any Census block or block group is more than 10 percentage points greater than the average of the surrounding area.

The EJ study area included all Census blocks and block groups having any part that lies within a 0.5-mile radius of the project alignment and station locations. Minority persons were defined as all individuals not identified as White only in the 2000 Census, including those identified as Hispanic or Latino. Low-income persons were defined as those individuals with household incomes below the Census poverty threshold (see the EJ methodology description in Appendix A for an examination of the appropriate poverty threshold for this analysis.)

Although Census 2000 data is now a decade old, the decennial Census is considered the most reliable source of data on race and ethnicity because it is based on a 100% population survey of all geographical areas, rather than sampling or estimating techniques as is used in more recently published data. The California Department of Transportation has reported that minority and low-income characteristics are slow to change in California communities, making the data relevant and reliable over a relatively long period of time (California Department of Transportation 1997). To confirm these assumptions, EJ populations in the study area were further examined using additional quantitative and qualitative methods to identify any potential demographic changes that may have occurred since the 2000 Census. Quantitative analysis included proxy data sources that would indicate the current locations of EJ populations, such as American Community Survey data for 2006 through 2008 and participation data by zip code for social service, food stamp, Section 8 housing, and school free or reduced-fee lunch programs in the study area. Qualitative examination included outreach to local agencies and organizations to inquire about changes in conditions that would lead to changes in EJ population identification, as well as local expert review of identified 2000 Census EJ areas to ensure that results are representative of current minority and low-income conditions. These additional verification processes confirmed the accuracy of the 2000 Census, and all are thoroughly documented in the EJ methodology in Appendix A, Section A.1.

Table 4-14 presents population estimates with minority and low-income percentages for the region as a whole and also for the population living in the EJ study area. Kern County has the largest percentage of individuals in the EJ study area (70.9% of the total 115,230 residents), followed by Fresno (16.2%), Kings (12.4%), and Tulare (0.01%). This total population within the EJ study area presents a count of potentially affected individuals. The actual number of individuals affected may be much smaller than these baseline totals, as the study area will likely not be affected across its entire area. Bypass alternative alignments steer clear of the more populated cities and encounter fewer and lower-density EJ communities. It follows that the number of potentially affected individuals would be reduced if a bypass alignment were selected.

The region as a whole has a high percentage of minority and low-income individuals. According to the 2000 Census, 56.5% of the total regional population is minority and 22.2% is living below the U.S. Census poverty threshold. Within the study area, these percentages are even higher, with minority and low-income individuals totaling 68.7% and 28.2% of the study area population, respectively. Hispanics are the predominate minority in EJ areas, accounting for 80% of the minority population (U.S. Census Bureau 2000e). Figure 4-3 provides an overview of the location of EJ populations throughout the entire region. Orange is used to indicate U.S. Census blocks containing EJ population, and darker orange is representative of EJ blocks with higher population densities. The red dashed lines represent the study area, and the purple line is the project alignment. EJ populations located outside of the study area corridor are displayed to add regional context to the study area results and to show that the concentration of EJ populations in the study area are similar to those found in surrounding areas.

Table 4-14
Minority and Low-Income Percentages in the Region

Location	Total Area			Environmental Justice Study Area			
	Population 2000	% Minority	% Low Income	Population 2000	% Minority	% Low Income	Key Minority Demographic
Fresno County	799,407	60.3	22.9	18,610	81.4	40.5	Hispanic
City of Fresno	427,652	62.7	24.7	12,680	86.2	48.4	Hispanic
Community of Laton	1,236	71.9	17.4	685	81.9	18.7	Hispanic
Kings County	129,461	58.4	19.5	14,302	64.8	18.3	Hispanic
City of Hanford	41,686	50.1	17.3	1,135	64.7	13.9	N/A
Community of Grangeville	638	26.8	14.0	330	23.3	14.1	Hispanic
Community of Armona	3,239	58.3	26.6	185	42.7	30.1	Hispanic
City of Corcoran[A]	14,458	75.9	29.4	10,240	73.4	24.2	Hispanic
Tulare County	368,021	58.2	23.9	619	83.0	35.3	Hispanic
Kern County	661,645	50.5	20.7	81,699	66.4	26.7	Hispanic
City of Wasco	21,263	78.4	27.6	7,868	91.3	31.9	Hispanic
City of Shafter	12,736	71.0	28.9	8,849	63.8	29.9	Hispanic
City of Bakersfield	247,057	48.9	19.2	31,719	61.8	25.7	Hispanic
Regional Total	1,958,534	56.5	22.2	115,230	68.7	28.2	Hispanic

Sources: U.S. Census Bureau 2000e, 2000g.

[A] An error in the Census 2000 data for Corcoran was later corrected by the Census Bureau, but only for total population and not the racial profile breakdown. Minority percentages for Corcoran are therefore based on the original 14,458 total population estimate provided by the Census.

Notes: The Census 2000 racial profile data do not include institutionalized populations, of which Corcoran has a large number because of the presence of the Corcoran state prison facilities. Bakersfield districts cross city limit boundaries and therefore contain population that is outside of what the Census defines as the city of Bakersfield.

Figures 4-4, 4-5, 4-6, and 4-7 show the locations of the EJ Census block populations across each of the four counties of Fresno, Kings, Tulare, and Kern, respectively. The Census blocks within the study area total 350.4 square miles, and 112.3 square miles (or 32.1%) of these are identified as EJ blocks.[13] The vast majority of these EJ blocks are rural with low-density populations (102.8 of the 112.3 square miles), and only 9.5 square miles (or 8%) of the EJ areas contain more urban, medium- to high-density populations (U.S. Census Bureau 2000e). Individual maps for each of the EJ populations in the communities along the alignments are provided in the community profiles in Appendix B.

[13] The area calculated for the EJ analysis will be different from the areas presented in other sections because the study area for EJ includes all U.S. Census blocks that are completely or partially contained within the 0.5-mile radius of the alignment. Therefore, the areas of partially contained U.S. Census blocks that are outside the 0.5-mile are included. This difference will be greater in rural areas, where the U.S. Census blocks are larger.

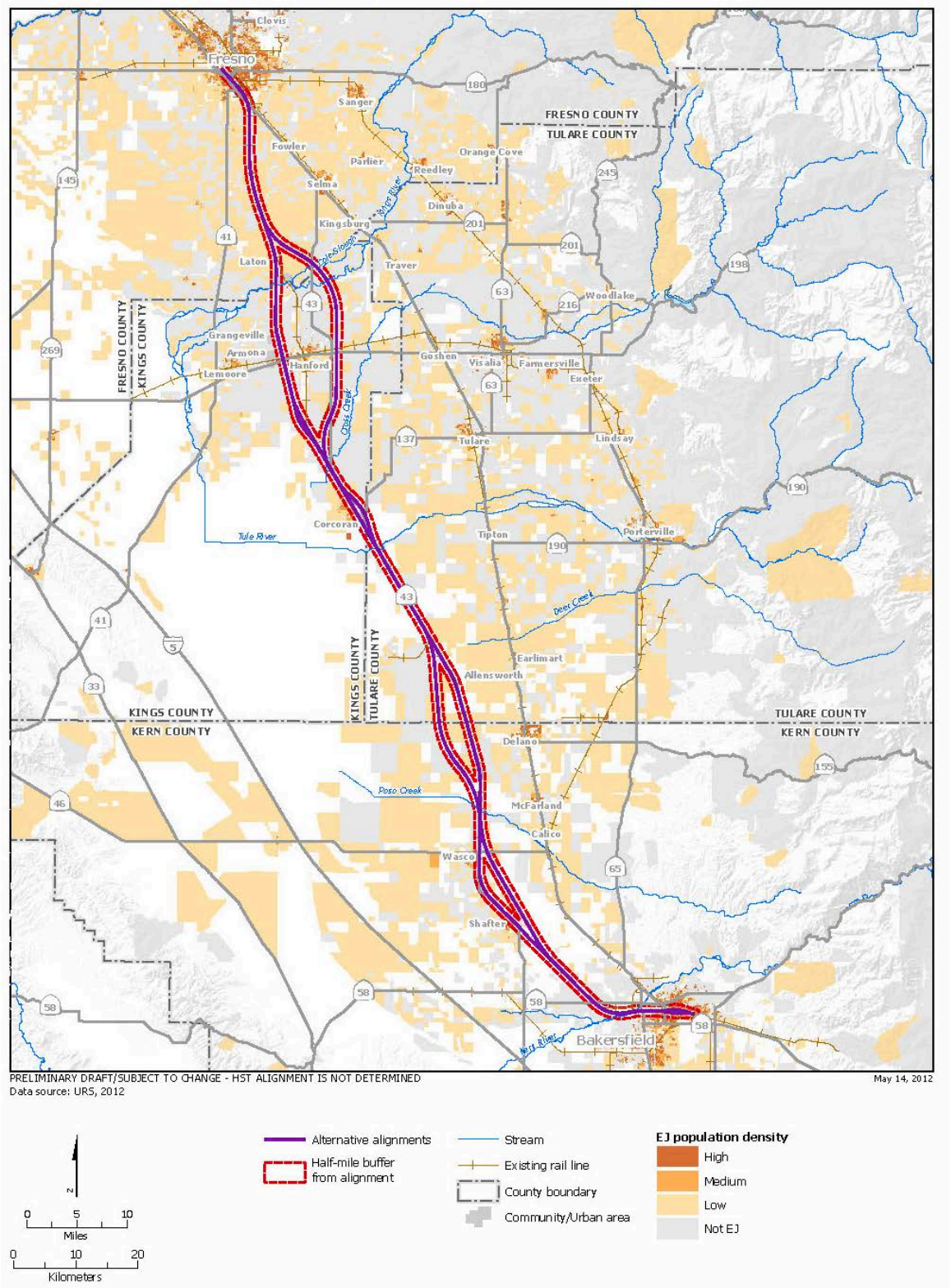

Figure 4-3
Region EJ Populations

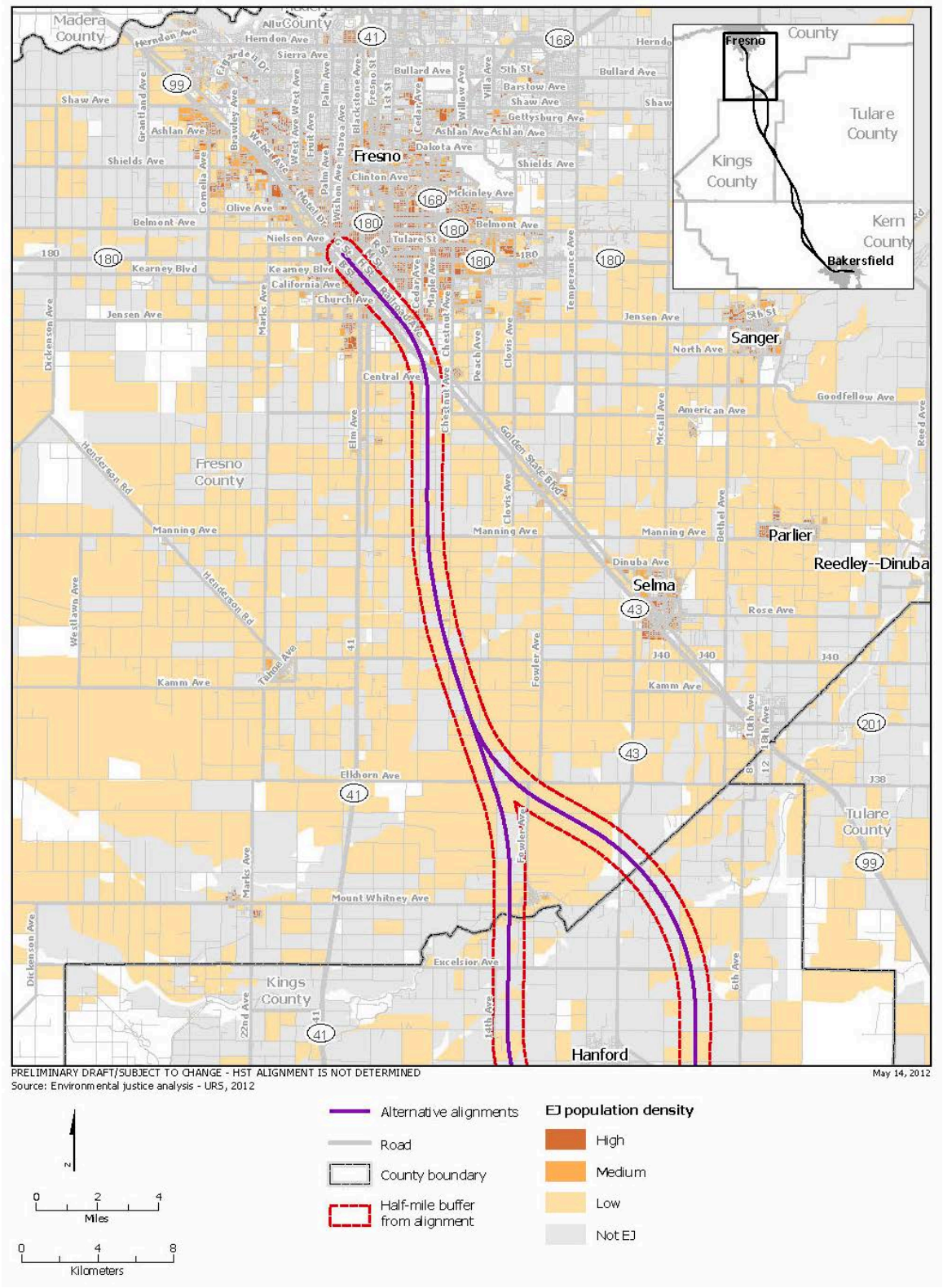

Figure 4-4
Fresno County EJ Block Populations

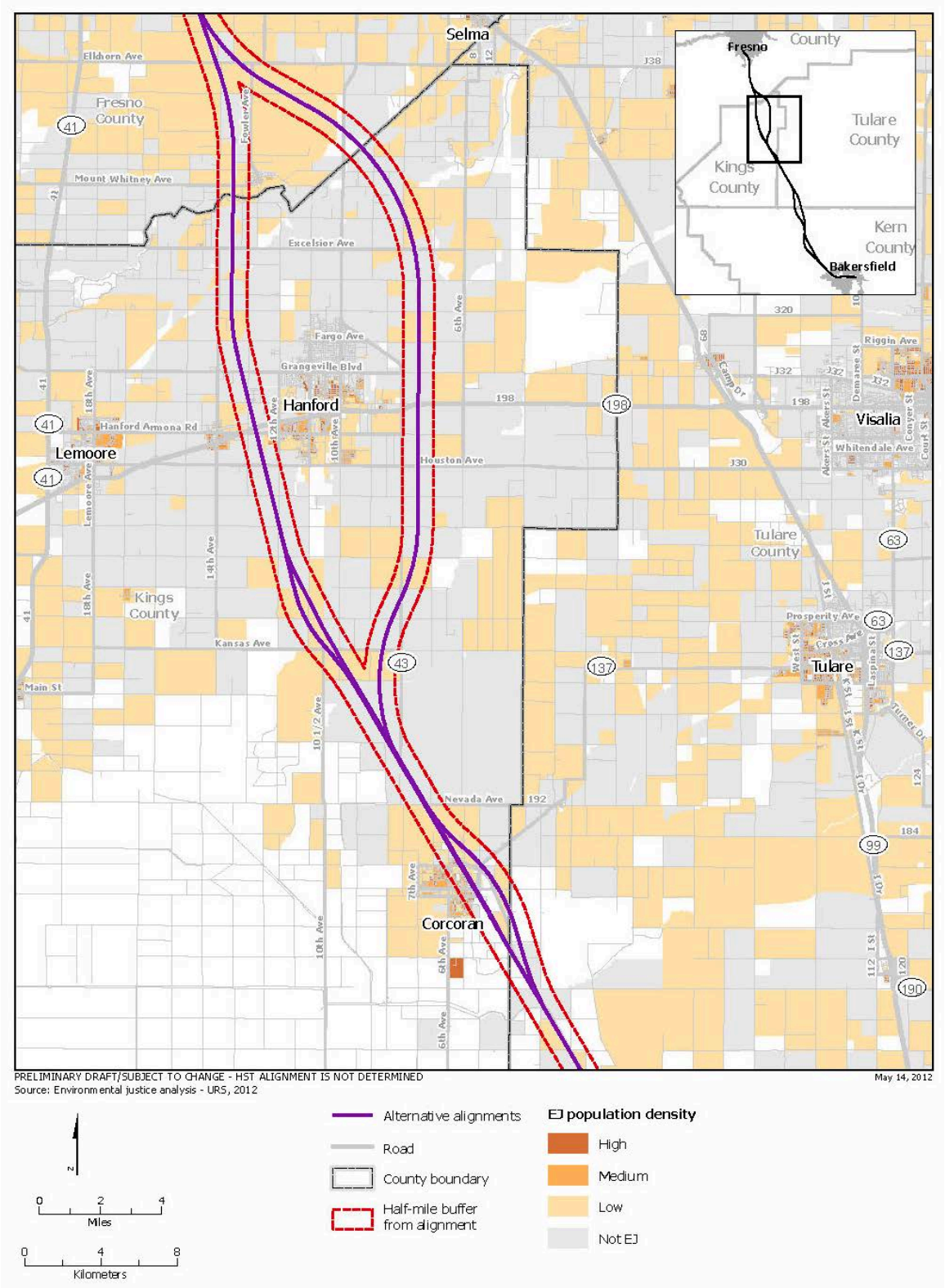

Figure 4-5
Kings County EJ Block Populations

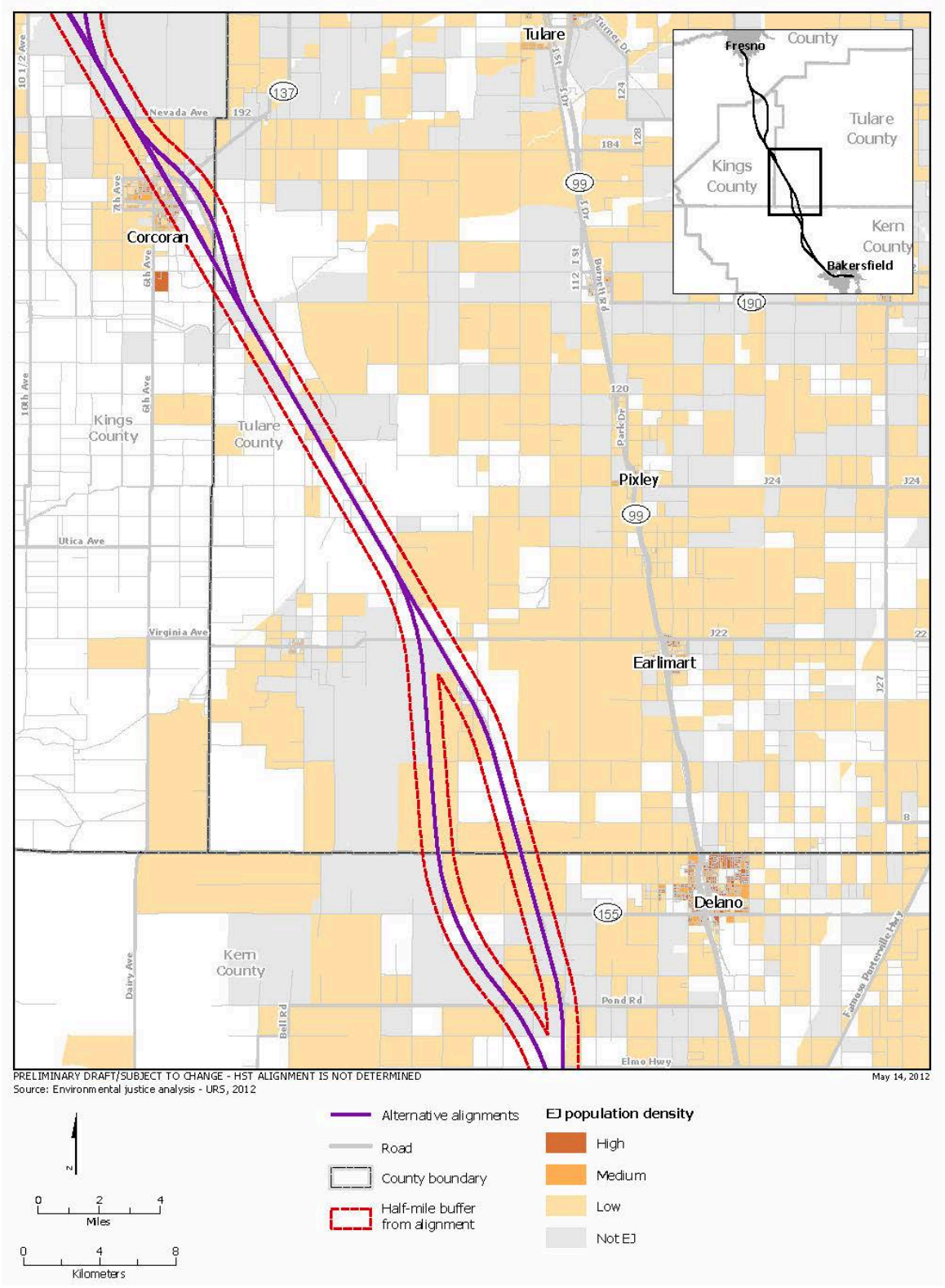

Figure 4-6
Tulare County EJ Block Populations

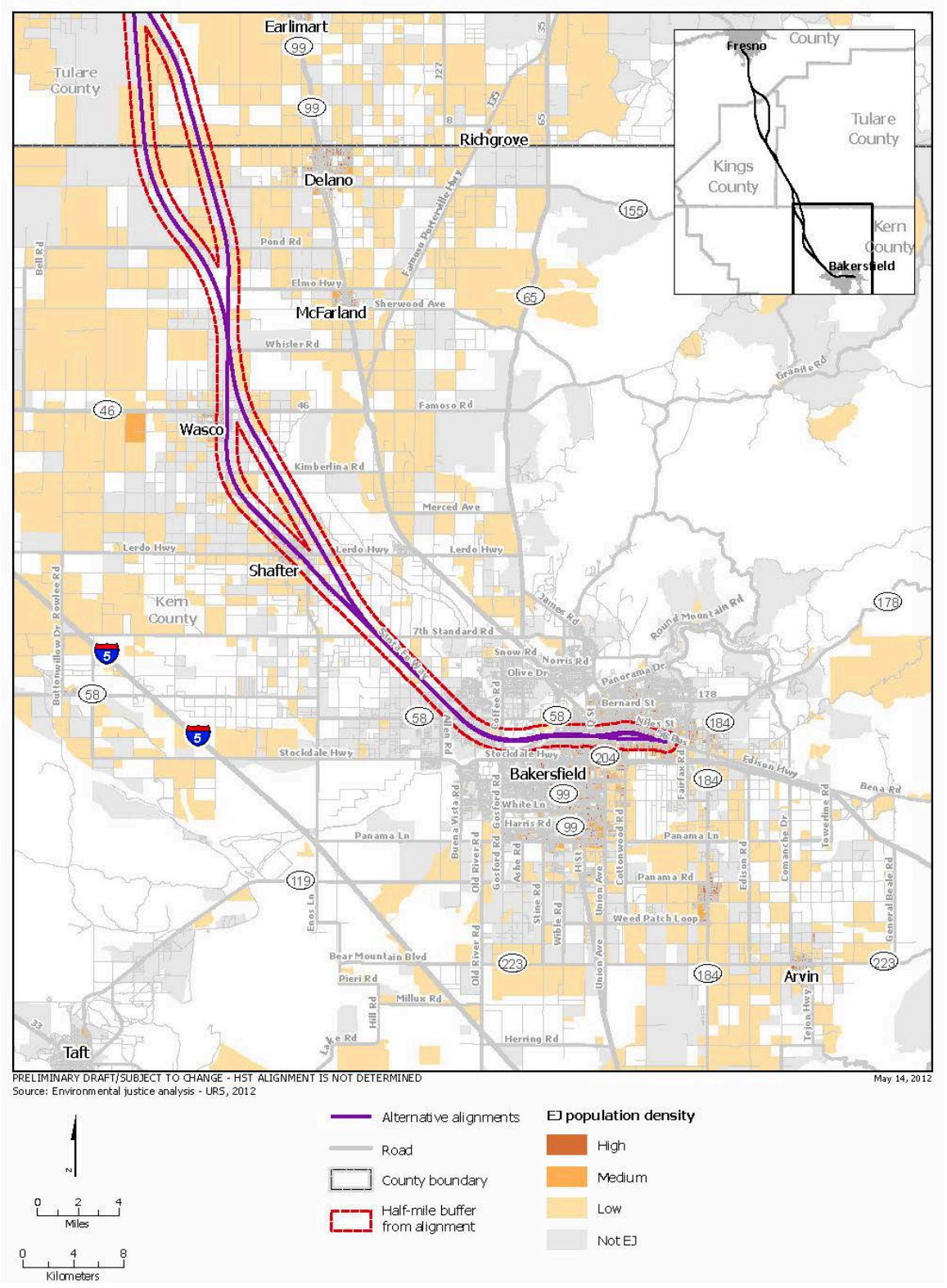

Figure 4-7
Kern County EJ Block Populations

Given that the study area crosses both highly urbanized and very rural areas (e.g., the cities of Fresno and Bakersfield and the agricultural lands between these communities), it is important to identify EJ populations according to population density. This population density provides insight into the concentration of EJ populations. The region's urban cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield have high concentrations of EJ populations. Fresno's Central District contains scattered EJ areas, some with high-density populations, and the Edison District contains a consistent stretch of densely populated EJ areas along the study area's southern extent. The Roosevelt District around Calwa, where the study area curves southward to leave the city, also contains a concentration of EJ areas with higher-density populations (U.S. Census Bureau 2000e). The poverty rate for each of the three districts was well above that of the city of Fresno in 2000 (24.7%). The Central District had the highest poverty rate, with 57.7% of the population in poverty, more than double the citywide poverty rate. Edison (44.7%) and Roosevelt (38.0%) were lower but still much higher than the city and region as a whole.

The city of Fresno also houses the largest homeless encampment within the San Joaquin Valley. Hundreds of homeless individuals live in makeshift shelters under the SR 41 freeway structures between the Central and Edison districts. Located in this area are the Fresno Rescue Mission, the Poverello House (a women's shelter), and other facilities that serve this population. Census 2000 data collection methods attempted to include homeless people in the overall population counts, but limitations in this data collection effort could lead to an underestimate of homeless populations in various locations (U.S. Census Bureau 2001).

The EJ study area for the Hanford West Bypass 1 & 2 alternatives includes Laton, Hanford, Grangeville, and Armona. This study area contains populations that differ from the other parts of the EJ study area, where a high minority population usually corresponds with a high low-income population. Within the study area for the Hanford West Bypass alternatives, such as in Laton, Hanford, and Kings County as a whole, the low-income population is not an EJ community, but the high minority population is an EJ area. In the Grangeville study area, neither a minority EJ community nor a low-income EJ community is present. The population in the Armona study area contains an EJ low-income community but not an EJ minority community.

The study area for the BNSF Alternative through Corcoran contains a concentration of high- and medium-density EJ areas that are fairly continuous throughout the study area within the Corcoran city limits, particularly to the west of SR 43 and Pickerell Avenue. The study area for the Corcoran Bypass Alternative (to the east of the town) contains a much lower total population, a lower percentage of minorities (73.4%) and low-income individuals (24.2%), than the City of Corcoran (U.S. Census Bureau 2000e, 2000g).

Wasco contains a concentration of mostly high-density EJ population areas along the entire extent of the study area for the BNSF Alternative. These EJ areas are, for the most part, west of SR 43, extending between SR 43 and Griffith Avenue, with the exception of a major farm labor housing development east of SR 43. The study area for the Wasco-Shafter Bypass Alternative, which lies to the east of Wasco and Shafter, contains scattered, very lightly populated EJ areas (U.S. Census Bureau 2000e, 2000g).

Within the BNSF Alternative study area in Shafter, the percentage of minorities is lower and the percentage of low-income residents is slightly higher than in the city as a whole. The existing BNSF Railway right-of-way is a major dividing line for EJ communities through the city. The high school and newer, upscale housing lie to the northeast of the BNSF Railway and the lower-income neighborhoods and traditional downtown area are to the southwest. As stated in the Wasco EJ discussion above, the study area for the Wasco-Shafter Bypass Alternative contains scattered, very lightly populated EJ areas (U.S. Census Bureau 2000e, 2000g).

The EJ area within Bakersfield is roughly split between low-density (38.6%), medium-density (33.4%) and high-density (28%) blocks. No concentration of high population density EJ areas were identified in the Northwestern District of Bakersfield, which had a very low percentage of persons living in poverty, at 5.5%. Poverty rates for the Central and Northeastern districts were well above the citywide poverty rate of 25.7% in 2000, at 29.5% and 37.0%, respectively. Central Bakersfield contains concentrations of high-density EJ areas, particularly south of Truxtun Avenue. The study area in the Northeast District of Bakersfield contains concentrations of high-density EJ areas both north and south of Edison Highway, moving west to east from Central Bakersfield through Oswell Street (U.S. Census Bureau 2000e, 2000g).

4.3.2 Environmental Justice Outreach and Interest Groups

Executive Order 12898 requires that federal agencies ensure effective public participation and access to information. Consequently, a key component of compliance with Executive Order 12898 is outreach to potentially affected minority and/or low-income populations to discover issues of importance that may not otherwise be apparent. Outreach to affected communities has been and will continue to be conducted as part of the Authority and FRA's decision-making process. The outreach conducted to date is fully documented in Chapter 7 (Public and Agency Involvement) of the EIR/EIS.

An extensive public and agency outreach program was conducted throughout the EIR/EIS process and will continue through the design and construction phases. Many meetings were held with local officials; public, local, and regional organizations; and government agencies. Meetings were also held with representatives of affected communities along the HST alternatives, including those communities containing predominantly minority and/or low-income populations. Existing EJ outreach programs (e.g., the San Joaquin Valley Air Pollution Control District EJ Committee) and established minority organizations (e.g., the Mexican American Political Association) were used to identify issues of concern and the locations of EJ communities. Special outreach conducted for minority and low-income populations included Spanish-language advertising of meetings, the availability of Spanish-language versions of project-related materials, and the availability of Spanish interpreters at public meetings in areas that included an EJ population with a large Hispanic population.

The EJ outreach team also conferred with local elected officials in each community on needs for interpretation in other languages besides Spanish. Where low income and/or minority populations would be affected by the HST, outreach activities were conducted to determine the extent of the affected populations and to gather information on the best ways of communicating with these populations. Input was solicited on the potential impacts of the project by representatives from EJ organizations or community leaders. Feedback was also sought from EJ community members during community events (e.g., Festival de la Familia, Asian Fest, Fresno Flea Market).

The purpose of these efforts was to gain the input of EJ community leaders and members on the project and to consider their comments as part of the public record. Through analysis of the project, staff identified whether the project would potentially disproportionately affect any of the EJ areas relative to the potential benefit gained by that community from the project, and appropriate alternatives or changes to the project were implemented.

The EJ outreach process consisted of the following steps (and sub-steps):

Step 1. Identify minority and/or low-income interest groups within the HST project study area.

- Identify areas potentially affected by the project that are likely to contain EJ areas.

- Work with elected officials, their local staff, and EJ community leaders to verify EJ areas, identify groups that represent those communities, and discuss appropriate methods of reaching out to the identified EJ communities.

- Create a list of EJ areas and EJ community leaders, and schedule meetings.

Step 2. Engage EJ community leaders and organizations.

- The outreach team met with elected officials and local staff to identify potential EJ areas and their community leaders, as identified in Step 1. The team worked with those community leaders to identify potential issues for their constituents; gather information on the most effective outreach methods, with the goal of increasing public participation in project development; and gain input on the alignment alternatives from members of EJ communities. Individual meetings with EJ representatives and organizations were scheduled to the extent feasible. Telephone conversations took place where face-to-face meetings were not feasible.

- The outreach team coordinated meetings in the identified EJ areas to identify potential project issues and concerns and potential project impacts and benefits on the EJ communities. The team also developed an outreach strategy for EJ communities to identify the best ways to keep the EJ communities engaged in the project environmental process and beyond.

Step 3. Identify how project information will be made available to the community.

- Bilingual literature and translation: within identified EJ areas, the outreach team identified appropriate languages other than English to use for translating outreach materials or for speaking to community members at outreach events. Spanish was identified as the primary language for translation services, but Hmong and Tagalog were also identified as the primary or secondary language of many residents of the Central Valley region.

- Identify local resources for providing project information: within each community, the outreach team identified sources for providing project information to EJ community groups, with recognition that many EJ community members may not have access to electronic media, newspapers, U.S. mail, or other standard methods of information distribution. Through conversations with EJ community leaders, the team determined that posting project-related information at local stores and religious venues, distributing information through local school mail distributions or announcements, placing information in water or other billings mailed to residents, and attending local community events would provide alternative options for notifying EJ communities of project milestones and opportunities for public comment.

- Establish a multi-lingual, toll-free hotline: the outreach team established a multi-lingual project hotline where non-English speaking individuals can leave messages for project staff. Languages besides English that are available on the hotline are Spanish, Hmong, and Tagalog. Hmong and Tagalog were identified based on regional Census data and feedback from EJ community leaders.

Step 4. Conduct EJ-specific community meetings to inform community members about the project, solicit input about community-based concerns, and establish opportunities for participation by community members in potentially affected EJ areas.

- Many residents of EJ communities do not receive information from typical avenues of communication and are therefore less likely to attend community meetings geared toward broader audiences. Within EJ communities, information was gathered regarding existing community meetings or events organized by the community and the modes of transportation and accessibility of event locations. These meetings and events were used to provide project-

related information and solicit feedback from residents and business owners within EJ communities. These meetings and events were conducted at local churches, civic organization meetings, city council meetings, and special community events (e.g., fairs, festivals).

- Outreach activities were advertised in Spanish and community leaders were contacted to help advertise meeting information. Spanish-speaking communities specifically targeted for meetings included Corcoran, Wasco, Shafter, East Bakersfield, and Allensworth. A meeting in Corcoran was held at the Corcoran Technology Learning Center, a new community building. A meeting was held in Wasco at the city council chambers, within walking distance of the Wasco Farm Labor Housing facility and other minority and/or low-income neighborhoods in the area. A meeting in Allensworth was held at a local community center.

- Two meetings were held in East Bakersfield at local churches. The first meeting was held at Cain Memorial Church. This meeting was arranged by City Councilwoman Irma Carson, who represents a portion of this community. Flyers in both English and Spanish were hand-distributed to businesses and residences within the community. The second meeting was arranged by the Church of Christ, 1020 E. California Avenue, Bakersfield, an African American Church in East Bakersfield. An invitation was extended to an African American Church in west Fresno, but the church did not request a presentation.

- Three meetings were also held in Fresno's Chinatown, with support from Chinatown Board members. Flyers in English and Spanish were hand-distributed to businesses and residences with the community. Letters in English and Spanish were also mailed to the business owners on the Chinatown distribution list.

- Flyers were distributed to local businesses in EJ areas to advertise meetings. Media advisories were sent to English and Spanish media outlets, including television and radio, to announce the meetings. All mailings were sent to both the property address and property owner's address so that renters and other occupants or employees living or working in the area would receive the meeting information. All text in the flyers, advisories, and mailings was in both English and Spanish.

Step 5. Develop alignment alternatives or modifications to avoid or minimize impacts on EJ areas.

- Some of the bypass alignment alternatives developed and studied in the EIR/EIS avoid identified EJ communities, including EJ communities in the cities of Corcoran, Wasco, and Shafter. An avoidance alternative for East Bakersfield was not feasible due to its proximity to the proposed location for the HST station in downtown Bakersfield and the strict geometry requirements of the HST tracks coming in and out of the station.

- Issues raised by EJ community leaders, organizations, and members included:

    i. Concerns regarding noise from the trains.

    ii. Concerns regarding visual impacts from elevated structures.

    iii. Concerns that HST structures would be targets for graffiti.

    iv. Concerns that the train route would divide or further divide communities. Union Pacific Railroad (UPRR) tracks were cited as an example of a transportation corridor that divides communities. Delano, Shafter, and Wasco were also cited as communities that could be adversely affected by a train that further divides a community.

v. Concerns about the potential impacts to local employment opportunities due to project impacts on agriculture and agricultural manufacturing jobs.

vi. Concerns about access to affordable regional and inner-city transportation services. Many families in rural communities must make time-consuming and costly commitments to travel to and from work or to get to or from city centers.

vii. Concerns about the affordability of the HST for low-income community members.

viii. Concerns about access to local employment opportunities related to the HST project and concerns that EJ communities would not have access to the appropriate training for jobs with the HST System.

ix. Concerns about how the alignments would affect access for emergency responders and concerns about general safety issues.

x. Concerns about local funding for the added security needed for the HST System and its facilities.

xi. Concerns that the proposed heavy maintenance facility would increase local pollution. Community members in Allensworth expressed environmental concerns related to this matter.

xii. Concerns about the safety of the high-speed train when traversing rural communities.

xiii. Concerns that the high-speed train isn't meant to benefit the traveler within the Central Valley, but is more geared toward people traveling between Northern California and Southern California.

xiv. Concerns that the high-speed train alignment will impact local churches, the Bakersfield Church of Christ in particular, which play an important role in improving local communities.

xv. Concerns regarding the ability of low-income or unemployed community members, particularly those who rent their housing, to relocate if impacted by the high-speed train.

xvi. Concerns about the impacts that the train alignments may have on public schools, and particularly the impacts caused by longer commute times for those school children who walk to school.

xvii. Concerns about potential impacts to local landmarks or facilities important to minority or low-income communities, such as the Martin Luther King Jr. Park and Recreation Center in Bakersfield.

xviii. Concerns that business impacts in Fresno's Chinatown would be greater for those who lease their storefronts than for those who actually own the properties.

Step 6. Document public information meetings and other EJ outreach.

- A meeting report was prepared for each scoping meeting, public information meeting (PIM), and individual briefing held within EJ communities or with EJ community leaders and organizations. These meeting reports are part of the administrative record for the project. Public comment cards were made available at every PIM and sign-in sheets were used to collect the names of the attendees, obtain their contact information, and inform them of

future meetings or new information about the project. Staff was available at each the meeting to discuss the project one-on-one with attendees. Also, a Spanish interpreter was available at each PIM meeting.

Starting in April 2007 and continuing through August 2010, 70 EJ-related meetings were held, including meetings to identify EJ areas and leaders to identify strategies for outreach to their communities and gain their input. A full list of these meetings is provided in Table 4-15.

Table 4-15
Public Outreach Meetings

Count	Date Held	Meeting Name
1	4/9/2007	Vice Mayor, City of Delano
2	4/9/2007	City of McFarland Planning Director
3	4/18/2007	Fresno County Technical Assessment Group (TAG)
4	4/23/2007	Tulare/Kings Counties HST Technical Assessment Group (TAG)
5	5/4/2007	Fresno Councilmember Blong Xiong; Council Assistant Miguel Arias
6	5/4/2007	Fresno County Board of Supervisors, Chairman Bob Waterston
7	5/7/2007	Ed Martin, Lemoore City Councilmember
8	5/7/2007	Friends of Allensworth Conference Call
9	5/21/2007	Rosamond (Town Council) Municipal Advisory Council
10	5/29/2007	Fresno City Council President Henry T. Perea
11	6/4/2007	HST Kings County Area Stakeholders – Group 1
12	6/4/2007	HST Kings County Area Stakeholders – Groups 10, 11, 12, 13, 15 & 16
13	6/7/2007	Kern County Supervisors Watson, Maben, and Maggard
14	2/21/2008	Dinuba Chamber of Commerce
15	3/27/2008	Porterville Breakfast Lions
16	4/1/2008	Hanford Breakfast Lions
17	4/18/2008	Fresno ADA Advisory Council
18	5/1/2008	Tulare County Farm Bureau (10 in attendance)
19	6/2/2008	Corcoran City Council
20	6/3/2008	Porterville Breakfast Rotary Club
21	6/5/2008	Fresno County Women's Chamber of Commerce
22	6/11/2008	Lindsay Chamber of Commerce
23	7/16/2008	Central California Hispanic Chamber of Commerce
24	7/28/2008	Reedley Kiwanis Club
25	7/30/2008	Rotary Club of Taft

Table 4-15
Public Outreach Meetings

Count	Date Held	Meeting Name
26	7/30/2008	Taft Chamber of Commerce
27	8/4/2008	Oildale Kiwanis Club
28	8/4/2008	Oildale Rotary Club
29	8/19/2008	Porterville Breakfast Lions
30	8/21/2008	CA-P Land Use Housing Ag Workgroup
31	9/24/2008	Orange Cove Chamber of Commerce
32	9/25/2008	Leadership Fresno
33	10/1/2008	Fresno Revitalization Corp
34	10/11/2008	National Federation of the Blind, Central Valley Chapter
35	1/8/2009	Mike Olmos, Visalia Asst. City Manager
36	1/16/2009	Bernard Jimenez, Division Manager, Fresno County Development Services Division, Public Works and Planning Department
37	1/28/2009	City of Bakersfield staff, Mayor Harvey Hall and Councilman Harold Hanson
38	2/12/2009	Cross Valley Rail JPA
39	2/26/2009	City of Corcoran Manager Ron Hoggard and Mayor Ray Lerma
40	2/26/2009	Shafter/Wasco Outreach Meeting
41	3/11/2009	City of Fresno Council President, Cynthia Sterling
42	3/24/2009	Visalia Scoping Meeting
43	3/25/2009	Fresno Scoping Meeting
44	3/26/2009	Scoping Meeting in Bakersfield
45	8/31/2009	Rey Leon of MAPA
46	9/15/2009	Bakersfield Public Information Meeting
47	10/26/2009	Meeting with Fresno County Supervisor Judy Case
48	11/3/2009	East Bakersfield PIM
49	11/9/2009	Corcoran Planning/Economic Development Commission
50	11/18/2009	Fresno Council Members Blong, Borgeas and Sterling
51	11/18/2009	City of Shafter Staff
52	11/18/2009	City of Wasco Staff
53	12/9/2009	East Bakersfield PIM
54	12/16/2009	Ace Mentoring/Kerman High School Outreach Meeting

Table 4-15
Public Outreach Meetings

Count	Date Held	Meeting Name
55	1/8/2010	Cross Valley Rail JPA Board Meeting Presentation
56	2/8/2010	SJVAPCD EJ Committee
57	2/19/2010	Leadership Bakersfield Meeting
58	3/17/2010	Staff from Shafter, Wasco, and County of Kern
59	4/15/2010	Edison School District Superintendent
60	4/27/2010	Hanford PIM
61	5/4/2010	Wasco/Shafter PIM
62	5/5/2010	Corcoran PIM
63	5/24/2010	Kern HSD and Bakersfield High School (BHS)
64	7/8-11/2010	Kings County Fair
65	7/24/2010	Native American Meeting
66	8/11/2010	Wasco-Shafter PIM
67	8/19/2010	Bakersfield PIM (Public Info Meeting)
68	8/19/2010	Kern High School District
69	10/28/2010	Fresno Economic Development Corporation
70	11/3/2010	Commercial Real Estate Women of Fresno
71	11/17/2010	Central California Hispanic Chamber of Commerce
72	12/2/2010	Bullard TALENT Elementary School
73	12/10-11/2010	Outreach and Booth at Mercado Latino in East Bakersfield
74	1/13/2011	Landowner Meeting (Aaron Fukuda)
75	2/18/2011	Kern Minority Contractors Association
76	2/23/2011	Kern County stakeholder meeting
77	2/24/2011	Central California Hispanic Chamber of Commerce
78	2/24/2011	Lacey Rural Community meeting
79	3/3/2011	Corcoran Rotary Club
80	3/6/2011	Fiesta de la Familia
81	3/7/2011	CSU Fresno Economic and Community Development
82	3/8/2011	Fresno Cherry Auction
83	3/8/2011	CA Rural Legal Assistance
84	3/8/2011	Fresno Rescue Mission

Table 4-15
Public Outreach Meetings

Count	Date Held	Meeting Name
85	3/9/2011	Kit Carson Union School District
86	3/9/2011	Poverello House
87	3/10/2011	Fresno Flea Market
88	3/10/2011	Black Metro Chamber of Commerce
89	3/10/2010	John Hernandez-Central CA Hispanic Chamber of Commerce
90	3/22/2011	Fresno West Coalition for Economic Development
91	3/30/2011	Hanford Sheriff
92	3/31/2011	Centro la Familia
93	4/8/2011	Visalia Leadership
94	4/12/2011	Allensworth Elementary School
95	4/12/2011	Allensworth Progressive Association/Community Council
96	4/12/2011	Adventist Health
97	4/12/2011	Hanford Police Department/Fire Department/Cargenie Museum/City of Hanford
98	4/12/2011	Center for Race, Poverty, and Environment
99	4/12/2011	Delano International Village
100	4/13/2011	Kern Black Chamber of Commerce
101	4/13/2011	Kern Hispanic Chamber of Commerce
102	4/13/2011	MLK Community Center, Senior Center, PAL Youth Center
103	4/13/2011	Shafter Police/Fire Department, Ebenezer Reformed Church, Shafter Rural Health Clinic, National Health Services
104	4/13/2011	Edison Ag/Water Stakeholder Meeting
105	4/14/2011	Reedley College Green Summit
106	4/19/2011	Fresno Kiwanis Club
107	4/21/2011	Kern Contractor's Minority Association
108	4/30/2011	Asian Fest
109	4/30/2011	Fresno Earth Day
110	5/1/2011	Cinco de Mayo Festival
111	5/10/2011	Fresno Business Council
112	5/12/2011	Hanford Marketplace event
113	5/16/2011	Corcoran Public Meeting

Table 4-15
Public Outreach Meetings

Count	Date Held	Meeting Name
114	5/17/2011	Fresno Public Meeting
115	5/18/2011	Hanford Public Meeting
116	5/19/2011	Bakersfield Public Meeting
117	5/26/2011	HSR Minority Business Outreach Panel
118	6/2/2011	Wasco City Council Presentation-public comment
119	6/7/2011	Kings County Public Forum
120	6/10/2011	Mexican Consulate
121	7/8-7/10/2011	Kings County Fair
122	7/15/2011	Downtown Merchants Association
123	7/27/2011	M-F & F-B Tribal Meeting
124	8/11/2011	National Association of Women in Construction
125	8/23/2011	Rosedale Revised Draft EIR / Supplementary Draft EIS Workshop
126	8/24/2011	Wasco/Shafter Revised Draft EIR / Supplementary Draft EIS Workshop
127	8/25/2011	Corcoran Revised Draft EIR / Supplementary Draft EIS Workshop
128	8/30/2011	Fresno (Chinatown) Revised Draft EIR / Supplementary Draft EIS Workshop
129	9/13/2011	Allensworth Progressive Association/Community Council
130	9/20/2011	Fresno Revised Draft EIR / Supplementary Draft EIS Hearing
131	9/21/2011	Hanford Revised Draft EIR / Supplementary Draft EIS Hearing
132	9/22/2011	Bakersfield Revised Draft EIR / Supplementary Draft EIS Hearing
133	12/8/2011	Mercado Latino- EJ Outreach
134	1/3/2012	California Rural Legal Assistance Inc.

ADA = Americans with Disabilities Act
HST = High-Speed Train
IDEAL = Development of Emerging Area Leaders
JPA = Joint Powers Authority
MAPA = Mexican American Political Association
MLK = Martin Luther King Jr.
TAG = Technical Assessment Group

Specific areas on the alignment where potential EJ areas were identified were targeted for additional public outreach. The communities identified included areas of Fresno, the cities of Corcoran, Allensworth, Wasco, and Shafter, and the area identified as East Bakersfield (generally east of Union Street between the Union Pacific Railroad tracks and California Avenue). The EJ outreach conducted in the second half of 2010 and early 2011 includes the following:

- July 24, 2010 (Visalia). The Authority held a meeting at the Visalia Convention Center with the tribal communities in the area. The meeting was an effort to provide an overview of the project. Of the 54 tribal communities invited none attended.

- August 2010 (Bakersfield). A meeting was held at the Greek Orthodox Church on Truxtun Avenue near the Amtrak station. Information was provided to the pastor and the church council as they were meeting. The pastor and council asked for more information at a future date during a council meeting, including a presentation about the possible alignments and the station location.

- February 16, 2010 (Bakersfield). Members of the Church of Christ High-Speed Rail Committee organized a meeting to facilitate a public forum to provide comments regarding the two HST alignments under examination in the Bakersfield area at this time. Members of the project outreach team were invited to attend to provide information, answer questions, and receive public comments.

- December 10, 2010 (East Bakersfield). The project outreach team coordinated a canvassing of Edison Highway, visiting businesses from Oswell Street west to the El Mercado and then extended both west and south of the Mercado, handing out flyers and visiting business owners. The purpose was to inform business owners about the HST alignments near their business locations.

- July 14, 2011 (Calwa Unincorporated Neighborhood in Southern Fresno). Presentation to the community of Calwa in response to a request to learn more about the HST project. An outreach representative attended to provide a short presentation on the project and to answer questions from the community.

- July 27, 2011 (Tribal Meeting). Tribal representatives were invited to meet with project staff to learn more about the HST project and as a follow-up to a June 1, 2011, meeting. The meeting was held in a format to encourage participation and feedback. Poster boards with project details were set up around the room and roll-out maps were made available. The Fresno to Bakersfield Section and Merced to Fresno Section teams provided project descriptions and subject-matter presentations about the HST project to Tribal attendees.

- August 23, 2011 (Educational Workshop). An educational workshop was held in Rosedale (near Bakersfield) to inform the public and other stakeholders about the release of the Revised Draft EIR / Supplementary Draft EIS, provide technical staff to help guide participants through the document, and to educate participants on how to comment on the draft document. Spanish materials and translating services were made available.

- August 24, 2011 (Educational Workshop). An educational workshop was held in Wasco/Shafter to inform the public and other stakeholders about the release of the Revised Draft EIR / Supplementary Draft EIS, provide technical staff to help guide participants through the document, and to educate participants on how to comment on the draft document. Spanish materials and translating services were made available.

- August 25, 2011 (Educational Workshop). An educational workshop was held in Corcoran to inform the public and other stakeholders about the release of the Revised Draft EIR / Supplementary Draft EIS, provide technical staff to help guide participants through the document, and to educate participants on how to comment on the draft document. Spanish materials and translating services were made available.

- August 30, 2011 (Educational Workshop). An educational workshop was held in the Chinatown section of Fresno to inform the public and other stakeholders about the release of the Revised Draft EIR / Supplementary Draft EIS, provide technical staff to help guide

participants through the document, and to educate participants on how to comment on the draft document. Spanish materials and translating services were made available.

- September 13, 2011 (Allensworth Community Council). The Fresno to Bakersfield Section outreach team attended a monthly council meeting to provide information about the release of the Revised Draft EIR / Supplementary Draft EIS to the community, guide them through the document, and educate them on how to submit their comments. The outreach team provided handouts with information regarding the Revised Draft EIR / Supplementary Draft EIS in both English and Spanish and set up three poster boards with information about the chapters included in the Revised Draft EIR / Supplementary Draft EIS, the schedule, and a plot map showing the proposed alignment. The outreach staff was available before, during, and after the meeting to provide information on the Revised Draft EIR / Supplementary Draft EIS.

- December 8, 2011 (Mercado Latino–East Bakersfield). The URS outreach team visited the Mercado to provide direct outreach to the vendors in the Mercado. The team spoke to approximately 35 business owners regarding updates on the Fresno to Bakersfield Section of the HST and, specifically, the release of the Revised Draft EIR / Supplementary Draft EIS in the Spring of 2012.

- January 3, 2012 (California Rural Legal Assistance Inc. [CRLA]). Met with CRLA representatives to discuss comment letter received in response to the Revised Draft EIR / Supplementary Draft EIS. In a comment letter dated October 12, 2011, the organization expressed concerns to the Authority regarding EJ outreach. Outreach representatives provided feedback on the EJ efforts conducted thus far and received feedback from the organization regarding future EJ efforts.

The only area along the alignment in proximity to significant homeless populations is in Downtown Fresno. The main illegal homeless encampments would not be directly affected by the proposed alignments, and the City of Fresno is working to close down these encampments and relocate them to more permanent and/or legal sites. Outreach staff met directly with representatives from the Fresno Rescue Mission and the Povorello House to discuss information distribution to the homeless populations in west Fresno. Flyers were posted in the homeless community area in advance of public information meetings. The outreach staff had discussions with City of Fresno staff and community members involved with the homeless in Fresno during various outreach activities. A small number of homeless people were observed attending the scoping meetings and PIMs in downtown Fresno, and staff engaged in discussions with them.

The Authority held two PIMs in East Bakersfield, and the Authority attended a meeting sponsored by the Church of Christ, which is in East Bakersfield. A public scoping meeting and an additional PIM were also held in the Rabobank Theater lobby, just west of the community of East Bakersfield. Notice of all PIM meetings was given in both English and Spanish.

At all of these meetings, contact information was made available for all attendees, in both English and Spanish, so that they could obtain any additional information on the project at a later date. Local elected officials were invited to each of these meetings along with any other known community leaders. Table 4-16 lists the details of past and planned EJ public information meetings.

Table 4-16
Public Involvement Activities and Outreach to Minority and Low-Income Populations

Project Milestone	General Time frame	Outreach Activity	Description
Initial outreach	April 2007–August 2009	Direct contact	Held meetings to identify communities of concern and their leaders and to identify strategies for outreach to these communities to gain their input.
Alternatives analysis	September–November 2009	Direct contact	Contacted minority and low-income interest groups to offer project updates, ask about the best ways to reach these populations, and receive suggestions for other groups to contact.
Results of alternatives analysis	November 2009	Public meeting; discussion of the alternatives to be evaluated in the Draft EIR/EIS and the next steps	Provided meeting notices to minority and low-income interest groups, advertisements in Spanish-language newspapers, meeting notices in minority and low-income service community facilities, additional information in Spanish, and Spanish-language interpreters at the meetings.
EIR/EIS preparation and analysis	Fall 2010 to Summer 2011	Community gatherings and events	Interacted with EJ communities through cultural gatherings and events (e.g., fairs, festivals) that are specific to targeted minority and low-income groups. Events were selected based on feedback from EJ community leaders.
Preferred alternative	Spring 2011	Public meeting to discuss the preferred alternative and next steps	Provided meeting notices to minority and low-income interest groups, advertisements in Spanish-language newspapers, meeting notices in minority and low-income service community facilities, additional information in Spanish, and Spanish-language interpreters at the meetings. Made a summary of the Final EIR/EIS available in Spanish at the meeting and online.
Draft EIR/EIS Educational Workshops	Summer 2011	Educational workshops to introduce the Draft EIR/EIS	Educational workshops were held to inform the public and other stakeholders about the release of the Revised Draft EIR / Supplementary Draft EIS, provide technical staff to help guide participants through the document, and educate participants on how to comment on the draft document. At all of these workshops, Spanish-language materials and translating services were made available.

Table 4-16
Public Involvement Activities and Outreach to Minority and Low-Income Populations

Project Milestone	General Time frame	Outreach Activity	Description
EIR/EIS public hearings and comment period	Winter 2011	Public hearings	Provide meeting notices to minority and low-income interest groups, advertisements in Spanish-language newspapers, meeting notices in minority and low-income service community facilities, additional information in Spanish, and Spanish-language interpreters at the meetings. Establish a telephone hotline using interpreter services to receive EIR/EIS comments and provide information on the hotline in Spanish, Hmong, and Tagalog.
Final EIR/EIS	Fall 2012/Winter 2013	Provision of environmental document	Make a summary of the Final EIR/EIS available in Spanish in hard copy and online.

4.4 Local Economy

4.4.1 Employment

4.4.1.1 Region

Levels of employment and income in the Southern San Joaquin Valley have historically lagged behind those in other parts of the state. The four counties of Fresno, Kings, Tulare, and Kern make up one of the most agriculturally productive areas in the world, and the regional economy has been driven by the farming industry. Although the four counties have led the state in agricultural revenues, the regional economy has also been diversifying in recent decades to become more oriented toward services. Additional shifts in employment sectors came as a result of the real estate boom several years ago, which generated many jobs in construction, fueled retail sales, and generated increased property sales and tax revenues (Cowan 2005).

Although the agricultural industry provides the area with a great deal of employment, the region continues to be one of the most economically depressed areas in the nation because many of these jobs are seasonal and low paying (Cowan 2005). The region was largely untouched by the bursting of the ".com" bubble and the loss of tourism following the 9/11 tragedy. However, the real-estate boom generated many jobs in construction, fueled retail sales, and generated increased sales and property tax revenues. This increased activity and investment in the real estate industry only made the effects of the market's subsequent crash that much worse, exacerbating the economic situation and leaving the region one of the hardest-hit areas in the nation. The regional implications of the industry's 2007 collapse and associated nationwide recession include substantial increases in unemployment, foreclosure rates, and poverty, as well as sharp declines in housing prices (Bertaut and Pounder 2009). Unemployment rates increased sharply across all four counties, with Tulare County's 15.3% unemployment rate climbing highest in the region in 2009 and beyond the state average of 11.4% in the same year (California Employment Development Department 2010b).

While Fresno County has continued to increase production in agricultural goods over the past decades, the number of people employed in the industry has declined by approximately 12% since 2000, and it is expected that the number of people employed in agricultural and related occupations will continue to decrease through 2016 as agricultural land is urbanized and work in the fields is further mechanized. Despite Fresno County's agricultural productivity, this sector does not employ the largest percentage of the workforce. Instead, education, health, and social services are the largest sector, employing approximately 21.2% of the total labor force compared with agriculture, at 14%, in 2008. Seven of Fresno County's largest employers are located in the project study area.

Kings County has been more buffered from the recession due to the large number of persons employed by the government working at the state prisons and Lemoore Naval Air Station in the county. Public administration has continued to be by far the largest employment base in the county, with 31.6% of the total labor force. Since 2000, no single occupation group experienced a dramatic shift in its percentage of the labor force makeup. Of the 25 largest employers in the county, three are located in the study area (California Employment Development Department 2010c).

Tulare County has been hard hit by the economic recession and has the highest unemployment rate in the region. Although occupations in agriculture and related industries provide the largest employment base in Tulare County, with 24.7% of the total labor force, it has continued to shrink and is projected to be approximately the same size as the public administration sector by 2016. None of Tulare County's 25 largest employers are located in the HST alignment study area.

Kern County continues to have the lowest unemployment rate in the region with its diversified employment base. Production in agricultural goods has continued to increase, and although the percentage of the labor force employed in agriculture and resource extraction has declined somewhat since 2000, this sector still employs the largest percentage of the labor force. Of the 25 largest employers in Kern County, 9 are potentially in the study area (California Employment Development Department 2010c).

Table 4-17 provides a summary of unemployment rates across the region in 2000 and 2009. In the discussion of each community that follows the table, data for 2008 is also discussed to illustrate changes resulting from the 2008–2009 recession.

Table 4-17
Unemployment Rates (2000 and 2009)

Location	% of Labor Force	
	2000	2009
Fresno County	**10.4**	**15.1**
City of Fresno	9.7	14.2
Central District	30.0	N/A
Edison District	23.0	N/A
Roosevelt District	16.8	N/A
Community of Laton	21.2	29.8

Table 4-17
Unemployment Rates (2000 and 2009)

Location	% of Labor Force	
	2000	2009
Kings County	**10.0**	**14.6**
City of Hanford	8.7	12.8
Community of Grangeville	7.4	N/A
Community of Armona	13.6	19.1
City of Corcoran	10.8	15.2
Tulare County	**10.4**	**15.3**
Kern County	**8.2**	**14.4**
City of Wasco	15.6	26.1
City of Shafter	14.9	25.1
City of Bakersfield	5.7	10.1
Northwest District	4.3	N/A
Central District	10.2	N/A
Northeast District	13.1	N/A
Regional Total	**9.7**	**14.9**

Source: California Employment Development Department 2010b; U.S. Census Bureau 2000i.

N/A = not available (the U.S. Census Bureau, American Community Survey 2006–2008a does not provide data for communities with a population of less than 20,000)

4.4.1.2 City of Fresno

Despite the strength of the agricultural sector, unemployment in Fresno remains high and wages relatively low. Public administration is the largest occupational sector, followed by educational, health, and social services (City of Fresno Planning and Development Department 2002). Between 2000 and 2008, the number of workers in Fresno's labor force grew by 24,800, and the unemployment rate increased slightly, from 9.7% to 9.9%. In 2009, the city, county, and region all experienced increased unemployment, with rates climbing to 14.2%, 15.1%, and 14.9%, respectively. Employment data from the districts in the city of Fresno show that individuals living in the Central District (30%) were much more likely to be unemployed in 2000 than those living in either the Edison (23%) or Roosevelt District (16.8%). Information on employment by occupation type is not available at the district level after 2000 (see Table 4-17).

4.4.1.3 Community of Laton

Between 2000 and 2009, the unemployment rate in Laton increased from 21.2% to 29.8%. The 2009 percentage is high for the area, and is higher than both the county unemployment rate (15.1%) and the region unemployment rate (14.9%).

4.4.1.4 City of Hanford

Between 2000 and 2008, Hanford's labor force grew by 2,900 workers, while unemployment increased from 8.7% to 9.4%. During 2009, unemployment rates in Hanford reached 12.8%, slightly lower than the county, at 14.6%. Public administration is the largest occupation group within the city limits of Hanford. The occupational profile of the city is very different from that of either the county or region, with a much smaller percentage of the workforce participating in agriculturally related jobs. This is most likely due to Hanford's proximity to several major regional employers, such as NAS Lemoore and the Corcoran state prisons (see Table 4-17).

4.4.1.5 Community of Grangeville

In 2000, the community of Grangeville had a population of 638 individuals and a 7.4% unemployment rate. No 2009 unemployment data were available for Grangeville because of its small size.

4.4.1.6 Community of Armona

Armona is a rural, agricultural community that had an unemployment rate of 13.6% in 2000 and 19.1% in 2009. The 2009 unemployment rate is higher than both the county unemployment rate (14.6%) and the region unemployment rate (14.9%).

4.4.1.7 City of Corcoran

Public administration is the largest occupation in the city limits of Corcoran. The city's occupational profile differs from that of the county and region, with a much smaller percentage of the workforce participating in agriculturally related activities. When compared with other communities, Corcoran has a very high percentage of individuals working in the public administration field as a result of the two major state prison facilities. Between 2000 and 2008, the number of workers in Corcoran's labor force grew by 700, while unemployment increased from 10.8% to 11.4%. During 2009, the city's unemployment rate reached 15.2% (see Table 4-17).

4.4.1.8 City of Wasco

A large number of jobs in Wasco service the agriculture industry. Between 2000 and 2008, the number of workers in Wasco's labor force grew by 1,600, while unemployment increased from 15.6% to 18.8%. During 2009, Wasco's annual average unemployment rate of 26.1% was a great deal higher than rates seen in both the county (14.4%) and the region (14.9%) (see Table 4-17). Public administration and agriculture are the two largest occupations within the city limits and account for approximately 70% of Wasco's occupational profile.

4.4.1.9 City of Shafter

Between 2000 and 2008, the number of workers in Shafter's labor force grew by 1,200, and unemployment increased from 14.9% to 16.9% (see Table 4-17). The 2009 annual average unemployment rate of 25.1% experienced in Shafter is one of the highest in the region. Agriculture and related occupations make up the largest occupational sector in Shafter. Between 2000 and 2008, the agricultural industry experienced substantial growth, more than doubling in

size, in large part due to the opening of the Bidart Brothers apple-packing facility and the expansion of Grimmway's citrus- and carrot-packaging facilities in Shafter (Sweeny 2010, personal communication). The occupational profile of Shafter is even more dominated by the agricultural sector than that of either the county or region.

4.4.1.10 City of Bakersfield

Bakersfield's economy has traditionally been more diversified than others in the region, with both the oil and gas industry and agriculture playing major roles. Between 2000 and 2008, the number of workers in Bakersfield's labor force grew by 29,100, while unemployment increased from 5.7% to 6.8%. The 2009 annual average unemployment rate of 10.1% experienced in Bakersfield is lower than the rate experienced in either the county (14.4%) or the region (14.9%). In 2000, unemployment rates for both the Central District and the Northeastern District were much higher, at 18.5% and 20.5%, respectively, than the 12.4% unemployment rate experienced in the Northwestern region (see Table 4-17) (U.S. Census Bureau 2000i). Public administration is the largest occupational sector in Bakersfield. The occupational profile of Bakersfield includes a much smaller percentage of the workforce participating in agricultural-related activities, while other occupations that represented a small percentage of the county and regional profile are larger here.

4.4.2 Fiscal Conditions

State and local governments have been hit hard by recent declines in tax revenues. Property taxes are being reset to much lower levels in the current environment of surplus inventory and home foreclosures, and even homes that have not been resold are subject to temporary property tax reductions linked to Proposition 13. In addition, during the recession of 2008-2009, local governments have all experienced substantial reductions in revenues from both property and sales taxes. As a result, most local governments in the region are involved in reducing staff, cutting services, and furloughing employees. Table 4-18 presents fiscal characteristics for the counties and cities for fiscal year 2008–2009.

Table 4-18
County and City Fiscal Conditions for Fiscal Year 2008–2009

Location	Annual Budget	Property Tax as a % of Budget	Sales Tax as a % of Budget
Fresno County	**$1,501,239,097**	**6.45**	**9.49**
City of Fresno	$726,713,800	10.6	9.9
Community of Laton	N/A	N/A	N/A
Kings County	**$182,447,882**	**22.4**	**1.0**
City of Hanford	$55,735,830	19.5	10.7
Community of Grangeville	N/A	N/A	N/A
Community of Armona	N/A	N/A	N/A
City of Corcoran [a]	$14,870,654	8.0	1.5
Tulare County	**$734,248,355**	**14.6**	**0.8**

Table 4-18
County and City Fiscal Conditions for Fiscal Year 2008–2009

Location	Annual Budget	Property Tax as a % of Budget	Sales Tax as a % of Budget
Kern County	**$1,645,347,432**	**14.2**	**2.6**
City of Wasco	$24,840,132	2.8	4.6
City of Shafter	$42,000,000	1.4	10.5
City of Bakersfield	$181,174,000	34.4	36.5

Sources: Fresno County 2008; City of Fresno 2009; County of Kings 2009; City of Hanford 2010; City of Corcoran 2009a; Tulare County 2009b; Kern County 2009; City of Wasco 2008a; City of Bakersfield 2009.

[a] City of Corcoran data presented for fiscal year 2007–2008, because more recent data are not available.

4.5 Public Services and Facilities

4.5.1 Region

Of primary concern for the socioeconomics, communities, and environmental justice analysis are the locations of public buildings; public safety, fire, and police stations; medical services; schools; places of worship; and parks. In addition to the amenities that give the various communities in the region their unique sense of place, some amenities may be viewed as more regional in nature. For example, the region has two California State University campuses (one in each of the two largest cities: Fresno and Bakersfield) that draw students from throughout the region and beyond. The Southern San Joaquin Valley also abounds in major recreational resources, including Inyo National Forest, Giant Sequoia National Monument, Kings Canyon National Park, Sequoia National Park, Isabella Lake, Colonel Allensworth State Historic Park, as well as numerous other state-run historical parks, recreation areas, and game preserves. These resources are enjoyed by residents and visitors alike.

As the fifth-largest city in California and one of the main cultural, economic, and service hubs of the Central Valley, Fresno offers numerous local attractions and entertainment opportunities. It has an active arts community, including a local philharmonic orchestra, an opera, and several theater groups. The city hosts an annual film festival and has several museums, including the African American Museum of the San Joaquin Valley, Fresno Art Museum, Artes Americas, and Armenian Museum. Fresno is also home to a California State University campus, serves as a venue for major concerts and sports events, and maintains more than 50 city parks and three municipal golf courses (City of Fresno parks and Recreation 2010).

Bakersfield is the largest city in Kern County and offers a wide array of amenities, compared with the smaller communities in the region. The city has a convention center, a symphony orchestra, a planetarium, an art museum, a natural history museum, the California Living Museum (Bakersfield Zoo), and the Kern County Museum, a historical museum with many Native American and frontier life artifacts. The city also has its own professional baseball, football, basketball, and hockey teams, as well as three public golf courses and numerous private country clubs. It is home to the 40-acre Kern County Soccer Park, with 24 playing fields, and it maintains 53 local parks offering a variety of recreational resources, as well as miles of biking and hiking trails, including a portion of the Kern River Parkway. Other local points of interest include Old Town, which has a concentration of Basque restaurants, the Buck Owens Crystal Palace, the Majestic Fox Theater, and other theater and music venues.

4.5.2 City of Fresno

The city has many more public buildings and venues than most other cities in the Central Valley, and both the State of California and the federal government have multiple offices there. A majority of these state and federal office buildings are located in the study area, along with many of the city and county office buildings. Other buildings in the study area include libraries, museums, and community centers. A majority of these buildings (16 of the 18 total) are in the Central neighborhood, the Edison neighborhood has two facilities, and the Roosevelt neighborhood has none.

There are also public safety facilities, including police, fire, and medical buildings, within the study area in the city of Fresno. Five of the 95 schools in the city are located in the study area, three of the five schools are in the Edison District, and two are in the Central District. A large number of religious facilities are also located in the study area. The Central District contains 14 of the 26 facilities identified, with 11 in the Edison District and 1 in the Roosevelt District. Three parks and recreation facilities maintained by the city are also found in the study area in the Central District.

4.5.3 Community of Laton

Laton is a small rural town in the south-central portion of Fresno County, just north of the Kings River, which separates Fresno and Kings counties. The local economy is based on agriculture, and the community is surrounded by dairy farms, cornfields, and fruit and nut orchards. The population has held steady, growing about 1% per year over the past decade. The community had a major growth spurt in 1986, when 96 new homes were built. Future growth potential is limited by Murphy Slough to the north and east and the Kings River to the south and east. Laton has no formal government structure and no local elected officials, except for five directors who are elected to serve on the board of the Laton Community Services District, which supplies local street lighting, fire protection, water, wastewater, and solid waste services (Fresno Local Agency Formation Commission 2007). Laton has a range of services that is typical of a small town in the San Joaquin Valley: a barber shop, a beauty parlor, auto repair shops, a hardware store, several small markets, and several churches. However, no gas station or bank is available in the town, so residents must travel to other nearby communities such as Hanford for some services. The local Lions Club sponsors an annual rodeo (Laton Lions Club n.d.).

The Community of Laton has two public buildings that serve the needs of the community. In the context of this document, public buildings refer to not just government buildings but also community centers and other facilities open to the public. One public building is a Fresno County public library, and the other building is the Laton Lions Club. In addition to the public library and the Lions Club, Laton also has a community-based volunteer fire station organization, which has 12 on-call firefighters. The Fresno County Sheriff's Office provides police protection to the community of Laton, though the sheriff's office does not have a station in the community; the nearest Fresno County Sheriff's Office station is in the city of Selma, approximately 13 miles to the northeast. Fresno County has 907 sworn officers on staff (Fresno County Sheriff 2009). Laton has no medical services, so residents must go to other nearby cities to receive care. The nearest hospital is the Central Valley General Hospital, which is 9 miles south in the city of Hanford.

In addition to public services, Laton has three public schools within the community that are part of the Laton Joint Unified School District. The total enrollment in the Laton Joint Unified School District is approximately 746 students. Laton has one existing community park that covers approximately 22 acres; the park is used as the two schools' sports complex. Laton, has three places of worship within the community: the First Church of God, at 6258 Murphy Avenue; Our Lady of Fatima Church, at 20855 South Fatima Avenue; and Laton Pentecostal Church, at 6066 East Riverdale Avenue.

4.5.4 City of Fresno to City of Hanford

The seven small communities that are interspersed along this section of the alignment are Malaga, Oleander, Bowles, Monmouth, Conejo, Hamblin, and Ponderosa.

Malaga community facilities located in the study area include a school, a park, and a water district office that serves as the administrative center of the community. The two key community facilities identified in the study area in the community of Bowles are the Pacific Union School and the Manning Gardens Convalescent Home. Monmouth community facilities identified in the study area are the Monroe Elementary School and the Monmouth Community Presbyterian Church. A key community facility identified on the boundary of the study area in Ponderosa is the Kit Carson Elementary School. No key community facilities were identified in Oleander, Conejo, or Hamblin.

4.5.5 Community of Grangeville

Grangeville is a small rural town in Kings County that is about 1.9 miles north of the community of Armona and approximately 4.5 miles east of Downtown Hanford. The local economy is based solely on agriculture, and the community is surrounded by fruit and nut orchards. Established as early as 1850 as the town of Eureka, the town's name was changed to Grangeville when a U.S. Post Office was established there on August 27, 1867 (Hoover and Kyle 2002, 141). The post office was active until the 1920s, and currently Grangeville falls under Kings County public services and the city of Hanford ZIP code.

Grangeville has no formal government structure and no local elected officials. Services in town are limited; the Grangeville Market serves as a grocery store and gas station for local residents and travelers and other nearby communities. Services besides what the market can provide are probably available in the city of Hanford. Public services in Grangeville include a public school, and a church, the First Baptist Church, on 9125 13½ Avenue.

4.5.6 Community of Armona

Armona is a small rural town in the south-central portion of Kings County, west of the city of Hanford on the State Route (SR) 198 corridor. With a community motto, "Small but proud," the local economy is based on agriculture, and the community is surrounded by fruit and nut orchards. Established as early as 1875 and built as a Southern Pacific railroad town in the late 1890s, Armona is a bedroom community to the cities of Hanford, Lemoore, Visalia, and Fresno. Warehouses for the fruit-packing industry are visible in Armona along this rail corridor.

The community of Armona has two public buildings that serve the needs of the community. In the context of this report, public buildings refer to not just government buildings but also community centers and other facilities open to the public. Besides the citizens of Armona, the Armona Community Library serves the community of Grangeville and other rural communities in the area as an extension library to the greater Kings County library system. The Armona Community Library shares operational responsibilities for the library with the Armona Elementary School District. In Armona, community services such as public gas, electricity, water, and sewage are under the authority of the Armona Community Services District, founded in 1928. The district has two office locations in Armona: 10740 Oak Avenue and 10956 14th Avenue. The Kings County Sheriff's Office, at 1444 W. Lacey Boulevard in Hanford, provides police protection to the community of Armona. Other nearby police resources include the Kern County Sheriff's Department and the police departments of the Cities of Hanford and Kingsburg. Armona has one volunteer fire station with approximately 14 on-call volunteer firefighters. Other nearby firefighting resources include the fire departments of Hanford, Corcoran, Stratford, Hardwick, and Lemoore. Armona has no medical services, so residents must go to other nearby cities to receive

care. The nearest hospital is the Central Valley General Hospital, which is 9 miles south of Armona in the city of Hanford.

In addition to public services, Armona has three public schools, with a total enrollment of approximately 700 students. The Armona Union Elementary School District manages all of these schools. Armona has eight places of worship in the community. Also, Armona has one existing community park; the park covers about 5 acres and has two baseball diamonds. Recreational areas are addressed as a need in the Armona Community Plan (Kings County Association of Governments 2009, 17–21). Additional detailed park information can be found in Section 3.15, Parks, Recreation, and Open Space, of this EIR/EIS. The Grangeville Cemetery established circa 1861 is the oldest cemetery in the Mussel Slough area and came under the jurisdiction of the Lemoore Cemetery District in 1934. The cemetery has many visitors because of the older, historic gravesites with their interesting monument-style headstones. The cemetery includes colorful propagated rosebushes, which have been planted all around the grounds. A gated niche garden, at the south entrance, is a modern addition to the cemetery.

4.5.7 City of Hanford

Of the numerous public buildings that serve the needs of Hanford, two of these facilities are located in the study area, the City of Hanford offices and the Hanford Carnegie Library. Neither of the two law enforcement facilities in Hanford is located in the study area. The six medical facilities in the community of Hanford are certified by the Office of Statewide Health Planning and Development (OSHPD), and four are located in the study area.[14] There are 21 schools in the community of Hanford, and they have a total of approximately 9,442 students between the Hanford Elementary and Hanford Joint Union High School districts (California Department of Education 2010). Of all the schools, 14 are public institutions and the remaining six schools are private. Eight of the schools are located in the study area.

Hanford has many places of worship in the city. The majority of these facilities belong to Christian denominations, with no Muslim or Jewish facilities identified. There are two temples in the community, which are Buddhist and Taoist. None of these religious facilities are located in the study area.

The city operates and maintains 21 outdoor facilities/parks, including neighborhood parks, larger community parks, and ball fields totaling approximately 172 acres. In addition, the city has agreements with the local school district and the College of the Sequoias to jointly use other recreation facilities (Norris Design 2009). No Hanford parks are located in the study area.

4.5.8 City of Hanford to City of Corcoran

The study area between the cities of Hanford and Corcoran is entirely in Kings County. El Ranchero is the one community identified in this segment of the project, with no key community facilities identified.

4.5.9 City of Corcoran

Corcoran has three public buildings that serve the needs of the community. One building houses the administrative offices of the city and serves as city hall. There is also a library operated by Kings County and a veterans' center. All three facilities are in the project study area. Public safety facilities include the two police stations in Corcoran, both of which are located in the study area. There is one fire station in the city and two medical facilities. The fire station and one of the two

[14] The Office of Statewide Planning and Development is the governing agency for hospital construction in California.

medical facilities, the Corcoran District Hospital, are located within the study area. No other OSHPD-registered facilities are located in Corcoran.

Corcoran has six public schools and one private school. The city has two high schools; the remaining schools are elementary, middle, or private schools. Three of these schools are in the study area. Corcoran also has many places of worship in the city, all of which appear to belong to Christian denominations, with no Muslim, Jewish, or other types of religious institutions identified. Ten of these religious facilities are located in the study area.

There are approximately 48 acres of existing park land in Corcoran and approximately 44 acres of additional play fields, open space, and indoor recreational facilities available for public use. Five existing park facilities lie in the study area.

4.5.10 City of Corcoran to City of Wasco

The eight communities identified in the study area between the cities of Corcoran and Wasco are split between two counties. Blanco, Angiola, Stoil, and Allensworth are located in Tulare County; and Kernell, Pond, Elmo, and Neufeld are located in Kern County. Only the community of Allensworth had community facilities including a school, church, and a community center.

4.5.11 City of Wasco

Wasco has three public buildings in the study area: (1) the city administrative offices/city hall; (2) a library operated by Kern County; and (3) a local Historical Society Museum. Public safety facilities include a single County Sheriff's station and one fire station, both located in the study area. Wasco's one medical facility is an independent medical center and is located within the study area. No other OSHPD-registered facilities are located in Wasco.

There are nine public and private schools in the community, five of which are in the study area. Wasco has many places of worship in the city, and all seem to belong to Christian denominations. Of these facilities, 10 are located in the study area. The city currently has four parks and is planning to construct two additional recreational facilities.

4.5.12 City of Wasco to City of Shafter

The three communities identified in the study area between the cities of Wasco and Shafter are Palmo, North Shafter Labor Camp, and Myricks Corner. All are in Kern County. Although no key community facilities were identified in either Palmo or Myricks Corner, one community building was identified in the study area in North Shafter Labor Camp.

4.5.13 City of Shafter

Shafter has five public buildings that serve the needs of the community. One building houses the administrative offices of the city and serves as city hall. Other buildings include the local library, which is operated by the county, and three museums. City hall, as well as two of the museums, is in the study area. The Shafter police and fire stations, as well as the two medical facilities in the city, are all located in the study area.

There are five public schools in Shafter, with a total enrollment of approximately 3,124 students. All five of these local schools are in the study area. There are also 14 churches in the study area, all of which belong to Christian denominations. Shafter has three existing neighborhood parks of about 5 acres in size, a larger community park of 15 acres that is still under construction, and a grassed town square.

4.5.14 City of Shafter to City of Bakersfield

The one identified community in the study area between the cities of Shafter and Bakersfield is Crome. A Pentecostal Church of God is in the study area, but no other key community facilities were identified. Outside of the community of Crome, the Shafter City Cemetery was identified.

4.5.15 City of Bakersfield

Facilities of concern include the 10 public buildings in Bakersfield that are located in the study area. These include libraries, museums, community centers, and government offices. Seven of these facilities are in the Central District and three are in the Northeastern District. Public safety facilities include four police stations, one of which is in the study area. The County Sheriff has one station, a jail, and a crime lab in the city. Two federal law enforcement agencies have offices in the study area as well—the FBI and the Federal Bureau of Alcohol, Tobacco and Firearms. All these facilities are located in the Central District, except for the FBI building, which is in the Northwestern District. Bakersfield's 26 fire stations are spread throughout the city: three are in the study area (two in the Central District and one in the Northeast District).

Bakersfield has many medical facilities. According to OSHPD, there are 60 licensed medical facilities in the city (10 hospitals, 12 primary care, 11 specialty care, 17 hospices, and 10 long-term care). Of these facilities, 18 are in the study area: 9 in the Central District, 3 in the Northeast District, and 6 in the Northwest District.

The Bakersfield City School District and the Kern High School District are the largest school districts in the Bakersfield area, with 41 elementary and middle schools and 25 high schools, serving 27,263 and 37,783 students, respectively. Several other school districts serve the area, including Rosedale Unified (5,325 students), Fruitvale Elementary (3,237 students), Fairfax Elementary (2,122 students) and Edison Elementary (1,112 students) (California Department of Education 2010). Thirty-one schools are in the study area: 10 in the Northwestern District, 7 in the Central District, and 14 in the Northeast District.

Bakersfield High School is one of the seven schools located in the study area in the Central District. In addition to the critical nature of the educational services it provides to the greater Bakersfield community and the adjacent low-income and minority neighborhood, the high school holds historical importance for the many alumni who continue to support the school and its events. The campus is in a built-out urban area. Bethel Christian School is also in the study area. The school, which serves the greater Bakersfield area, has approximately 50 students in grades K through 12, is coed, and is Baptist in orientation.

Numerous religious facilities and a wide range of faiths are represented in the city. A majority of the religious facilities in the study area are in the Northeastern District (32 of 61 facilities), with fewer in the Central (19 of 61) and Northwest (10 of 61) districts. Six parks operated by the city, as well as existing bicycle facilities, are located in the study area (City of Bakersfield 2007). The existing parks in the districts are neighborhood parks in close proximity to schools, serving the Beardsley, Fruitvale, Norris, Rosedale, Standard School, and Rio Bravo-Greeley School Districts (North of the River Recreation and Park District n.d.).

4.6 Non-Motorized Circulation and Access

Circulation and access in a community is important to community character and quality of life. Non-motorized circulation issues associated with pedestrian and bicycle transportation are a key concern in the analysis and the focus of this discussion. Non-motorized (pedestrian and bicycle) facilities are listed in Table 4-19 for the cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and

Bakersfield. No critical pedestrian or bicycle paths were identified in the study area in Tulare County, or in the rural areas between the cities listed.[15] The data show that the greatest numbers of non-motorized facilities within the study area are located in the largest cities in the region, Fresno and Bakersfield.

Table 4-19
Non-Motorized Facilities in the Study Area

Cities in Study Area	Number of Pedestrian Paths and/or Bikeways
City of Fresno	14
City of Hanford	0
City of Corcoran	2
City of Wasco	2
City of Shafter	3
City of Bakersfield	24
Note: Number includes both existing and planned facilities.	

Planning documents for all six cities recognize the importance of the availability and accessibility of alternative modes of transportation, and plan for additional pedestrian and bicycle friendly features. A full listing of bikeways, both existing and proposed, is provided in the community profiles in Appendix B of this technical report. Issues associated with main roads, public transportation, and parking can also affect communities; more detail on these aspects of circulation and access can be found in the Transportation Technical Report.

[15] Critical pedestrian or bicycle paths are those where disruption could lead to a loss of community access, cohesion or character.

Chapter 5
Impact Analysis

5.0 Impact Analysis

This chapter provides analysis of the socioeconomic and EJ impacts of the Bakersfield to Fresno Section of the HST project. The analysis includes the following:

- Impacts on the character and cohesion of communities and neighborhoods.
- Impacts from residential displacements and from the acquisition of commercial, industrial, and agricultural parcels.
- Impacts on EJ and sensitive populations (elderly, disabled, linguistically isolated, and female head of household).
- Impacts on school districts.
- Impacts on agricultural access.
- Impacts on the fiscal accounts of county and city governments.

Impacts are presented by topic for communities and neighborhoods, properties, environmental justice and economic impacts and effects. These sections contain analysis of both short-term (construction) and long-term (operation) impacts.

5.1 Communities and Neighborhoods

Analysis of impacts to communities and neighborhoods includes an examination of disruption or division of existing communities and the potential need for new or altered government and public facilities from short- and long-term project job creation.

5.1.1 Disruption or Division of Existing Communities

This section examines the disruption and division of existing communities during both construction and operation of the project.

5.1.1.1 Construction impacts

Project construction would occur from the beginning of the first phase of construction through operational testing of the HST System. It is expected that the heavy construction activities such as grading, excavating, and laying the HST railbed and trackway would be accomplished within a 5-year period. Construction would also require property acquisition and displacement of homes and businesses along the selected alignment. Because these impacts would involve permanent changes to communities (as opposed to temporary construction impacts), they are addressed below under project operation.

The construction of any of the HST alternatives would result in temporary impacts to communities, such as additional demand for services due to purchases of materials and equipment necessary for construction and construction workers; temporary use of properties and changes in access for project construction; and temporary impacts on minority and low-income populations such as dust and noise, which would also affect the general population. The effects for each of the alternatives are discussed below.

No Project Alternative

The No Project Alternative would not result in the community benefits associated with the HST project. These benefits include reducing traffic congestion on highways and major roadways in the region and improving mobility and access to jobs, educational opportunities, and recreational resources within the region. Currently planned projects primarily include transportation improvements and residential and industrial development projects. It is uncertain whether these projects would create new barriers that would disrupt community interactions or divide

established communities, but they would result in a net increase in housing units and industrial space in the region. If the projects are carried out, then these projects and the associated development are assumed to be consistent with adopted general plans and policies, which aim to strengthen socioeconomic conditions in existing communities and improve neighborhood amenities, potentially benefiting community cohesion. The many development projects planned under the No Project Alternative would include typical design and construction practices to avoid or minimize potential impacts to the extent possible.

It is not known whether community facilities would be affected under the No Project Alternative, but any potential impacts are assumed to be mitigated to the extent possible. Emergency response times and access would likely be enhanced from transportation improvements. It is not known if direct or indirect adverse impacts on Section 4(f) lands (that is, public school facilities open for use for public recreation) would occur. Again, it is assumed that the projects planned under the No Project Alternative would be subject to a project-level environmental review and include feasible mitigation measures to avoid or substantially reduce potential impacts.

Construction Impacts Common to All Alternative Alignments, Station Alternatives, and HMF Site Alternatives

Heavy construction (e.g., grading, excavation, constructing the HST railbed, laying the trackway) would be accomplished over a 5-year period. The degree of construction intensity would vary among the alignment alternatives. Construction duration would likely be longer in the station areas in Fresno and Bakersfield because of the infrastructure requirements. Activities related to building the HST project would include receiving and moving equipment and materials, clearing and exposing soils, introducing lights for nighttime work, storing construction materials, and generally visually changing the project landscape. As much as possible, construction would occur within the right-of-way acquired for the project.

Construction impacts would include temporary increases in noise and dust, visual changes, and traffic congestion related to road closures or detours. Potential noise impacts during construction on residential properties would be greater during any required nighttime construction; overall construction noise impacts on both residential and commercial properties are expected to be small. Potential construction vibration impacts are evaluated in the Noise and Vibration Technical Report, and will be further evaluated during final design.

Adverse construction impacts related to local roadway modifications and construction may temporarily disrupt community circulation patterns. While access to some neighborhoods would be disrupted and detoured for short periods during construction, access would continue to be available to neighborhoods. Any roadways that would need to be moved due to the HST project right-of-way requirements would be realigned before the closure of the existing roadway to minimize impacts. Construction would also require an increase in truck trips that could increase congestion and affect pedestrians, bicyclists, and transit through detours, delays, or increased safety risks. See the Transportation Technical Report for additional details.

Construction would require a large number of employees, but is not expected to have any negative effects related to temporary population increases and the need for increased housing and services. Unemployment in the region remains relatively high, so project-related construction jobs are expected to be filled by current residents in the region who have the needed skills. This would have a positive impact on the economies of the communities within the region. Because many of the jobs would be filled by area residents, no impacts related to a need for additional housing or services would be expected.

Emergency vehicle access for police and fire protection services would be maintained at all times. Law enforcement, fire, and emergency services could experience increased response times due

to construction-related road closures, detours, and increased traffic congestion in some locations. Delays could be longer in rural areas where temporary road closures could result in several miles of out-of-direction travel to cross the HST alignment.

Access to some community facilities could be modified temporarily during construction, potentially inconveniencing patrons, but access would not be eliminated (except in cases where facilities would be relocated). Construction impacts would include temporary increases in noise and dust, traffic congestion related to temporary road closures or detours, and visual changes. (See Section 3.2 Transportation, Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; and Section 3.16, Aesthetics and Visual Resources, of this EIR/EIS for a fuller discussion of these construction impacts.) Construction noise impacts on residents would be greater during nighttime because of the extra sensitivity of people when they are trying to sleep. Construction noise impacts on both residential and commercial properties would vary at different locations along the alignments, depending on their proximity to sensitive receptors. Construction activities could be particularly disruptive to nearby community facilities and institutions (such as schools, clinics, and government offices) because construction would occur primarily during their normal hours of operation, when noise, traffic and other conflicts would be most problematic. Potential conflicts with special events such as fairs or major conventions would be addressed through a special mitigation measure described in the "Construction during Special Events" discussion in Section 3.2, Transportation, of this EIR/EIS. This measure provides a mechanism to prevent roadway construction activities from reducing roadway capacity during major athletic events or other special events that attract a substantial number of visitors. Mechanisms include the presence of police officers directing traffic, special-event parking, use of within-the-curb parking, shoulder lanes for through-traffic, traffic cones, and so on. Through such mechanisms, roadway capacity would be maintained.

In general, construction would occur primarily outside (but in some areas within or adjacent to) established neighborhoods in areas associated with agricultural, commercial, or industrial uses.[16] Where the alternatives lie adjacent to existing transportation corridors, construction would not bisect or isolate established communities or change the existing community character. Impacts to pedestrian and vehicular circulation are not considered a barrier to interaction because the HST project is primarily adjacent to the existing transportation corridors. Although project construction would impact individuals or individual property owners, these impacts would be temporary and would not substantially affect community cohesion.

Potential Mitigations for Construction Impacts

Given the potential disruption to communities during construction, the following mitigation measures are suggested.

Develop and implement a construction management plan. The Authority will develop and implement a construction management plan to address communications, community impacts, visual protection, air quality, safety controls, noise controls, and traffic controls to minimize impacts on low-income households and minority populations and to maintain access to local businesses, residences, and emergency services. This plan will include maintaining access to local businesses throughout construction, and the use of signs to instruct customers on access to businesses during construction. In addition, the plan will include efforts to coordinate with local transit providers to minimize impacts on local and regional bus routes in affected communities.

Consider provision of hotel and transit vouchers for residents affected by nighttime construction or other construction activities. The Authority will provide hotel and transit

[16] Note: Impacts associated with displacement and relocation are addressed in the Section 5.2, Property Displacements and Relocations.

vouchers to families during periods of nighttime construction that produce glare or loud noise, so they may temporarily relocate to avoid these impacts. This measure would accrue to a greater degree within communities of concern where households may not have the means to temporarily relocate if desired.

5.1.1.2 OPERATION impacts

This section addresses potential impacts to existing communities and neighborhoods during project operation by considering three key issues: (1) the potential for new project facilities to disrupt or divide existing communities (or to bring about changes in community character that could alter social interactions or affect community cohesion); (2) the potential for the project to displace key community facilities or services; and (3) the potential changes in non-motorized circulation and access that could affect community cohesion.[17] These key issues are addressed below by project alternative. After the discussion of these key issues, potential mitigation measures are described.

Disruption or Division of Existing Communities or Neighborhoods

No Project Alternative

The No Project alternative would not result in the operation of a new linear train facility that could potentially disrupt or divide adjacent communities, but would involve other transportation improvement projects (such as road widening or construction of new roadways) that may be implemented in the future to meet growing regional transportation needs. These projects could result in disruption to existing communities, but the impacts associated with such projects are unknown at this time and would be addressed through separate environmental analyses conducted in the future.

Operation Impacts Common to All Alternative Alignments

The HST System would bring social benefits to the region by improving access to jobs and community amenities, reducing travel times, reducing traffic congestion, and providing new employment opportunities through project construction and operation. Although employment effects would be regional, the other benefits would likely occur by and large in the neighborhoods where the new HST stations would be constructed. The project would likely stimulate redevelopment efforts in these locations, which would likely result in improved neighborhood character and vitality, potentially strengthening community cohesion. The people who live or work in the general vicinity of the proposed station locations would be likely to benefit the most from the improved access provided by the new HST facilities; those who live along the portions of the alignment without station access would not enjoy the same level of mobility and access benefits. The project could enhance social conditions on a regional scale by facilitating new access to employment and educational opportunities through reduced commuting times and by providing another means for people to visit friends and relatives living in other parts of the San Joaquin Valley.

Operation of the Fresno to Bakersfield Section of the HST project could potentially divide adjacent communities by physically removing homes, businesses, and important community facilities (see Section 5.2 [Property Displacements and Relocations] for a description of the number and types of facilities that would be affected by each project alternative). Operation of

[17] Community cohesion refers to residents' sense of belonging to their neighborhood, their level of commitment to their community, or "a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time." This disruption could include interference with established patterns of interactions among community residents, isolation of one part of a community from another, or disruption of residents' access to community facilities and services.

the HST project could disrupt established patterns of interactions among community residents, isolate one part of a community from another, or disrupt residents' access to community facilities and services. Also, other environmental impacts on communities or neighborhoods—such as substantial increases in noise or traffic—could have adverse consequences on community members' interactions in the project vicinity. Similarly, substantial changes in visual quality or aesthetics could result in a perceived change to community character or the quality of life experienced in affected neighborhoods. See Sections 3.2, Transportation; 3.4, Noise and Vibration; and 3.16, Aesthetics and Visual Resources, for a full discussion of such impacts in the urban and rural communities along the alternative alignments.

Because "community" implies a certain concentration of homes, typically with associated businesses and services, the focus of the community impact analysis is on urban neighborhoods and rural residential developments. Because the proposed project is in the San Joaquin Valley, the richest agricultural area in the nation, an attempt has been made to also consider project impacts on the broader agricultural community that exists throughout much of the region. This consideration seems appropriate given the NEPA directive to examine potential impacts with sensitivity to their local context.

The following analysis describes the community impacts that would occur under each HST alternative, primarily through the permanent acquisition of property required for the project.

Operation Impacts Specific to the Alternative Alignments

BNSF Alternative

Most of the BNSF Alternative follows existing and long-established railroad corridors that connect Fresno and Bakersfield as well as the smaller communities between these two major cities. The alignment would pass through the cities of Fresno, Corcoran, Wasco, Shafter, and Bakersfield, but would bypass the city of Hanford and the community of Allensworth. All of the affected communities have grown historically on either side of the existing heavy rail corridor. Therefore, for the most part, the project would not introduce a new feature that would divide these communities. Rather, it would have minor impacts on the edges of the neighborhoods that have developed in the vicinity of the existing rail corridor over the past decades, displacing a relatively small number of homes, businesses, or community amenities that currently occupy land near the railroad tracks. (The exception to this general finding occurs in two areas in Bakersfield, the Northwest District and the Northeast District, where the proposed project alignment would deviate from the existing rail corridor and bisect two established residential communities, as described below).

Besides the incorporated communities discussed above, a number of smaller, unincorporated communities and clusters of rural residential development lie along the proposed BNSF Alternative. Where the alignment follows an existing transportation corridor, it would not divide an existing community, because the project would not introduce a new barrier. However, the project could affect social relationships in small communities by displacing homes and businesses. It could also affect perceptions of quality of life by introducing an incongruous new feature into the community with associated noise and visual impacts. In areas where the project deviates from existing rail corridors, impacts on these very small communities could be substantial. Table 5-1 summarizes the potential impacts of the BNSF Alternative on unincorporated communities in the study area. Findings for these small and very small unincorporated communities are discussed below under the appropriate project alternative separately from the potential impacts on neighborhoods in the two major cities (Fresno and Bakersfield) and the four smaller cities (Hanford, Corcoran, Wasco, and Shafter).

Table 5-1
Potential HST Impacts on Unincorporated Communities in the Project Vicinity: BNSF Alternative

Place	Location	County	Description	Potential HST Impacts
Malaga	2 miles south of Fresno	Fresno	About 1,500 residents surrounded by industrial park and warehouses	ROW and Fresno Works–Fresno HMF site are about ¾ mile to the west of the community; no residential or community facility displacements. HST guideway would be elevated to cross Golden State Blvd and SR 99.
Oleander	5 miles south of Fresno	Fresno	About 20 homes and surrounding farmsteads; Adam's Market & Liquor store	ROW would pass at-grade about ¼ mile east of this community and Fresno Works–Fresno HMF site about 0.1 mile away. Gas line relocation and roadway work would temporarily inconvenience homes and businesses along E. Adams Avenue (including the community's only market), but no permanent displacements.
Bowles	11 miles south of downtown Fresno	Fresno	CDP with population of 182 in 2000; Manning Gardens Convalescent Hospital, Marian Homes, and Pacific Union School	HST would pass at-grade immediately east of the community (about 300 feet from closest residences, about 500 feet from the nursing homes, and about 800 feet from the school); road realignments at north and south ends of town and freight rail line relocation along ROW.
Monmouth	11 miles south of Fresno; 7.25 miles west of Selma	Fresno	Unincorporated community west of RR tracks; about 35 homes plus industrial uses; has a church, elementary school, and large grape processing facility	ROW would pass at-grade along western border of town, through agricultural area across the freight tracks, but within 250 feet of residences and 500 feet of church. Realignment of E. Nebraska Avenue would displace one home and disrupt one business.
Conejo	19 miles south of Fresno; 7.25 miles southwest of Selma	Fresno	Older unincorporated community with about 20 homes east of RR tracks; feed store and dairy	No displacements, but ROW passes within 200 feet of many homes and would be elevated 45 feet to cross existing BNSF RR; substantial increase in rail-related noise and visual impacts.
Hamblin	2 miles east of Hanford	Kings	As Hanford has grown eastward, this small community has become like a suburb of the city	ROW would pass at-grade about 1 mile east of Hamblin, but construction staging area for potential Kings/Tulare Regional Station would lie about ½ mile to the east of Hamblin.
Ponderosa Road	3 miles east of Hanford	Kings	Rural residential development with 25 homes, close to Kit Carson School but no other services	About half of all homes would be displaced by ROW or from removal of access; other homes would be very close to ROW. Large construction staging area would be sited just west of community and permanent station built, bringing traffic, noise, and visual impacts to a formerly quiet rural residential area.

Table 5-1
Potential HST Impacts on Unincorporated Communities in the Project Vicinity: BNSF Alternative

Place	Location	County	Description	Potential HST Impacts
Allensworth	20 miles south of Corcoran	Tulare	EJ community in unincorporated area with about 120 households, a school, church, and community center	No displacements, but ROW would be as close as about 150 feet from some homes and within 2,000 feet of school.
Kernell	11 miles north of Wasco; 5 miles west of Delano	Kern	Tiny unincorporated community adjacent to RR; consists predominately of industrial uses, but also several homes	HST ROW would be at-grade on other side of existing RR tracks; residential properties would be buffered from HST by long industrial buildings.
Pond	8 miles north of Wasco; 4 miles southwest of Delano	Kern	Unincorporated community adjacent to RR and Central Valley Highway	ROW would be on other side of Central Valley Highway on agricultural land, but ROW would pass at-grade about 600 feet from some homes.
Palmo	2.5 miles south of Wasco	Kern	Has several single-family homes, the Shafter-Wasco Irrigation District office, shops, a youth counseling center, and almond-processing facilities at SR 43 and Kimberlina Road	ROW would pass this community at-grade on the east side; no residential displacements, but ROW would be approximately 500 feet from homes. ROW and rail relocation would displace several of the industrial buildings south of Kimberlina Road, including almond-processing facilities and the building that houses a youth counseling program.
North Shafter Labor Camp	2 miles north of Shafter	Kern	Merced Avenue at SR 43—about 45 duplex units and a community building	No property displacements or division, but ROW would pass at-grade within 300 feet of camp buildings.
Myrick's Corner	1.25 miles northwest of Shafter	Kern	About 75 homes at intersection of Fresno Avenue and SR 43	ROW on other side of highway, but track would be elevated (40 to 50 feet); no displacements or division, but ROW would pass within 200 feet of some homes.
North Shafter	1 mile northwest of Shafter	Kern	Similar to Myrick's Corner, but closer to suburban areas of Shafter	ROW on other side of highway, but track would be elevated (60 feet) no displacements or division, but ROW would pass within 250 feet of some homes.
Hight's Corner/ Crome	5 miles northwest of Bakersfield (at 7th Standard Road)	Kern	About 20 homes, a church, and an auto-wrecking business	Local road facilities, resulting in the displacement of one-third of the homes and the only church in this community. Realigned frontage road and HST tracks would lie within 100 feet of some of the remaining homes.

BNSF = BNSF Railway
CDP = Census Designated Place
EJ = environmental justice
HMF = heavy maintenance facility
HST = high-speed train
ROW = right-of-way
RR = railroad (tracks)
SR =State Route

Fresno County

The BNSF Alternative would extend through approximately 24 miles of Fresno County, from the Fresno Station area to the Kings County border. Within the city of Fresno, the BNSF Alternative would follow the western side of the existing UPRR right-of-way at-grade from Amador Street to East Jensen Avenue. The HST tracks would pass through predominantly industrial areas in portions of the Central, Edison, and Roosevelt districts in Fresno. The BNSF Alternative would displace a total of five houses in the Edison and Roosevelt districts and would displace 33 businesses (32 in the Edison District and 1 in the Roosevelt District), including a café, several automotive businesses, a commercial bakery, and a mix of light industrial and warehousing uses. The majority of the affected businesses are not neighborhood-serving; rather, they offer services citywide or regionally. The affected area has a high number of commercial vacancies, which offer opportunities for nearby relocation to avoid disruption to affected businesses.

The BNSF Alternative would affect the homeless population of Fresno living in clusters of tents in the vicinity of SR 41 and Golden State Boulevard near Downtown Fresno in the Roosevelt District (referred to locally as "Tent City") (Barfield 2010, personal communication; Prout 2010, personal communication).[18] Although the tents themselves are portable and could be moved to other nearby locations outside the project footprint, the BNSF Alternative would also displace a key facility, the Fresno Rescue Mission, which provides critical services to this population. The Fresno Rescue Mission provides meals and services, including overnight shelter accommodations for up to 250 persons and an onsite 18-month drug and alcohol recovery program that currently has approximately 110 persons enrolled full-time. This facility complements the services that the nearby Poverello House provides to the homeless population. The Fresno Rescue Mission owns and operates other related facilities (and some additional vacant land) in the immediate vicinity, including an emergency family shelter, a food warehouse, the Save the Children playground, and the former Craycroft Youth Center (closed in June 2010). The displacement of the Fresno Rescue Mission could be a serious community resource impact; however, staff indicated that it would be possible to rebuild Fresno Rescue Mission facilities on other land that it controls in the immediate vicinity.[19]

South of the city of Fresno, the BNSF Alternative would continue along the BNSF right-of-way and pass through mainly rural agricultural areas of Fresno County. This alternative would lie in the vicinity of five small unincorporated communities: Malaga, Oleander, Bowles, Monmouth, and Conejo. The alignment would pass about ¾ mile to the west of Malaga—far enough away that community impacts would be negligible, though the elevated HST guideway that would span Golden State Boulevard and SR 99 would be visible from the community. The alignment would then pass approximately ¼ mile east of the small community of Oleander, and the Fresno Works–Fresno HMF site would lie 0.1 mile northeast of this community. Gas line relocation and roadway work would inconvenience homes and businesses along E. Adams Avenue, including Oleander's only market, but it is likely that no permanent residential or business displacements would occur.

[18] Fresno's Homeless Coordinator estimates that approximately 100 people are living in the G and H Street encampments, and the Fresno Rescue Mission estimates that around 200 homeless persons are living on streets in the vicinity of the Mission, in addition to the several hundred people that seek overnight shelter at the Mission or participate in its 18-month residential program.

[19] According to the executive director of the Fresno Rescue Mission, if the BNSF Alternative were implemented, the Mission would rebuild its facility on land it owns in the immediate vicinity, which could present an opportunity to improve and consolidate some of its functions that are now scattered and meet ADA and other requirements that have come into existence since the original Rescue Mission was established.

The BNSF alignment would pass immediately east of the community of Bowles, within 300 feet of the closest residences, 500 feet from Manning Gardens Convalescent Hospital, and 800 feet from Pacific Union School, an elementary school and the only school facility in Bowles. The existing freight line running through the community would be relocated to the east side of the new HST tracks, so that freight rail trains would be further removed from the residential area of town. Roads at the north and south ends of the community (E. Springfield and E. Manning avenues) would be realigned to overpass the train tracks and maintain east-west connections in the community. Although HST construction and operation and associated noise and visual impacts would disrupt the community, no homes or businesses in Bowles would be displaced.

The BNSF alignment would pass at-grade along the western border of Monmouth, through agricultural land across the existing freight tracks. The alignment would pass within 250 feet of homes and within 500 feet of the community's only church. Realignment of E. Nebraska Avenue would displace one home and disrupt one local business.

The BNSF alignment would not cause any displacements in Conejo, but the ROW would pass within 200 feet of many homes and would be elevated 45 feet to cross the existing BNSF tracks, resulting in substantial noise and visual impacts in the community.

Kings County

The BNSF Alternative would travel approximately 28 miles through Kings County, traversing primarily rural agricultural areas. It would bypass the city of Hanford to the east, but would pass east of the unincorporated community of Hamblin, on the outskirts of Hanford, and through a rural residential development with 25 homes in the vicinity of East Lacey Boulevard and Ponderosa Road. The HST tracks in this area would be elevated approximately 40 feet for about 2.5 miles, from Fargo Avenue to Hanford-Armona Road, to span the San Joaquin Valley Railroad and SR 198. The elevated HST tracks would run 1 mile east of Hamblin. Although the HST tracks and the potential Kings/Tulare Regional Station would be visible from Hamblin, impacts on community character and cohesion in Hamblin would be minor, because of the distance between the community and the HST facilities. However, in the Ponderosa Road community, approximately half of the existing ranch homes would be displaced by the project and other homes would be close (less than 200 feet) to the new HST guideway, which would be elevated 40 feet above ground level. The potential Kings/Tulare Regional Station would be built on the elevated guideway in the immediate vicinity of the Ponderosa Road community, just north of the existing freight rail tracks. The project would affect community character, social interactions, and community cohesion by displacing half of the households and by exposing the remaining rural residential homes to increased traffic, noise, and visual impacts.

South of Hanford, the BNSF Alternative would curve west and then south through agricultural areas, rejoining the BNSF right-of-way (along the west side) just north of the city of Corcoran. The alignment would travel through the eastern edge of the city of Corcoran at-grade, along the western side of the existing BNSF right-of-way. The HST tracks and new road overcrossings would displace 50 homes, including a substantial portion of a mobile home / recreational-vehicle park near the downtown area. The HST tracks would also displace up to 16 businesses in Corcoran, including the Amtrak station building that houses the city's Chamber of Commerce offices, one church, a market, and portions of a mobile home/recreational-vehicle park. The HST tracks would run within approximately 200 feet of the city hall building. The displacements, along with the increased noise and visual impacts associated with the HST project, could affect social interactions, community cohesion, and the perceived quality of life in Corcoran.

Tulare County

The BNSF Alternative crosses approximately 22 miles of rural agricultural land in Tulare County, adjacent to the western side of the existing BNSF right-of-way. The only community in this segment of the alignment is the unincorporated community of Allensworth, which is situated immediately south of the Colonel Allensworth State Historic Park. This community has about 120 homes, a school, a church, and community center. The HST tracks would pass along the east side of the community at-grade. The alignment would not displace any homes, but would pass as close as approximately 150 feet from several homes and within 2,000 feet of the school. The project would not divide the community, but it would introduce new visual and noise elements into this rural setting.

Kern County

The BNSF Alternative in Kern County is approximately 40 miles long. It would pass through the cities of Wasco and Shafter on an elevated guideway that would follow the existing BNSF right-of-way—on the western side through Wasco, on the eastern side through Shafter, then switching to the western side again south of Shafter. In Wasco, the elevated structure would span approximately 3 miles, from Margola Street to Prospect Avenue; the structure would reach a height of 50 feet above the Paso Robles Highway. HST facilities would result in the displacement of two homes and 13 businesses in Wasco. Most of these businesses provide automotive or agricultural support services or storage. The project also would introduce new noise and visual elements along the existing transportation corridor. HST trains would pass within 400 feet of the city's administrative offices and about 600 feet from the downtown Wasco Plaza area.

The BNSF Alternative would also pass three very small, unincorporated communities along the existing railroad tracks in the vicinity of Wasco: Kernell (11 miles north of Wasco), Pond (8 miles north of Wasco), and Palmo (2.5 miles south of Wasco). The HST tracks would pass each of these communities at-grade and on the far side of the existing railroad and Central Valley Highway rights-of-way. In Kernell, homes would be buffered from noise and visual impacts to some extent by a series of long industrial buildings. In Pond, the new HST tracks would pass about 600 feet from several homes (and even closer to some isolated farmsteads in the vicinity). In Palmo, the HST tracks would be approximately 500 feet from existing homes and would displace several industrial buildings on the south side of Kimberlina Road in the vicinity (almond-processing facilities and a building that houses a youth counseling program that serves the cities of Shafter and Wasco).

Similarly, the BNSF Alternative would pass three unincorporated communities just north of the city of Shafter: the North Shafter Labor Camp (2 miles north of Shafter), Myrick's Corner (1.25 miles north of Shafter), and North Shafter (approximately 1 mile north of the city). The project would not require any property acquisition in these communities, but the new HST trains would pass close to existing homes (within 200 to 300 feet). The HST tracks would be at-grade as they pass the North Shafter Labor Camp, but would begin to elevate north of Madera Avenue, passing Myrick's Corner at an elevation of 40 to 50 feet above-grade and approximately 60 feet above-grade near the suburb of North Shafter, exposing these communities to new sources of noise and visual intrusion within several hundred feet of existing homes.

In the vicinity of Shafter, the elevated structure would span a distance of about 3.5 miles, descending to grade at Cherry Avenue. The HST facilities and related road and utility work would displace two homes and seven businesses in Shafter, including a hardware or general store and a gas station/minimart.

Between Shafter and Bakersfield, the BNSF Alternative would pass the small, unincorporated community of Crome, a cluster of about 25 to 30 homes located 5 miles northwest of Bakersfield

in the northwest quadrant of the intersection of 7th Standard Road and the Central Valley Highway. The HST project would relocate Santa Fe Way to the west through this area to accommodate the HST tracks. This activity would displace approximately one-third (8 to 10) of the homes in this community and the only non-residential use in the community—a church complex that houses both the 7th Standard Pentecostal Church of God and the India Pentecostal Assembly.

The BNSF Alternative would enter the northwestern portion of Bakersfield at-grade; from approximately Palm Avenue to the Bakersfield Station, this alternative would run on an elevated structure that would range from 50 to 80 feet above-grade. This alignment would pass through three districts in Bakersfield: Northwest, Central, and Northeast. In several areas, the alignment deviates from the existing transportation corridor to accommodate the turning-radius requirements of a high-speed train and to incorporate the Bakersfield Station. In these areas, the substantial acquisition of right-of-way and the redevelopment of properties for the BNSF Alternative would divide established communities—particularly the formerly unincorporated Greenacres area of the Northwest District near Rosedale and the Northeast District, which has large populations of African-American and Hispanic residents. Impacts to the three districts are summarized below.

Northwest Bakersfield. In the Northwest District of Bakersfield, the BNSF Alternative would depart from the BNSF right-of-way just south of Rosedale Highway and rejoin the rail right-of-way after crossing the Kern River. The alignment would cut through an existing suburban development in Bakersfield's Northwest District, displacing 146 homes and 19 non-residential properties, including a gas station/minimart, two health centers, and two churches (Chinmaya Mission, and Korean Presbyterian Church). This neighborhood of Bakersfield has a strong suburban residential character, with predominately single-family, ranch-style homes constructed before the 1990s. The rate of homeownership in this area (81%) is substantially higher than the citywide average, and there is considerable racial and socioeconomic homogeneity (in 2000, over 94% of the residents of this neighborhood were White). Although few community services or public facilities are present in this neighborhood, the relatively large yards surrounding the modest single-family homes display meticulously maintained landscaping, indicating a shared sense of community pride and commitment to place. Also, signs indicate the presence of neighborhood watch groups, and recent community-organizing activities have sought to raise awareness about the proposed HST project and its potential impacts on the neighborhood. These factors indicate a relatively high degree of community cohesion that the project could adversely affect. The proposed route would also eliminate access that rural residential homes along Palm Avenue and Torrey Drive have used to bring horse trailers and supplies to the rear portions of their ¾-acre to 1-acre parcels; however, this habitual access appears to be via the BNSF railroad maintenance road, which is not a public right-of-way or a private easement. This alignment would alter community social interactions and community cohesion, change the physical character of the community, and potentially create problems for rural residential property owners to continue to use their properties for certain activities (e.g., horse trailer ingress/egress).

Central Bakersfield. In the Central District, the BNSF Alternative would displace only one home and no churches, but it would displace an estimated 108 businesses—a mix of office and industrial uses, retail services, medical clinics, and the Industrial Arts Building on the Bakersfield High School campus. The school's historical importance, combined with the critical nature of the educational services it provides, makes the school an important community resource. Removal of the Industrial Arts Building would be an important physical change to the campus as a whole. Depending on where and how it is replaced, this physical change could result in a social impact (as those alumni and community members who are emotionally attached to the high school's history and role in the community perceive a substantial void in the long-intact campus).

Northeast Bakersfield. In the Northeast District of Bakersfield, 119 homes and 174 non-residential properties (including a mix of retail and industrial businesses and several churches) would be displaced by the BNSF Alternative. Christ First Ministries would be displaced, and a portion of the parking at Iglesia de Dios would be taken. The BNSF Alternative would also pass very close to the building that houses the Bethany United Methodist Church and Centro Cristiano Agape. Existing parking lots, including parking at the Bakersfield Convention Center overflow lot, would be directly affected by the project, but this impact would be mitigated by providing replacement parking through the reuse of vacant land beneath the HST structure. The BNSF Alternative would roughly parallel East Truxtun Avenue and would result in the displacement of a swath of older homes and businesses several hundred feet south of this roadway.20 This alternative would bisect the building that houses the Mercado Latino Tianguis (Mercado) at 2105 Edison Highway. Because of its size and location, the Mercado building would most likely be demolished, redesigned, and rebuilt to avoid the support columns. This could mean closing or relocating the building for approximately 1 year, potentially affecting the livelihoods of 118 merchants and temporarily removing a facility of substantial cultural importance for the local and regional Hispanic community. This neighborhood has considerable cultural diversity (52% White, 43% Hispanic, 9% Black, and 8% Asian in 2000), numerous small churches, and a relatively active street life, with many residents observed strolling or biking around the residential areas or patronizing local schools, services, and businesses. These factors indicate a relatively high degree of community cohesion that the project could adversely affect.

Impacts to the Regional Agricultural Community

Under the BNSF Alternative, residential displacements would include 143 displaced homes in the unincorporated areas of the region—58 in Fresno County, 44 in Kings County, 8 in Tulare County, and 33 in Kern County. Although many of these displacements would occur in areas that lie just outside the city limits of existing cities, a substantial number of them would be farmsteads that would be displaced by construction of roadway overcrossings. The largest number would occur in Fresno County, where farm homesteads and rural residences would have to be displaced at intervals of approximately every mile or so along the alignment to accommodate new roadway overcrossings. These displacements would cause considerable disruption to the agricultural community south of Malaga, in the agricultural areas surrounding Bowles, Monmouth, and similar small farm towns stretching into Kings County to the vicinity of Corcoran.

These displacements of many farm homesteads in a region that takes pride in its agricultural heritage and where agriculture is a dominant economic activity would cause considerable disruption not only to the individual property owners but also to the wider agricultural community. Rural neighbors often rely on each other for assistance, such as responding to an emergency or lending resources in the event of unexpected equipment failure or a need for extra hands at harvest. This interdependence can build community cohesion, even in areas with low population density. Displacement of a rural home can cause substantial disruption to a particular family faced with a choice between moving or replacing their established home and outbuildings, gardens, irrigation and fencing systems, and mature landscaping, which have been carefully built over many years or several generations. The broader farming community can also suffer disruption by this displacement of multiple neighbors—who may or may not decide to continue farming in proximity to a new HST line—and by having other farming operations in the area divided by a new linear feature. This disruption to the agricultural community in the rural areas of Fresno and Kings counties would be considered a moderate effect under NEPA and a less-than-significant impact under CEQA. This impact would be reduced over the long term, as homesteads

[20] Some commercial and industrial uses could remain if the support columns that would carry the elevated guideway do not affect property use. In some cases, existing business structures might be modified or demolished and rebuilt in new locations to accommodate the project; in these cases, business disruptions would be temporary rather than permanent displacements.

are moved or replaced and farm operations realigned or changed to accommodate the new linear feature.

Hanford West Bypass 1 Alternative

The two Hanford West Bypass alternatives would bypass the city of Hanford on its west side rather than the east side. As a result, these two alternative alignments would avoid impacts to the Ponderosa residential community associated with the BNSF Alternative. The Hanford West Bypass 1 Alternative would depart from the BNSF Alternative just south of East Elkhorn Avenue, then travel south through predominately agricultural land to the west of the community of Laton and to the east of Grangeville. This alternative would then pass between Hanford and Armona, just west of the Hanford Campus of the College of the Sequoias and through an area with a mix of agricultural land, commercial-industrial businesses, and a small cluster of suburban homes. From there, this alternative would travel south through predominately agricultural land and would rejoin the BNSF Alternative just south of Lansing Avenue. The main community impact associated with this alternative would be felt in the vicinity of 13th Avenue and the Hanford-Armona Road, where 20 homes and eight businesses would be displaced by the at-grade option, mainly as a result of ancillary road work rather than track construction. Similarly, the below-grade option would displace 18 homes and eight businesses. Although the loss of homes would be a hardship for the affected households, these displacements would not divide or disrupt the communities of Armona or Hanford as a whole, and these households could relocate in the area. The displaced businesses are regional in nature, rather than providing services to the immediate community. They include two towing services, a collision center, the Kings United Way office, a veterinarian pharmaceutical wholesaler, and several agriculture supply and service businesses.

Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative is similar to the Hanford West Bypass 1 Alternative, except between Grangeville Boulevard and Houston Avenue. The Hanford West Bypass 2 Alternative would rejoin the BNSF Alignment one-half mile north of Kansas Avenue. The portions of this alternative alignment that differ from the Hanford West Bypass 1 Alternative are in rural agricultural areas with no concentrations of homes, community services, or businesses. Therefore, community impacts associated with this alternative would be identical to those identified for the Hanford West Bypass 1 Alternative, above, occurring primarily in the vicinity of 13th Avenue and Hanford-Armona Road.

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would be identical to the BNSF Alternative except for the portion of the alignment that passes through the city of Corcoran. Here the alignment would be elevated from Nevada Avenue to 4th Avenue, travelling along the east side of the existing BNSF right-of-way. Because the guideway would be elevated and on the east side of the existing tracks under the Corcoran Elevated Alternative, substantially fewer property displacements would result than under the BNSF Alternative. Only one home and one small business (an auto body shop) would be displaced in Corcoran under the Corcoran Elevated Alternative. The associated noise and visual impacts close to the downtown center and residential areas could affect social interactions and local perceptions about community character.

Corcoran Bypass Alternative

The Corcoran Bypass Alternative would be identical to the BNSF Alternative except it would curve to the southeast to bypass the city of Corcoran on the east side. The overall community impacts associated with this alternative would be similar to those described above for the BNSF Alternative, except in the immediate vicinity of Corcoran. By extending through predominately rural agricultural areas outside the city limits, the Corcoran Bypass Alternative would avoid the

substantial community impacts within the city of Corcoran that would occur with the BNSF Alternative or the Corcoran Elevated Alternative. However, the Corcoran Bypass Alternative would divide the small unincorporated rural residential community that lies immediately northeast of the city limits in the vicinity of Newark Avenue between SR 43 and the irrigation canal. The proposed Corcoran Bypass Alternative would pass through the middle of this community, which consists of about 20 homes on adjacent large lots. The HST tracks and associated roadway work would displace about 40 percent of the homes and leave some of the remaining homes very close to (within 50 to 150 feet of) the HST train tracks. Similar impacts would occur to the smaller enclave of rural residential homes approximately 1 mile to the southeast, in the vicinity of 5th Avenue and Wakena Avenue.

Although the Corcoran Bypass Alternative would displace 51 fewer homes in Corcoran, it would displace 31 more homes in the unincorporated area of Kings County, increasing the total residential displacements in the unincorporated area from 44 to 75. However, most of this increase would occur in the rural residential developments in the unincorporated area just outside the Corcoran city limits described above. Therefore, the impacts to the agricultural community would be somewhat greater but similar to those described for the BNSF Alternative.

Allensworth Bypass Alternative

The Allensworth Bypass Alternative would pass west of the community of Allensworth, farther away from the existing community than would the BNSF Alternative. For this reason, noise and other operational impacts on the community would be less under the Allensworth Bypass Alternative than they would be under the BNSF Alternative.

Wasco-Shafter Bypass Alternative

The Wasco-Shafter Bypass Alternative would traverse agricultural land and open space east of Wasco and Shafter, where no population concentrations are found. This bypass alternative would not divide existing communities and would avoid the operation impacts in the downtown areas of Wasco and Shafter associated with the BNSF Alternative by extending through rural agricultural areas instead.

Bakersfield South Alternative

Like the BNSF Alignment, the Bakersfield South Alternative would pass through the Northwest, Central, and Northeast districts of Bakersfield. However, the Bakersfield South Alternative would affect similar but somewhat different community facilities in these districts. Impacts in the Northwest District of Bakersfield would be similar to those identified for the BNSF Alternative, so many homes and several churches would be displaced. Like the BNSF Alternative, the Bakersfield South Alternative would divide the existing community and result in a considerable number of residential property acquisitions in this neighborhood (127, compared with 146 for the BNSF Alternative), and the displacement of churches (the Korean Presbyterian Church would be fully displaced and parts of Chinmaya Mission property would be displaced).

In the Central District, the Bakersfield South Alternative would parallel the existing BNSF line north of the existing rail yard that lies east of SR 99 and would thereby avoid the impacts to Bakersfield High School associated with the BNSF Alternative. No homes would be displaced in this vicinity, but the Bakersfield South Alternative would displace 57 commercial-industrial businesses (compared with 108 for the BNSF Alternative), a church (Saints Memorial Church of God in Christ), and a building that houses services associated with the Mercy Hospital medical complex. The elevated guideway associated with the Bakersfield South Alternative would also span an existing staff and patient parking lot and permanently remove a small portion of the parking spaces when the supports are constructed. The Mercy Hospital medical complex provides critical care to the greater Bakersfield community, and there are inherent challenges in finding a

suitable nearby replacement for the Mercy Hospital building that would be displaced (a four-story medical office and pharmacy building) in a built-out urban environment. The Bakersfield Convention Center's overflow parking lot would also be affected by the project. However, any permanent loss of parking spaces due to construction of guideway supports would be eliminated or minimized by providing reuse of other vacant land beneath the elevated guideway.

In the Northeast District, the Bakersfield South Alternative would divide and disrupt the existing neighborhood southeast of the downtown area between East Truxtun and East California avenues and from Union Avenue to the section terminus at Oswell Street. This established neighborhood in the Northeast District would be traversed farther south from East Truxtun Avenue and much closer to California Avenue under the Bakersfield South Alternative compared to the BNSF Alternative. Similar to the BNSF Alternative, the Bakersfield South Alternative would divide parts of this older, established neighborhood by a 100-foot right-of-way beneath the elevated guideway that would be cleared of homes, churches, and other facilities that were once a part of the community. Under this alternative, 142 homes and 57 businesses would be acquired (compared with 119 homes and 174 businesses for the BNSF Alternative). Three churches (Baker Street Church of Christ, Full Gospel Lighthouse, and First Free Will Baptist Church) would be fully displaced, and the alignment would pass close to two other churches (Grace Christian Center and the Chapel of Praise Church of God). Because the HST facility would not be within an existing rail corridor, it is considered a new linear element dividing an established community. Also, the only veterinary hospital in this neighborhood, which has served the community since 1968, would be immediately adjacent to the new rail facility and would likely be forced to close or relocate because of the need for a quiet environment at this sensitive facility where surgical procedures and other treatments and recovery take place. Also, some parking associated with the Human Health & Services building would be removed to accommodate supports for the elevated guideway.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative, like the BNSF and Bakersfield South alternatives, would pass through Bakersfield's Northwest, Central, and Northeast districts, affecting similar but somewhat different community facilities. The Bakersfield Hybrid Alternative would be identical to the BNSF Alternative from approximately Hageman Road to Rosedale Highway (SR 58). From there, it would follow the Bakersfield South Alignment to approximately A Street, where it would cross over Chester Avenue and the BNSF tracks in a southeasterly direction, then curve back to the northeast to parallel the BNSF tracks. 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 Alternative, the Bakersfield Hybrid Alternative would begin at-grade and be elevated from Country Breeze Place to its terminus.

The impacts in the Northwest District of Bakersfield would be similar to those identified for the BNSF Alternative, displacing many homes and businesses and several churches. Like the BNSF and Bakersfield South alternatives, the Bakersfield Hybrid Alternative would divide this existing community and result in a considerable number of residential property acquisitions in this neighborhood (128, compared with 146 and 127 for the BNSF Alternative and the Bakersfield South Alternative, respectively) and would similarly disrupt two churches (the Korean Presbyterian Church would be fully displaced and parts of Chinmaya Mission property would be taken). Also, 20 business units would be displaced by the Bakersfield Hybrid Alternative in the Northwest District, with these business impacts being very similar to those of the BNSF Alternative.

In the Central District, the Bakersfield Hybrid Alternative would parallel the BNSF Railway line north of the existing rail yard that lies east of SR 99, avoiding the impacts on Bakersfield High School associated with the BNSF Alternative. The Bakersfield Hybrid Alternative would displace

one home and 79 commercial-industrial businesses in the Central District (compared with the 108 businesses and 57 businesses that the BNSF Alternative and Bakersfield South Alternative would displace, respectively). The Bakersfield Hybrid Alternative would also displace several community facilities, such as the City Public Works office and portions of the city's corporation yard, a Kern County Mental Health office (at 1400 L Street), and the Bakersfield Homeless Shelter, at 1600 E. Truxtun Avenue. This facility, which is privately run using a combination of government grants and private donations, has 174 beds to provide crisis housing for homeless families, women, and children. The facility also serves 500 to 700 free meals daily and provides a wide array of counseling, health, education, and job placement services, including onsite day care (Gill 2012). Similar to the BNSF Alternative and the Bakersfield South Alternative, the elevated guideway would span portions of existing downtown parking lots, permanently removing a small number of the parking spaces when the supports are constructed. However, the loss of parking spaces could be eliminated or minimized by providing reuse of other vacant land beneath the HST elevated guideway.

In the Northeast District, the Bakersfield Hybrid Alternative would cause less disruption than the other two alternatives to the existing residential neighborhood southeast of the downtown area, roughly between East Truxtun and East California avenues, and from Union Avenue to the section terminus at Oswell Street. The Bakersfield Hybrid Alternative would travel along the northern edge of this neighborhood, avoiding many of the residential displacements and the church displacements associated with the other alternatives, but (like the Bakersfield South Alternative) it would displace many of the automotive and other businesses along the south side of the Edison Highway and it would cause additional business displacements in the area north of E. Truxtun Avenue and south of the rail yards. The Bakersfield Hybrid Alternative would displace a total of 56 homes in the Northwest District—a substantial number, but considerably fewer than the 119 homes that would be displaced under the BNSF Alternative and the 142 homes that would be displaced under Bakersfield South Alternative in this neighborhood. Under the Bakersfield Hybrid Alternative, 181 businesses in the Northeast District would be displaced, compared with 174 businesses under the BNSF Alternative and 56 businesses under the Bakersfield South Alternative. (The high number of business displacements under both the BNSF Alternative and the Bakersfield Hybrid Alternative include the estimated 118 micro businesses sheltered under the roof of the Mercado Latino at 2105 Edison Highway.) The mix of commercial-industrial businesses displaced (in the Edison Highway vicinity) would be similar to those displaced under the BNSF Alternative.

Station Alternatives

Fresno Station–Mariposa Alternative

The Fresno Station–Mariposa Alternative would be located on Mariposa Street adjacent to the HST tracks west of Chukchansi Park. Some commercial-industrial businesses in the area would be relocated, but the station would not divide an existing community and it has the potential to benefit community cohesion by improving neighborhood aesthetics and providing an active transportation hub and associated service businesses.

Fresno Station–Kern Alternative

The Fresno Station–Kern Alternative would be similar to the Mariposa Alternative except that this alternative would not encroach on the historic Southern Pacific depot and would not require relocation of the Greyhound bus depot.

Kings/Tulare Regional Station—East Alternative

The Kings/Tulare Regional Station East Alternative would be situated in a rural agricultural area. The station itself would not displace any homes, businesses, or community facilities. However,

the traffic, noise, and visual impacts associated with the station would adversely affect the quality of life in the adjacent rural residential area in the vicinity of Ponderosa Road and Edna Way—for those homes that are not displaced by the HST tracks. These effects would be moderate under NEPA, and the impacts would be less than significant under CEQA.

Kings/Tulare Regional Station—West Alternative

The Kings/Tulare Regional Station West Alternative would be situated in a rural agricultural area that currently has no concentrations of homes, businesses, or community facilities. Therefore, the effects on existing communities would be negligible under NEPA, and the impacts would be less than significant under CEQA.

Bakersfield Station–North Alternative

The Bakersfield Station–North Alternative would span the existing BNSF rail line east of the existing Amtrak station. This alternative would displace and relocate 14 residential households, 20 businesses, and Saint George Greek Orthodox Church and its associated school, playground, and meeting facilities.

Bakersfield Station–South Alternative

The Bakersfield Station–South Alternative would relocate approximately 8 commercial and industrial facilities, as described in Section 5.2 (Property Displacements and Relocations). However, this alternative would be on the south side of the existing BNSF rail line and would generally not interfere with established patterns of interactions among community residents, would not isolate one part of a community from another, or disrupt resident access to community facilities and services (although the alignment would run very close to the Bakersfield Word of Life Ministries).

Bakersfield Station–Hybrid Alternative

The Bakersfield Station—Hybrid Alternative would be in the same general vicinity as the other two station alternatives in the Central District of Bakersfield, but with a somewhat different footprint that would encompass portions of the footprints of each of the other two alternatives between Truxtun and California avenues, but with a portion of the station facilities reaching further to the east, across Union Avenue. This station alternative would displace 12 homes and 20 businesses in the Central District. The businesses are a mix of small automobile-servicing businesses, professional services (legal, insurance), and one fast-food restaurant. Like the Bakersfield Station–North Alternative, the Bakersfield Station–Hybrid Alternative would also disrupt auxiliary facilities associated with the Saint George Greek Orthodox Church, but would not take the church itself.

Heavy Maintenance Facility Site Alternatives

The operation of a heavy maintenance facility could result in changes in transportation, air quality, noise and vibration, safety and security, and aesthetics and visual resources that could potentially affect an adjacent community. Two of the HMF site alternatives (the Fresno Works–Fresno and the Kern Council of Governments–Wasco sites) are in areas near high concentrations of minority and low-income populations. The Fresno Works–Fresno HMF site is in a transitional area between the city and rural areas, with a mix of industrial and agricultural uses. Part of the HMF facility would lie less than ¼-mile east of the rural residential community of Malaga. The Wasco HMF site is adjacent to a labor camp, and the Kern Council of Governments–Shafter East and Kern Council of Governments–Shafter West HMF sites lie adjacent to a small rural residential community (Crome) that also appears to house an EJ population. Only the Kings County–Hanford

HMF site is surrounded by predominately rural, agricultural land, about 2 miles east of the Home Garden community southwest of the main urbanized area of Hanford.

5.1.2 Project Job Creation

This section presents an analysis that estimates project job creation and the resulting need for workers in the region. The need for workers in the region is an important consideration because an influx of workers could increase the demand for public services and require new or altered government and public facilities to meet the increased demand in communities. The analysis presented below examines the potential for population increases resulting from the job creation expected during both the short term (construction phase) and the long term (operation phase) as a result of the project.

5.1.2.1 Short-Term Job Creation and Public facilities

A recent report by the U.S. Conference of Mayors highlights the ability of HST projects to increase jobs, wages, business sales, and value-added gross regional product (U.S. Conference of Mayors 2010). These impacts were found to be particularly substantial for intercity travel that is under 3 hours, which would be the case for the project. An analysis was conducted to determine if such project-related job creation during construction (i.e., during the short term) could result in the need for additional government facilities to serve communities along the project alignment.

This section provides a description of the methodology and the findings of the analysis conducted to estimate the short-term employment resulting from construction of the project from Fresno to Bakersfield. U.S. Department of Commerce Bureau of Economic Analysis' (BEA) Regional Input-Output Modeling System (RIMS II) multipliers were used to estimate this employment over the construction period of the project (FY2014 to FY2022).[21] RIMS II multipliers are available at the county level and therefore were obtained for the four-county region of Fresno, Kings, Tulare, and Kern counties. The resulting estimate includes the number of direct jobs created as well as the indirect and induced employment. Direct employment refers to the jobs created to construct the project and primarily involves jobs created in the construction sector. Indirect employment refers to the jobs created in existing businesses in the region (e.g., material and equipment suppliers) that supply goods and services to project construction. Induced employment refers to jobs created in new or existing businesses (e.g., retail stores, gas stations, banks, restaurants, service companies) that supply goods and services to workers and their families. BEA RIMS II Type II annual regional economic final-demand multipliers were used to generate these estimates Final-demand employment multipliers provide the total number of jobs created per $1 million change in final demand (in this case per $1 million in project spending in the region).

The annual series multipliers used are based on 2006 national annual input-output data and 2006 regional data. These multipliers are available for 60 aggregated industries. Benchmark series multipliers are also available. These benchmark series multipliers provide a more detailed breakdown of 473 economic sectors but are based on older data. Annual series multipliers were used in this analysis instead of available benchmark series to take advantage of the newer data used to generate the annual series. Also, the breakout of spending available for the project was not detailed enough to allow for proportioning into the detailed industries available in the benchmark series. Therefore, there was no advantage to using the benchmark series.

Type II multipliers measure the economic impact of industries and household expenditures. Unlike Type I multipliers, which account for direct and indirect impacts, Type II multipliers include the induced impacts associated with the spending of earnings by labor (households) within a region. Therefore, these endogenous multipliers can be used to estimate the sum of

[21] California state fiscal years are used in this analysis (July 1 through June 30).

direct, indirect, and induced impacts. Type II multipliers were used in this analysis, because the induced impacts were of interest.

No Project Alternative

It is expected that the projects that would constitute the No Project Alternative would result in economic benefits (e.g., job creation) and potential losses (e.g., relocations). It is also expected that the planned projects that would constitute the No Project Alternative would undergo project-specific environmental review, as appropriate, and include feasible mitigation measures to minimize any adverse effects associated with project job creation.

BNSF Alternative

Short-term construction impacts were estimated by applying final-demand multipliers to a bill-of-goods construction spending estimate for the Fresno to Bakersfield Section of the project. The total project costs used are presented in Chapter 5 (Project Costs and Operations) of the EIR/EIS (Authority and FRA 2011a). This analysis is interested in estimating the impacts occurring within the region as a result of construction of the project. Therefore, spending in the following Chapter 5 cost categories were used in this analysis: 10 track structures & track; 20 stations, terminals, intermodal; 30 support facilities: yards, shops, admin. bldgs.; 40 site work, right-of-way, land, existing improvements; 50 communications and signaling; 60 electric traction; and 80 professional services.[22] Total project spending was converted to annual spending using the project construction schedule as presented in Chapter 2 (Alternatives) of the EIR-EIS and a standard S-shaped-type spending curve, which assumes that spending increases steadily to a peak at the mid-point of the construction and then decreases symmetrically until construction is completed.

Total spending was then proportioned to represent spending within particular economic sectors. This approach is referred to as a bill-of-goods approach. The sectors examined in this approach were the construction sector for equipment spending; the nonmetallic mineral product manufacturing sector for stone, gravel, and concrete; the primary metal manufacturing sector for steel and other required metal processing; the household sector for spending from construction labor earnings; the transportation sector for spending on moving equipment and materials within the region; and the wholesale sector for wholesale trade margins resulting from purchases. The proportions of the spending for labor, equipment, and materials were determined by referencing transportation cost studies and also through discussions with rail construction experts (URS 2009; Rudden 2010, personal communication). These sources provided the following percentage breakdown across sectors: 15% for equipment; 35% for labor; and 50% for materials. Materials were broken down further into nonmetallic (stone, gravel, concrete) (75% of 50% or 37.5%) and primary metal (steel) components (25% of 50% or 12.5%).

The percentage of total spending that would occur in the region was estimated using data on regional economic activity in these sectors. Commodity flow data from the U.S. Census Bureau was examined, and it was determine that 30% of the nonmetallic (stone, gravel, concrete) and 10% of the primary metal (steel) materials could be procured within the region. It is assumed that the bulk of the steel needed for the project would originate from major steel-producing areas outside the region, but given the presence of the base metal sector in the region, it is assumed that some material and additional processing would be provided by local companies. Also, given the large construction sector and current unemployment levels in construction in the

[22] Property costs were removed from right-of way expenditures to leave only spending on site work and improvements.

region, 70% of the required direct labor was assumed to originate from within the region.[23] Some equipment spending (20%) was assumed to occur within the region; this assumption reflects limitations on the four-county region alone to supply all the equipment necessary for project construction.

These spending values were then converted from purchaser prices to producer prices using Table F, Commodity Composition of Intermediate Purchases by Industry Aggregation – Construction Data from RIMS II.[24] This conversion removes the transportation and wholesale margin associated with these transactions. The resulting contributions to the transportation sector and wholesale sector within the region were also estimated using this distributional cost data.

Table 5-2 presents all regional producer price construction expenditures by sector. All costs are presented in 2010 dollars to allow for aggregation of values.

Table 5-3 provides the RIMS II final-demand multipliers for the four-county region. These multipliers represent the number of jobs (direct, indirect, and induced) created per million dollars of project expenditure. The economic sectors identified above were associated with an industry code in the BEA annual industry list (construction = #7; nonmetallic mineral product manufacturing = #9; primary metal manufacturing = #10; transportation = #32; and wholesale margin = #27). The household sector (#60) was used to represent the spending of earnings from the project.

These multipliers were multiplied by the annual spending totals presented in Table 5-2.[25] The results of this analysis are presented in Table 5-4. These values represent the estimated total direct, indirect, and induced employment created by project spending on the BNSF Alternative. Over the entire construction period, 21,944 1-year full-time job equivalents would be created.[26]

[23] Estimates using the household expenditure multiplier are for workers who live in the region, not those who commute to the region for work.

[24] The RIMS II multipliers are calculated based on producer prices, so final demand changes must also be converted to producer prices.

[25] The final-demand employment multiplier was multiplied by spending converted to $2006 because the RIMS II final-demand employment multipliers should be used with $2006 data.

[26] Job estimates are provided in this section. However, presenting these estimates as exact numbers in Volume I of the EIR/EIS without all of the methodological detail and discussion of the assumptions, as presented here, would provide a false sense of precision. Therefore, when presented in Volume I of the EIR/EIS, these results are rounded to the nearest 100 for the presentation of totals and to the nearest 25 for the presentation of differences between the BNSF Alternative and the other alternative alignments. As a result, the values presented in Section 3.12, Socioeconomics, Communities, and Environmental Justice, and Section 3.18, Regional Growth, do not match exactly the results provided here; however, the Volume I EIR/EIS values are rounded versions of the numbers provided here.

Table 5-2
Construction Spending within Region for BNSF Alternative by Economic Sector (millions of 2010$)

Economic Sector	Percentage of Total Spending by Sector	Percentage Spent within the Region	Percentage That Is Producer Value	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total by Economic Sector[a]
Construction equipment	15%	20%	100%	$27	$27	$27	$27	$27	$21	$12	$5	$4	$177
Materials – nonmetallic	37.5%	30%	81.5%	$82	$82	$82	$82	$82	$65	$38	$16	$14	$542
Materials – primary metal	12.5%	10%	65.4%	$7	$7	$7	$7	$7	$6	$3	$1	$1	$48
Transportation	N/A	100%	6.6%	$6	$6	$6	$6	$6	$5	$3	$1	$1	$39
Wholesale margin	N/A	100%	18.1%	$16	$16	$16	$16	$16	$13	$17	$3	$3	$107
Construction labor	35%	70%	78%[b]	$172	$172	$172	$172	$172	$136	$80	$34	$28	$1,136
Annual total[a]	100%			$309	$309	$309	$309	$309	$246	$143	$61	$51	$2,049

Source: Analysis of Fresno to Bakersfield Section EIR/EIS Chapter 5 data (Authority and FRA 2011a).

Note: N/A is not applicable. Percentage spending by sector is not relevant to transportation and wholesale margins because these values are a function of the conversion of purchaser to producer value. Total summations of spending are rounded and therefore may not exactly match column and row sum totals.

[a] Totals may not add exactly due to rounding.

[b] Workers benefits are removed from earnings as that portion of the annual salary would not be spent in the local economy as household income.

N/A = not applicable

Table 5-3
BEA RIMS II Final-Demand Multipliers Used in Analysis

Industry	Final-Demand Employment per $1 million in spending
#7 Construction	15.2595
#9 Nonmetallic mineral product manufacturing	8.6147
#10 Primary metal manufacturing	6.0805
#27 Wholesale margin	10.4593
#32 Truck transportation	14.3786
#60 Households	8.9824

Source: Bureau of Economic Analysis RIMS II Model

BEA = U.S. Department of Commerce Bureau of Economic Analysis
RIMS II = Regional Input-Output Modeling System

Table 5-4
Annual Region Employment Creation Using Final-Demand Multipliers

Impact	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
Employment (1-year full-time job equivalents)	3,314	3,314	3,314	3,314	3,314	2,633	1,536	658	549	21,944

Source: Results from BEA RIMS II multiplier analysis.

BEA = U.S. Department of Commerce Bureau of Economic Analysis
RIMS II = Regional Input-Output Modeling System

The values presented in Table 5-4 are a sum of the total direct, indirect, and induced jobs created. To distinguish between the impacts associated with direct, indirect, and induced jobs, the direct jobs need to be identified. Therefore, direct jobs are calculated from the project spending on labor. An annual wage of $156,000 (including benefits) was used to estimate the number of direct workers. Total annual labor spending was divided by the annual per worker cost to estimate the number of direct jobs created by the project each year. The results of this analysis show that the total 1-year full-time job equivalents created directly by the project were 7,282. These direct jobs were then subtracted from the total jobs presented in Table 5-4 to obtain the indirect and induced employment (14,662). Table 5-5 provides this detailed breakdown of the total. Tables 5-6 and 5-7 provide the annual breakdown of direct and indirect/induced totals. As can be seen, during the peak construction years, an additional 3,314 jobs will be created, 1,100 of which are direct.

Table 5-5
Breakdown of Direct, Indirect, and Induced Impacts in the Region Using Final-Demand Multipliers

	Direct	Indirect and Induced	Total
Employment (1-year full-time job equivalents)	7,282	14,662	21,944

Source: Results from BEA RIMS II multiplier analysis and calculation of direct jobs created using California Department of Industrial Relations 2010 and estimated project spending on labor in the region.

Acronyms:
BEA = U.S. Department of Commerce Bureau of Economic Analysis
RIMS II = Regional Input-Output Modeling System

Table 5-6
Annual Region Direct Employment Creation Using Final-Demand Multipliers

Impact	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Direct employment (1-year full-time job equivalents)	1,100	1,100	1,100	1,100	1,100	874	510	218	182	7,282
Total employment (1-year full-time job equivalents)	3,314	3,314	3,314	3,314	3,314	2,633	1,536	658	549	21,944

Source: Results from BEA RIMS II multiplier analysis.

BEA = U.S. Department of Commerce Bureau of Economic Analysis
RIMS II = Regional Input-Output Modeling System

Table 5-7
Annual Region Indirect and Induced Employment Creation Using Final-Demand Multipliers

Impact	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
Indirect and induced employment (1-year full-time job equivalents)	2,214	2,214	2,214	2,214	2,214	1,759	1,0261, 466	440	367	14,662
Total employment (1-year full-time job equivalents)	3,314	3,314	3,314	3,314	3,314	2,633	1,536	658	549	21,944

Source: Results from BEA RIMS II multiplier analysis.

BEA = U.S. Department of Commerce Bureau of Economic Analysis
RIMS II = Regional Input-Output Modeling System

Annual average unemployment across the four-county region was 14.9% in 2009, with 159,300 persons out of work (California Employment Development Department 2010b). A 2009 study

states that the California Employment Development Department reported a loss of 32,300 construction jobs in the San Joaquin Valley between June 2006 and August 2009 (Eberhardt School of Business 2009). As with any large construction project, some influx of population is expected as workers arrive in the area seeking jobs. However, given the high level of unemployment in the region and the large number of construction workers currently on the job market, the majority of these new construction jobs would be filled by current residents of the region who possess the necessary construction skills. As a result, construction of additional community facilities would not be required to support this workforce. However, given the current fiscal conditions of city and county jurisdictions, the context is one of tight budgets for the provision of government and public services. As a result, any additional burden, however small, could be of moderate consequence.

Other Alternative Alignments

Examination of the relative differences (increases and decreases in employment) by alignment alternative were undertaken using the cost differences provided in Chapter 5 (Project Costs and Operations) of the Fresno to Bakersfield Section EIR/EIS (Authority and FRA 2011a). The resulting differences in terms of annual job years created are presented in Table 5-8. The largest differences are along the Corcoran Elevated, Allensworth Bypass, and Wasco-Shafter Bypass alternatives, where in each case construction spending is somewhat different than for the corresponding portion of the BNSF Alternative.

Table 5-8
Relative Difference between Alternatives Using Direct-Effect Multipliers

Alternative	Direct Employment (annual job years)	Indirect and Induced Employment (annual job years)	Total New Employment (annual job years) [a]
Hanford West Bypass 1	-139	-279	-418
Hanford West Bypass 2	-120	-241	-361
Corcoran Elevated	-45	-90	-135
Corcoran Bypass	-376	-758	-1,134
Allensworth Bypass	-88	-178	-266
Wasco-Shafter Bypass	-312	-628	-940
Bakersfield South	+4	+8	+12
Bakersfield Hybrid	-73	-147	-220

[a] Totals may not add exactly due to rounding.

Proposed Station Alternatives

All proposed station alternatives provide similar levels of job creation based on the estimated project construction spending. The annual job-years created are:

- Fresno Station–Mariposa and Fresno Station–Kern alternatives: 228 total, with 76 direct and 152 indirect and induced.

- Kings/Tulare Regional Station–East Alternative: 234 total, with 78 direct and 156 indirect.
- Kings/Tulare Regional Station–West Alternative at-grade option: 335 total, with 111 direct and 224 indirect and induced.
- Kings/Tulare Regional Station–West Alternative below-grade option: 420 total, with 139 direct and 281 indirect and induced.
- Bakersfield Station–North and Bakersfield Station–South alternatives: 241 total, with 80 direct and 161 indirect and induced.
- Bakersfield Station–Hybrid Alternative: 482 total, with 160 direct and 322 indirect and induced.

Heavy Maintenance Facility Site Alternatives

The annual job years created through project spending for the HMF are 1,898 total, with 630 direct and 1,268 indirect and induced.

5.1.2.2 Long-term Job Creation and public facilities

A recent report prepared for the U.S. Conference of Mayors highlights the ability of HST projects to increase jobs, wages, business sales, and value-added gross regional product (Economic Development Research Group 2010). These impacts were found to be particularly substantial for intercity travel that is under 3 hours, which would be the case for the project. An analysis was conducted to determine if such project-related job creation during operation (i.e., during the long term) could result in the need for additional government facilities to serve communities along the project alignment.

Cambridge Systematics Inc. conducted analyses that provide estimates of the long-term employment resulting from the operation of the HST System. These long-term jobs are created through operation of the project and by businesses that are attracted to the region, existing businesses in the region that expand as a result of the project, and spatial reallocation of employees taking advantage of the increased mobility provided by the HST project (Cambridge Systematics Inc. 2010).

Cambridge Systematics Inc. estimated that 47,436 new jobs would be created in the region by 2035 as a result of the operation of the HST System. This total would include jobs to operate and maintain the HST (approximately 2,000 jobs), the indirect and induced jobs created to support these workers, and the jobs created because of increased mobility in the region. This number of new jobs is a 3.2% increase in employment above the 2035 estimate of 1.4 million total jobs in the region under the No Project Alternative (Cambridge Systematics Inc. 2010).

The trends and overall levels of unemployment discussed above indicate that given historical and current trends in the region, unemployment rates will be higher there on average than in the rest of the state. Therefore, the workforce exists to support much of the 3.2% job growth expected to result from the operation of the HST project. However, given the unique ability of an HST System to alter mobility patterns, some amount of population influx is expected.

Therefore, given the number jobs expected to be created and the likely levels of unemployment in the region, any physical impacts from the provision of new or altered government and public facilities would be minimal, because no new facilities would need to be constructed. From the standpoint of fiscal conditions for city and county jurisdictions, the context could be one of tight budgets for the provision of government and public services. This potential for fiscal concerns is present because the region has historically lagged the state as a whole in economic development

and because of the uncertainty surrounding the transition of the region from a purely agriculture-based economy to a more diversified economic structure better able to withstand economic downturns. As a result, any additional burden, however small, could be of moderate consequence.

Demand for employment and long-term job creation estimates would be the same under all the alternative alignments, all station alternatives, and all HMF site alternatives.

5.2 Property Displacements and Relocations

Property displacements and resident and business relocations were identified in the following analysis. The term 'displacement' is used to represent property takings that result in the acquisition of a parcel or structure, while the term 'relocation' is used to represent the need to find new homes for the residents and institutions, such as businesses, that are located in affected structures. This analysis included a thorough review of GIS data that presented the spatial relationship between the project alternatives, the existing county parcel boundaries, and the structures located on affected parcels. Specifically, GIS data overlays included the area of the proposed project footprint, aerial imagery of current structure locations, U.S. Census demographic information, photos of and field notes on properties obtained during site visits, and county parcel data providing parcel size, land use designations, and structure characteristics such as address, value, and square footage. All of this information was used to (1) identify each parcel intersecting the project footprint, (2) determine the need for full or partial acquisition of the affected parcel, and (3) count the number and characterize the types of structures displaced. Details of this methodology are presented in Appendix A.

This evaluation of parcel acquisitions and the structures affected by the project was recorded in a Microsoft Excel database. Additional information was added to this database to record the following:

- Number of residential units associated with each acquired parcel.
- Number of businesses associated with each acquired parcel, including business names, addresses, type of business, and the estimated number of employees and annual sales.
- Number of agricultural parcels acquired that were split as a result of the project.
- Number of agricultural parcels acquired that contained facilities that would be displaced.
- Number and types of community facilities that would be displaced by the project alternatives.
- Average number of residents per household in the area.
- Property and sales tax rates for county and city jurisdictions.
- Current vacancies for suitable replacement residences and businesses in the vicinity of projected displacements and relocations.

In total, this extensive collection of information enabled the analysis conducted to go beyond simple counts of parcels and structure types. The full analysis of potential displacement effects and impacts that was undertaken included the following:

- The number of units and residents.
- The demographics of residents.
- The types of residential structures displaced.
- The number and type of commercial and industrial businesses displaced and specific economic sectors affected.
- The dollar value estimate of commercial and industrial sales and the estimated number of employees displaced in various job sectors.
- The number of agricultural parcels that have affected facilities or that are split, thus leading to increased costs and/or temporary disruption of agricultural production.
- The number and type of community facilities affected.

- The estimated loss of property and sales tax revenues to local jurisdictions.
- The availability of suitable replacement residences and business locations within the vicinity of displacements and relocations.

The Authority will comply with applicable federal and state laws and regulations, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The act and its amendments provide guidance on how federal agencies, or agencies receiving federal financial assistance for a project, and will compensate for impacts on property owners or tenants who need to relocate if they are displaced by a project. The Authority will compensate all property owners or tenants in accordance with this act, which applies to all real property. All benefits and services will be provided equitably without regard to race, color, religion, age, national origins, and disability, as specified under Title VI of the Civil Rights Act of 1964. The Relocation Assistance Program was developed to help displaced individuals move with as little inconvenience as possible. All rights and services provided under Public Law 91-646, Uniform Relocation Assistance and Real Property Acquisition Act of 1970, will be strictly adhered to by the Authority to meet the needs of the handicapped, the elderly, and other special groups (e.g., non-English speaking people) to ensure that their relocation needs are met. Programs implemented to meet these needs include bilingual brochures on relocation services, interpreters, determination of individuals' needs and preferences through individual interviews, transportation services for those who do not own personal transportation or who cannot drive, information on other state and federal assistance programs, and counseling to minimize hardships.

Given the stage of project design at the time of this analysis, the identification of the individual circumstances surrounding each partial acquisition of parcels is not possible. To be conservative and to avoid underestimating displacements and relocations, all residences and businesses on partially acquired parcels, including those that may ultimately be temporary impacts—that is, impacts associated with construction that are not expected to last through project operation—are counted the same as full displacements and thus are considered to require relocation. This assumption allows for a worst-case assessment of potential property acquisition impacts. The final full and partial parcel acquisition decisions would ultimately be determined on a case-by-case basis during the land-acquisition phase of the project.

5.2.1 Methodology

Potential full parcel acquisition was identified if the project facilities would displace existing structures or take a substantial portion of the property that would affect its continued use. In the case of full acquisition, all residences and business facilities on the parcel are assumed displaced. Many parcels would be partially acquired for this project, and displacement and relocation of the residences and business facilities located on the parcel may not be necessary. However, this does not mean there are no potential impacts on these structures. For example, residences may not be displaced, but rather the residents temporarily moved if they are located close to construction area nuisances such as noise, dust, and traffic during the construction period. Also, businesses located near construction areas may close temporarily to allow for construction lay-down areas in cases where access in and out of the facility would be restricted and also where buildings would need to be modified to exist adjacent to the project. At this stage of project design, identifying the individual circumstances surrounding each of these potential occurrences on partial acquisitions is not possible. To be conservative in this analysis and to avoid underestimating displacements, all residences and business facilities on partially acquired parcels, including those that may ultimately be temporary impacts, are counted as displacements. This assumption allows for an initial understanding of potential property impacts. The final full and partial parcel acquisition decisions would ultimately be determined on a case-by-case basis during the land acquisition and real estate appraisal phase of the project.

The analysis of potential suitable replacement real estate (residential and commercial-industrial) available for sale or rent in the study region was conducted in 2010, with findings reported below. Real estate market conditions are constantly changing, as are the overall economic conditions in the region. Research indicates that regional economic conditions have been improving slowly since the recession of 2008–2009 (Central Valley Business Times 2011; University of the Pacific 2012). However, market conditions in 2012 are considered generally comparable to those evaluated in 2010.

Specific and more detailed methods are presented below for the analysis conducted on the displacement of residential, commercial and industrial, agricultural, and community facilities.

5.2.1.1 Residential Properties

Residential properties, or portions thereof, that would need to be acquired were identified using aerial photographs, conceptual engineering plans and profiles, and right-of-way data showing potential parcel acquisitions. These acquisitions were compiled in the Microsoft Excel database containing details for each affected parcel, including the estimated number of residential units, land use, assessed value, size of parcel, and street address. The number of residential units on a parcel was approximated using the available county land use assessment and field observations. Field visits were conducted to obtain necessary additional information on properties. To identify displaced multifamily properties, the county zoning and land use codes of displaced residential properties were used.

As described above, potential full and partial acquisitions were tabulated for each parcel located in the path of the project alternatives. Potential full residential parcel acquisition was identified if the project facilities would displace existing residential structures or take a substantial portion of the front yard or other important residential amenities (e.g., the driveway or garage) that would affect the continued use of the property. While these definitions were used to estimate the impact of the project, full and partial acquisition decisions would ultimately be determined on a case-by-case basis during the land acquisition and real estate appraisal phase of the project, and therefore these definitions may change in the future. These full and partial designations are used here to provide an initial understanding of potential impacts.

The number of residents displaced was estimated for each community using the average household size available in 2000 Census data. Data on minority, low-income, elderly, disabled, female head of household and linguistically isolated residents in the vicinity of high concentrations of relocations was compared to data from the region, county, and city to identify sensitive populations. This Census data, although a decade old, was the best available to identify demographics in the districts of Fresno and Bakersfield, the areas with the highest potential for high concentrations of residential relocations.

Analysis was also conducted to determine the number of suitable replacement housing units within the communities of the displaced residents. Land acquisition would begin in 2012, so current vacancy rates were considered to be a good indicator of the availability of suitable replacement properties. Analysis involved a community search for vacant housing using the U.S. Department of Housing and Urban Development (HUD) Aggregated U.S. Postal Service (USPS) Administrative Data on Address Vacancies and a search of vacant housing properties in real estate listings (U.S. Department of Housing and Urban Development 2010; Zillow 2010; Primedia 2010). Locations of vacant residential properties were identified by Census tract and zip code along the project alignment and compared with the projected numbers of displaced residences in these areas to identify the likely availability of suitable replacement housing.

5.2.1.2 Commercial and Industrial

Non-residential properties containing commercial and industrial businesses, or the portions thereof, that would need to be acquired were identified using aerial photographs, conceptual engineering plans and profiles, and right-of-way data showing potential parcel acquisitions. Even though businesses have been identified as temporarily displaced, marginal businesses may not survive a temporary relocations and would instead close. The resulting sales of these businesses would likely be compensated for by other businesses in the area, but temporary impacts would be magnified by potential business closures. County data on parcel characteristics were obtained to identify specific parcel information such as land use, assessed value, size of parcel, and street address. These direct construction impacts were compiled in the Microsoft Excel database containing details for each affected parcel, including a count of the number of businesses and relevant business characteristics (i.e., type of business, number of employees, and annual sales). The number and type of businesses, as classified in the North American Industry Classification System (NAICS), on each parcel were identified using the Reference USA database, a service of InfoGroup. Field visits were conducted to obtain necessary additional information.

Potential full and partial acquisitions were tabulated for each parcel along each of the project alternatives. Potential full non-residential property acquisition was determined if the project would physically intrude on existing buildings, or remove enough of a portion of available use of the site (such as parking) so that the business would be unable to operate. The analysis for commercial and industrial business parcels included estimating the number, type and size (by number of employees and amount of annual sales) of businesses displaced. While these definitions were used to estimate the impact of the project, such full and partial acquisition decisions would ultimately be determined on a case by case basis during the land acquisition and real estate appraisal portion of the project and therefore may change in the future. These full and partial designations are used here to provide an initial understanding of potential impacts.

Analysis was also conducted to determine the number of suitable replacement properties within the communities of the displaced businesses. Land acquisition is scheduled to begin in 2012, so current vacancy rates are considered a good indicator of the likely availability of suitable replacement properties. Locations of vacant commercial and industrial properties were identified by Census tract and zip code along the project alignment and compared with the projected numbers of displaced businesses in these areas to identify the likely availability of suitable replacement properties. This involved a community search for vacant commercial and industrial properties in these Census tracts and zip codes using HUD Aggregated USPS Administrative Data on Address Vacancies and a search of vacant commercial and industrial properties in real estate listings (U.S. Department of Housing and Urban Development 2010; Loopnet 2010).

Additional real estate data were provided by a private commercial realtor in the area who was able to run professional-level queries of the Loopnet database (www.loopnet.com) of commercial properties. This information was used to determine current availability/vacancy of commercial real estate for the counties of Fresno, Kings, Tulare and Kern. For purposes of this analysis, all available data were extracted for the four counties. The data consisted of both sales and lease availability for the following types/classes of commercial property: office, warehouse, medical, retail, shopping center, industrial, agricultural, hotel/motel, church, restaurant, gas station, agricultural land, raw land, and automotive. The analysis was conducted in July 2010. Therefore, the real estate numbers represent the vacancies at that time. However, the recovery from the recession of 2008–2009 has been very slow in the region, and the economic conditions have remained essentially constant (Central Valley Business Times 2011; University of the Pacific 2012). Therefore, market conditions in 2012 are considered generally comparable to those evaluated in 2010.

These current vacancies were then tallied for the various types of properties for each respective county and whether they were for sale or for lease. The data were further narrowed by focusing only on properties within the zip codes of areas through which the proposed HST project will pass. The zip codes used were as follows:

- Fresno: 93609, 93662, 93701, 93702, 93704, 93705, 93706, 93721, 93722, 93725, 93728, 93242.
- Kings: 93212 and 93230.
- Tulare: none needed as there are no projected commercial or industrial displacements in the county.
- Kern: 93250, 93263, 93280, 93301, 93304, 93305, 93306, 93307, 93308, 93309, 93312, 93314.

This vacancy information was transferred to the Microsoft Excel database and the numbers were combined to arrive at a total count. The resulting information was subsequently used in a gap analysis to compare the availability of commercial property to the need for similar types of properties that would result from displacements and relocations.

To further refine the property data, the property types/classes were categorized by their respective NAICS codes. These NAICS codes were then grouped into five broader categories:

- Industrial.
- Commercial/Wholesale/Retail/Offices.
- Transportation and Warehousing.
- Automotive.
- Miscellaneous.

The available properties for each category were then aggregated and compared directly to the estimated displacements of similar properties, as determined in the gap analysis. The resulting data were used to determine gaps and/or surpluses of commercial real estate currently available in Fresno, Kings, and Kern counties.

5.2.1.3 Agricultural

Examination of agricultural businesses involved identifying the direct construction impacts associated with the number of split parcels as well as the number of parcels where agricultural facilities (such as, processing facilities, warehouses, barns, or silos) would be displaced. Split agricultural parcels—those parcels divided into two or more separate pieces by the project—represent potential impacts where farm units that are not rearranged to incorporate resulting splits logically could result in added operational expense (staff time, extra gasoline) associated with access to fields for irrigation, pesticide application, harvesting, and other farm equipment operations.

The count of parcels with displaced agricultural facilities provides an indication of impacts on agriculture in the region. These impacts are associated with temporarily losing the associated facility functions and the resulting direct impacts on farmers as well as the indirect impacts on the businesses involved in processing and transporting the agricultural products dependent on those facilities. The number of split parcels and displacements of agricultural facilities were identified using aerial photographs, conceptual engineering plans and profiles, and site visits.

5.2.1.4 Community Facilities

Preliminary impacts were identified through intensive review of aerial photographs and GIS layers that showed the spatial relationship between the proposed action and alternatives and existing community facilities. Assessor's parcel data and site inspections were used to identify those

parcels containing community facilities, and other databases (e.g., Reference USA) were used to identify the number and type of community facilities that may be displaced or disrupted. The various alternative alignments were considered in relationship to locations of key community facilities and services to determine potential impacts due to relocating community or public service facilities and services.

5.2.2 Residential Displacements

This section presents the residential unit displacements and evaluates the need for permanent and temporary relocation of residents. It also evaluates the potential relocation capacity (i.e., the available, comparable residential space) within each city and county and the relevant socioeconomic impacts of those relocations.

5.2.2.1 No Project Alternative

It is expected that the projects that would constitute the No Project Alternative would require acquisition of land and relocation of residents. It is also expected that the planned projects that would constitute the No Project Alternative would undergo project-specific environmental review, as appropriate, and include feasible mitigation measures to avoid or substantially reduce potential impacts and adequately compensate all who are relocated.

5.2.2.2 Alternative Alignments

BNSF Alternative

Residential Displacements

In total along the entire BNSF Alternative, an estimated 451 residential units would be displaced (see Table 5-9). This correlates to an estimated 1,430 relocated residents. The majority of these unit displacements are in the Bakersfield area, where 265 households divided among Bakersfield's three districts would be displaced as follows: the Northwest district with 145 units and 444 residents displaced; the Central District with 1 unit and 3 residents displaced; and the Northeast District with 119 units and 364 residents displaced.

Table 5-9
Residential Displacement under the BNSF Alternative

Location	Residential Units Displaced	Estimated Residents to be Relocated
Urban Areas		
Fresno Central	0	0
Fresno Edison	3	11
Fresno Roosevelt	2	7
Hanford	0	0
Corcoran	48	172
Wasco	2	8
Shafter	2	8
Bakersfield Northwest	145	444

Table 5-9
Residential Displacement under the BNSF Alternative

Location	Residential Units Displaced	Estimated Residents to be Relocated
Bakersfield Central	1	3
Bakersfield Northeast	119	364
Rural Areas		
Unincorporated Fresno County	56	176
Unincorporated Kings County	40	132
Unincorporated Tulare County	8	27
Unincorporated Kern County	25	78
Regional Total	**451**	**1,430**
Source: Authority and FRA 2012.		

The remaining displacements along the BNSF Alternative are primarily single-family residences in unincorporated portions of the four counties and the City of Corcoran, specifically 56 units and 176 residents in unincorporated Fresno County, 48 units and 172 residents in Corcoran, 40 units and 132 residents in unincorporated Kings County, 8 units and 27 residents in unincorporated Tulare County, and 25 units and 78 residents in unincorporated Kern County. The other urban areas have a small number of residential displacements and relocations: 5 units and 18 residents in the city of Fresno, and 2 units with 8 residents in both Wasco and Shafter. The city of Hanford would have no residential displacements.

An examination of suitable replacement housing alternatives finds that a sufficient number of comparable replacement residences are currently available in all areas with relocations (except for large-lot rural residential developments, as noted in this section below and also above in Section 5.1.1 Disruption or Division of Existing Communities). Table 5-10 shows the gap analysis of single-family residential properties that are available for relocation.

Table 5-10
Gap Analysis of Single-Family Residential Displacements in the BNSF Alternative

Location	Residential Units Displaced	Residential Units Available	Size of Surplus
Urban Areas			
Fresno Central	0	66	66
Fresno Edison	3	118	115
Fresno Roosevelt	2	657	655
Hanford	0	417	417
Corcoran	48	75	27
Wasco	2	108	106

Table 5-10
Gap Analysis of Single-Family Residential Displacements in the BNSF Alternative

Location	Residential Units Displaced	Residential Units Available	Size of Surplus
Shafter	2	66	64
Bakersfield Northwest	145	500	355
Bakersfield Central	1	520	519
Bakersfield Northeast	119	945	826
Rural Areas			
Unincorporated Fresno County	56	342	286
Unincorporated Kings County	40	589	549
Unincorporated Tulare County	8	3,302	3,294
Unincorporated Kern County	25	2,044	2,019
Regional Total	**451**	**11,589**	**11,138**

Replacement Housing

About 95% of the total residential unit displacements under the BNSF Alternative would occur in unincorporated Fresno and Kings counties, the city of Corcoran, and communities in the Northwest and Northeast districts of Bakersfield. All of these areas have current vacancies in excess of the estimated displacements. Vacant residential properties in overlapping zip codes along the project alignment in unincorporated Fresno, Kings, and Kern counties numbered 342, 589, and 2,044, respectively. These vacant properties would be more than sufficient for the 56, 40 and 25 potential displacements, respectively, in these locations, and these vacant residential properties do not include consideration of existing adjacent vacant land where current units could be moved. In Corcoran, 75 vacant residential properties are available for the 48 that would be displaced. At present in the Northeast District of Bakersfield, 945 single-family homes are available for sale where 119 units would be displaced (an 8-to-1 vacancy-to-displacement ratio). Thus, the existing supply of vacant residences would be far greater than necessary to house the relocated residents. Similarly, the Northwest District of Bakersfield currently has 500 vacancies, which exceeds the 145 units that would be displaced by more than a 4-to-1 ratio.

An examination of a second data source—the HUD Aggregated USPS Administrative Data on Address Vacancies—in the heavily affected areas of Corcoran and Bakersfield confirms the above findings that current residential vacancies would be sufficient to accommodate relocated residents. In Corcoran, 1 out of every 20 residences is vacant. In Bakersfield, approximately 1 out of every 18 residences is currently vacant in the Northeast District and 1 out of 70 residences is vacant in the Northwest District. These ratios equate to 252 vacant residences in Corcoran, 4,672 vacant units in the Northeast District of Bakersfield, and 481 vacant units in the Northwest District of Bakersfield. In all cases, the number of available units far exceeds the number of residential displacements expected from the project. Although the postal data do not indicate how many of these vacant units are actually available for sale or rent, they do indicate that the vacancy rate for residential properties is currently high in the study area.

The values of these potential replacement housing units are comparable to the values of the displaced properties. This comparison of cost is a good measure of the suitability of replacement housing because it is a function of important attributes, such as size, quality, and neighborhood amenities. This is particularly important in Bakersfield given the 265 displaced residences across all value categories. The displaced residential units in the Northeast District of Bakersfield have an average value of around $70,000. More specifically, 3 units have values greater than $200,000, 15 units have values between $100,000 and $200,000, and 101 units have values less than $100,000. The displaced properties in the Northwest District of Bakersfield have an average value of $160,000; 29 units have values greater than $200,000, 88 units have values between $100,000 and $200,000, and 28 units have values below $100,000. Data from the 2009 U.S. Census American Community Survey show that vacant housing values in Bakersfield are evenly distributed between all three of these price classes, with about 1,100 units in each class (U.S. Census Bureau, American Community Survey 2009). Also, a review of current vacant home prices in the Northeast and Northwest districts reveals a price distribution that is similar to that of the displaced properties in each district (Zillow 2010).

The multi-family displacements in the heavily affected Bakersfield districts would be 52 units displaced in the Northeast District and 21 units displaced in the Northwest District. Under the assumption that a large percentage of those living in multi-family housing would not purchase a home (i.e., would continue to rent), comparable rental units in these communities were quantified. Available houses and apartments for rent in the Northwest District (34 units) are sufficient to house the relocated potential renters in these communities. However, fewer units are available in the Northeast District (27 units) than the potential number of renters relocated. Also, renters housed in single-family residences could add to this need for rental units in all three districts in Bakersfield. Even so, given the large numbers of single-family residential vacancies, it is not likely that new housing would need to be constructed to house these individuals (given the large numbers of vacancies in homes detailed above). The relocation plan for residents in the Northeast District will note the possibility that rental units available in the immediate area may not be adequate and as a result, it will be important to allow for sufficient lead time to allow for identification of suitable rental properties and provision of housing of last resort, including rehabilitation of existing housing or relocation of the disrupted residential areas to newly constructed housing elsewhere in the vicinity, where necessary, for low-income renters within the Northeast District.

In sum, although the BNSF Alternative would displace considerable numbers of existing housing units and relocate many people, adequate replacement housing appears to be available in the area. Residential displacements are concentrated in the Bakersfield Northwest and Northeast districts (a total of 264 residences and 808 residents) and the city of Corcoran (48 residences and 172 residents). Although sufficient replacement housing is available within these communities, the number of displacements is considerable and represents over two-thirds of all residential displacements along the entire alignment. Although residential displacements in unincorporated Fresno, Kings, and Kern counties are fewer in number and less concentrated in a single community, they are still considerable and represent about 12%, 9%, and 6%, respectively, of all residential displacements along the alignment. Because the majority of displacements in unincorporated counties are likely to be single-family residential households on working agricultural lands, it may be difficult to find comparable replacements, and the relocation of existing housing to nearby land may take time. Relocations may be especially difficult for rural residential subdivisions such as Ponderosa Road northeast of Hanford, the Newark Avenue area northeast of Corcoran, where residents enjoy a unique blend of amenities (spacious lots, city services, a country setting yet close to town), and the rural residential community at the intersection of 7th Standard Road and the Central Valley Highway in Kern County. Few vacant, comparable, developed rural residential homesteads may be available for use as relocation resources. If so, it may be necessary to consider constructing housing of last resort, or even

duplicating the disrupted residential areas elsewhere in the vicinity. The relocation plan that the Authority will develop will consider these relevant impacts and prepare for them.

Residential displacements in the other communities along the BNSF Alternative are few in number and any effect on the region or any individual county or city would be minor. However, the composition of the relocated population must be considered because the Uniform Relocation Act and other policies and regulations require efforts to avoid disproportionate impacts on any given population group, particularly those considered to live in "environmental justice" communities. The demographics, income, ownership rates, and other relevant data on the communities in the project study area were presented in detail in Chapter 4 (Affected Environment).

One manufactured housing— or mobile home— park community is affected by the BNSF Alternative in the city of Corcoran (20 units displaced). The special characteristics of mobile home parks can make it difficult to relocate residents within the same vicinity. Therefore, special consideration will need to be included in the project relocation plan to address the unique needs of these residents.

The sections on environmental justice and sensitive populations in this technical report take a closer, more detailed look at impacts on minority and low-income (EJ) populations and sensitive populations (the elderly, disabled, female heads of households, and linguistically isolated) in the communities through which the alternative alignments pass, particularly in the heavily affected Bakersfield districts, because those communities are where the overwhelming majority of residential displacements would take place.

In general, the residents of parcels that would be displaced do not differ from the general populations of the Central Valley. For example, minority and low-income populations tend to be clustered in the urban areas, whereas displaced residents in rural areas tend to be non-minority, with somewhat higher incomes. The exception to this general rule is the Northwest District of Bakersfield, which is an area of large, newer, high-priced, single-family homes that are owned and occupied by generally higher-income people.

The BNSF Alternative would cause the displacement within the Fresno Roosevelt District of an estimated 250 beds in the headquarters building of the Fresno Rescue Mission. As described in Section 5.1.1 (Disruption or Division of Existing Communities), this facility provides meals and services, including an overnight shelter, to the city's homeless. The social impact of displacing these transient residents would be large and might require relocation or reestablishment of the facility elsewhere. From the perspective of property displacements, suitable existing replacement structures appear to be available within the community, as many vacant buildings are present in the area of the facility.[27] Also, if it is determined that a new building should be constructed, it would be a single structure and is not likely to place pressure on the availability of existing housing units, affect existing community housing objectives or plans, or require new, previously unplanned housing to be built. The project would not displace substantial numbers of existing housing or people along this alternative alignment and thus would not require the construction of replacement housing elsewhere.

Table 5-11 contains a summary of the relative changes in residential displacements that compares each of the alternative alignments to the BNSF Alternative. Table 5-12 contains a more detailed comparison of the residential displacements in those portions of the BNSF Alternative that would be replaced by a corresponding alternative alignment.

[27] As noted in Section 5.1.1, the executive director of the Fresno Rescue Mission has indicated that it may be possible to rebuild the headquarters building on adjacent land owned by the Rescue Mission.

Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative consists of an at-grade option and a below-grade option. Little difference exists in the number of residential displacements between these two options. The at-grade option would displace 53 residences: 1 in Laton, 2 in Hanford, 7 in unincorporated Fresno County, 40 in unincorporated Kings County, and 3 in Armona. The below-grade option would displace 52 residences: 1 in Laton, 1 in Hanford, 7 in unincorporated Fresno County, 40 in unincorporated Kings County, and 3 in Armona. Because 62 residential displacements would occur along the corresponding portion of the BNSF Alternative, the displacements for the at-grade option and the below-grade option would be a decrease of 9 and 10 displacements, respectively, if one of these alternatives were selected instead of the BNSF Alternative. The estimated total number of residents relocated by this alternative would be about 171, or about 30 fewer than under the BNSF Alternative.

An examination of suitable housing alternatives for the displaced residents in this area finds that a sufficient number of alternative homes are currently available. Real estate listings for homes for sale show that Laton, unincorporated Fresno and Kings counties (within zip codes 93242 and 93230), and the city of Armona (zip code 93202) had vacancies of 22, 506, and 37, respectively, all in excess of the residential displacements that would result in these locations from either of the two options for this alternative. Also, examination of HUD-aggregated USPS administrative data on address vacancies in the heavily affected area of Armona further verified that residential vacancies would be sufficient to accommodate relocated residents: 107 units were identified as vacant. The Hanford West Bypass 1 Alternative would therefore not necessitate the construction of replacement housing elsewhere.

Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative consists of an at-grade option and a below-grade option. Little difference exists in the number of residential displacements between these two options. The at-grade option would displace 51 residences: 1 in Laton, 2 in Hanford, 7 in unincorporated Fresno County, 38 in unincorporated Kings County, and 3 in Armona. The below-grade option would displace 50 residences: 1 in Laton, 1 in Hanford, 7 in unincorporated Fresno County, 38 in unincorporated Kings County, and 3 in Armona. Because 62 residential displacements would occur along the corresponding portion of the BNSF Alternative, the displacements for the at-grade option and the below-grade option would be a decrease of 11 and 12 units, respectively, if this alternative were selected instead of the BNSF Alternative. The estimated total number of residents relocated by this alternative would be about 164, or about 37 fewer than under the BNSF Alternative.

Table 5-11
Relative Change in Residential Displacement

Residential Displacements	BNSF Alternative	Relative Change to the BNSF Alternative									
		Hanford West Bypass 1		Hanford West Bypass 2		Corcoran Elevated	Corcoran Bypass	Allensworth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
		AG	BG	AG	BG						
Total units	451	-9	-10	-11	-12	-49	-21	-9	-5	7	-79
Total residents	1,430	-30	-30	-37	-37	-175	-83	-29	-17	22	-242

AG = at-grade option
BG = below-grade option

Table 5-12
Total Changes in Residential Displacement along Corresponding Portions of the BNSF Alternative

Alternative	Residential Units Displaced in Alternative Alignment	Residential Units Displaced in Corresponding Portion of BNSF Alternative	Difference
Hanford West Bypass 1 AG	53	62	-9
Hanford West Bypass 1 BG	52	62	-10
Hanford West Bypass 2 AG	51	62	-11
Hanford West Bypass 2 BG	50	62	-12
Corcoran Elevated	3	52	-49
Corcoran Bypass	31	52	-21
Allensworth Bypass	0	9	-9
Wasco-Shafter Bypass	18	23	-5
Bakersfield South	272	265	7
Bakersfield Hybrid	186	265	-79
AG = at-grade option BG = below-grade option			

An examination of suitable housing alternatives for the displaced residents in this area is the same as that outlined for the Hanford West Bypass 1 Alternative. Therefore, the Hanford West Bypass 2 Alternative would not necessitate the construction of replacement housing elsewhere.

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would displace 3 residences: 1 in Corcoran and 2 in unincorporated Tulare County. Because 52 residential displacements would occur along the corresponding portion of the BNSF Alternative, these displacements would be a decrease of 49 units if this alternative were selected instead of the BNSF Alternative. Because the alternative would displace a small number of existing housing units, the alternative would not require the construction of replacement housing elsewhere.

Corcoran Bypass Alternative

The Corcoran Bypass Alternative would displace a total of 31 residences: 30 in unincorporated Kings County and 1 in unincorporated Tulare County. The corresponding portion of the BNSF Alternative would have 52 residential displacements. Therefore, if the Corcoran Bypass Alternative is selected instead of the BNSF Alternative, 21 fewer residences would be displaced. The estimated total number of residents relocated would be 102, or about 83 fewer than under the BNSF Alternative.

A sufficient number of suitable housing alternatives for the displaced residents in this area are currently available. Real estate listings of homes for sale show that unincorporated Kings County

(within zip code 93212) and in the city of Corcoran had 664 vacancies[28] in excess of the 31 total residential displacements that would result from this alternative. Because this alternative would not displace substantial numbers of existing housing units or people, the alternative would not require the construction of replacement housing elsewhere.

Allensworth Bypass Alternative

The Allensworth Bypass Alternative would not displace any residences. The corresponding portion of the BNSF Alternative would displace 9 residences and relocate 29 residents.

Wasco-Shafter Bypass Alternative

The Wasco-Shafter Bypass Alternative would displace 18 residences: 16 in unincorporated Kern County and 2 in Shafter. The corresponding portion of the BNSF Alternative would displace 23 residences. Some 58 residents would be displaced by the Wasco-Shafter Bypass, 17 fewer than the corresponding portion of the BNSF Alternative.

Unincorporated Kern County and the city of Shafter have 2,044 and 66 vacant homes available, respectively, to meet the housing needs of these displaced residents. Because this alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of replacement housing elsewhere.

Bakersfield South Alternative

The Bakersfield South Alternative would displace 272 residences in the city of Bakersfield. The corresponding portion of the BNSF Alternative would displace 265 residences. Displacements resulting from the Bakersfield South Alternative would relocate 832 residents, whereas displacements along the corresponding portion of the BNSF Alternative would relocate 810 residents.

The Bakersfield South Alternative would displace 146 units and 447 residents in the Northeast District, and 126 units and 386 residents in the Northwest District. These totals are similar to those of the corresponding portion of the BNSF Alternative, which would displace 7 fewer residential units and 22 fewer residents.

Sufficient numbers of alternative residences are available in the area. The Northeast District has 945 units available for sale, and the Northwest District has 500 units. As noted in the discussion of displacements in the BNSF Alternative, replacement rental units may be scarce, but no new residential units are likely to be constructed because both districts have sufficient replacement housing for the estimated number of displacements. In cases where this is not true, housing of last resort, rehabilitation of existing housing, or relocation of disrupted residential areas to newly constructed housing elsewhere in the vicinity would need to be considered. Because this alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of replacement housing elsewhere.

Like the BNSF Alternative, the residential displacements along Bakersfield South Alternative in the Northwest and Northeast districts of Bakersfield would be considerable.

[28] Note that since the Corcoran Bypass Alternative is located outside of Corcoran, these vacancies include housing in unincorporated Kings County in the vicinity of Corcoran. The vacancy count for the BNSF Alternative includes only residences in Corcoran.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative would displace 186 residences in Bakersfield. The corresponding portion of the BNSF Alternative would displace 265 residences. Displacements resulting from the Bakersfield Hybrid Alternative would affect 569 residents, compared with the 810 residents that would be relocated by the corresponding portion of the BNSF Alternative.

The Bakersfield Hybrid Alternative would displace 57 units and 174 residents in the Northeast District, 128 units and 392 residents in the Northwest District, and 1 unit with an estimated 3 residents in the Central District. These totals are less than those of the corresponding portion of the BNSF Alternative, which would displace 79 additional residential units and 242 additional residents.

Similar to the BNSF Alternative, residential displacements in the Northwest and Northeast districts would be considerable.

Sufficient numbers of replacement residences are available in the area. The Northeast District has 945 units available for sale and the Northwest District has 500 units available. As noted in the discussion of displacements in the BNSF Alternative, although replacement rental units may be scarce, no new residential units are likely to be constructed because all of these districts have sufficient replacement housing for the estimated number of displacements. In cases where this is not true, housing of last resort, rehabilitation of existing housing, or relocation of disrupted residential areas to newly constructed housing elsewhere in the vicinity would need to be considered.

5.2.2.3 Station Alternatives

Fresno Station–Mariposa Alternative

The Fresno Station–Mariposa Alternative would not displace any residential units and therefore would not require the construction of replacement housing elsewhere. Thus, this station alternative would have no impact.

Fresno Station–Kern Alternative

The Fresno Station–Kern Alternative would not displace any residential units and therefore would not require the construction of replacement housing elsewhere. Thus, this station alternative would have no impact.

Kings/Tulare Regional Station—East Alternative

The Kings/Tulare Regional Station—East Alternative would not displace any residential units and therefore would not require the construction of replacement housing elsewhere. Thus, this station alternative would have no impact.

Kings/Tulare Regional Station—West Alternative

The Kings/Tulare Regional Station—West Alternative would not displace any residential units and therefore would not require the construction of replacement housing elsewhere. Thus, this station alternative would have no impact.

Bakersfield Station–North Alternative

The Bakersfield Station–North Alternative would displace 16 residential units in Bakersfield's Central District, which in 2010 had 520 vacant residential units to accommodate these 16 displaced households. Because the Bakersfield Station–North Alternative would not displace

substantial numbers of existing housing units or people, this alternative would not require the construction of a substantial amount of replacement housing elsewhere. Thus, the impact of this station alternative would be minor.

Bakersfield Station–South Alternative

The Bakersfield Station–South Alternative would not displace any residential units and therefore would not require the construction of replacement housing elsewhere. Thus, this station alternative would have no impact.

Bakersfield Station–Hybrid Alternative

The Bakersfield Station–North Alternative would displace 12 residential units in Bakersfield's Central District, which in 2010 had 520 vacant residential units to accommodate these 12 displaced households. Because the Bakersfield Station–Hybrid Alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of a substantial amount of replacement housing elsewhere. Thus, the impact of this station alternative would be minor.

5.2.2.4 HMF Site Alternatives

Fresno Works–Fresno HMF Site

Although the Fresno Works–Fresno HMF site would displace 31 residential units in unincorporated Fresno County south of the Fresno city limits, 342 vacant residential units are available along the alignment in unincorporated Fresno County to accommodate these displacements. Because this HMF site alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of a substantial amount of replacement housing elsewhere. Thus, the impact of this HMF site alternative would be minor.

Kings County–Hanford HMF Site

The Kings County–Hanford HMF site would displace 1 residential unit. Because this HMF site alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of a substantial amount of replacement housing elsewhere. Thus, the impact of this HMF site alternative would be minor.

Kern Council of Governments–Wasco HMF Site

Although the Kern Council of Governments–Wasco HMF site would displace 1 residential unit in Wasco, over 100 vacant residential units are available in the city to accommodate this displacement. Because this HMF site alternative would not displace substantial numbers of existing housing units or people, this alternative would not require the construction of a substantial amount of replacement housing elsewhere. Thus, the impact of this site alternative would be small.

Kern Council of Governments–Shafter East HMF Site

The Kern Council of Governments–Shafter East HMF site would not displace any residential units and would not necessitate the construction of replacement housing elsewhere. Thus, this HMF alternative site would have no impact.

Kern Council of Governments–Shafter West HMF Site

The Kern Council of Governments–Shafter West HMF site would displace 5 residential units, but would not require the construction of a substantial amount of replacement housing elsewhere. Thus, this HMF alternative site would have a minor impact.

5.2.3 Commercial and Industrial Business Relocations

5.2.3.1 No Project Alternative

It is expected that the projects that would constitute the No Project Alternative would require acquisition of land and relocation of businesses. It is also expected that the planned projects that would constitute the No Project Alternative would undergo project-specific environmental review, as appropriate, and include feasible mitigation measures to avoid or substantially reduce potential impacts and adequately compensate all who are relocated.

5.2.3.2 Alternative Alignments

BNSF Alternative

Business Relocations

In total along the entire BNSF Alternative, an estimated 395 commercial and industrial businesses would be relocated during the construction of the project. These relocated businesses would correspond to an estimated 2,458 relocated employees. Bakersfield businesses, which account for 302 of the 395 total business relocations, would be divided among the city's Central District (109 businesses and an estimated 635 employees), Northeast District (174 businesses and 477 employees), and Northwest District (19 businesses and 410 employees).

The remaining commercial and industrial relocations along the BNSF Alternative would occur primarily in the city of Fresno (36 businesses and 579 employees), unincorporated Fresno County (15 businesses and 151 employees), and Corcoran (16 businesses and 51 employees). The cities of Wasco (13 businesses and 31 employees) and Shafter (6 businesses and 21 employees), unincorporated Kern County (4 businesses and 53 employees), and unincorporated Kings County (3 business and 51 employees) would also have relocations. No business relocations would occur in the city of Hanford or unincorporated Tulare County.

Table 5-13 contains a breakdown of the total commercial and industrial business relocations along the BNSF Alternative.

Table 5-13
Commercial and Industrial Relocations under the BNSF Alternative

Location	Businesses Relocated	Estimated Employees Relocated
Urban Areas		
Fresno Central	1	5
Fresno Edison	34	534
Fresno Roosevelt	1	40
Hanford	0	0
Corcoran	16	51
Wasco	13	31

Table 5-13
Commercial and Industrial Relocations under the BNSF Alternative

Location	Businesses Relocated	Estimated Employees Relocated
Shafter	6	21
Bakersfield Northwest	19	409
Bakersfield Central	109	635
Bakersfield Northeast	174	477
Rural Areas		
Unincorporated Fresno County	15	151
Unincorporated Kings County	3	51
Unincorporated Tulare County	0	0
Unincorporated Kern County	4	53
Regional Total	**395**	**2,458**

Source: Authority and FRA 2010.

Examination of the NAICS classification of relocated commercial and industrial businesses reveals that the types of businesses being relocated along the BNSF Alternative include automotive repair; wholesale trade; professional, scientific and technical services; machinery and equipment services; accommodation and food services; construction, transportation and warehousing; health care and social assistance; administrative and support; and waste management and remediation services. The highest number of business and employee relocations would occur in the Edison District in the city of Fresno, unincorporated Fresno County, Corcoran, and the Central and Northeast districts in Bakersfield.

Replacement Business Locations

An assessment was conducted to determine the suitability of available properties as relocation sites for these businesses. The suitability of a property was based on the NAICS codes of the businesses being relocated and the description, configuration, and zoning of the properties listed as available. The NAICS codes of the businesses being relocated were shortened to 2 digits and then grouped into similar functional requirements. The exception to this method was automotive services, where 3-digit NAICS codes were used to distinguish these specific and extremely common business types in the study area from others that began with “81-.” Table 5-14 shows the available commercial facilities within the study area that were evaluated and determined to be suitable relocation sites for these businesses.

Examination of suitable replacement locations for these businesses finds that a sufficient number of alternative sites are available for the retail, commercial, office, industrial, transportation, and warehousing sectors. However, there are a larger number of businesses (58) associated with automotive repair, service, or sales than there are properties available (14). Relocating these automotive businesses could therefore require modification of the equipment or configuration of other properties to meet needed specifications. Table 5-15 shows the results of the gap analysis—comparison of needed versus available—of the total number of industrial and commercial properties within the study area.

Table 5-14
Number of Available Vacant Business Properties by County and Most Common NAICS Code

Description and NAICS Codes	Fresno	Kings	Kern
Industrial (construction and manufacturing): 23, 31, 32, 33	64	10	46
Commercial / Wholesale / Retail / Offices : 42, 44, 53, 54	174	40	363
Transportation and Warehousing: 45, 48	114	6	111
Automotive Repair and Services: 811	5	0	9
Accommodation, food service, other non-automotive services: other 81 codes	15	1	67

NAICS = North American Industry Classification System

Source: Analysis of information collected through Reference USA 2010, Loopnet 2010, county parcel data, aerial images, and site visits.

Table 5-15
Gap Analysis of Business Relocations in the BNSF Alternative

Counties	Businesses Relocated	Business Units Available	Size of Surplus
Fresno County	51	372	321
Kings County	19	57	38
Tulare County	0	0	0
Kern County	325[a]	596	269
Regional Total	**395**	**1,025**	**630**

Source: Analysis of information collected through Reference USA 2010, Loopnet 2010, county parcel data, aerial images, and site visits.

[a] Note that this total for Kern County includes businesses associated with the Mercado Latino Tianguis, a single structure that houses an estimated 118 small businesses.

This analysis examined the availability of these types of business locations within the zip codes that fall within the study area in the communities. The 321 displaced businesses in Kern County in the Bakersfield area and in the cities of Wasco and Shafter are primarily retail, commercial, office, and miscellaneous businesses (225 units). Examination of commercial real estate for sale and for lease in these locations identified 430 units of this type available. Vacancies in industrial as well as transportation and warehousing properties total 46 and 111 units, respectively. By comparison, 25 and 23 units, respectively, of each type would be displaced by the BNSF Alternative.

In the city of Fresno and unincorporated Fresno County, the commercial, retail, and office space vacancies total 174 units; this level of vacancies would be more than sufficient to meet the needs of the 27 businesses displaced by the BNSF Alternative. Vacant industrial as well as transportation and warehousing vacancies total 64 and 114 units, respectively, again more than the 11 and 4 businesses of each class that the BNSF Alternative would relocate.

Within the city of Corcoran, 16 business relocations would occur across the industrial, commercial, wholesale, retail, and automotive and transportation sectors. Current vacancies in

Corcoran are minimal, and there is a deficit of all types of required business properties in the city. Therefore, business relocation in Corcoran will be an important consideration in the relocation plan.

The HUD-aggregated USPS administrative data on address vacancies supports these findings, showing overall current business vacancies in the Bakersfield Central and Northeast districts to be 17% and 16%, respectively. Based on these percentages, one out of every six business locations in these two districts is vacant, which equates to 2,112 and 834 vacant business properties, respectively, in these districts). The overall vacancy rate in Fresno's Edison District is approximately 17% and one out of every six business sites is vacant (totaling 200 vacant business properties).

Automotive is an important class of businesses relocated in both Kern and Fresno counties as well as in the city of Corcoran, and automotive businesses usually require specialized facilities, given the services they perform. Based on an examination of alternative automotive-specific locations, current vacancies specifically tailored for this sector are fewer than the projected relocations. In Kern County, 46 automotive businesses would be relocated and only 9 current vacancies were identified. In Fresno County, 8 automotive businesses would be relocated and only 5 units were vacant. In Corcoran, 4 automotive businesses would be relocated, and no vacancies were identified. Given the relative scarcity of these specialized replacement properties, special consideration would be given to automotive businesses during the acquisition and relocation process.

Commercial and industrial business relocations in the Bakersfield Central and Northeast districts total 283 units, employing an estimated 1,111 individuals. Although there is sufficient replacement space located within these communities, this is a considerable number of relocations and represents about 70% of all commercial and industrial relocations along the entire alignment. Given the high number of relocations and the fact that the BNSF Alternative would divide these communities and important community facilities, the impact of these relocations on business operations would be substantial.

The number of business relocations in Corcoran is 16, which is large given the small size of the city's overall economy. In addition, the lack of suitable vacant replacement properties has the potential to further disrupt economic conditions. Therefore, the effect of these relocations on business operations in Corcoran would be substantial.

Commercial and industrial relocations in unincorporated Fresno County and the Fresno Edison District are smaller in number but remain considerable and represent 8%, and 5%, respectively, of all commercial and industrial relocations along the alignment. The effect on business operations within these communities would be moderate.

Commercial and industrial relocations in the other communities along the BNSF Alternative are relatively small in number and would have a minor effect.

One active oil well is located in the Bakersfield metropolitan area along the BNSF Alternative within the project footprint and a 50 foot buffer around the footprint. Active wells would need to be capped and abandoned or relocated, potentially to nearby locations using direction drilling techniques, if feasible. Appurtenant facilities such pipelines would also potentially need to be relocated if they fall within the footprint. Production lost during well relocation is expected to be small on a regional basis, due to the small number of affected wells.

Table 5-16 contains a summary of the relative changes in commercial and industrial business relocations and compares each of the alternatives to the BNSF Alternative. Table 5-17 contains a more detailed comparison of the relocations in those portions of the BNSF Alternative that could be replaced by a corresponding alternative.

Table 5-16
Relative Change in Commercial and Industrial Relocations

Commercial and Industrial Business Relocations	BNSF Alternative	Change Relative to the BNSF Alternative									
		Hanford West Bypass 1		Hanford West Bypass 2		Corcoran Elevated	Corcoran Bypass	Allensworth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
		AG	BG	AG	BG						
Total units	395	+4	+4	+4	+4	-15	-16	0	-19	-167[a]	-22
Total employees	2,458	-7	-7	-7	-7	-48	-51	0	-92	-481	-123

[a] Note that this difference includes businesses associated with the Mercado Latino Tianguis, which houses an estimated 118 small businesses. The Mercado Latino Tianguis is not affected by the Bakersfield South Alternative.

AG = at-grade option
BG = below-grade option

Table 5-17
Changes in Commercial and Industrial Relocations along Parallel Alignment Portions

Alternative	Business Relocations in Alternative Alignment	Business Relocations in Corresponding Portion of BNSF Alternative	Difference
Hanford West Bypass 1 at-grade option	7	3	+4
Hanford West Bypass 1 below-grade option	7	3	+4
Hanford West Bypass 2 at-grade option	7	3	+4
Hanford West Bypass 2 below-grade option	7	3	+4
Corcoran Elevated	1	16	-15
Corcoran Bypass	0	16	-16
Allensworth Bypass	0	0	0
Wasco-Shafter Bypass	4	23	-19
Bakersfield South	135	302	-167
Bakersfield Hybrid	280	302	-22

Hanford West Bypass 1 Alternative

Seven businesses with 44 employees would be relocated along the Hanford West Bypass 1 Alternative under both the at-grade option and the below-grade option. These relocations compare with the 3 businesses and 51 employees that would be relocated in the corresponding portion of the BNSF Alternative. The Hanford West Bypass 1 Alternative would have a negligible effect on commercial and industrial business operations.

Hanford West Bypass 2 Alternative

Seven businesses with 44 employees would be relocated along the Hanford West Bypass 2 Alternative under both the at-grade option and the below-grade option. These relocations compare to the 3 businesses and 51 employees that would be relocated in the corresponding portion of the BNSF Alternative. The Hanford West Bypass 2 Alternative would have a negligible effect on commercial and industrial business operations.

Corcoran Elevated Alternative

One commercial or industrial business would be relocated along the Corcoran Elevated Alternative, unlike the corresponding portion of the BNSF Alternative, where 16 businesses and 51 employees would be relocated. This alternative would have no effect on business operations.

Corcoran Bypass Alternative

No commercial or industrial businesses would be relocated along the Corcoran Bypass Alternative, unlike the corresponding portion of the BNSF Alternative where 16 businesses and 51 employees would be relocated. This alternative would have no effect on business operations.

Allensworth Bypass Alternative

No commercial and industrial businesses would be relocated along the Allensworth Bypass Alternative. Selection of this alternative over the corresponding portion of the BNSF Alternative would therefore not change the number of businesses or employees relocated and would have no impact on business operations.

Wasco-Shafter Bypass Alternative

Four commercial and industrial businesses would be relocated along the Wasco-Shafter Bypass Alternative with an estimated 13 employees. The corresponding portion of the BNSF Alternative would relocate 23 businesses and 105 employees. This alternative would have less of an impact on commercial and industrial business operations than would the BNSF Alternative.

Bakersfield South Alternative

The Bakersfield South Alternative would relocate an estimated 135 commercial and industrial businesses and an estimated 1,041 employees, and the corresponding portion of the BNSF Alternative would relocate 302 businesses and 1,521 employees. The Bakersfield South commercial and industrial business relocations would be divided as follows among the city's districts:

- The Northwest District would have 21 business and 440 employee relocations.
- The Central District would have 57 business and 357 employee relocations,
- The Northeast District would have 57 business and 244 employee relocations.

Although a considerable number of commercial and industrial businesses are relocated by the Bakersfield South Alternative, the examination of suitable alternatives for these businesses found that a sufficient number of alternative sites were available for those in the retail, commercial, office, industrial, transportation, and warehousing sectors, which is similar to the analysis for the corresponding portion of the BNSF Alternative. As with the BNSF Alternative, however, relocations in the automotive sector may have difficulty finding existing suitable locations.

One active oil well is located in the Bakersfield metropolitan area along the Bakersfield South Alternative within the project footprint and a 50 foot buffer around the footprint. Active wells would need to be capped and abandoned or relocated, potentially to nearby locations using direction drilling techniques, if feasible. Appurtenant facilities such pipelines would also potentially need to be relocated if they fall within the footprint. Production lost during well relocation is expected to be small on a regional basis, due to the small number of affected wells.

Although the total number of commercial and industrial business relocations in the Bakersfield Central and Northeast districts would be much less under the Bakersfield South Alternative compared to the BNSF Alternative, these totals are still considerable.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative would relocate an estimated 280 commercial and industrial businesses and an estimated 1,399 employees, and the corresponding portion of the BNSF Alternative would relocate 302 businesses and 1,521 employees. The Bakersfield Hybrid commercial and industrial business relocations would be divided as follows among the city's districts:

- The Northwest District would have 20 business and 467 employee relocations.
- The Central District would have 78 business and 365 employee relocations.
- The Northeast District would have 182 business and 567 employee relocations.

Although a considerable number of commercial and industrial businesses would be relocated by the Bakersfield Hybrid Alternative, the examination of suitable alternatives for these businesses found that a sufficient number of alternative sites are available for those in the retail, commercial, office, industrial, transportation, and warehousing sectors, which is similar to the analysis for the corresponding portion of the BNSF Alternative. However, as with the BNSF Alternative, relocations in the automotive sector may have difficulty finding existing suitable locations.

Although the total number of commercial and industrial business relocations in the Bakersfield Central and Northeast districts would be fewer under the Bakersfield Hybrid Alternative than under the BNSF Alternative, the totals would still be considerable.

5.2.3.3 Station Alternatives

Fresno Station–Mariposa Alternative

The Fresno Station–Mariposa Alternative would relocate 4 commercial and industrial businesses with an estimated 54 employees in the city of Fresno. As with the BNSF Alternative, sufficient numbers of suitable alternative business sites are available in the city of Fresno and unincorporated Fresno County for the businesses in every sector except for the automotive sector. Given the number of units and employees displaced in this small area, the impact on business operations would be moderate.

Fresno Station–Kern Alternative

The Fresno Station–Kern Alternative would relocate 1 commercial and industrial business with an estimated 8 employees in the city of Fresno. As with the BNSF Alternative, sufficient numbers of suitable alternative business sites are available in the city of Fresno and unincorporated Fresno County for the businesses in every sector except for the automotive sector. Given the number of units and employees displaced in this small area, the impact on business operations would be moderate.

Kings/Tulare Regional Station–East Alternative

The Kings/Tulare Regional Station–East Alternative would not relocate any commercial or industrial businesses and therefore would have no impact on business operations.

Kings/Tulare Regional Station–West Alternative

The Kings/Tulare Regional Station–West Alternative would relocate one industrial business with an estimated three employees. The impact on business operations would be negligible.

Bakersfield Station–North Alternative

The Bakersfield Station–North Alternative would relocate an estimated 19 commercial and industrial businesses with an estimated 229 employees in the Bakersfield Central District. Five of these businesses are associated with railroad spurs providing access to the BNSF railroad. Therefore, these businesses would require special relocation consideration to ensure continued access to the BNSF in their new locations. Examination of suitable alternatives for these businesses had the same result as the examination of the surrounding Bakersfield area for relocations along the BNSF Alternative. Although the Bakersfield Station–North Alternative would affect a substantial number of businesses, a sufficient number of alternative sites were available for businesses in every sector except for the automotive sector. Given the number of units and employees relocated in this small area, the impact on business operations would be moderate.

Bakersfield Station–South Alternative

The Bakersfield Station–South Alternative would relocate an estimated 6 commercial and industrial businesses with an estimated 174 employees in Bakersfield's Central District. Five of these businesses are associated with railroad spurs providing access to the BNSF railroad. Therefore, these businesses would require special relocation consideration to ensure continued access to the BNSF in their new locations. Examination of suitable alternatives for these businesses had the same result as the examination of the surrounding Bakersfield area for relocations along the BNSF Alternative. A sufficient number of alternative sites appear to be available for the businesses in all but the automotive sector. Given the number of units and employees displaced in this small area, the impact on business operations would be moderate.

Bakersfield Station–Hybrid Alternative

The Bakersfield Station–Hybrid Alternative would relocate an estimated 22 commercial and industrial businesses with an estimated 194 employees in the Bakersfield Central District. Four of these businesses are associated with railroad spurs providing access to the BNSF railroad. Therefore, these businesses would require special relocation consideration to ensure continued access to the BNSF railroad in their new locations. Examination of suitable alternatives for these businesses had the same result as the examination of the surrounding Bakersfield area for relocations along the BNSF Alternative. A sufficient number of alternative sites are available for the businesses in all but the automotive sector. Given the number of units and employees displaced in this small area, the impact on business operations would be moderate.

5.2.3.4 Heavy Maintenance Facility Site Alternatives

Fresno Works–Fresno HMF Site

This proposed HMF site would relocate 8 commercial and industrial businesses with an estimated 43 employees in unincorporated Fresno County. Examination of suitable alternatives for these commercial and industrial businesses resulted in the same findings as the examination previously discussed for the surrounding Edison District and unincorporated Fresno County locations under the BNSF Alternative. Again, although a sufficient number of alternative sites are available for the affected businesses, those businesses in the automotive sector may have difficulty finding existing suitable locations. Given the number of units and employees relocated in this small area, the impact on business operations would be substantial.

Kings County–Hanford HMF Site

This proposed HMF site would not relocate any commercial or industrial businesses. There would be no impact on business operations.

Kern Council of Governments–Wasco HMF Site

This proposed HMF site would relocate one commercial and industrial business with an estimated eight employees in the city of Wasco. Examination of suitable alternatives for these displaced commercial and industrial businesses in the surrounding area found that a sufficient number of alternative sites are available for all displaced businesses. Given the number of units and employees displaced in this small area, the impact on business operations would be moderate.

Kern Council of Governments–Shafter East HMF Site

This proposed HMF site would not relocate any commercial or industrial businesses. There would be no impact on business operations.

Kern Council of Governments–Shafter West HMF Site

This proposed HMF site would relocate two commercial or industrial businesses with an estimated two employees. There would be a minor impact on business operations.

5.2.4 Agricultural Displacements

This section presents the agricultural displacements and evaluates the need for suitable relocation properties.

5.2.4.1 No project alternative

It is expected that the projects that would constitute the No Project Alternative would require acquisition of land and relocation of agricultural operations. It is also expected that the planned projects that would constitute the No Project Alternative would undergo project-specific environmental review, as appropriate and include feasible mitigation measures to avoid or substantially reduce potential impacts and adequately compensate all who are relocated.

5.2.4.2 Alternative Alignments

Split Parcels and Facility Displacements

BNSF Alternative

In total along the entire BNSF Alternative, an estimated 112 agricultural parcels would be split, and 19 parcels containing agricultural facilities would be displaced. In Kings County, the BNSF Alternative would split 45 agricultural parcels. Split parcels also occur in unincorporated Kern County (29 parcels), Fresno County (20 split parcels), and Tulare County (18 split parcels). If farm units are not rearranged to incorporate these split parcels, additional operational expenses (e.g., labor hours, extra gasoline) associated with access to and movement within fields for irrigation, pesticide application, harvesting and other farm equipment operations could result.

Displaced agricultural facilities occur in Fresno County (9 parcels), Kern County (2 parcels), Kings County (5 parcels), and Tulare County (3 parcels). The temporary business interruption from the relocation of these facilities could result in temporary increases in business costs and lost revenues. Table 5-18 contains a breakdown of these agricultural impacts.

Table 5-18
Agricultural Business Impacts under the BNSF Alternative

Location	Split Agricultural Parcels	Displaced Facilities (Parcels)
Fresno County	20	9
Kings County	45	5
Tulare County	18	3
Kern County	29	2
Regional total	**112**	**19**

Suitable agricultural land is available in the region for any agricultural operations that are required to relocate. It is the case that most agricultural disruption will not be in relocation but

rather in the logical reallocation of agricultural property bought and sold by neighboring operations. Note that the loss of any prime farmland will have greater implications as relocation is unlikely given the scarcity of this resource. This issue is covered below in the dollar value estimates lost agricultural production. In the instance where an operation may be required to relocate, a current examination of vacant and for sale agricultural lands and operations reveals a generous supply available (Loopnet 2010). There were 380 agricultural properties for sale in the region with 195 in Fresno County, 23 in Kings County, 97 in Tulare County and 65 in Kern County. These operations include vacant agricultural land as well as land and facilities for pasture/ranch; field crops, vineyards, diary; and nut and fruit tree operations.

Overall, Kings and Kern counties have the greatest number of split agricultural parcels, and Kern County would have the greatest number of displaced agricultural facilities. In all four counties there is the potential for temporary disruptions to agricultural operations when split parcels are reallocated among owners, if desired, and facilities are relocated.

In terms of agricultural facilities, special consideration is required in the relocation plan for dairy operations, a unique rendering facility in Kings County, and a California Department of Food and Agriculture sampling station in Corcoran. Dairy operations are important to the local economy and are examined in more detail in the Economic Effects section, below. The affected rendering facility (Baker Commodities) is the only one of its kind in the area, and is critical to the economic well-being of local dairy and livestock operations. In addition, the sampling station in Corcoran inspects wheat, safflower, corn, and barley for moisture and from May until September has as many as 75 to 100 trucks per day passing through the facility. It would therefore be important that relocation of the rendering facility and the sampling station occur before the existing facilities are closed or that steps be taken to ensure that sufficient capacity is available at other facilities to avoid interruption in the provided services.

Table 5-19 contains a summary of the relative changes in agricultural facility displacements, and compares each of the alternatives to the BNSF Alternative. Table 5-20 contains a more detailed comparison of the agricultural business impacts in those portions of the BNSF Alternative that would be replaced by a corresponding alternative.

Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative consists of an at-grade option and a below-grade option. The two options would result in a different number of split parcels. The at-grade option would split 60 parcels and displace four agricultural facilities, and the below-grade option would split 56 parcels and displace four facilities. The difference between the numbers of split parcels in the two options is due to the differences in the right-of-way land acquisition required for each option. The corresponding portion of the BNSF Alternative would split 64 parcels and displace six facilities. Similar to the BNSF Alternative, the effect of the parcel splits and facility disruptions resulting from the Hanford West Bypass 1 Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Table 5-19
Relative Change in Agricultural Business Impacts

Agricultural Impacts	BNSF Alternative	Relative Change to the BNSF Alternative									
		Hanford West Bypass 1		Hanford West Bypass 2		Corcoran Elevated	Corcoran Bypass	Allensworth Bypass	Wasco-Shafter Bypass	Bakersfield South	Bakersfield Hybrid
		AG	BG	AG	BG						
Split parcels	112	-4	-8	-2	-7	0	+15	+29	+5	0	0
Facilities displaced	19	-2	-2	-3	-3	-2	-3	0	0	-1	-1

AG = at-grade option
BG = below-grade option

Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative also consists of an at-grade option and a below-grade option. The two options would result in a different number of split parcels. The at-grade option would split 62 parcels and displace three agricultural facilities, and the below-grade option would split 57 parcels and displace three facilities. The difference between the numbers of split parcels in the two options is due to the differences in the right-of-way land acquisition required for each option. The corresponding portion of the BNSF Alternative would split 64 parcels and displace six facilities. Similar to the BNSF Alternative, the effect of the parcel splits and facility disruptions resulting from the Hanford West Bypass 2 Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Table 5-20
Changes in Agricultural Business Impacts along Parallel Alignment Portions

Alternative	Number in Alternative	Number in Corresponding Portion of BNSF Alternative	Difference
Split Parcels			
Hanford West Bypass 1 at-grade option	60	64	-4
Hanford West Bypass 1 below-grade option	56	64	-8
Hanford West Bypass 2 at-grade option	62	64	-2
Hanford West Bypass 2 below-grade option	57	64	-7
Corcoran Elevated	2	2	0
Corcoran Bypass	17	2	+15
Allensworth Bypass	44	15	+29
Wasco-Shafter Bypass	28	23	+5
Bakersfield South	0	0	0
Bakersfield Hybrid	0	0	0
Facilities Displaced (Parcels)			

Table 5-20
Changes in Agricultural Business Impacts along Parallel Alignment Portions

Alternative	Number in Alternative	Number in Corresponding Portion of BNSF Alternative	Difference
Hanford West Bypass 1 at-grade option	4	6	-2
Hanford West Bypass 1 below-grade option	4	6	-2
Hanford West Bypass 2 at-grade option	3	6	-3
Hanford West Bypass 2 below-grade option	3	6	-3
Corcoran Elevated	2	4	-2
Corcoran Bypass	1	4	-3
Allensworth Bypass	0	0	0
Wasco-Shafter Bypass	1	1	0
Bakersfield South	0	1	-1
Bakersfield Hybrid	0	1	-1

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would split two parcels and displace two facilities. The corresponding portion of the BNSF Alternative would split two parcels and displace four facilities. Similar to the BNSF Alternative, the effect of the parcel splits and facility disruptions resulting from the Corcoran Elevated Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Corcoran Bypass Alternative

Along the Corcoran Bypass Alternative, an estimated 17 agricultural parcels would be split and one agricultural facility would be displaced. A total of 14 of the 17 split parcels along the bypass are in Kings County; the other 3 parcels are in Tulare County. Similar to the BNSF Alternative, the effect of parcel splits and facility disruptions resulting from the Corcoran Bypass Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Allensworth Bypass Alternative

An estimated 44 agricultural parcels would be split along the Allensworth Bypass Alternative. This number is much greater than the 15 parcels that would be split along the corresponding portion of the BNSF Alternative. The Allensworth Bypass Alternative would not displace any facilities and neither would the corresponding portion of the BNSF Alternative. The 44 split parcels along the Allensworth Bypass would be in Tulare County (20 parcels) and Kern County (24 parcels). Similar to the BNSF Alternative, the effect of the split parcels and facility disruptions resulting from Allensworth Bypass Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Wasco-Shafter Bypass Alternative

Along the Wasco-Shafter Bypass Alternative, an estimated 28 agricultural parcels would be split, and one agricultural facility would be displaced. The corresponding portion of the BNSF Alternative would split 23 agricultural parcels and displace one agricultural facility. Similar to the BNSF Alternative, the effect of split parcels and facility disruptions resulting from the Wasco-Shafter Bypass Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Bakersfield South Alternative

Agricultural business displacements and disruptions along the Bakersfield South Alternative would be minimal because no agricultural splits or facility disruptions would occur along the Bakersfield South Alternative. This result is not surprising given that this alternative is primarily within the city limits of Bakersfield. Only one agricultural parcel would be split and no agricultural facilities would be displaced by the corresponding section of the BNSF Alternative.

Bakersfield Hybrid Alternative

Agricultural business displacements and disruptions along the Bakersfield Hybrid Alternative would be minimal because no agricultural splits or facility disruptions would occur along the Bakersfield Hybrid Alternative. This result is not surprising given that this alternative is primarily within the city limits of Bakersfield. Only one agricultural parcel would be split and no agricultural facilities would be displaced by the corresponding section of the BNSF Alternative.

Station Alternatives

Fresno Station–Mariposa Alternative

The Fresno Station–Mariposa Alternative would be located in the city of Fresno in the urbanized downtown area and would not affect agricultural operations.

Fresno Station–Kern Alternative

The Fresno Station–Kern Alternative would be located in the city of Fresno in the urbanized downtown area and would not affect agricultural operations.

Kings/Tulare Regional Station—East Alternative

The optional Kings/Tulare Regional Station—East Alternative would not split any agricultural parcels or displace any agricultural facilities.

Kings/Tulare Regional Station—West Alternative

The optional Kings/Tulare Regional Station—West Alternative would not split any agricultural parcels or displace any agricultural facilities.

Bakersfield Station–North Alternative

The Bakersfield Station–North Alternative would be located within the city of Bakersfield in the urbanized downtown area and would not affect agricultural operations.

Bakersfield Station–South Alternative

The Bakersfield Station–South Alternative would be located within the city of Bakersfield in the urbanized downtown area and would not affect agricultural operations.

Bakersfield Station–Hybrid Alternative

The Bakersfield Station–Hybrid Alternative would be situated in the city of Bakersfield in the urbanized downtown area and would not affect agricultural operations.

Heavy Maintenance Facility Site Alternatives

The HMF site alternatives would not split parcels because they are not a linear feature. Instead, a count of the total agricultural parcels acquired is presented.

Fresno Works–Fresno HMF Site

This proposed HMF site would not split any parcels but would displace agricultural facilities on 10 parcels. Displacement and relocation of agricultural facilities could result in increased business costs.

Kings County–Hanford HMF Site

This proposed HMF site would not split any parcels or displace any agricultural facilities.

Kern Council of Governments–Wasco HMF Site

This proposed HMF site would not split any parcels but would displace one agricultural facility. Displacement and relocation of agricultural facilities could result in increased business costs.

Kern Council of Governments–Shafter East HMF Site

This proposed HMF site would not split any parcels or displace any agricultural facilities.

Kern Council of Governments–Shafter West HMF Site

This proposed HMF site would split one parcel and would not displace any agricultural facilities.

Resulting Agricultural Dollar Value and Employment Loss

The Central Valley of California is one of the most productive agricultural areas in the world. In 2007, the four counties in the project study area ranked first (Fresno), second (Tulare), third (Kern), and eighth (Kings) in agricultural revenues generated in California (California Department of Food and Agriculture 2010). The Fresno to Bakersfield Section would displace farmland and the associated crop and animal agriculture on the farmland in this region. The agricultural revenue generated on 1 acre of farmland is a function of many factors. Two key factors are the quality of the farmland and the type of crop raised or type of animal operations conducted on the particular parcel affected. This analysis examines these two factors and estimates the amount of agricultural revenue and the number of agricultural jobs that would potentially be lost as a result of the displacement of agricultural production by the project alternatives.

The project would have negligible to moderate effects on the agricultural and livestock production in the four-county region. For a more detailed analysis of the effects of the project on agricultural production, see Appendix C. The analysis in this appendix provides these results by county and by project alternative in terms of the number of acres of agricultural production lost, the resulting annual revenue loss in both dollar and percent terms for each type of agricultural production, and the employment loss.

BNSF Alternative

The estimated total reduction in agricultural production along the BNSF Alternative would represent a small amount of the total annual revenue generated by agricultural production in each of the four counties in the study area. Specifically, the estimated total annual reduction in revenues is approximately $27.5 million for the region as a whole, which represents less than 0.2% of the region's estimated $16 billion annual agricultural production. The associated reduction in agricultural employment in the region would be about 350 employees. The effects would be highest in Kern County (with $10.2 million in reduced annual revenues and 140 employees affected) and Kings County ($9.7 million in reduced annual revenues and 80 employees affected), with $7.2 million of this loss of revenue in Kings County occurring in the dairy sector. The estimated annual revenue reduction for Fresno County would be $4.9 million, with about 90 employees affected, and the estimated annual revenue reduction for Tulare County would be $2.7 million, with about 40 employees affected.[29]

Effects on dairy operations are a special consideration in Kings County. Overall, it is not expected that any dairy operations would need to be relocated. In four dairy facilities and one feedlot facility, portions of the cattle-holding areas and retention basins as well as their associated structures would be affected, but relocation of these facilities would not preclude continued operation. In those cases, the Authority's right-of-way agents would work with each affected dairy to address issues of concern. Agents would attempt to resolve conflicts, for example by reconfiguring facilities so that there is no net loss of operational capacity. The agents may not be able to resolve all issues, and may offer compensation to landowners that demonstrate a hardship from loss of facilities.

Additionally, when the HST right-of-way removes a portion of a dairy site or would otherwise be in close proximity to confined animal facilities, the HST operation might cause noise that would disturb livestock. Based on existing research, the FRA has established a threshold for high-speed train noise effects on livestock of 100 dBA SEL (FRA 2005). As discussed in Section 3.4 Noise and Vibration, the term SEL, or the sound exposure level, represents the noise generated during a single event, such as the train passing a given point. At a distance of 100 feet, the SEL for project operations at all dairies along the alignment in Kings County would be less than 100 dBA SEL. Given that all facilities on Kings County dairies would be at least 100 feet from the project, there would be no need to relocated structures as a result of noise effects.

The project would also need to acquire 188 acres of croplands in Kings County that are associated with dairy operations or on neighboring parcels and used for nutrient distribution.[30] This land is important as dairy operations face restrictions on the amount of manure that can be spread per acre of farmland. Some dairies have enough of their own land to manage all of their manure onsite, while others must sell manure offsite to comply with regulations. Therefore, acquiring these acres could force operations to alter current manure management plans and require them to find replacement locations for nutrient distribution. If such replacement lands are not available immediately or it is not economically feasible for smaller operations to adjust, operations would be required to reduce the number of cows housed at the facility. To be conservative and not underestimate any potential effect resulting from this loss of land, it was assumed that dairy operations would need to reduce their milk production in the short term until they found replacement lands for all of the 188 acres acquired by the project. As a result, this

[29] The estimates of reduction in agricultural production and employment presented in this section have been rounded. The exact numbers along with all of the methodological detail and discussion of the assumptions are presented in Appendix C.

[30] Nutrient distribution is the application of manure from animal operations to cropland in order to safely dispose of the waste and also improve soil productivity.

short-term effect on the Kings County dairy sector is estimated at around $7.2 million, which represents around 1.1% of the total county revenue generated annually in this sector.

All crops that have annual dollar value losses greater than $100,000 per year or that have a value of more than 1.5% of overall county production are presented in Table 5-21.

Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative has both an at-grade option and a below-grade option. Little difference exists between the two options with regard to the estimated reductions in agricultural revenue and employment. For both options, the estimated reductions are $7.0 million and 70 employees for the counties of Fresno and Kings. Kings County would experience the majority of these reductions ($5.9 million and 50 employees), with the remaining reductions ($1.1 million and 20 employees) in Fresno County. Overall, these estimated dollar value reductions for the Hanford West Bypass 1 Alternative represent 0.1% of total agricultural production in both counties. These reductions are less than the $11.6 million in reductions associated with the corresponding portion of the BNSF Alternative. One dairy facility along the Hanford West Bypass 1 Alternative would be severely affected by the project. During the right-of-way acquisition process, engineering solutions may be identified that make it possible for continued operation. However, this outcome is speculative; at this time, it is assumed that the severity of the effect likely precludes the ability for the dairy to continue operation at this location.

Table 5-21
Crops with Losses Greater Than $100,000 per Year or More Than 1% of Total County Crop Loss under the BNSF Alternative

Crop Type	% of Entire Annual County Crop Revenue Lost	Estimated Revenue Loss in County	Crop Type	% of Entire Annual County Crop Revenue Lost	Estimated Revenue Loss in County
Fresno			**Kern**		
Unknown ag land	—	$ 2,068,994	Almond	1.3%	$5,404,474
Grape, raisin	0.2%	$ 768,989	Unknown ag land	—	$1,572,462
Dairy	0.1%	$552,045	Ornamental–rose	3.1%	$1,009,787
Almond	0.1%	$427,751	Pistachio	0.2%	$507,385
Grape, table	0.1%	$295,446	Carrot	—	$472,209
Peach	0.1%	$270,620	Grape, wine	0.6%	$460,171
All others	0.1%	$504,791	Grape	0.1%	$227,299
			Ornamental–shrub	6.1%	$115,760
County sum	0.1%	$ 4,888,636	County sum	0.1%	$10,234,108
Kings			**Tulare**		
Dairy	1.1%	$ 7,216,143	Unknown ag land	—	$1,296,561
Unknown ag land	—	$1,124,507	Deciduous nut tree	0.2%	$733,559
Alfalfa	0.3%	$ 285,343	Feedlot	0.2%	$504,294
Cherry	—	$217,845	Dairy	0.1%	$206,949
All others	—	$837,737	All Others	0.1%—	$6,072
County sum	0.5%	$ 9,681,575	County sum	0.1%	$2,747,435

— = data not available to determine loss as a percentage of county production
ag = agricultural

Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative also has both an at-grade option and a below-grade option. Little difference exists between the two options with regard to the estimated reductions in agricultural revenue and employment. For both options, the estimated reductions are $6.2 million and 70 employees for the counties of Fresno and Kings. Kings County would experience the majority of these reductions ($5.1 million and 50 employees), with the remaining reductions in Fresno County ($1.1 million and 20 employees). Overall, these estimated dollar value reductions for the Hanford West Bypass 2 Alternative represent 0.1% of total agricultural production in both

counties. These reductions are less than the $11.6 million in reductions associated with the corresponding portion of the BNSF Alternative.

Corcoran Elevated Alternative

For the Corcoran Elevated Alternative, the estimated reductions in agricultural production value and employment would be $1.2 million and 16 employees for the two counties of Kings and Tulare. Tulare County would experience the majority of these impacts ($929,000 and 12 employees), with the remaining reductions in Kings County ($292,000 and 4 employees). Overall, these estimated dollar value reductions for the Corcoran Elevated Alternative represent around 0.02% of total agricultural production in both counties. These reductions are less than the $1.5 million in reductions associated with the corresponding portion of the BNSF Alternative. Similar to the BNSF Alternative, the effect of the Corcoran Elevated Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Corcoran Bypass Alternative

For the Corcoran Bypass Alternative, the estimated reductions in agricultural production value and employment would be $1.3 million and 15 employees for the two counties of Kings and Tulare. Kings County would experience the majority of these impacts ($775,000 and seven employees), with the remaining reductions in Tulare County ($542,000 and eight employees). Overall, these estimated dollar value reductions for the Corcoran Bypass Alternative represent around 0.04% of the total agricultural production in both counties. These reductions are less than the $1.5 million in reductions associated with the corresponding portion of the BNSF Alternative. Similar to the BNSF Alternative, the effect of the Corcoran Bypass Alternative on agricultural business operations would be moderate in the short term and negligible in the long term.

Allensworth Bypass Alternative

For the Allensworth Bypass Alternative, the estimated reductions in agricultural production value and employment would be $1.6 million and 25 employees for the two counties of Kern and Tulare. Kern County would experience most of these impacts ($1.1 million and 18 employees), with the remaining reductions in Tulare County ($500,000 and 7 employee). Overall, these estimated dollar value reductions for the Allensworth Bypass Alternative represent about 0.03% of total agricultural production in both counties. These reductions are less than the $2.4 million in reductions associated with the corresponding portion of the BNSF Alternative.

Wasco-Shafter Bypass Alternative

For the Wasco-Shafter Bypass Alternative, the estimated reductions in agricultural production value and employment would be $11.7 million and 230 employees for Kern County. These reductions are the equivalent of about 0.2% of Kern County's estimated $4 billion in total agricultural production. These reductions are greater than the $8.3 million in reductions associated with the corresponding portion of the BNSF Alternative.

Bakersfield South Alternative

The Bakersfield South Alternative is primarily situated within the city of Bakersfield and would not acquire agricultural parcels. Therefore, no loss in agricultural production value or employment would occur.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative is primarily situated within the city of Bakersfield and would not acquire agricultural parcels. Therefore, no loss in agricultural production value or employment would occur.

5.2.5 Community Facilities

The HST project alignments would avoid most community facilities and other properties that provide public services. The visual interpretation and parcel-by-parcel analysis of the BNSF Alternative and the other alternative alignments found no takings of police or fire stations, libraries, post offices, or civic centers. Each of these community facilities affected are listed below by alternative. Some of these facilities are hybrids of public and private services discussed above in Section 5.1.1 (Disruption or Division of Existing Communities). These facilities are covered again here for clarity and specific discussion of their role in providing community services.

5.2.5.1 No project alternative

The planned projects that would constitute the No Project Alternative would undergo project-specific environmental review, as appropriate. No community facilities are known to be affected or any impacts are assumed to be mitigated to the extent possible. Emergency response times and access would be likely be improved as a result of transportation improvements. No direct or indirect adverse impacts on Section 4(f) lands (that is, public school facilities open for use for public recreation) are known to result. Again, it is assumed that the projects planned under the No Project Alternative would be subject to a project-level environmental review and include feasible mitigation measures to avoid or substantially reduce potential impacts.

5.2.5.2 Alternative Alignments

BNSF Alternative

Overall, the BNSF Alternative would affect 11 community facilities. The majority are in Bakersfield, where the BNSF Alternative would affect 8 parcels containing community facilities: the Mercado Latino Tianguis, Bakersfield High School's Industrial Arts Building, and 6 parcels housing religious facilities.

The Mercado Latino Tianguis is not only a retail center but also an important community facility that would be temporarily displaced during construction of the BNSF Alternative. The Mercado is a shopping complex that re-creates the feel of a Mexican village market in the Northeast District of Bakersfield. This facility is not a single business entity; rather, it rents stall space to approximately 118 small and micro-businesses that cater to Kern County's Hispanic population. The Mercado is often filled with shoppers who come to meet, sample traditional foods, and browse the narrow aisles lined with homemade and manufactured goods. Mexican music is played over the loudspeakers that permeate the Mercado; the music competes with soccer scores and other announcements in Spanish. The Mercado consists of a large main building that has been developed into numerous booths or stalls, where individual business owners sell wares, ranging from apparel to electronics to homemade foods. Services such as immigration advice and legal assistance, cell phone service sales, and insurance protection services are also provided by merchants who speak Spanish fluently. At the south end of the complex is an outdoor market area, Plaza del Pueblo, which has additional retail stalls and a range of restaurants featuring Latino foods and outdoor seating areas. This area provides opportunities for members of the Hispanic community to interact with one another. Cultural events such as Mexican dance and music performances are sometimes held at the Mercado, as are health fairs where members of the community can obtain vaccinations and other health services. Therefore, the loss of the Mercado Latino Tianguis would be a substantial impact to the community. In addition to the

cultural importance of the facility to the Hispanic community of Kern County, the closure or relocation of the Mercado would create economic hardships for the 118 small business owners who provide goods and services through this unique marketplace.

Bakersfield High School occupies a relatively small campus in a built-out urban area. Because of this situation, opportunities for relocating the displaced Industrial Arts Building and meeting modern codes and regulations are limited. The historic importance of Bakersfield High School, combined with the critical nature of its educational services, makes it an important community resource. The displacement of this facility in an already built-out urban area is considered a division of an important community resource.

Five religious facilities would be directly affected by the BNSF Alternative in the Bakersfield area. The project would displace three religious facilities, and two parcels containing religious facilities would be partially acquired. Two other religious facilities would not be directly affected by property acquisition but would be located very near to the project during construction and operation. Parking would be displaced on one of the partially acquired parcels, and all remaining facilities would be exposed to increased noise, traffic, and other indirect impacts during project construction and operation. The religious facilities affected in Bakersfield are listed in Table 5-22. The Bakersfield Station alternatives and the Bakersfield South and Bakersfield Hybrid alternatives would also affect religious facilities, as indicated in this table.

With the BNSF Alternative, the Fresno Rescue Mission, which provides beds, living space, and other support services for up to 250 homeless people, would be displaced. See discussion above in Section 5.1.1 (Disruption or Division of Existing Communities) regarding this community facility.

The BNSF Alternative would also acquire the Amtrak Station and a church in the community of Crome. The Wasco Amtrak passenger platform may need to be relocated.

Hanford West Bypass 1 Alternative

The Hanford West Bypass 1 Alternative at-grade and below-grade options would not acquire any parcels containing community facilities.

Hanford West Bypass 2 Alternative

The Hanford West Bypass 2 Alternative at-grade and below-grade options would not acquire any parcels containing community facilities.

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would not acquire any parcels containing community facilities.

Corcoran Bypass Alternative

The Corcoran Bypass Alternative would not acquire any parcels containing community facilities.

Allensworth Bypass Alternative

The Allensworth Bypass Alternative would not acquire any parcels containing community facilities.

Wasco-Shafter Bypass Alternative

The Wasco-Shafter Bypass Alternative would displace one religious facility in the community of Crome.

Table 5-22
Bakersfield Religious Facilities Affected

Name	Address	District	Alternative	Impact
Christ First Ministries	625 Robinson Street	Northeast	BNSF Alternative	Displaced
Iglesia de Dios	1227 E. 19th Street	Northeast	BNSF Alternative	Parcel affected
Bethany United Methodist Church/Centro Cristiano Agape	409 Baker Street	Northeast	BNSF Alternative	Close to project
St George Greek Orthodox Church	401 Truxtun Avenue	Central	BNSF Alternative (Bakersfield Station–North Alternative) and Bakersfield Station–Hybrid Alternative	Parcel affected
Korean Presbyterian Church	1601 Art Street	Northwest	BNSF and Bakersfield South alternatives	Displaced under both alignments
Chinmaya Mission of Bakersfield	1723 County Breeze Place	Northwest	BNSF, Bakersfield South, and Bakersfield Hybrid alternatives	Displaced under BNSF Alternative and parcel affected under Bakersfield South and Bakersfield Hybrid alternatives
Grace Baptist Church	2550 Jewetta Avenue	Northwest	BNSF Alternative	Close to project
Baker Street Church of Christ	200 Baker Street	Northeast	Bakersfield South Alternative	Displaced
Full Gospel Lighthouse	800 Butte Street	Northeast	Bakersfield South Alternative	Displaced
Grace Christian Center	231 Beale Ave.	Northeast	Bakersfield South Alternative	Close to project
Chapel of Praise Church of God	1223 Dolores Street	Northeast	Bakersfield South Alternative	Close to project
First Free Will Baptist Church	2400 E California Ave	Northeast	Bakersfield South Alternative	Displaced
Saints Memorial Church of God in Christ	1302 East 19th St	Central	Bakersfield South Alternative	Displaced
Bakersfield Word of Life Ministries	1300 S Street	Central	Bakersfield South Alternative (Bakersfield Station–South Alternative)	Close to project

Bakersfield South Bypass Alternative

The Bakersfield South Alternative would displace and require relocation of several businesses and ancillary facilities associated with the Mercy Hospital medical complex. See discussion above in Section 5.1.1 (Disruption or Division of Existing Communities).

The Bakersfield South Alternative would also affect nine religious facilities in the Bakersfield area: five of these facilities would be relocated, one would remain on a parcel that is partially acquired, and three would not be directly affected but would be very close to the project (see Table 5-22). The Bethel Christian School (associated with the First Free Will Baptist Church) would also need to be relocated, together with the associated church. Parking would be displaced on the partially acquired parcels, and the facilities would be exposed to increased traffic, noise, and other indirect impacts during project construction and operation.

Also, land within the Bakersfield Fleet Services Department of Public Works yard would be acquired for the project, thus potentially affecting public works vehicle parking and service delivery in the city.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative would displace and require relocation of several businesses and ancillary facilities associated with the Mercy Hospital medical complex. The Kern County Mental Health facility, the Mercado Latino Tianguis, and a Bakersfield homeless shelter would also be displaced. See discussion above in Section 5.1.1 (Disruption or Division of Existing Communities).

The Bakersfield Hybrid Alternative would also affect two religious facilities in the Bakersfield area; both facilities would remain on a parcel that is partially acquired (see Table 5-22). Parking would be displaced on the partially acquired parcels, and the facilities would be exposed to increased traffic, noise, and other indirect impacts during project construction and operation.

Also, land within the Bakersfield Fleet Services Department of Public Works yard would be acquired for the project, impacting parking in ways similar to the Bakersfield South Alternative.

5.2.5.3 Station Alternatives

For the location of the Bakersfield Station–North Alternative, a portion of a parcel containing a religious facility (see Table 5-22) would be acquired. Although the church itself would not be acquired, this acquisition would affect an associated school, a meeting place, and a playground area. Also, a religious facility would not be affected but would be close to the Bakersfield South station location.

5.2.5.4 Heavy Maintenance Facility Site Alternatives

No parcels containing community facilities would be acquired for any of the heavy maintenance facility site alternatives.

5.2.6 Potential Mitigations for Property Displacements and Relocations

Given the potential displacement of residential, commercial and industrial, agricultural, and community facilities, the following mitigation measures are suggested to reduce the nature and magnitude of any impacts.

Develop relocation plan. Develop a relocation plan taking into account the large number of displacements and relocations in Northwest and Northeast districts of Bakersfield. This plan should take into account any special needs of those being relocated.

Provide access modifications to affected farmlands. If cases where partial property acquisitions result in division of farmlands, the Authority will consider providing overcrossings or undercrossings of the HST track to allow continued use of farmlands. This would include the design overcrossings or undercrossings to allow farm equipment passage. Refer to Section 3.14 (Agricultural Lands) in the EIR/EIS for additional information.

Explore ways to mitigate negative effects associated with property values. The Authority will work with the affected communities to explore ways to mitigate any negative effects that could occur as a result of reduced property values for areas in close proximity to the elevated structure.

Implement measures to reduce impacts associated with the displacement of Bakersfield High School facilities and Bethel Christian School. The Authority will minimize impacts of the disruption to Bakersfield High School facilities associated with the BNSF Alternative. In part, the Authority will accomplish this by contracting or initiating a safety study as soon as a preferred alignment is identified, and completing it prior to property acquisition. This study will include identification and a feasibility analysis of suitable relocation alternatives for Bakersfield High School facilities in conformance with Title 5 requirements. The Authority will consult with school and school district officials prior to land acquisition to reconfigure or replace campus facilities as necessary to replace (both temporarily and permanently) displaced classroom space in a manner that will meet new mandates and minimize disruption to school activities.

Bakersfield High School occupies a relatively small campus in a built-out urban area. Because of this, opportunities for relocating the displaced industrial arts building and meeting modern codes and regulations are limited.

The Authority will minimize the impacts of the disruption to Bethel Christian School facilities associated with the Bakersfield South Alternative. The Authority will consult with First Free Will Baptist Church and Bethel Christian School to identify suitable relocation alternatives for both facilities to minimize the impacts of the disruption. The Authority will consult with school and church officials before land acquisition to find the facilities necessary to replace displaced classroom space in a manner that ensures similar functionality and accessibility to current levels.

Implement measures to reduce impacts associated with the displacement of the Mercado Latino Tianguis. Mitigation will minimize community disruptions associated with the BNSF Alternative and the business closure or relocation (of up to 1 year) of the Mercado Latino Tianguis. The loss of the Mercado Latino Tianguis would be a substantial one to the community. In addition to the cultural importance of the facility to the Hispanic community of Kern County, its closure or relocation will create economic hardships for the 118 individual small business owners who currently provide goods and services through the unique marketplace.

To mitigate these losses, the Authority will develop and implement a comprehensive Spanish-language outreach program for the community prior to land acquisition. This program will facilitate the identification of alternatives that would maintain continuity of operation and allow space and access for the types of services currently provided at the Mercado. Preferred alternatives will be located in the immediate vicinity so as not to impact the Hispanic businesses located along adjacent Chamberlain Street, which rely on the customer base currently generated by the Mercado. To avoid disruption to this community amenity, the Authority will construct a replacement facility prior to the demolition of the existing structure.

Implement measures to reduce impacts associated with the displacement of the Fresno Rescue Mission and associated facilities. The Authority will minimize impacts associated with the BNSF Alternative and the displacement of the Fresno Rescue Mission and its associated facilities and programs by initiating outreach and coordination with representatives of the Fresno Rescue Mission prior to land acquisition. Suitable relocation sites for the headquarters building will be identified within the immediate neighborhood to minimize disruption in the provision of services to Fresno's homeless population and to preserve the integrity of the continuum of services provided to the area's population. The Authority will work with City of Fresno representatives and the Fresno Rescue Mission to facilitate the proper zoning and permitting of a new facility, which will be constructed prior to demolition of the existing structure.

Implement measures to reduce impacts associated with the displacement of Mercy Hospital medical complex facilities. The Authority will minimize impacts from the Bakersfield South Alternative, which would relocate and displace commercial-industrial businesses and facilities associated with the Mercy Hospital medical complex by coordinating with Mercy Hospital officials to identify potential new locations for the relocated medical offices, pharmacy, and parking facilities to minimize disruption to the spectrum of vital medical services provided by this facility. The Authority will initiate consultations with hospital campus planners before property acquisition to identify how displaced amenities can best be replicated to minimize disruption to the provision of medical services. This will include identifying potential replacement office and pharmacy space and alternatives for replacement parking facilities on or in the immediate vicinity of the existing Mercy Hospital campus. Relocated businesses will be encouraged to relocate to such nearby locations, or if such locations cannot be found, the Authority will identify suitable sites for the construction of new facilities to replace those that would be displaced as a result of the project.

Implement measures to reduce impacts associated with the displacement of religious facilities. The Authority will minimize impacts associated with the property acquisition of religious facilities by initiating outreach and coordination with the facilities to identify project design modifications that would minimize impacts on facilities and services, and that would avoid splitting functions among different sites. If the project design cannot be altered to avoid such impacts, the entire facility will be relocated to a suitable alternative location.

5.3 Environmental Justice

Executive Order 12898, the federal environmental justice policy, requires federal agencies to address the potential for their programs, policies, and activities to have a disproportionately high and adverse human health and environmental effect on minority and low-income populations. Department of Transportation Order 5610.2 on environmental justice interprets "disproportionately high and adverse effect on minority and low-income populations" to mean an adverse effect that is predominately borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. This section provides the methodology and results from an examination of potential EJ effects. This examination took a detailed, step-by-step approach to identify potential disproportionately high and adverse effects on minority or low-income populations in the project study area.

5.3.1 Methodology

The analysis presented in Chapter 4 (Affected Environment) of this technical report identified the locations of EJ populations within the project study area (see Appendix A for a detailed description of the EJ methodology). Various resource specialists conducted analyses identifying the potential for project effects on environmental resources in the study area, including effects

on transportation; air quality and global climate change; noise and vibration; electromagnetic fields and electromagnetic interference; public utilities and energy; biological resources and wetlands; hydrology and water resources; geology, soils and seismicity; hazardous materials and wastes; safety and security; socioeconomics and communities; local growth, station planning, and land use; agricultural lands; parks, recreation, and open space; aesthetics and visual resources; cultural and paleontological resources; and regional growth. These effects were identified by geographic area, alignment, and type of impact. The EJ outreach that was conducted is described in Chapter 4 (Affected Environment).

In cases where no effects were identified or effects were negligible or moderate for NEPA and impacts were less than significant under CEQA, no further analysis was conducted on the potential of the project to affect an EJ population. All effects that were found to be substantial and significant before mitigation were reviewed to see if a proposed mitigation measure could reduce the effects. If so, no further evaluation was conducted on EJ effects. Effects that would remain substantial and significant after mitigation were then compared to the geographic locations of EJ populations within the study area. This comparison was done to determine if any of these effects occurred disproportionately in EJ communities or if these effects were of a disproportionately high magnitude within EJ communities. If any effect was disproportionate in an EJ community, then the potential for a disproportionately high and adverse effect on minority and low-income populations could be present. If effects were concentrated in non-EJ areas or evenly distributed along the entire alignment, then no disproportionate EJ effects would occur. The findings are presented in Section 5.3.2 (Potential Environmental Justice Effects by Resource Area).

5.3.2 Potential Environmental Justice Effects by Resource Area

This section describes effects for all resources that are pertinent to studying disproportionately high and adverse effects on minority and low-income populations along the BNSF Alternative, Hanford West Bypass 1 Alternative, Hanford West Bypass 2 Alternative, Corcoran Elevated Alternative, Corcoran Bypass Alternative, Allensworth Bypass Alternative, Wasco-Shafter Bypass Alternative, Bakersfield South Alternative, and Bakersfield Hybrid Alternative. After these effects are described, the discussion then examines the effects for their potential to be disproportionately high and adverse in EJ communities along these alignments. No substantial effects or significant impacts were identified for either the public utilities and energy or the hydrology and water resource areas, and as a result, they are not discussed here.

5.3.2.1 No Project Alternative

Under the No Project Alternative, the HST would not be constructed, but other planned transportation improvements would be made to rail, highway, airport, and transit systems. It should be noted that the improvements associated with some of these projects could require expanding railroad rights-of-way or urban terminal facilities, which are likely to be in urban areas inhabited by predominately minority and low-income populations. It is assumed that any disproportionate effects to minority and low-income populations would be mitigated to the extent possible.

5.3.2.2 Alternative Alignments

BNSF Alternative

Transportation (Section 3.2 of the EIR/EIS)

Construction traffic impacts. Temporary traffic delays could occur because of construction worker traffic entering and leaving construction parking and staging areas. Effects would be distributed along the entire alignment, but would be concentrated in the urban areas. Because

the traffic would be temporary in nature and the contractors would be required to use avoidance and minimization measures during construction, the effects would be negligible and less than significant.

Permanent road closures. Roads would be closed as a result of the project, and people would be forced to use different roads to cross over or under the HST tracks. Effects could be substantial and significant and would be distributed along the entire alignment, though rural areas would experience more road closures than urban areas. Impacts would be reduced to a less-than-significant level with implementation of mitigation measure TR-MM#1 (Access Maintenance for Property Owners).

Traffic delays at stations. In 2035, both the No Project Alternative and the project alternatives would contribute to substantial and significant traffic delays both along roadways and at intersections. Impacts can be reduced to a less-than-significant level with the implementation of Mitigation Measures TR-MM#3 (Add Signal to Intersection to Improve LOS/Operation), TR-MM#4 (Restripe Intersections), TR-MM#5 (Revise Signal Cycle Length), TR-MM#6 (Widen Approaches to Intersections), TR-MM#7 (Add Exclusive Turn Lanes to Intersections), and TR-MM#8 (Add New Lanes to Roadway).

Traffic delays at the HMF. Worker traffic may cause delays at the start and end of work shifts as the workers enter and exit the HMF site on existing roads. Effects are expected to be moderate and significant to both roadways and intersections, with facility design minimizing effects with turning lanes and traffic controls. Impacts will be reduced to a less-than-significant level with the implementation of Mitigation Measures TR-MM#3 (Add Signal to Intersection to Improve LOS/Operation), TR-MM#4 (Restripe Intersections), TR-MM#5 (Revise Signal Cycle Length), TR-MM#6 (Widen Approaches to Intersections), TR-MM#7 (Add Exclusive Turn Lanes to Intersections), and TR-MM#8 (Add New Lanes to Roadway).

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Construction regional pollutant emissions effects. With the concurrent construction of the track, station, and HMF facility, the project would in essence be multiple small- to medium-sized construction projects. The cumulative effects of all these construction sites would exceed San Joaquin Valley Air Pollution Control District thresholds, with the effects being dispersed throughout the project corridor. The effects would be substantial and significant but with proposed mitigation impacts would be reduced to a less-than-significant level.

Localized "hot spot" impacts from HMF operation. Five sites for the HMF have been proposed along the alignment. Of these five sites, two were found to have substantial and significant effects due to surrounding uses: the Fresno Works–Fresno HMF Site and the Kern Council of Governments–Wasco HMF Site. The effects from these facilities could be decreased by the implementation of Mitigation Measures AQ-MM#6 (Reduce the Potential Impact of Toxics) and AQ-MM#7 (Reduce the Potential Impact of Stationary Sources. Impacts would be reduced to a less than significant level with mitigation.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Noise from construction activities would temporarily exceed noise standards evenly along the entire alignment and would affect sensitive receivers. These effects would be substantial and significant, but would be reduced to a less-than-significant level by implementation of Mitigation Measure N&V-MM#1 (Construction Noise Mitigation Measures).

Construction vibration effects. Vibrations from construction activities would temporarily exceed vibration standards evenly along the entire alignment and would affect sensitive receivers. These effects would be substantial and significant, but would be reduced to a less-

than-significant level by implementation of Mitigation Measure N&V-MM#2 (Construction Vibration Mitigation Measures).

Operation noise effects. Noise from the operation of the HST would increase ambient noise levels above noise standards and would affect sensitive receivers. These effects would be substantial and significant, but the implementation of several mitigation measures, including Mitigation Measures N&V-MM#3 (Implement California High-Speed Train Project Noise Mitigation Guidelines), N&V-MM#4 (Vehicle Noise Specification), N&V-MM#5 (Special Trackwork at Crossovers and Turnouts), and N&V-MM#6 (Additional Noise Analysis Following Final Design) would reduce many of the impacts to a less-than-significant level. Some areas would still experience operational noise impacts even with the proposed mitigation.

Operation vibration effects. Vibration from operation of the HST would have vibration effects to sensitive receivers that are located directly adjacent to the alignment. These effects would be substantial and significant, but the implementation of Mitigation Measure N&V-MM#8 (Implement Project Vibration Mitigation) would reduce some of the impacts from vibration. Even with the proposed mitigation, effects would be substantial and significant.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

The BNSF Alternative would have no effect on electromagnetic fields and electromagnetic interference.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

The BNSF Alternative would have no effect on public utilities and energy

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

All effects on biological resources and wetlands can be mitigated to a less-than-significant level with the implementation of mitigation, except for the impacts to wildlife movement corridors. Even with the proposed mitigation measures these impacts would remain significant.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

The BNSF Alternative would have no effect on hydrology and water quality.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

The BNSF Alternative would have no effect on geology, soils, and seismicity.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Temporary hazardous material and waste activities in the proximity of schools. Construction of the HST System could result in an accidental release of hazardous materials within 0.25 miles of a school that could expose children to risks. These effects would be evenly dispersed along the entire alignment and would be mitigated to a less-than-significant level with implementation of HMW-MM#1 (No Use of Hazardous Materials with 0.25 Miles of a School).

Hazardous material and waste activities during project operation in the proximity of schools. Operation of the HST System could result in an accidental release of hazardous materials that could expose both workers and the general public to risks. These effects would be evenly dispersed along the entire alignment and would be negligible and less than significant.

Safety and Security (Section 3.11 of the EIR/EIS)

Increased demand for emergency services. There would be an increased demand for fire, rescue, and emergency services at stations and HMFs. This effect would be distributed along the entire alignment, but concentrated in the urban areas. This effect would constitute a moderate effect and a significant impact, but this impact could be reduced to a less-than-significant level with implementation of Mitigation Measure S&S-MM#1 (Monitor response of local fire, rescue, and emergency service providers to incidents at stations and the HMF and provide a fair share of cost of service).

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Construction and operation of the HST would split some communities and disrupt their current community character. The communities affected by cohesion impacts are Ponderosa, Corcoran, and Bakersfield. Effects would be substantial and significant and would remain significant with the proposed mitigation measures.

Displacement effects. Construction and operation of the HST would displace a number of residences, businesses, and community buildings. For displacement of residences, the areas of concern include the Northwest and Northeast districts in Bakersfield. For the displacement of businesses, the areas of concern include Fresno's Edison District, unincorporated Fresno County, Corcoran, Wasco, and the Central and Northeast districts of Bakersfield. For the displacement of important community buildings (Bakersfield High School, Mercado Latino Tianguis, Fresno Rescue Mission, Bakersfield Homeless Shelter, Mercy Hospital, and multiple churches) impacts could be reduced to a less-than-significant level with implementation of Mitigation Measures SO-MM#4 (Implement Measures to Reduce Impacts Associated with the Relocation of Important Facilities).

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Disruption of access. Construction of the alternatives would temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands. These impacts would be significant, but with proposed mitigation measures impacts would be reduced to a less-than-significant level.

Change in intensity of adjacent land uses. The development of the alternatives along with the construction of the Kings/Tulare Regional Station would put an incompatible land use in a rural area. These impacts would be significant and unavoidable.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Conversion of farmland to non-agricultural use. The loss of agricultural land would be a permanent reduction in land resources. This effect would be substantial and significant. Impacts would remain significant even with implementation of Mitigation Measure Ag-MM#1 (Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland).

Indirect removal of lands from Williamson Act contract. Parcels that are currently under Williamson Act contract may be reduced in size, such that they would no longer meet the size requirements of the program. This reduction in size could then force the parcel out of Williamson Act contract and increase the property taxes on the parcel. The increases in property tax may make it so that the land is no longer economically viable to farm. Impacts can be reduced to a less-than-significant level with implementation of mitigation measure Ag-MM#1 (Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland).

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Construction park closures. Project construction would create closures of some facilities, including bike and equestrian facilities along the Kern River Parkway, Mill Creek Linear Park, and the Amtrak Station playground in Bakersfield. These closures would create moderate effects and significant impacts. Impacts could be reduced to a less-than-significant level with the implementation of Mitigation Measure PC-MM#1 (Compensation for Staging in and Temporary Closures of Park Property during Construction).

Construction of the HST would increase noise, which would affect the character of Father Wyatt Park, in Corcoran, and the McMurtrey Aquatic Center, in Bakersfield. These effects would be substantial and significant but would be mitigated to a less-than-significant level with the mitigation measures described in Section 3.4, Noise and Vibration, of the EIR/EIS.

Project parkland acquisition. The BNSF Alignment would cross Colonel Allensworth State Historic Park, requiring acquisition of some of the park. This would be a substantial effect and a significant impact. The impacts could be reduced to a less-than-significant level with the implementation of Mitigation Measures PP-MM#1 (Acquisition of Park Property) and PP-MM#2 (Avoidance of Colonel Allensworth State Historic Park).

The BNSF Alignment would affect the character of the Colonel Allensworth State Historic Park by introducing noise and visual disturbances to the park. These effects would be moderate and significant. The impacts would remain at a significant level even with the implementation of mitigation measures detailed in Sections 3.4, Noise and Vibration, and 3.16, Aesthetics and Visual Resources, of the EIS/EIR.

Project increased use impacts. As a result of the project, the Amtrak Station Playground in Bakersfield would receive additional use that could increase use to a level that could result in substantial physical deterioration of the playground, which could result in effects that would be substantial and significant. These potentially significant impacts could be decreased with the implementation of Mitigation Measure PP-MM#3 (Collect Additional Maintenance Funds).

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Construction visual disturbances. Construction activities would cause visual effects in urban areas for the entirety of the construction phase of the project. The effects would be substantial and potentially significant, but would be reduced to a less-than-significant level with the implementation of Mitigation Measure AVR-MM#1a (Minimize Visual Disruption from Construction Activities).

Construction nighttime lighting impacts. Intrusive nighttime lighting could result in adverse effects in both rural and urban areas. These effects would be substantial and potentially significant, but impacts could be reduced to a less-than-significant level with the implementation of Mitigation Measure AVR-MM#1b (Minimize Visual Disruption during Construction).

Lower visual quality (during operation). The HST System would become a dominant feature in the areas where it would be built. The visual quality within approximately 0.5 mile of the elevated guideway and within 0.25 mile of the at-grade rail would substantially affect visual quality. These effects would be substantial and potentially significant. These impacts would be reduced with the implementation of Mitigation Measures AVR-MM#2a (Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context), AVR-MM#2b (Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs), AVR-MM#2c (Screen At-Grade and Elevated Guideways Adjacent to Residential Areas), AVR-MM#2d (Replant Unused Portions of Lands Acquired for the HST), AVR-MM#2e (Provide Offsite Landscape Screening Where Appropriate), AVR-MM#2f (Landscape Treatments along the

HST Project Overcrossings and Retained Fill Elements of the HST), AVR-MM#2g (Provide Sound Barrier Treatments), and AVR-MM#2h (Screen Traction Power Distribution Stations and HMF). Even with the proposed mitigation measures, impacts would remain significant for the urban areas of Corcoran, Wasco, Shafter, and Bakersfield and rural areas.

New source of substantial light and glare. Individuals would experience operational night lighting effects. The persons potentially affected would be rural residents in the vicinity of the Kings/Tulare Regional Station alternatives, residents residing near any of the proposed HMF site alternatives, and commercial viewers in the vicinity of the Fresno and Bakersfield stations. The effects would be substantial and potentially significant, but could be reduced to a less-than-significant level with the implementation of Mitigation Measure AVR-MM#1b (Minimize Light Disturbance during Construction).

Noise wall would block views. Many of the alternatives would require the use of noise walls along portions of the guideway in urbanized areas, potentially blocking existing views or adding to the prominence and incompatible character of the guideways. Effects would be substantial and significant even with proposed Mitigation Measures AVR-MM#2b (Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs), AVR-MM#2c (Screen At-Grade and Elevated Guideways Adjacent to Residential Areas), AVR-MM#2d (Replant Unused Portions of Lands Acquired for the HST), AVR-MM#2e (Provide Offsite Landscape Screening Where Appropriate), and AVR-MM#2f (Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST).

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Construction activities taking place in areas known to contain historical resources or properties would cause substantial physical changes to the resources. As a result, substantial effects and significant impacts would occur along the entirety of the BNSF Alternative. These impacts could be mitigated to a less-than-significant level with the implementation of Mitigation Measures Cul-MM#2 (Conduct Archaeological Training), Cul-MM#3 (Halt Work in the Event of an Archaeological Discovery), Cul-MM#4 (Plan an Intentional Site Burial Preservation in Place), and Cul-MM#5 (Conduct Preconstruction Geoarchaeological Testing in Proximity to CA-KER-2507).

Historic property and resource effects. Several historic properties along the BNSF Alternative would experience substantial effects and potentially significant impacts as a result of both construction and operation of the project. The majority of these buildings are concentrated in the downtown districts of urban areas, with Fresno and Bakersfield having the largest number of historic buildings. Impacts would remain significant for construction even with proposed Mitigation Measures Cul-MM#6 (Avoid and/or Monitor Adverse Construction Vibration Effects), Cul-MM#7 (Develop Protection and/or Stabilization Measures), Cul-MM#8 (Avoid Historic Architectural Resources at the Fresno Works–Fresno Heavy Maintenance Facility Site), Cul-MM#9 (Minimize Adverse Effects through Relocation of Historic Structures), Cul-MM#10 (Minimize Adverse Operational Noise Effects), Cul-MM#11 (Prepare and Submit NRHP Nominations), Cul-MM#12 (Prepare and Submit CRHR Nominations), Cul-MM#13 (Prepare and Submit Historic American Building Survey, Historic American Engineering Record, and Historic American Landscape Survey Documentation), and Cul-MM#14 (Prepare Historic Structure Reports).

Construction paleontological resource effects. No known fossil sites occur along the project alignment; however, during construction fossil sites could be found anywhere along the alignment. Such sites could represent substantial and significant effects. These impacts could be reduced with the implementation of Mitigation Measures Cul-MM#17 (Engage a Paleontological Resource Specialist to Direct Monitoring during Construction), Cul-MM#18 (Prepare and

Implement a Paleontological Resource Monitoring and Mitigation Plan), and Cul-MM#19 (Halt Construction When Paleontological Resources Are Found).

Regional Growth (Section 3.18 of the EIR/EIS)

The BNSF Alternative would have no effect on regional growth.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Cumulative impacts. Almost all resource areas would have potential cumulative effects, but most of these effects could be reduced to a negligible effect or a less-than-significant impact with mitigation. The resource areas where effects would not be able to be reduced to a less-than-significant level include air quality and global climate change, noise and vibration, agricultural lands, aesthetics and visual resources, and cultural and paleontological resources. Effects would not be concentrated in one geographic area but would be dispersed along the entire alignment, expect from aesthetics and visual resources and cultural and paleontological resources where effects are concentrated in urban areas.

Hanford West Bypass 1 Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be greater than those described for the BNSF Alternative because more receptors would be exposed to operational noise. Effects would be substantial and significant.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be greater than those of the BNSF Alternative due to potential conflicts with electrical facilities. Displacement of current electrical facilities would occur with the Hanford West Bypass 1 Alternative and even with mitigation impacts would remain significant and unavoidable.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Effects would be less than those of the BNSF Alternative due to the removal of impacts to Ponderosa.

Displacement effects. Effects would be less than those of the BNSF Alternative for residential displacements and greater than the BNSF Alternative for commercial displacements.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Regional Growth (Impact Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hanford West Bypass 2 Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be greater than those described for the BNSF Alternative because more receptors would be exposed to operational noise. Effects would be substantial and significant.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be greater than those of the BNSF Alternative due to potential conflicts with electrical facilities. Displacement of current electrical facilities would occur with the Hanford West Bypass 2 Alternative, and even with mitigation the impacts would remain significant and unavoidable.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Effects would be less than those of the BNSF Alternative due to the removal of impacts to Ponderosa.

Displacement effects. Effects would be less than those of the BNSF Alternative for residential displacements and greater than those of the BNSF Alternative for commercial displacements.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Regional Growth (Impact Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Corcoran Elevated Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be greater than those described for the BNSF Alternative because more receptors would be exposed to operational noise. Effects would be substantial and significant.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Effects would be similar to those of the BNSF Alternative.

Displacement effects. Effects would be less than those of the BNSF Alternative because fewer displacements would result.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Corcoran Bypass Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be less than those described for the BNSF Alternative because fewer receptors would be exposed to operational noise. However, the effects would still be substantial and significant.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Emergency services construction effects. Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Effects would be greater than those of the BNSF Alternative due to the disruption the Corcoran Bypass Alternative would have on rural agricultural communities to the north of Corcoran. Even with mitigation, the impacts would remain significant.

Displacement effects. Effects would be less than those of the BNSF Alternative because fewer displacements would result.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be less than those of the BNSF Alternative because the Corcoran Bypass would not affect father Wyatt Park in Corcoran, where potentially significant impacts may occur under the BNSF Alternative.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be less than those of the BNSF Alternative because the Corcoran Bypass Alternative would go around the city of Corcoran, where potentially significant impacts for aesthetics and visual resources would occur.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Effects would be similar to those of the BNSF Alternative.

Historic property and resource effects. No effects would result from the Corcoran Bypass Alternative, whereas one historic property would be affected under the BNSF Alternative.

Construction paleontological resource effects. Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Allensworth Bypass Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be less than those of the BNSF Alternative because fewer receptors would be exposed to operational noise. However, the effects would still be substantial and significant.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Station Planning, Land Use and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

No potentially substantial or significant effects were identified along the Allensworth Bypass Alignment. The effects would be less than those under the BNSF Alternative because the Allensworth Bypass Alignment would not affect Allensworth State Historic Park.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be less than those of the BNSF Alternative because the Allensworth Bypass Alignment goes around Allensworth State Historic Park, where potentially significant impacts to aesthetics and visual quality impacts would occur under the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Effects would be similar to those of the BNSF Alternative.

Historic property and resource effects. No effects would occur under the Allensworth Bypass Alternative; where one historic property would be affected under the BNSF Alternative.

Construction paleontological resource effects. Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Wasco-Shafter Bypass Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Construction noise effects. Effects would be similar to those of the BNSF Alternative.

Construction vibration effects. Effects would be similar to those of the BNSF Alternative.

Operation noise effects. Effects would be less than those of the BNSF Alternative because fewer receptors would be exposed to operational noise. However, effects would still be substantial and significant under the Wasco-Shafter Bypass Alternative.

Operation vibration effects. Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Community cohesion effects. Effects would be less than those of the BNSF Alternative because the communities of Wasco and Shafter would not be split.

Displacement effects. Effects would be less than those of the BNSF Alternative because fewer displacements would result.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be less than those of the BNSF Alternative because the Wasco-Shafter Bypass Alternative would go around the cities of Wasco and Shafter, where significant effects to aesthetics and visual resources would occur under the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Effects would be similar to those of the BNSF Alternative.

Historic property and resource effects. The Wasco-Shafter Bypass would affect one historic property; the BNSF Alternative would affect two historic properties.

Construction paleontological resource effects. Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Bakersfield South Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Mercy Hospital is directly adjacent to the Bakersfield South Alignment, which would cause some portions of the hospital to experience electromagnetic interference that would be too high to operate sensitive equipment. This effect would be potentially substantial and significant. The impact could be mitigated with implementation of Mitigation Measure EMF/EMI-MM#1 (Protect Sensitive Equipment).

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be greater than those of the BNSF Alternative due to the impacts to Bakersfield High School from construction noise.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Effects would be similar to those of the BNSF Alternative.

Historic Property and resource effects. Several historic properties along the Bakersfield South Alternative would be affected as a result of the project. Although the buildings affected may or may not be the same as for the BNSF Alternative, the total numbers are similar.

Construction paleontological resource effects. Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Bakersfield Hybrid Alternative

Transportation (Section 3.2 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Air Quality and Global Climate Change (Section 3.3 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Noise and Vibration (Section 3.4 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Electromagnetic Fields and Electromagnetic Interference (Section 3.5 of the EIR/EIS)

Mercy Hospital is directly adjacent to the Bakersfield Hybrid Alignment, which would cause some portions of the hospital to experience electromagnetic interference that would be too high to operate sensitive equipment. This effect would be potentially substantial and significant. The

impact could be mitigated with implementation of Mitigation Measure EMF/EMI-MM#2 (Protect Sensitive Equipment).

Public Utilities and Energy (Section 3.6 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Biological Resources and Wetlands (Section 3.7 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hydrology and Water Quality (Section 3.8 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Geology, Soils, and Seismicity (Section 3.9 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Hazardous Materials and Wastes (Section 3.10 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Safety and Security (Section 3.11 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Socioeconomics, Communities, and Environmental Justice (Section 3.12 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Station Planning, Land Use, and Development (Section 3.13 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Agricultural Lands (Section 3.14 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Parks, Recreation, and Open Space (Section 3.15 of the EIR/EIS)

Effects would be greater than those of the BNSF Alternative due to the impacts on Bakersfield High School from construction noise.

Aesthetics and Visual Resources (Section 3.16 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cultural and Paleontological Resources (Section 3.17 of the EIR/EIS)

Construction impacts to prehistoric and historic archaeological resources. Effects would be similar to those of the BNSF Alternative.

Historic property and resource effects. Several historic properties along the Bakersfield Hybrid Alternative would be affected as a result of the project. Although the affected buildings may or may not be the same as for the BNSF Alternative, the total numbers are similar.

Construction paleontological resource effects. Effects would be similar to those of the BNSF Alternative.

Regional Growth (Section 3.18 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

Cumulative Impacts (Section 3.19 of the EIR/EIS)

Effects would be similar to those of the BNSF Alternative.

5.3.3 Disproportionately High and Adverse Impacts on EJ Populations

This section describes impacts for all resources that are pertinent to EJ communities because the effects are potentially disproportionately high and adverse with respect to minority and low-income populations along the BNSF Alternative, Hanford West Bypass 1 Alternative, Hanford West Bypass 2 Alternative, Corcoran Elevated Alternative, Corcoran Bypass Alternative, Allensworth Bypass Alternative, Wasco-Shafter Bypass Alternative, Bakersfield South Alternative, and Bakersfield Hybrid Alternative.

5.3.3.1 No Project Alternative

Under the No Project Alternative, the HST would not be constructed, but other planned transportation improvements would be made to rail, highway, airport, and transit systems. It is presumed these projects would happen throughout the region and would not disproportionately affect minority and low-income populations, except for those improvements that require expanding railroad rights-of-way or urban terminal facilities, which are likely to be in areas inhabited by predominately minority and low-income populations.

5.3.3.2 Alternative Alignments

BNSF Alternative

Table 5-23 presents a summary of the EJ findings for the BNSF Alternative and the proposed HST stations. Analysis of the alternative alignments (including the bypass alternative alignments) yielded slightly different findings but did not change the overall EJ determinations, so the alternative alignments are discussed separately in the text below rather than presented in the summary table.

Transportation (Section 3.2)

All transportation-related impacts could be reduced to a less-than-significant level by the implementation of the proposed mitigation measures, so there would be no disproportionately high and adverse effects on minority and low-income populations.

Air Quality and Global Climate Change (Section 3.3)

Emissions associated with construction would exceed the regional pollutant emission thresholds of the San Joaquin Valley Air Pollution Control District, but with mitigation impacts would be reduced to a less-than-significant level. Air quality impacts would be evenly dispersed along the entire alignment and would not affect any one area or population more than another. Therefore, the impacts to air quality and global climate change from the construction of the BNSF Alternative would not have disproportionately high and adverse impacts on minority and low-income populations.

Noise and Vibration (Section 3.4)

Noise from construction activities would temporarily exceed noise standards and would affect sensitive receptors. These effects would be substantial and significant, but would be decreased to a less-than-significant level by the proposed mitigation measures. Therefore, noise effects from construction of the BNSF Alternative would have no disproportionately high and adverse effects on minority and low-income populations.

Vibration from construction activities would temporarily exceed vibration standards and would affect sensitive receptors. These effects would be substantial and significant, but would be decreased to a less-than-significant level by implementation of the proposed mitigation measures. Therefore, vibration effects from construction of the BNSF Alternative would have no disproportionately high and adverse effects on minority and low-income populations.

Noise and vibration from the operation of the HST would increase ambient noise levels above noise standards and would affect sensitive receptors. These effects would be substantial and significant. For the most part, these effects could be reduced to a less-than-significant level with mitigation measures. The effects would be distributed along the entire alignment, not focused on a single area, so noise and vibration effects from operation of the HST would not have a disproportionately high and adverse effect on minority and low-income populations.

Table 5-23
EJ Findings for the BNSF Alternative and Station Alternatives by Resource Area

Resource	BNSF Alternative and Station Alternatives	
	Construction	Operation
Transportation	N	N
Air quality and global climate change	N	NE
Noise and vibration	N	N
Electromagnetic fields and electromagnetic interference	NE	NE
Public utilities and energy	NE	NE
Biological Resources and Wetlands	N	N
Hydrology and Water Quality	NE	NE
Geology, Soils, and Seismicity	NE	NE
Hazardous materials and wastes	N	N
Safety and security	N	N
Socioeconomics and communities	NE	Y
Station Planning, Land Use, and Development	N	N
Agricultural lands	N	N
Parks, recreation, and open space	N	Y
Aesthetics and visual resources	N	Y

Table 5-23
EJ Findings for the BNSF Alternative and Station Alternatives by Resource Area

Resource	BNSF Alternative and Station Alternatives	
	Construction	Operation
Cultural and paleontological resources	Y	N
Regional Growth	NE	NE
Cumulative impacts	Y	Y

EJ = environmental justice
N = no disproportionate adverse effect on a minority or low-income population
NE = no effect
Y = disproportionate adverse impact on a minority or low-income population

Electromagnetic Fields and Electromagnetic Interference (Section 3.5)

No electromagnetic field or electromagnetic interference impacts were identified along the BNSF Alternative; therefore, no disproportionately high and adverse effects on minority and low-income populations would result.

Public Utilities and Energy (Section 3.6)

No effects related to public utilities and energy were identified along the BNSF Alternative; therefore, no disproportionately high and adverse effects on minority and low-income populations would result.

Biological Resources and Wetlands (Section 3.7)

Only one effect related to biological resources and wetlands would remain significant after mitigation. This impact (wildlife movement corridors) would be distributed along the alignment in more rural areas. Since these areas do not have high concentrations of EJ populations, no disproportionately high and adverse effects on minority and low-income populations would result.

Hydrology and Water Quality (Section 3.8)

No effects related to public utilities and energy were identified along the BNSF Alternative; therefore, no disproportionately high and adverse effects on minority and low-income populations would result.

Geology, Soils, and Seismicity (Section 3.9)

No effects related to geology, soils, and seismicity were identified along the BNSF Alternative; therefore, no disproportionately high and adverse effects on minority and low-income populations would result.

Hazardous Materials and Wastes (Section 3.10)

All effects related to hazardous materials and wastes would be mitigated to a negligible effect and a less-than-significant impact, so no disproportionately high and adverse effects on minority and low-income populations would result.

Safety and Security (Section 3.11)

All effects related to safety and security could be reduced to a less-than-significant level by implementation of the proposed mitigation measures, so no disproportionately high and adverse effects on minority and low-income populations would result.

Socioeconomics, Communities, and Environmental Justice (Section 3.12)

Operation of the HST would divide some communities; remove numerous homes, businesses, and community services or amenities; and permanently alter the character of existing communities or neighborhoods. Many of the persons who would experience these community impacts are located in urban areas. These effects would remain even after the implementation of the proposed mitigation measures. Because the majority of home and business displacements along the BNSF Alignment would occur in Northeast Bakersfield, a community with a high concentration of minority and low-income individuals, a disproportionately high and adverse effect on minority and low-income populations would result.

Station Planning, Land Use, and Development (Section 3.13)

Construction effects related to station planning, land use, and development occur along the whole alignment and are not concentrated in one single area. These impacts are reduced to a less-than-significant level with proposed mitigation measures. Operation impacts are expected to occur in rural areas where there are low numbers of EJ communities. As the impacts are occurring in areas where EJ communities are not prevalent, there are no disproportionately high and adverse effects on minority and low-income populations.

Agricultural Lands (Section 3.14)

The HST project would result in the loss of agricultural land, a loss that would lead to a permanent reduction in land resources. These effects would be considered substantial. These effects to agricultural lands would occur along the entire BNSF Alternative outside the urban areas. These rural areas that would be affected contain the lowest concentrations of minority and low-income populations in the Fresno to Bakersfield Section. The effects would be evenly distributed across these rural areas and would not affect any one area more than another. Thus, agricultural effects from the BNSF Alternative would not have a disproportionately high and adverse effect on minority and low-income populations.

Parks, Recreation, and Open Space (Section 3.15)

The HST project would have both construction and operation impacts to parks, recreation, and open space. Three parks (Father Wyatt, Kern River Parkway, and Miller Creek Linear Park) would be affected by temporary closures, visual and character changes, land acquisitions, noise impacts, and increased use.

For Allensworth State Historic Park, the project would introduce a modern feature not consistent with the historical setting that has been recreated. Because the purpose of the Allensworth State Historic Park is to recreate an atmosphere from the past, the intrusion of a modern HST would conflict with established or planned uses of the park. Although the area surrounding Allensworth State Historic Park is sparsely populated, minority and low-income populations are present in the area; also, Allensworth is a unique state park, a memorial to the only California town founded, financed, and governed by African Americans. Thus, the park has special significance to a minority population. The impacts to the park cannot be mitigated to a less-than-significant level.

Father Wyatt Park, Kern River Parkway and Miller Creek Linear Park would experience construction effects from the closure of some of the trails and increases in noise in the park.

These parks serve the entire community, so impacts would not be borne disproportionately by minority or low-income populations.

As a result of the project, the Amtrak Station Playground in Bakersfield would receive additional use that could increase usage to a level where substantial physical deterioration of the playground would occur. However, this effect could be decreased by the implementation of the proposed mitigation measures.

Because the project would result in effects to Allensworth State Historic Park and because the park is important to minority populations, disproportionately high and adverse effects on minority and low-income populations would result at that location.

Aesthetics and Visual Resources (Section 3.16)

The HST project would have both construction and operation effects to aesthetics and visual resources. Construction effects would be concentrated in urban areas, where EJ populations reside. Nighttime lighting would be required, and the construction of the elevated guideways and the resulting visual impacts could not be mitigated to a less-than-significant level with the proposed mitigation measures.

During the operation phase of the project, effects would be distributed along the entire alignment. The elevated portions of the HST guideway would become a dominant feature in the visual landscape, substantially affecting visual quality within approximately 0.5 mile of the BNSF Alternative. The visual effect would occur in those areas where the alignment would be elevated, which is in mostly urban areas along the alignment. Except for a few areas (e.g., the city of Hanford and Bakersfield's Northwest District), these urban areas have high concentrations of minority and low-income populations. Therefore, the project operation would have a disproportionately high and adverse effect on minority and low-income populations. The sections of the alignment that are built at-grade would also have visual effects; however, those effects would occur closer to (within 0.25 mile of) the alignment, and they could be mitigated by the proposed mitigation measures in most areas. An area where the impacts would not be mitigated is near Allensworth State Historic Park. The passing of the train by the park would introduce a feature that is incompatible with the desired look of the park. This feature would affect the state park. The area surrounding Allensworth State Historic Park is sparsely populated; however, minority and low-income populations are present in the area. Furthermore, Allensworth is a unique state park because it is a memorial to the only California town founded, financed, and governed by African Americans. This history gives the park a special significance to a minority population. For these reasons, this aesthetics and visual resource impacts associated with the BNSF Alternative would have a disproportionately high and adverse effect on minority and low-income populations.

Visual effects from the construction and operation of the HST would occur along the entire alignment. The areas that would experience the greatest effects are those within urban areas along the alignment where the train would operate on an elevated guideway. These urban areas have high concentrations of minority and low-income populations. Therefore, the visual effects associated with the BNSF Alternative would have a disproportionately high and adverse effect on minority and low-income populations.

Cultural Resources (Section 3.17)

Construction activities taking place in areas known to contain historical resources or properties could cause substantial and significant physical changes to those resources. Because historical resources or properties are concentrated in Downtown Fresno and Downtown Bakersfield, construction effects on EJ populations would be considered to have a disproportionately high and adverse effect on minority and low-income populations. The BNSF Alternative would cause effects

to some historic buildings, most of which are concentrated in Downtown Fresno and Downtown Bakersfield. These impacts would be reduced to a less-than-significant level. Therefore, no disproportionately high and adverse effects on minority and low-income populations would result for operation.

Regional Growth (Section 3.18)

No effects related to regional growth were identified along the BNSF Alternative; therefore, no disproportionately high and adverse effects on minority and low-income populations would result.

Cumulative Impacts (Section 3.19)

Cumulative impacts occur for all resource areas except electromagnetic fields and electromagnetic interference; hazardous materials and wastes; local growth, station planning, and land use; and parks, recreation, and open space. For the resource areas that do have cumulative impacts, all impacts can be reduced to a less-than-significant level with the implementation of mitigation measures except for air quality and global climate change, noise and vibration, agricultural lands, aesthetics and visual resources, and cultural and paleontological resources. Of these resources, three (air quality and global climate change, noise and vibration, and agricultural lands) have cumulative impacts that are spread evenly throughout the study area and therefore do not affect EJ areas. The remaining two resources (aesthetics and visual resources and cultural resources) have effects that are concentrated in urban areas. Because urban areas are where a majority of the EJ populations live in the Fresno to Bakersfield Section, then cumulative impacts have a disproportionately high and adverse effect on minority and low-income populations.

Hanford West Bypass 1 and 2 Alternatives

The environmental justice effects for both the Hanford West Bypass 1 and the Hanford West Bypass 2 alternatives are similar to that of the BNSF Alternative. Although the BNSF Alternative would displace the community of Ponderosa and the Hanford West Bypass 1 and 2 alternatives would avoid this displacement, the community is not an EJ community. The areas that the alternatives would pass through are areas with some of the lowest concentrations of EJ populations in the study area.

Corcoran Elevated Alternative

The environmental justice effects for the Corcoran Elevated Alternative would be similar to those shown for the BNSF Alternative in Table 5-23, because the alignments are directly adjacent to each other. The Corcoran Elevated Alternative would take fewer residences and businesses in Corcoran but would still split the community.

Corcoran Bypass Alternative

The environmental justice effects of the Corcoran Bypass Alternative would be similar to those shown for the BNSF Alternative in Table 5-23. The Corcoran Bypass Alternative would take fewer residences and businesses in Corcoran but would divide and disrupt a rural agricultural community along Newark Avenue northeast of Corcoran that the BNSF Alternative would not affect. The Newark Avenue community is classified as an EJ area.

Allensworth Bypass, and Wasco-Shafter Bypass Alternatives

The environmental justice effects associated with two bypass alternatives would be less than those shown for the BNSF Alternative in Table 5-23. The substantial and significant effects to parks, recreation, and open space associated with Allensworth State Historic Park would be

avoided under the Allensworth Bypass Alternative. Substantial noise and visual effects would be somewhat reduced because the bypass alternative alignments traverse areas with fewer sensitive receptors that could be affected by the project. The population densities of these areas outside of Allensworth, Wasco, and Shafter are lower overall and fewer concentrations of minority and low-income populations were identified, so the effects of the HST alignment on these populations would be slightly reduced if the bypass alternatives are incorporated into the project.

Bakersfield South and Bakersfield Hybrid Alternatives

The environmental justice effects associated with the Bakersfield South and Bakersfield Hybrid Alternatives would be similar to those shown for the BNSF Alternative in Table 5-23. The same communities would be divided, but somewhat different homes, businesses, and community facilities, such as churches, would be displaced (some would be the same, some different). The Bakersfield South and Bakersfield Hybrid alternatives would affect fewer residences and businesses. The Bakersfield South Alternative would affect more churches than the corresponding portion of the BNSF Alternative. The Bakersfield South and Bakersfield Hybrid alternatives would have a more substantial effect on Bakersfield High School, which is attended by predominately minority and low-income students. Further, the Bakersfield Hybrid Alternative would also displace the Bakersfield Homeless Shelter, which serves low-income families.

5.3.3.3 Station Alternatives

The construction and operation effects associated with the proposed HST stations were analyzed as part of the BNSF Alignment and the alternatives. Although the project considers alternative designs (e.g., the Fresno Station–Mariposa and Fresno Station–Kern alternatives for Fresno and the Bakersfield Station–North, Bakersfield Station–South, and Bakersfield Station–Hybrid alternatives for Bakersfield), these alternative designs are reconfigurations of station facilities at the same locations, within almost identical footprints. For this reason, the EJ findings of effect would not vary from one station alternative to another.

The construction and operation of the potential Kings/Tulare Regional Station–East and Kings/Tulare Regional Station–West would increase urban development pressures on the agricultural lands in the area, because land in the vicinity of the stations would be developed to support the station operation. However, these station locations are not in areas with high concentrations of minority and low-income individuals. As a result, these station construction effects would not have disproportionately high and adverse effects on minority and low-income populations.

Overall, communities of concern are concentrated in the urban areas of Fresno and Bakersfield, where two of the stations for the Fresno to Bakersfield Section will be built. Therefore, all the station alternatives in these two cities would have disproportionately high and adverse construction and operation effects on minority and low-income populations.

5.3.3.4 Heavy Maintenance Facility Site Alternatives

Unlike the station alternatives, the five sites proposed for the construction of the HMF (in four different parts of the study area) vary in both size and configuration and thus could result in different effects on EJ populations. Table 5-24 presents a summary of the EJ findings for the proposed HMF sites.

As shown in Table 5-24, of the five proposed HMF sites, two were found to have significant and substantial environmental effects due to the sensitivity of surrounding uses: the Fresno Works–Fresno HMF site and the Kern Council of Governments–Wasco HMF site. The air quality, noise, and aesthetics/visual impacts from the construction and operation of facilities at these two locations would be substantial and significant. Because these two locations are in areas near high

concentrations of minority and low-income populations (the Kern Council of Governments–Wasco HMF site is immediately adjacent to the Wasco Farm Labor Camp), these two sites would result in a disproportionately high and adverse effect on minority and low-income populations. The other proposed HMF sites (the Kings County–Hanford HMF site and the Kern Council of Governments–Shafter East and Shafter West HMF sites) do not result in any substantial and significant effects and therefore are not considered to have a disproportionate adverse effect on a minority or low-income population.

Table 5-24
Environmental Justice Findings by Heavy Maintenance Facility Site

Resource	Heavy Maintenance Facility Site				
	Fresno Works–Fresno	Kings County–Hanford	Kern Council of Governments–Wasco	Kern Council of Governments–Shafter East	Kern Council of Governments–Shafter West
Transportation	N	N	N	N	N
Air quality and global climate change	Y	N	Y	N	N
Noise and vibration	Y	N	Y	N	N
Electromagnetic fields and electromagnetic interference	N	N	N	N	N
Public utilities and energy	N	N	N	N	N
Biological resources and wetlands	N	N	N	N	N
Hydrology and water quality	N	N	N	N	N
Geology, soils, and seismicity	N	N	N	N	N
Hazardous materials and wastes	N	N	N	N	N
Safety and security	N	N	N	N	N
Socioeconomics, communities, and environmental justice	Y	N	Y	N	N
Station planning, land use and development	N	N	N	N	N
Agricultural lands	N	N	N	N	N
Parks, recreation, and open space	N	N	N	N	N
Aesthetics and visual resources	Y	N	Y	N	N

Table 5-24
Environmental Justice Findings by Heavy Maintenance Facility Site

Resource	Heavy Maintenance Facility Site				
	Fresno Works–Fresno	Kings County–Hanford	Kern Council of Governments–Wasco	Kern Council of Governments–Shafter East	Kern Council of Governments–Shafter West
Cultural and paleontological resources	N	N	N	N	N
Regional growth	N	N	N	N	N
Cumulative impacts	N	N	N	N	N

EJ = environmental justice
N = no disproportionate adverse effect on a minority or low-income population
N/A = resource not applicable
NE = no effect
Y = disproportionate adverse effect on a minority or low-income population

5.3.3.5 Project Benefits

In accordance with Executive Order 12898, offsetting benefits should also be considered when evaluating potential disproportionately high and adverse effects on minority and low-income populations. The proposed HST project would bring economic benefits to the study region, including jobs and related income. HST construction and operation jobs would be filled by the regional labor force, so the project would benefit regional workers broadly, but would not disproportionately benefit minority and low-income populations in the absence of special recruitment, training, or job set-aside programs.

Although elevated guideways would introduce substantial adverse aesthetic and visual effects through urban areas, station construction and planned station area improvements in Downtown Fresno and Downtown Bakersfield would improve the aesthetics and visual environment in these locations, benefiting the nearby minority and low-income communities. Other station-related benefits, including improved accessibility and potential property value increases, would most benefit those who live closest to the new stations. In Fresno and Bakersfield, the people who live closest to the new stations would be the adjacent minority and low-income communities. The optional Kings/Tulare Regional Station is in a sparsely populated area that would bring neither disproportionate adverse effects nor benefits to minority and low-income populations.

5.4 Other Impacts

5.4.1 Relocation of Sensitive Populations

High concentrations of residential unit displacements associated with construction of the project could result in the relocation of high percentages of sensitive populations, including the elderly (over 65), the disabled, female heads of household, and linguistically isolated residents. It follows that adequate relocation plans must be put in place to meet any special needs. Potential impacts from the relocation of sensitive populations are a direct result of project construction and the need to acquire land for the project and its associated structures. Impacts from the relocation of minority and low-income populations are examined specifically in Section 5.3 (Environmental Justice).

The anticipated residential unit displacements resulting from the construction of the HST System are not expected to disproportionately displace sensitive populations; however, it is expected that sensitive populations will be among those relocated by the project. Relocation plans and resources would take this into account and address special needs of such households accordingly. Therefore, the impacts on sensitive populations overall would not be substantial.

5.4.1.1 Alternative Alignments

BNSF Alternative

The highest numbers of residential displacements would occur in the Northeast and Northwest districts of Bakersfield under the BNSF Alternative. Within the U.S. Census tracts for these three districts, analysis of Census 2000 data shows that the percentage of the total population that is elderly in these districts is 10.5% and 7.8%, respectively. These percentages are similar to those for Bakersfield as a whole (8.8%) and for Kern County (9.4%). The disabled population in these districts accounts for 24.6% and 14.3%, respectively, of the total population. The values for the Northeast District are somewhat higher than those of Bakersfield as a whole (19.9%) and Kern County (22.5%), and the percentage for the Northwest District is considerably lower. The female head of household population in these districts is 17.8% and 7.9%, respectively. The percentage for the Northeast District is somewhat higher than those for Bakersfield as a whole (14.2%) and Kern County (15.0%), and the percentage for the Northwest District is considerably lower. The percentage of households linguistically isolated in the districts is 9.6% and 1.2%, respectively. The percentage for the Northeast District is higher than in Bakersfield as a whole (5.8%) and Kern County (8.2%). These comparisons suggest that the residential displacements in the Northeast District may affect slightly higher numbers of disabled, female head of household populations, and linguistically isolated populations. Relocation plans and resources would take these possibilities into account.

Table 5-25 provides this breakdown of elderly, disabled, female head of household, and linguistically isolated residents in Kern County, the city of Bakersfield, and the two affected districts of Bakersfield.

Table 5-25
Sensitive Populations in Areas with High Concentration of Residential Displacements

Area	Percent over 65	Percent Disabled	Percent female Head of Household	Percent Linguistically Isolated
Kern County [a]	9.4%	22.5%	15.0%	8.2%
City of Bakersfield [a]	8.8%	19.9%	14.2%	5.8%
Bakersfield Northwest District [b]	7.8%	14.3%	7.9%	1.2%
Bakersfield Northeast District [b]	10.5%	24.6%	17.8%	9.6%

Sources:
[a] Data for Kern County and the city of Bakersfield are from U.S. Census Bureau 2007, 2008; California Department of Finance 2009; U.S. Census Bureau, American Community Survey 2008c.
[b] Data for the three districts in Bakersfield are from U.S. Census Bureau 2000j; California Department of Finance 2009; U.S. Census Bureau 2000f.

After the Bakersfield area, the city of Corcoran and unincorporated Fresno and Kings counties contained the most residential displacements. For the unincorporated areas, these relocations are not concentrated in a single community, but are dispersed throughout rural areas. Given that no elderly, disabled care, or women's centers were identified among these displacements, there is no reason to believe that relocation of elderly, disabled, or female head of household populations would occur at a rate greater than that for the county average for these populations. The same is true for individuals who are linguistically isolated, because the percentage of these individuals relocated would be expected to correlate with those of the counties as a whole.

Hanford West Bypass 1 Alternative

High concentrations of residential displacements would not occur under the Hanford West Bypass 1 Alternative. Therefore, the impacts on sensitive populations would be small.

Hanford West Bypass 2 Alternative

High concentrations of residential displacements would not occur under the Hanford West Bypass 2 Alternative. Therefore, the impacts on sensitive populations would be small.

Corcoran Elevated Alternative

High concentrations of residential displacements would not occur under the Corcoran Bypass Alternative. Therefore, the impacts on sensitive populations would be small.

Corcoran Bypass Alternative

High concentrations of residential displacements would not occur under the Corcoran Bypass Alternative. Therefore, the impacts on sensitive populations would be small.

Allensworth Bypass Alternative

High concentrations of residential displacements would not occur under the Allensworth Bypass Alternative. Therefore, the impacts on sensitive populations would be small.

Wasco-Shafter Bypass Alternative

High concentrations of residential displacements would not occur under the Wasco-Shafter Bypass Alternative. Therefore, the impacts on sensitive populations would be small.

Bakersfield South Alternative

High concentrations of residential displacements would occur in and near the city of Bakersfield's Northwest and Northeast districts under the Bakersfield South Alternative. The presence of sensitive populations in these areas was examined for the BNSF Alternative. The analysis suggests that relocation in these districts may affect high numbers of disabled, female head of household, and linguistically isolated populations in the Northeast District. Therefore, the relocation plans and resources provided will take these populations into account.

Bakersfield Hybrid Alternative

High concentrations of residential displacements would occur in and near the Bakersfield Northeast and Northwest districts under the Bakersfield Hybrid Alternative. The presence of sensitive populations in these areas was examined for the BNSF Alternative. The analysis suggests that relocation in these districts may affect high numbers of disabled, female head of household, and linguistically isolated populations in the Northeast District. Therefore, the

relocation plans and resources provided will take the special needs of these populations into account.

5.4.1.2 Station Alternatives

No residential displacements would be associated with the Fresno and Hanford station alternatives. Residential displacements associated with the Bakersfield Station–North Alternative occur in and near the Central and Northeast districts of Bakersfield. The presence of sensitive populations in these districts was examined for the BNSF Alternative. The analysis suggests that relocations in these districts may affect high numbers of female-headed households and linguistically isolated populations. Therefore, the relocation plans and resources provided will take these populations into account.

5.4.1.3 Heavy Maintenance Facility Site Alternatives

Residential displacements that would result from the Fresno Works–Fresno HMF site and the Kern Council of Governments–Wasco HMF site would not disproportionately displace sensitive populations. No residential displacements are associated with the Kings County–Hanford HMF site, the Kern Council of Governments–Shafter East HMF site, or the Kern Council of Governments–Shafter West HMF site.

5.4.2 Changes in School District Funding

The potential impact of high concentrations of residential unit displacements on school districts was considered based on potential indirect construction impacts on school funding resulting from reductions in student populations in communities with high numbers of relocations. School district funding is dependent on student attendance, and the relocation of large populations of students outside existing school districts could therefore reduce funding for the affected school districts.

The elementary, secondary, and unified school district boundaries in the four counties were examined to determine the number of residential relocations in each school district (Cal-Atlas 2009). The boundaries of these districts overlap, because secondary school districts are often an aggregation of many elementary school districts (see Figures 5-1 and 5-2). The number of affected students in each school district was estimated by first multiplying the percentage of school-age children (5 to 19 years old) in each city or county population by the average household size in the corresponding location (U.S. Census Bureau 2000a, 2000d). The average number of school-age children per household was then multiplied by the number of residential relocations in each area. The ages of 5 to 14 were used to approximate elementary-school-aged children and the ages of 15 to 19 were used to approximate secondary-school-aged children. The number of enrolled students in each school district was obtained from the California Department of Education for the 2010–2011 school year (California Department of Education 2011). The numbers of affected students per school district are presented below.

The total number of students relocated in a school district was compared with the number of vacant housing units in the nearby vicinity to determine whether a large number of displaced residents may be forced to relocate outside of their current school district. The number of residential vacancies within each school district was determined by housing data based on the zip code or codes that most accurately captured the school district boundaries (Zillow 2010). Where a large number of displaced residents would have to relocate to homes in a new school district, school funding impacts may exist. As described in the residential displacement analysis above, a suitable amount of vacant replacement housing is available in the vicinity of all anticipated displacements, and students would likely have the opportunity to remain in their current school districts; therefore, any effect on school district funding would be small.

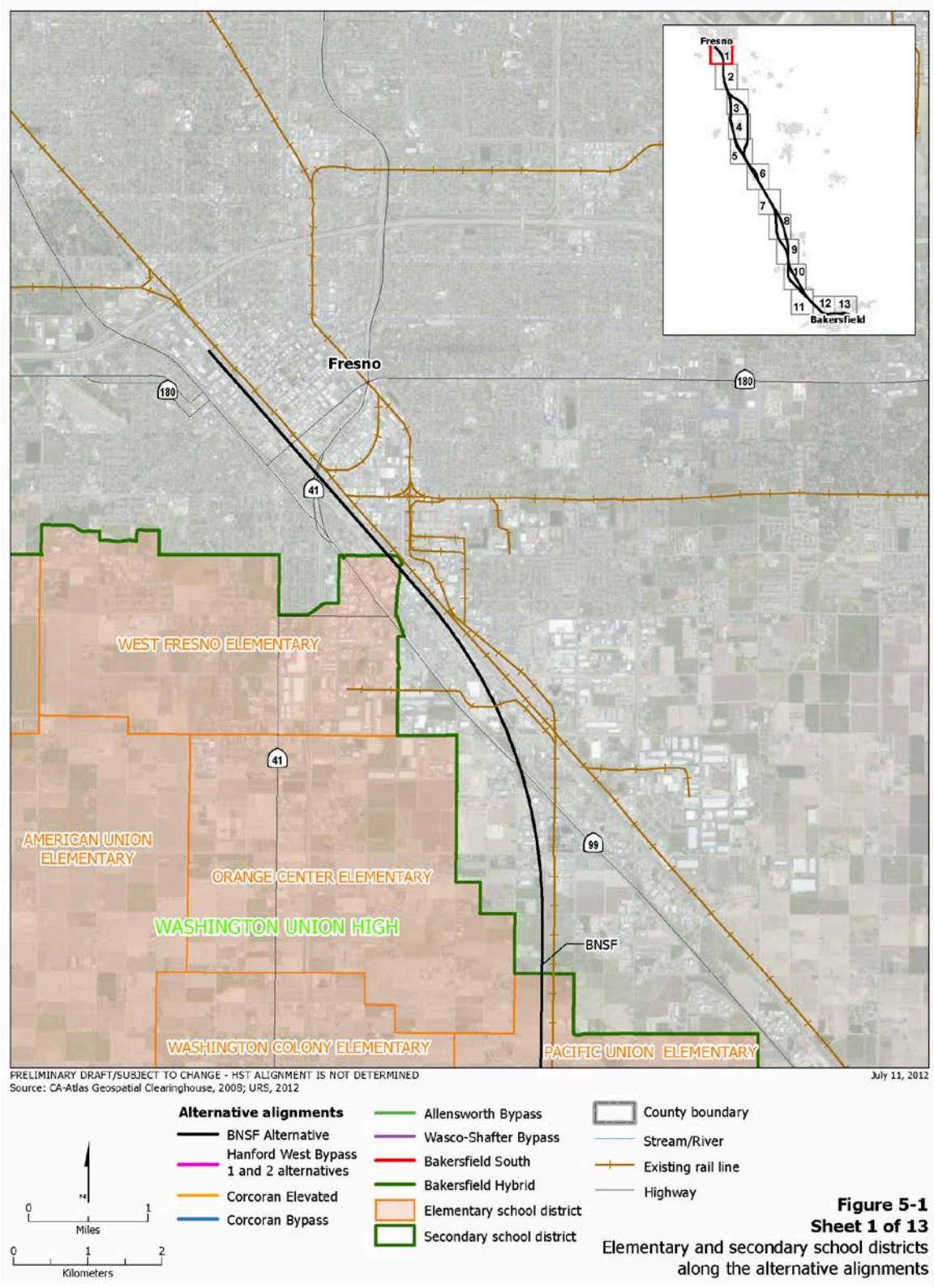

Figure 5-1
Elementary and secondary school districts along the alternative alignments

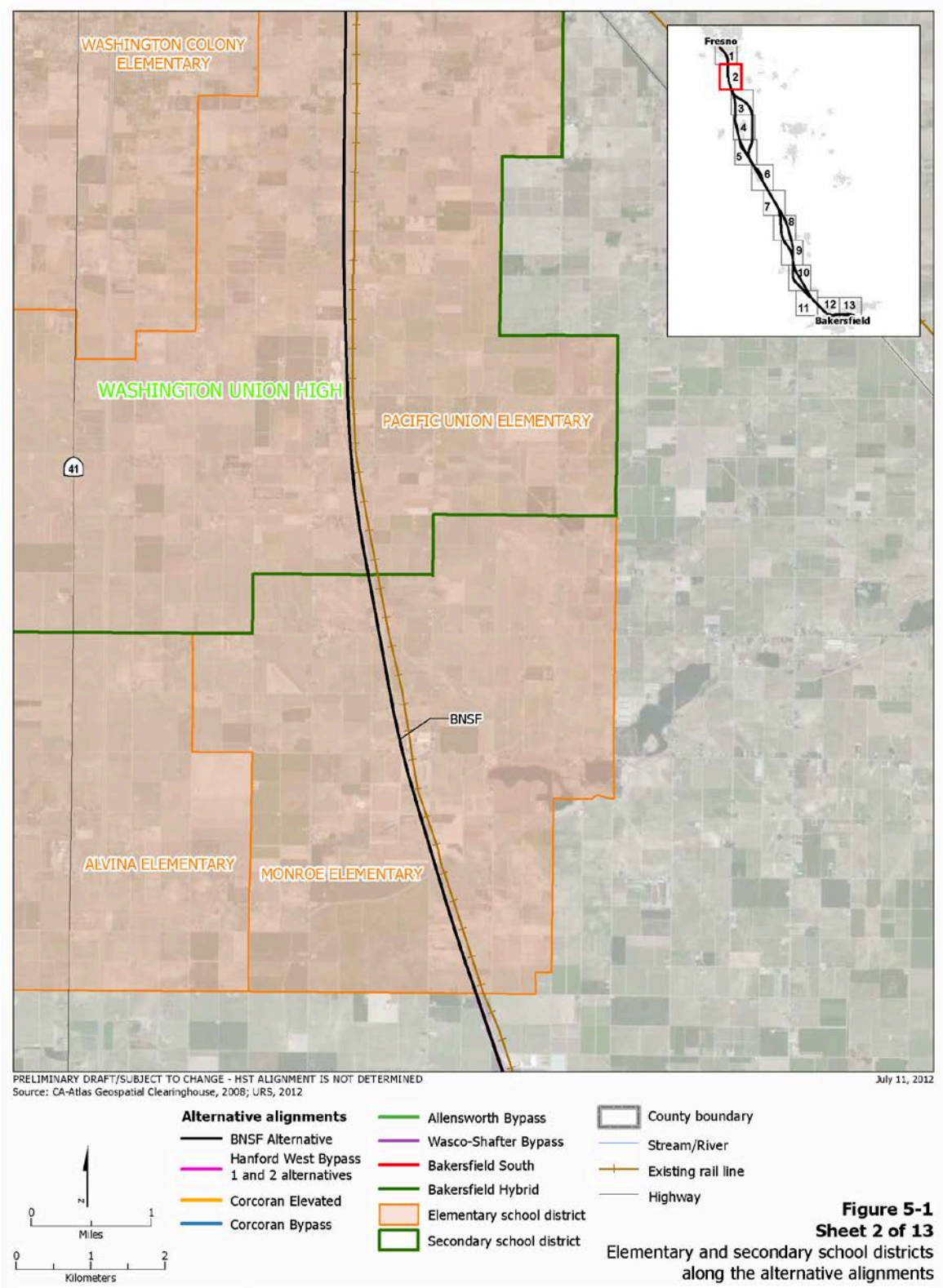

Figure 5-1
Sheet 2 of 13
Elementary and secondary school districts along the alternative alignments

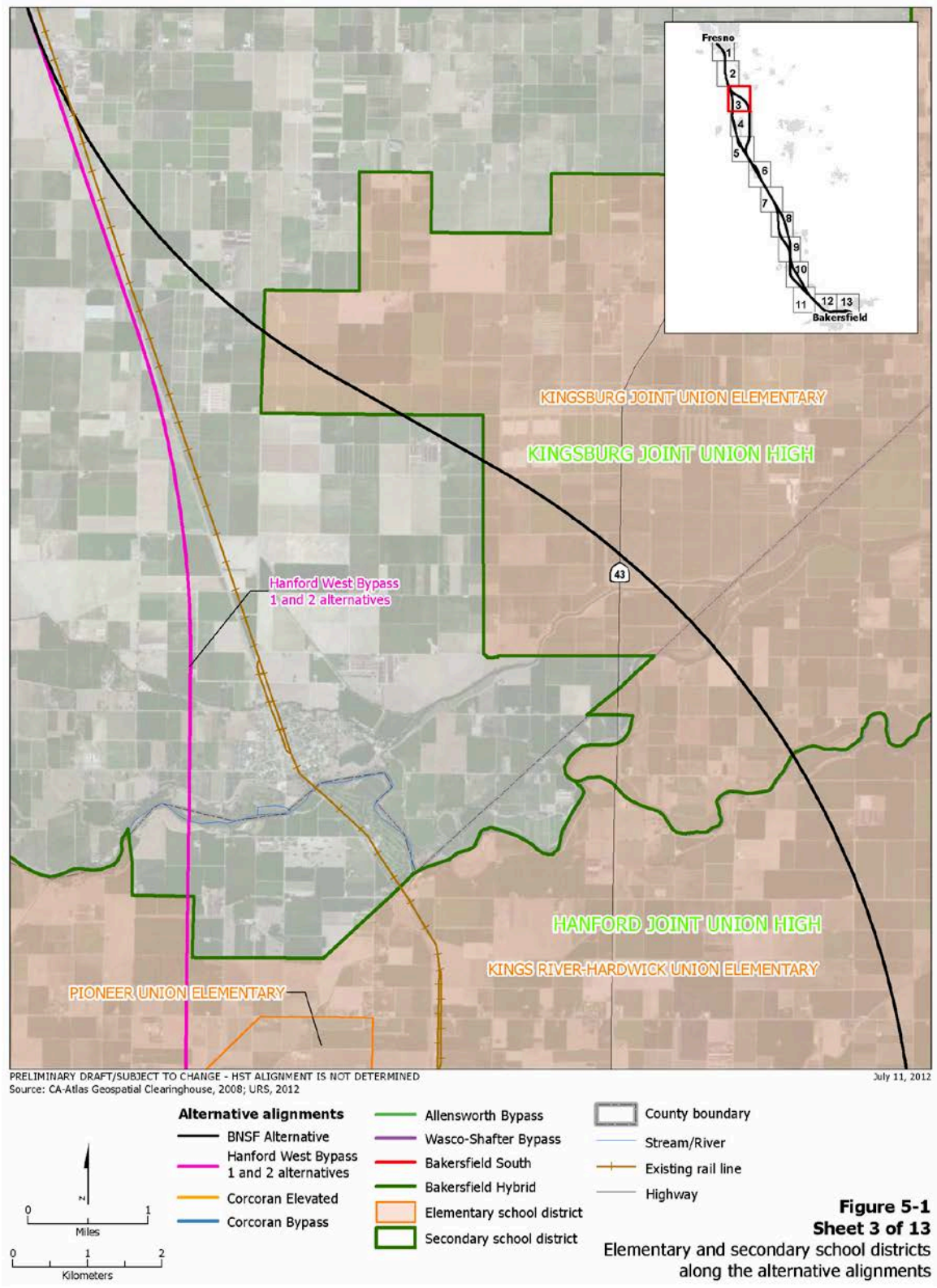

Figure 5-1
Sheet 3 of 13
Elementary and secondary school districts along the alternative alignments

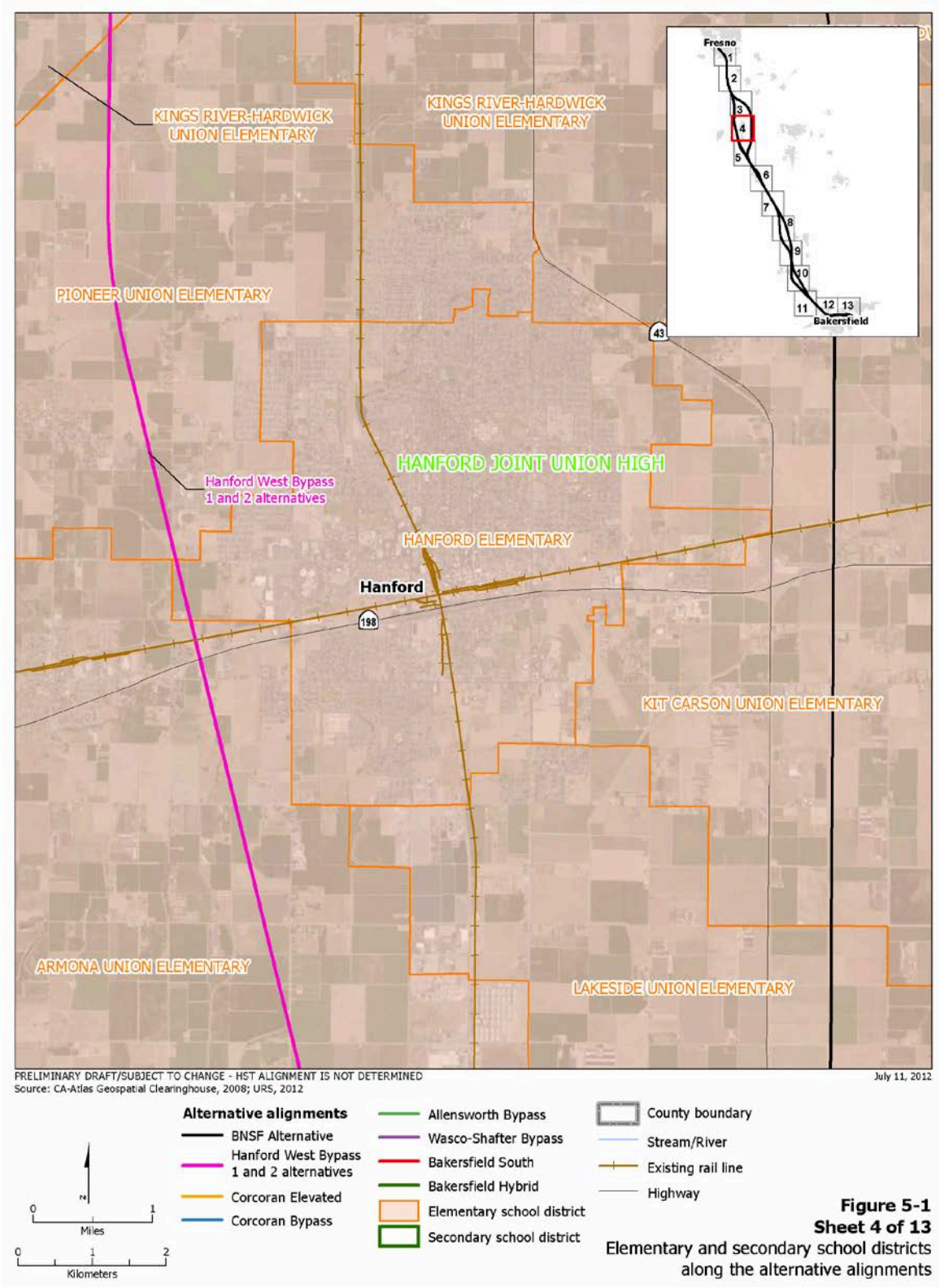

Figure 5-1
Sheet 4 of 13
Elementary and secondary school districts along the alternative alignments

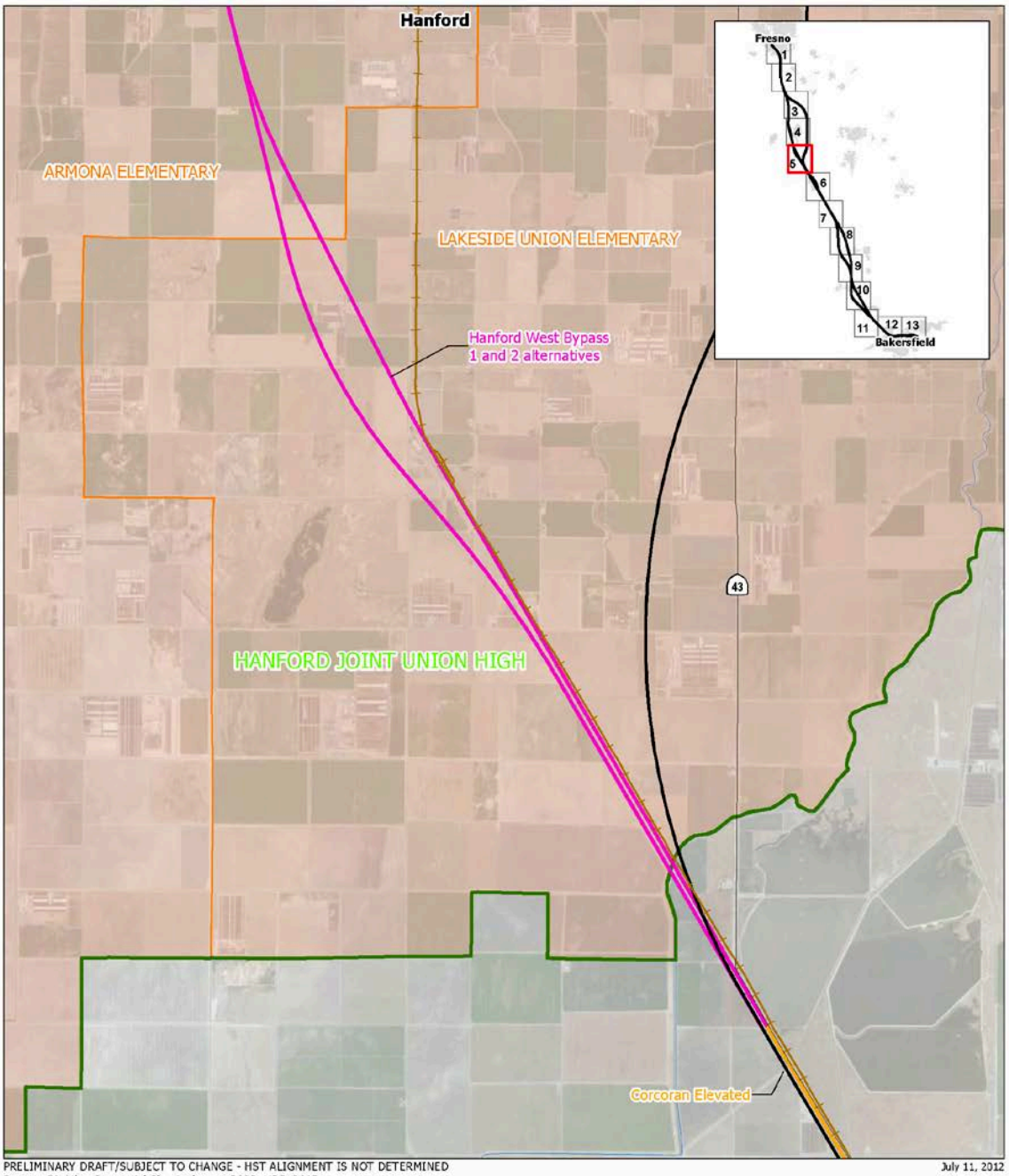

Figure 5-1
Sheet 5 of 13
Elementary and secondary school districts along the alternative alignments

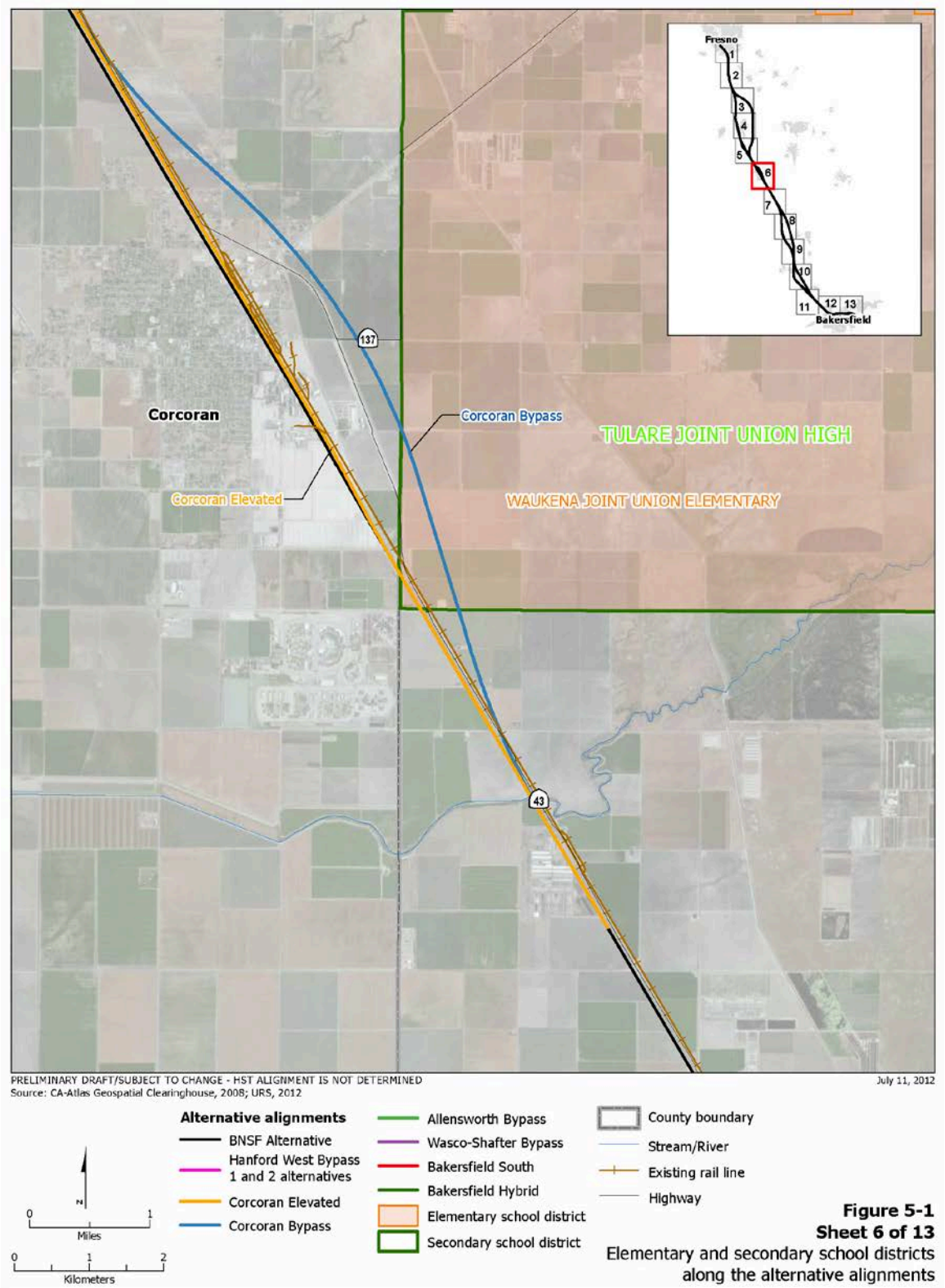

Figure 5-1
Sheet 6 of 13
Elementary and secondary school districts along the alternative alignments

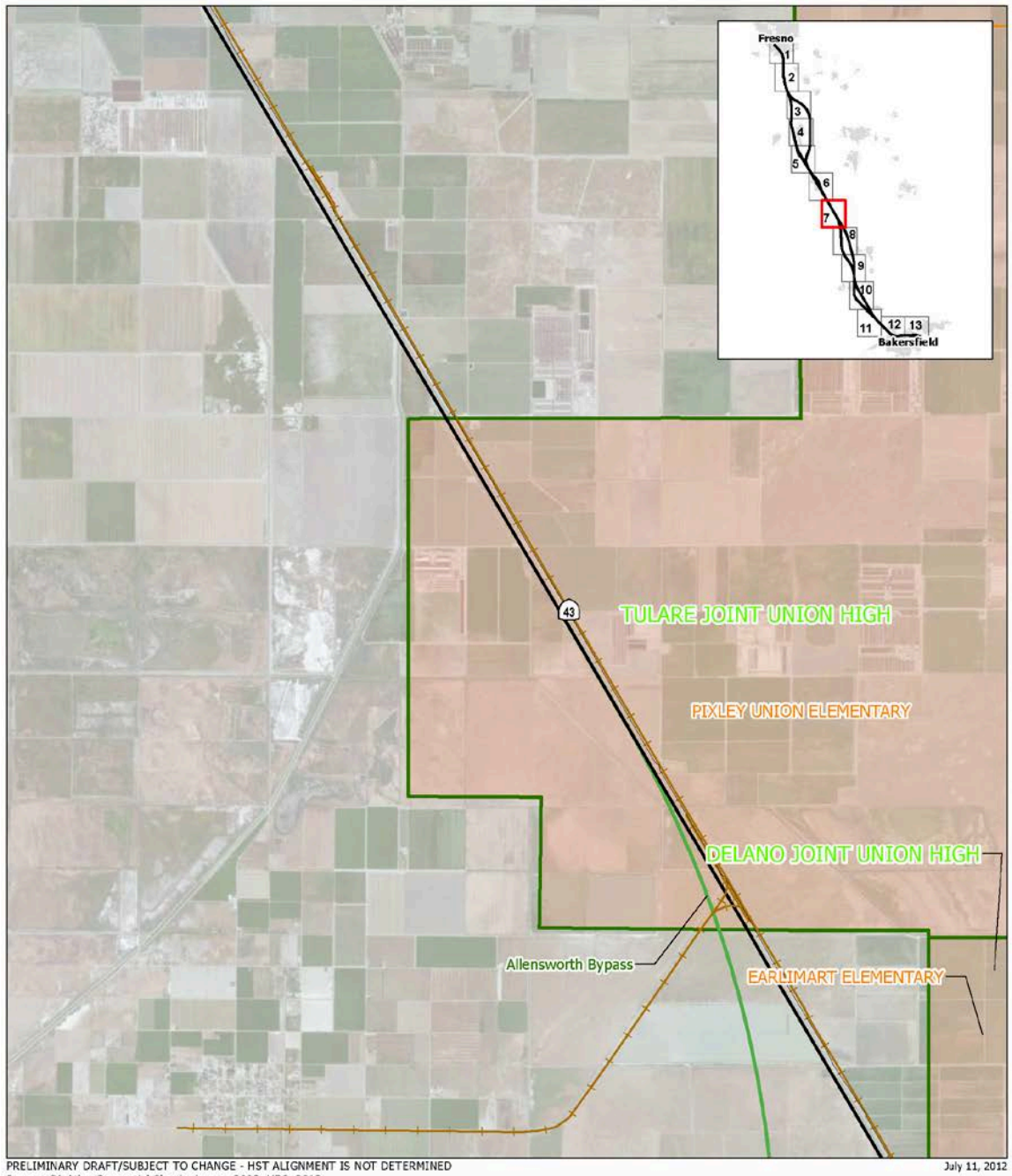

Figure 5-1
Sheet 7 of 13
Elementary and secondary school districts along the alternative alignments

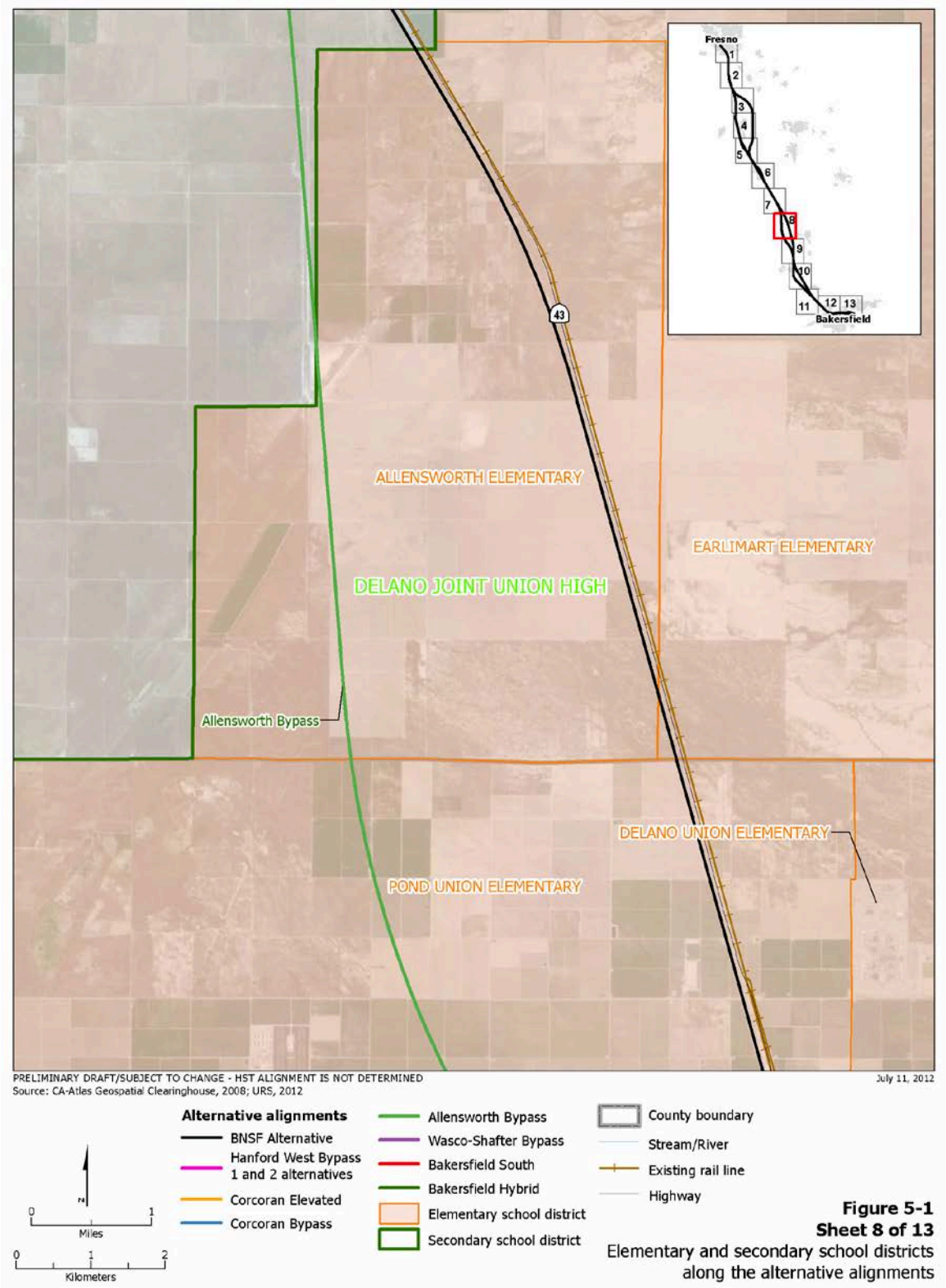

Figure 5-1
Sheet 8 of 13
Elementary and secondary school districts along the alternative alignments

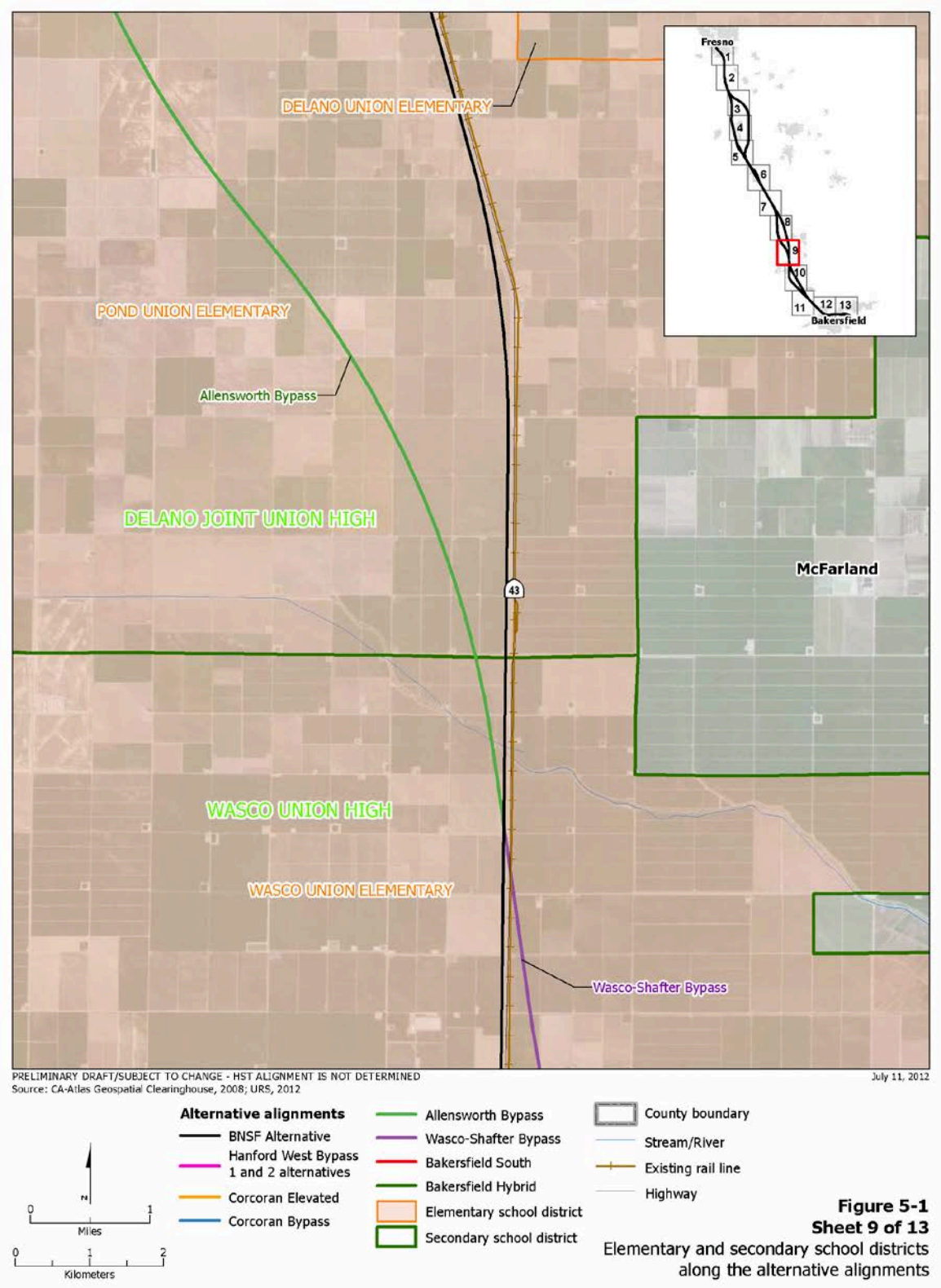

Figure 5-1
Sheet 9 of 13
Elementary and secondary school districts along the alternative alignments

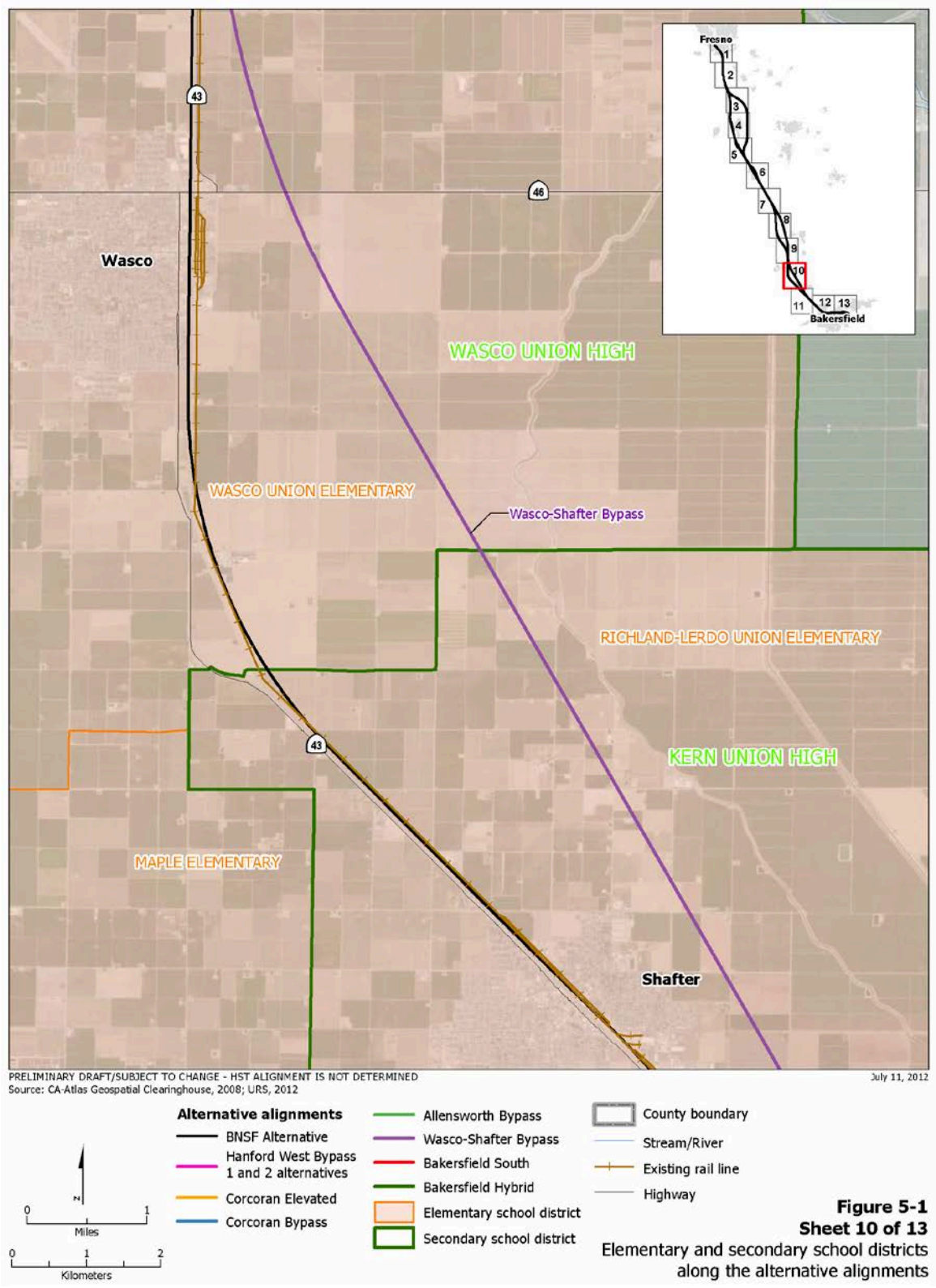

Figure 5-1
Sheet 10 of 13
Elementary and secondary school districts along the alternative alignments

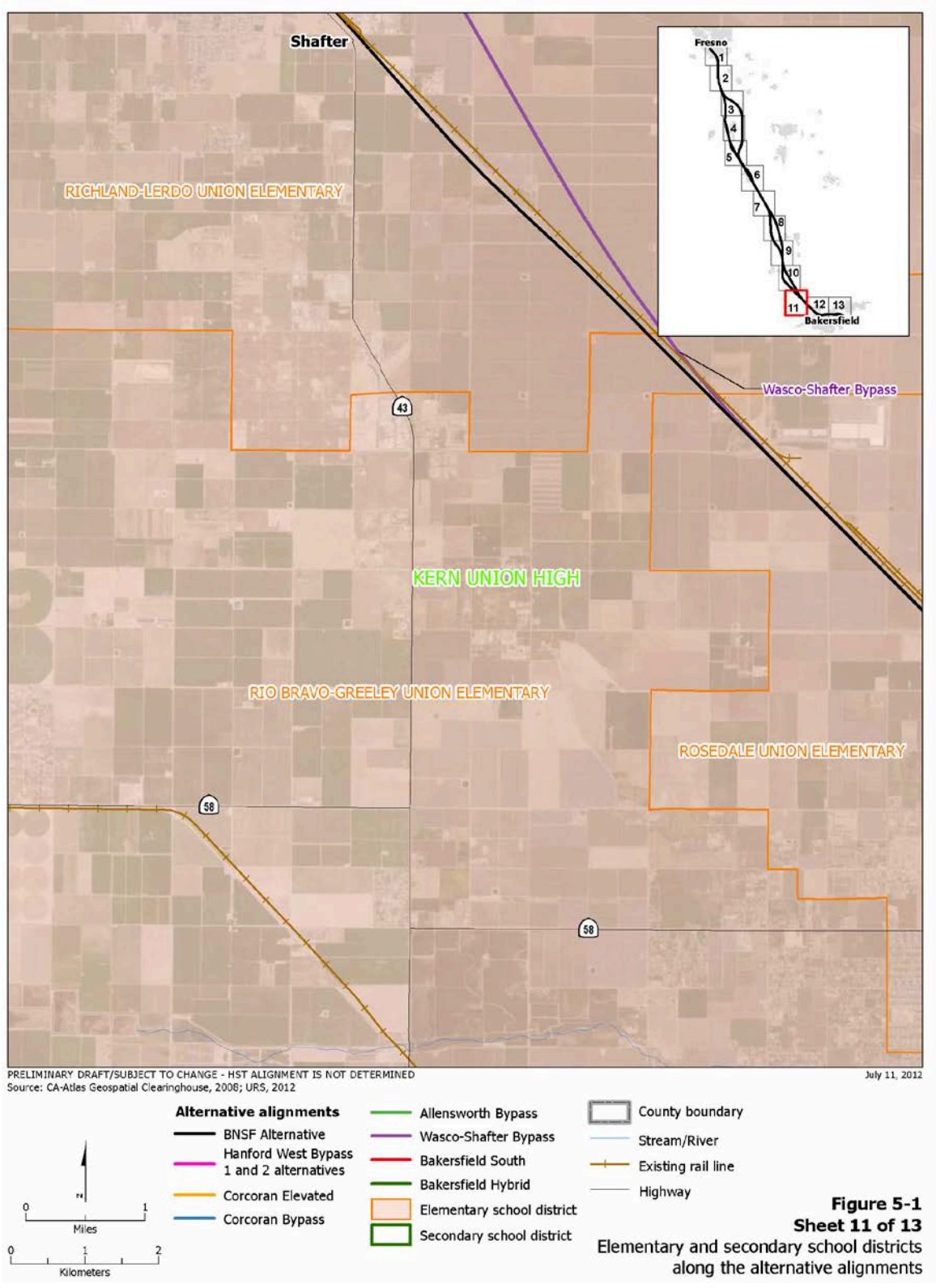

Figure 5-1
Sheet 11 of 13
Elementary and secondary school districts along the alternative alignments

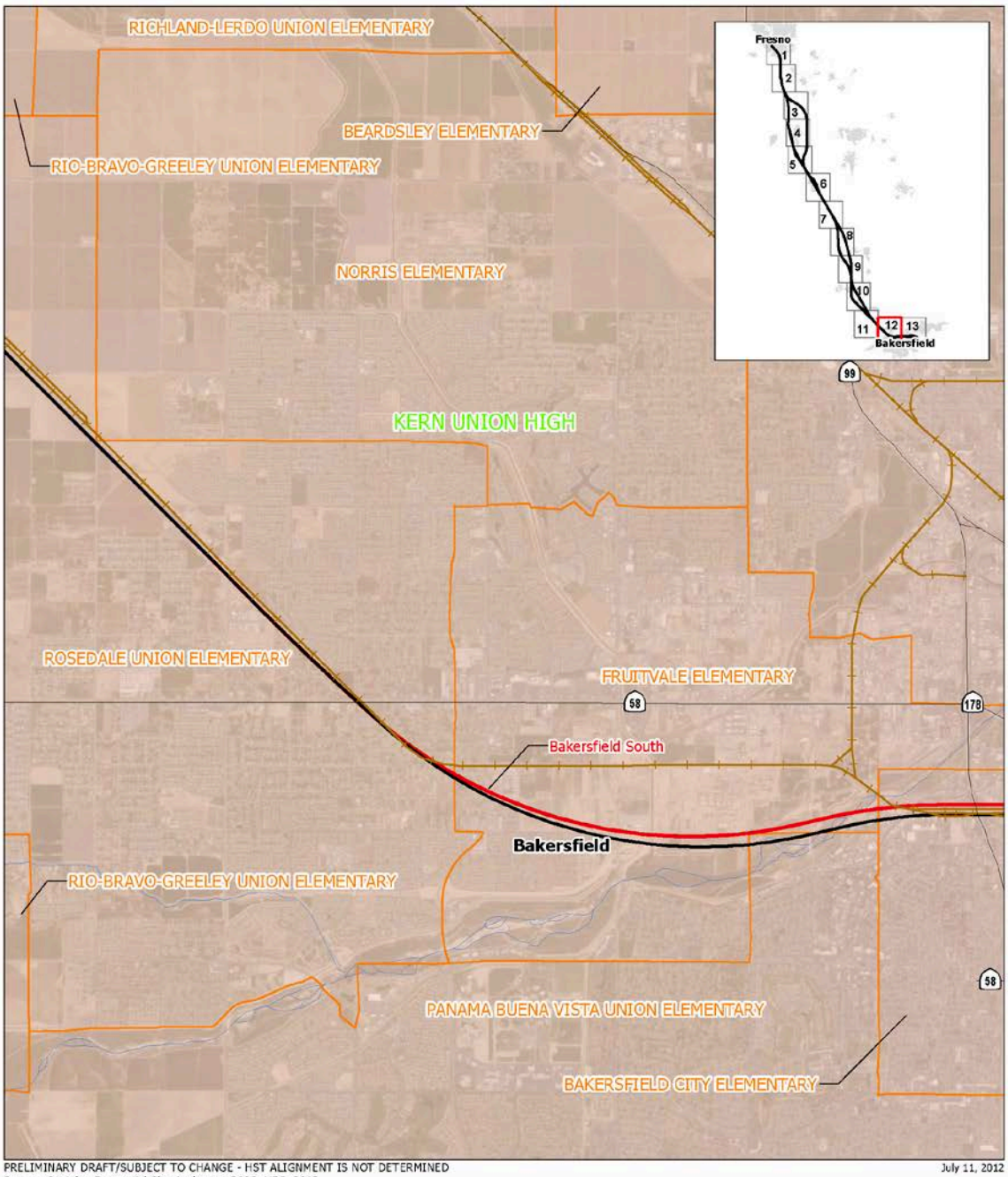

Figure 5-1
Sheet 12 of 13
Elementary and secondary school districts along the alternative alignments

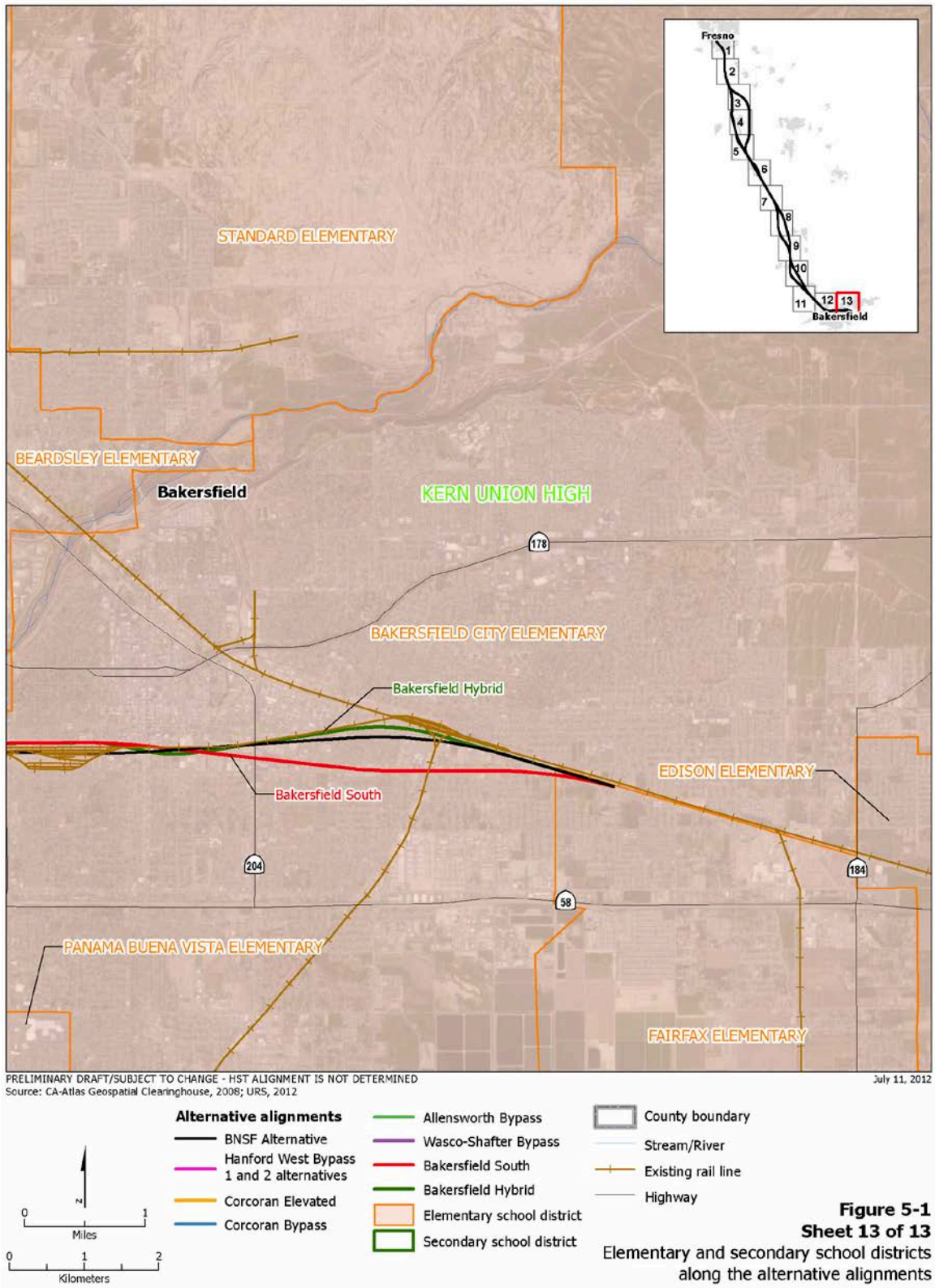

Figure 5-1
Sheet 13 of 13
Elementary and secondary school districts along the alternative alignments

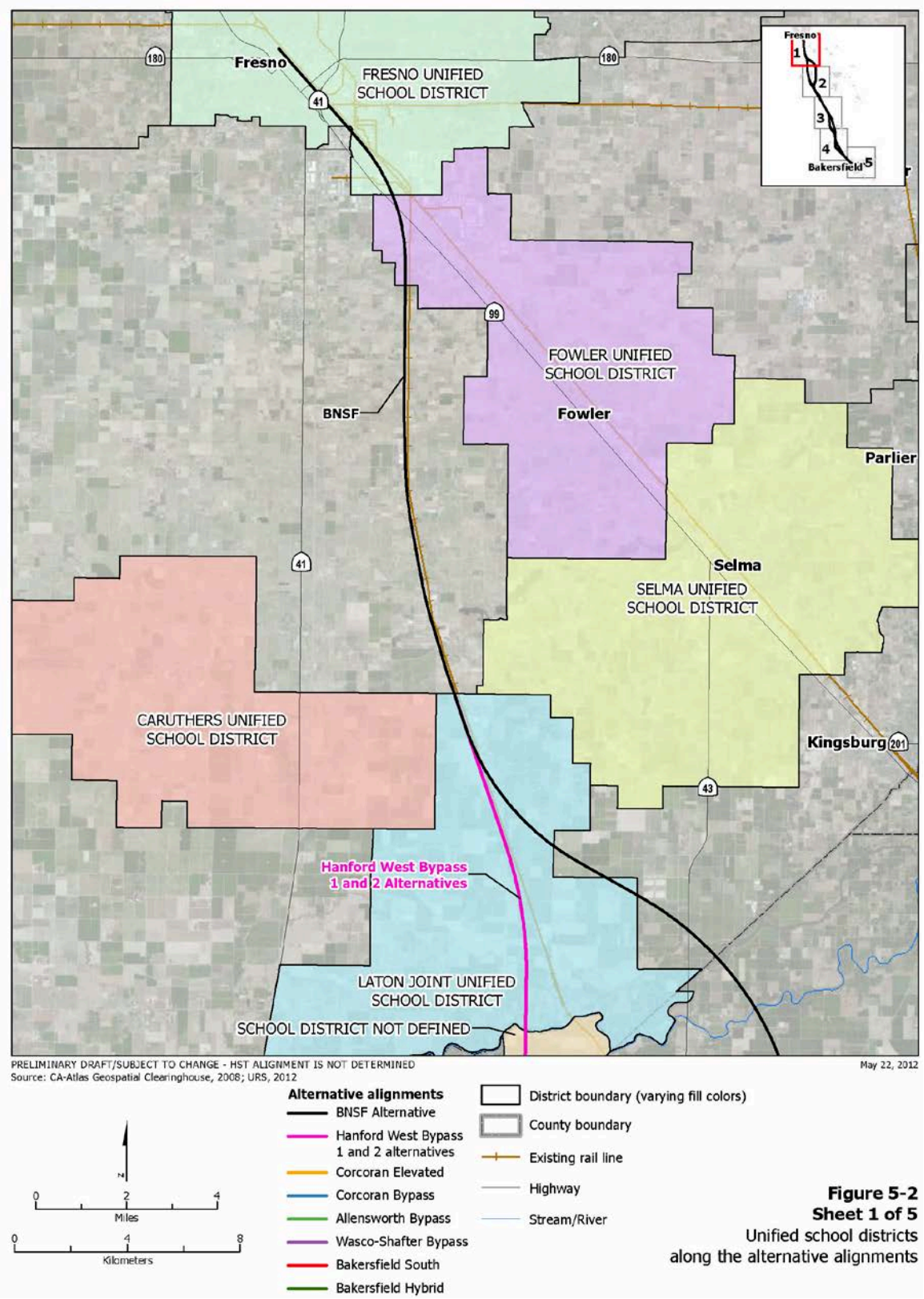

Figure 5-2
Unified school districts along the alternative alignments

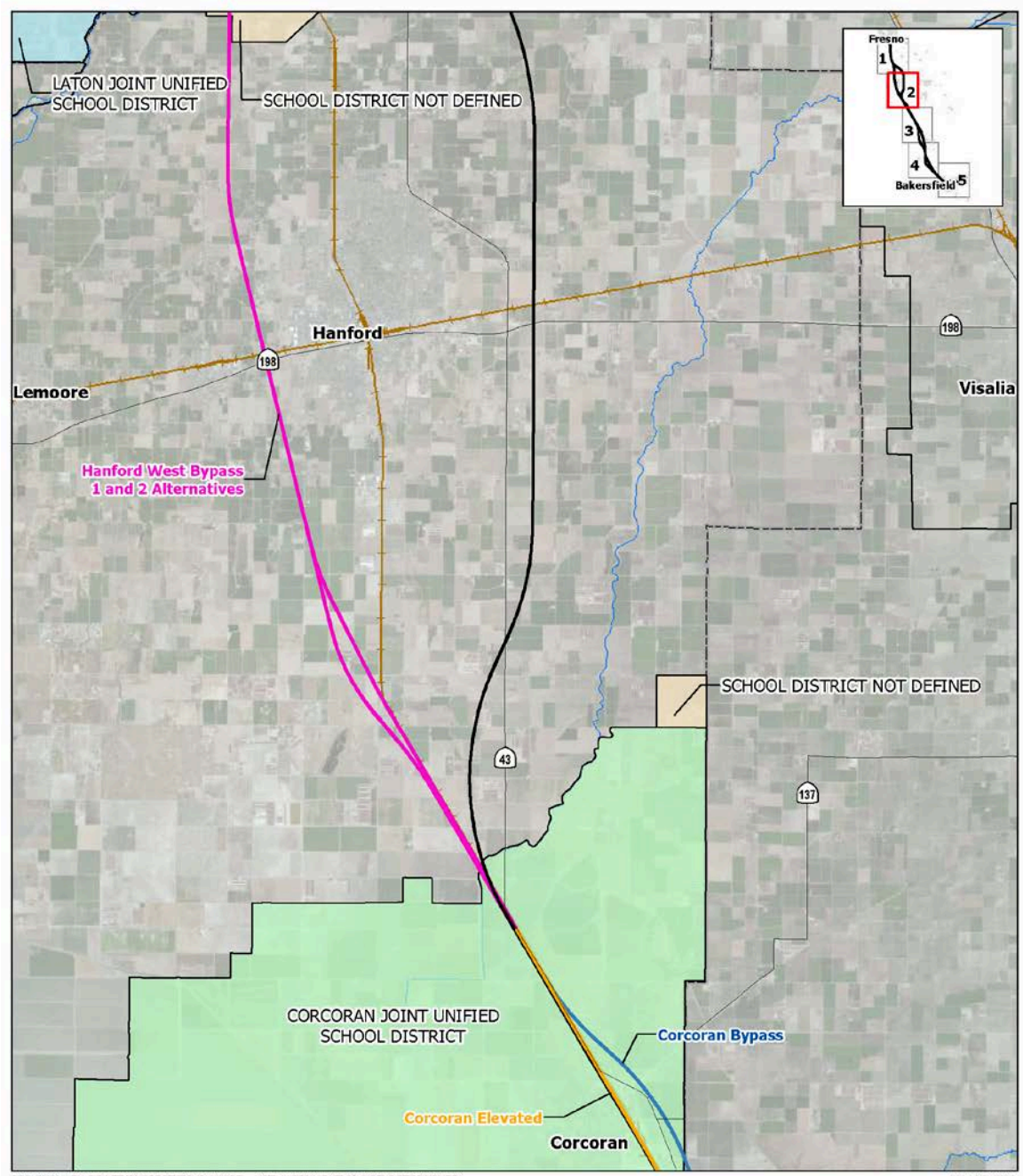

Figure 5-2
Sheet 2 of 5
Unified school districts along the alternative alignments

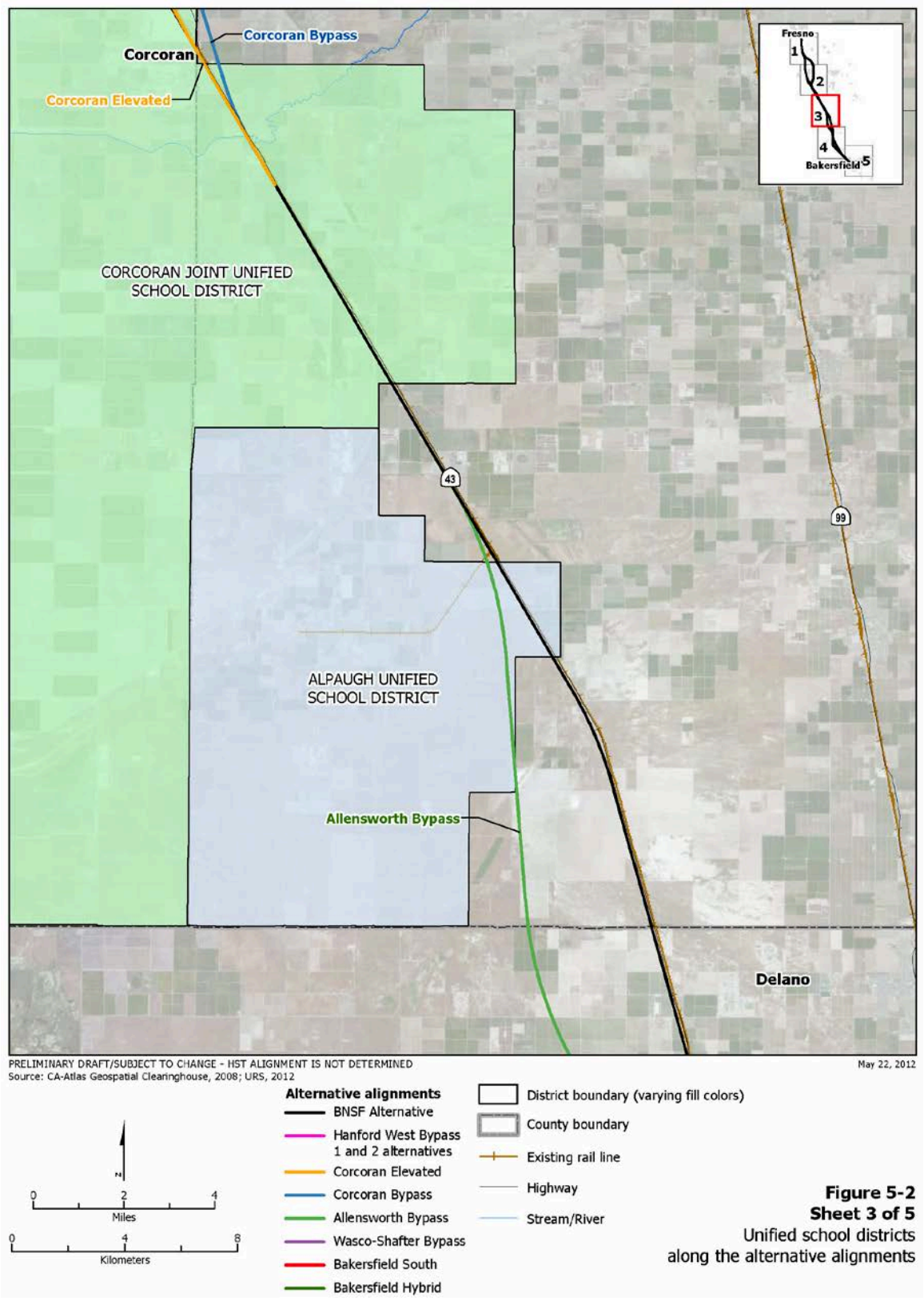

Figure 5-2
Sheet 3 of 5
Unified school districts along the alternative alignments

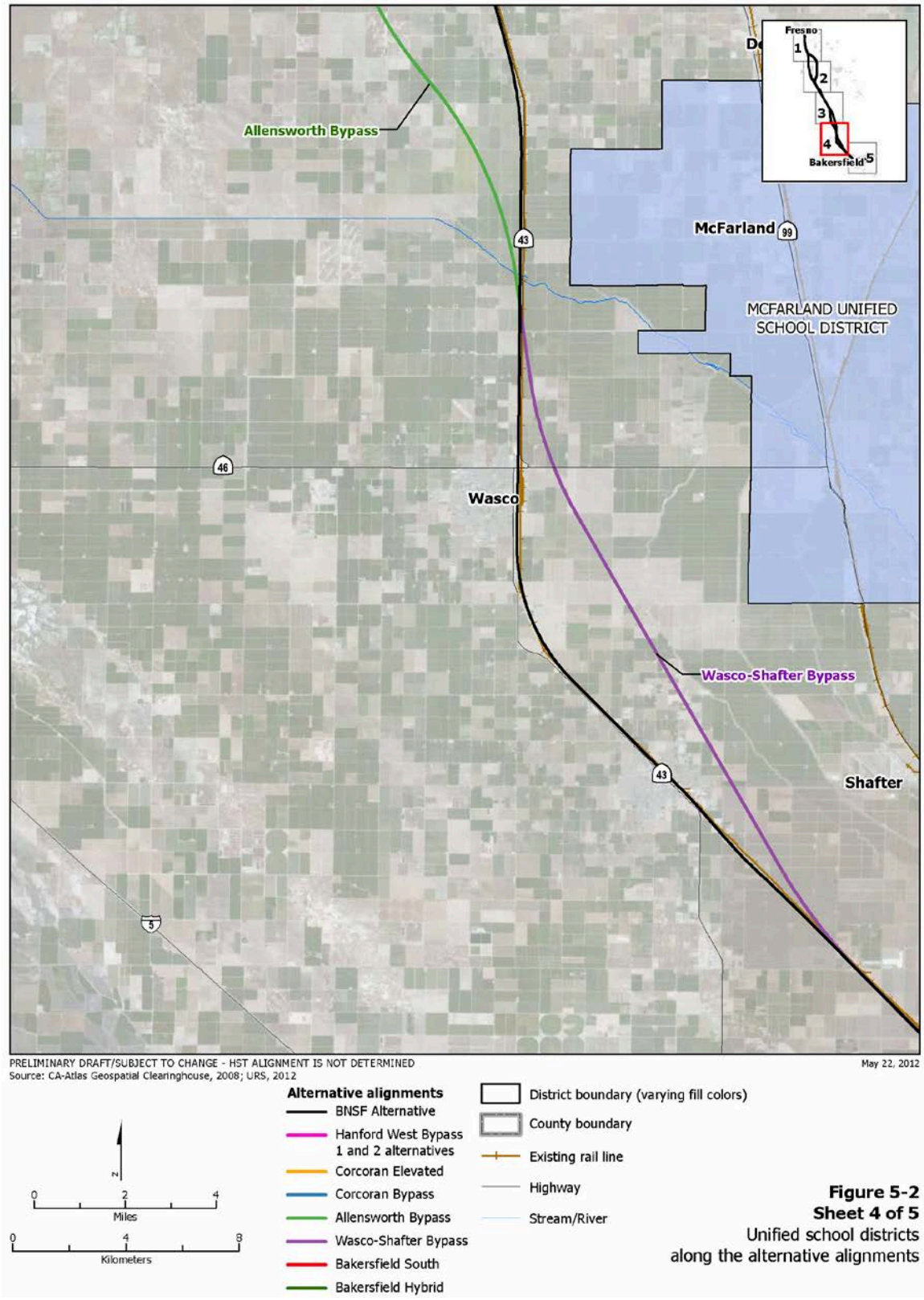

Figure 5-2
Sheet 4 of 5
Unified school districts along the alternative alignments

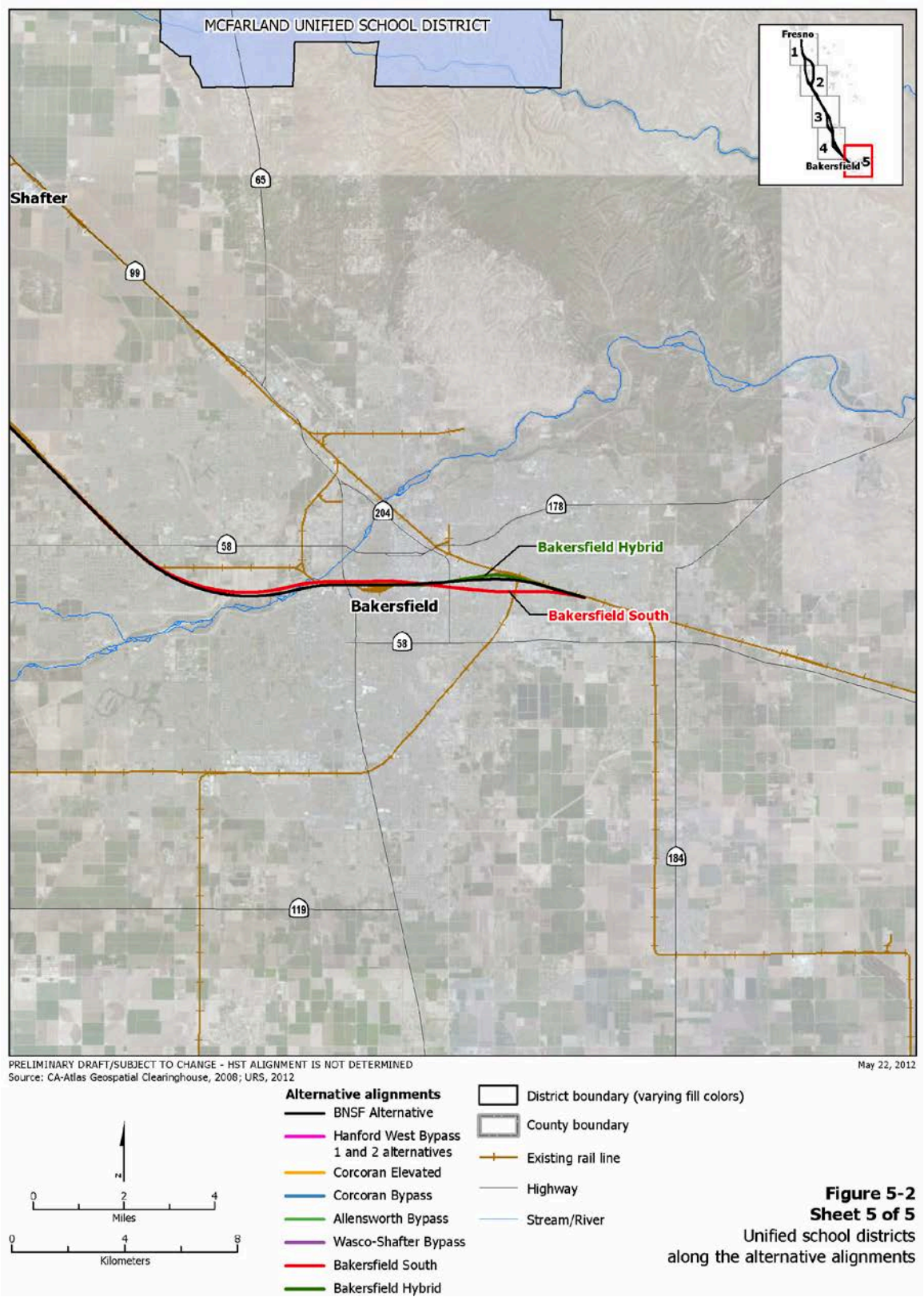

Figure 5-2
Sheet 5 of 5
Unified school districts along the alternative alignments

5.4.2.1 Alternative Alignments

BNSF Alternative

The greatest number of residential unit displacements along the BNSF Alternative would occur in school districts in the cities of Fresno, Hanford, Corcoran, and Bakersfield and the community of Laton. Findings are presented below, for elementary and secondary school districts and unified school districts by county.

The BNSF Alternative would affect residences in the southern portion of Fresno County (see Table 5-26; Figure 5-1, Sheets 1 and 2). In the Monroe Elementary School District, this alternative would result in 16 residential relocations and 9 potentially affected students in a school district with 191 students enrolled. In the Pacific Union Elementary School District, this alternative would result in 15 residential relocations and 8 potentially affected students in a school district with 359 students enrolled. In the Washington Union High School District, this alternative would result in 17 residential relocations and 5 potentially affected students in a school district with 1,063 students enrolled. The number of residential vacancies in this area of unincorporated Fresno County is 141 units, which means the affected residents would most likely relocate within the same school districts.

Very small numbers of students are potentially affected in the Orange Center Elementary school district as well as the Fowler and Fresno Unified school districts.

Table 5-26
Residential Displacements in School Districts in Fresno County for the BNSF Alternative

School District	Residential Units Relocated	Estimated Number of Students Affected	School District Enrollment
Orange Center Elementary	2	1	340
Monroe Elementary	16	9	191
Pacific Union Elementary	15	8	359
Washington Union High	17	5	1,063
Fowler Unified	4	3	2,375
Fresno Unified	5	6	74,831
Laton Joint Unified	23	20	746

In Laton, the BNSF Alternative would affect the Laton Joint Unified School District with 23 residential relocations (see Figure 5-2, Sheet 1) and 20 potentially affected students in a school district with 746 students enrolled. However, because the school district has 181 residential vacancies, the residents would mostly likely remain in the district.

In Hanford and the surrounding area, the BNSF Alternative would have potential impacts on four school districts (Table 5-27; Figure 5-1, Sheets 3, 4, and 5). In the Kings River–Hardwick Union Elementary School District, this alternative would result in six residential relocations and 3 potentially affected students in a school district with 700 students enrolled. In the Kit Carson Union Elementary School District, the alternative would result in 23 residential relocations and 12 potentially affected students in a school district with 448 students enrolled. In the Lakeside Union

Elementary School District, the alternative would result in 16 residential relocations and 8 potentially affected students in a school district with 325 students enrolled. In the Hanford Joint Union High School District, the alternative would result in 45 residential relocations and 13 potentially affected students in a school district with 3,891 students enrolled. This area of unincorporated Kings County has 512 residential vacancies, which means that the affected residents would most likely relocate within the same school districts.

Very small numbers of students are potentially affected in the Kingsburg Joint Union Elementary and High school districts.

Table 5-27
Residential Displacements in School Districts in Kings County for the BNSF Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Kingsburg Joint Union Elementary	8	4	2,347
Kit Carson Union Elementary	23	12	448
Lakeside Union Elementary	16	8	325
Kings River–Hardwick Union Elementary	6	3	700
Hanford Joint Union High	45	13	3,891
Kingsburg Joint Union High	8	2	1,157

In the city of Corcoran, the BNSF Alternative would affect the Corcoran Joint Unified School District, with 54 residential relocations (Table 5-28; Figure 5-1, Sheet 2) and 41 potentially affected students in a school district with 3,381 students enrolled. However, because this area has 86 residential vacancies, the affected residents would most likely remain in their current school district.

Very small numbers of students are potentially affected in the Allensworth Elementary and Delano Joint Union High school districts.

Table 5-28
Residential Displacements in School Districts in Tulare County for the BNSF Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Allensworth Elementary	3	2	76
Delano Joint Union High	9	3	4,408
Corcoran Joint Unified	54	41	3,381

The BNSF Alternative would result in more residential relocations in Bakersfield than in any other city in the study area (Table 5-29; Figure 5-1, Sheets 10 through 13). In the Bakersfield City Elementary School District, this alternative would result in 111 residential relocations and 62 potentially affected students in a school district with 27,590 students enrolled. In the Fruitvale

Elementary School District, the alternative would result in 39 residential relocations and 22 potentially affected students in a school district with 3,259 students enrolled. In the Rosedale Union Elementary School District, the alternative would result in 131 residential relocations and 73 potentially affected students in a school district with 5,226 students enrolled. In the Kern Union High School District, the alternative would result in 292 residential relocations and 85 potentially affected students in a school district with 5,226 students enrolled. These school districts are in the Bakersfield Northwest and Northeast districts, which have 718 and 995 residential vacancies, respectively. Therefore, displaced residents would have ample opportunity to relocate within the same school districts.

Table 5-29
Residential Displacements in School Districts in Kern County for the BNSF Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Bakersfield City Elementary	111	62	27,590
Fairfax Elementary	9	5	2,195
Fruitvale Elementary	39	22	3,259
Richland-Lerdo Union Elementary	5	3	3,296
Pond Union Elementary	6	3	230
Rosedale Union Elementary	131	73	5,226
Wasco Union Elementary	5	3	3,269
Wasco Union High	5	1	1,748
Kern Union High	292	85	37,452

Hanford West Bypass 1 Alternative

The at-grade and below-grade options for the Hanford West Bypass 1 Alternative would result in about the same amount of residential relocations within the potentially affected school districts (Figure 5-1, Sheets 3, 4, and 5).

In the Laton Joint Unified School District, the Hanford West Bypass 1 Alternative would result in eight residential relocations and 7 potentially affected students in a district with 746 students enrolled (Table 5-30). The area of this school district has 181 residential vacancies, which means that affected residents would most likely remain in the district. In the Armona Union Elementary School District, this alternative would result in 39 residential relocations and 23 potentially affected students in a school district with 2,171 students enrolled. The area of this school district in unincorporated Kings County has 512 residential vacancies, which means that affected residents would most likely remain in the school district. In the Hanford Joint Union High School District, the alternative would result in 63 residential relocations and 19 potentially affected students in a school district with 3,891 students enrolled. In the Kings River–Hardwick Union Elementary School District, the alternative would result in eight residential relocations and 4 potentially affected students in a school district with 700 students enrolled. In the Lakeside Union Elementary School District, the alternative would result in five residential relocations and 3 potentially affected students in a school district with 325 students enrolled. In the Pioneer Union Elementary School District, the alternative would result in 11 residential relocations and 6

potentially affected students in a school district with 1,567 students enrolled. The area of Hanford covered by these school districts has over 417 residential vacancies, which means that most affected residents would most likely remain in their school districts.

Table 5-30
Residential Displacements in School Districts in Laton, Hanford, and Armona for the Hanford West Bypass 1 Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Armona Union Elementary	39	23	2,171
Hanford Elementary	1	1	5,686
Hanford Joint Union High	64	19	3,891
Kings River-Hardwick Union Elementary	8	4	700
Lakeside Union Elementary	5	3	325
Laton Joint Unified	8	7	746
Pioneer Union Elementary	11	6	1,567

Hanford West Bypass 2 Alternative

The at-grade and below-grade options for the Hanford West Bypass 2 Alternative would result in about the same amount of residential relocations within the potentially affected school districts.

In the Laton Joint Unified School District, the Hanford West Bypass 2 Alternative would result in eight residential relocations and 7 potentially affected students in a district with 746 students enrolled (Table 5-31). The area of this school district has 181 residential vacancies, which means that affected residents would most likely remain in the district. In the Armona Union Elementary School District, this alternative would result in 39 residential relocations and 23 potentially affected students in a school district with 2,171 students enrolled. The area of this school district in unincorporated Kings County has 512 residential vacancies, which means that affected residents would most likely remain in the school district. In the Hanford Joint Union High School District, the alternative would result in 63 residential relocations and 19 potentially affected students in a school district with 3,891 students enrolled. In the Kings River–Hardwick Union Elementary School District, the alternative would result in eight residential relocations and 4 potentially affected students in a school district with 700 students enrolled. In the Lakeside Union Elementary School District, the alternative would result in five residential relocations and 3 potentially affected students in a school district with 325 students enrolled. In the Pioneer Union Elementary School District, the alternative would result in 11 residential relocations and 6 potentially affected students in a school district with 1,567 students enrolled. The area of Hanford covered by these school districts has over 417 vacancies, which means that most affected residents would likely remain in their school districts.

Table 5-31
Residential Displacements in School Districts in Laton, Hanford, and Armona for the Hanford West Bypass 2 Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Armona Union Elementary	39	23	2,171
Hanford Elementary	1	1	5,686
Hanford Joint Union High	64	19	3,891
Kings River-Hardwick Union Elementary	8	4	700
Lakeside Union Elementary	5	3	325
Laton Joint Unified	8	7	746
Pioneer Union Elementary	11	6	1,567

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would result in three residential relocations in the city of Corcoran.

The Corcoran Elevated Alternative would potentially affect 3 students within the Corcoran Joint Unified School District (Table 5-32; Figures 5-2, Sheets 2 and 3). This area of Corcoran has 86 residential vacancies, which means that affected residents would have the opportunity to remain in their current school district.

Table 5-32
Residential Displacements in School Districts in the City of Corcoran for the Corcoran Elevated Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Corcoran Joint Unified	3	3	3,381

Corcoran Bypass Alternative

The Corcoran Bypass Alternative would result in 34 residential relocations in the city of Corcoran.

The Corcoran Bypass Alternative would potentially affect 27 students within the Corcoran Joint Unified School District (Table 5-33: Figure 5-2, Sheets 2 and 3). This area of Corcoran has 86 vacancies, which means that affected residents would have the opportunity to remain in their current school district.

Table 5-33
Residential Displacements in School Districts in the City of Corcoran for the Corcoran Bypass Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Corcoran Joint Unified	34	27	3,381

Allensworth Bypass Alternative

The Allensworth Bypass Alternative would not result in any residential relocations and would therefore not affect any school district funding.

Wasco-Shafter Bypass Alternative

The most residential relocations along the Wasco-Shafter Bypass Alternative would occur in the Bakersfield Northwest and Northeast districts (see Figure 5-1, Sheets 11 and 12).

In the Rosedale Union Elementary School District, the Wasco-Shafter Bypass Alternative would result in 21 residential relocations and 12 potentially affected students in a school district with 5,226 students enrolled (Table 5-34). In the Kern Union High School District, this alternative would result in 25 residential relocations and 7 potentially affected students in a school district with 37,452 students enrolled. These two Bakersfield districts have 1,713 residential vacancies, which means that most affected residents would likely remain in their school districts.

Table 5-34
Residential Displacements in School Districts in the City of Bakersfield for the Wasco-Shafter Bypass Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Richland-Lerdo Union Elementary	4	3	3,296
Rosedale Union Elementary	21	12	5,226
Wasco Union Elementary	1	1	3,269
Kern Union High	25	7	37,452
Wasco Union High	1	1	1,748

Bakersfield South Alternative

The Bakersfield South Bypass Alternative would cause many residential relocations in the city of Bakersfield (see Figure 5-1, Sheets 10 through 13).

In the Bakersfield City Elementary School District, the Bakersfield South Bypass Alternative would result in 118 residential relocations and 66 potentially affected students in a school district with 27,590 students enrolled (Table 5-35). In the Fairfax Elementary School District, this alternative would result in 24 residential relocations and 14 potentially affected students in a school district with 2,195 students enrolled. In the Fruitvale Elementary School District, the alternative would

result in 18 residential relocations and 10 potentially affected students in a school district with 3,259 students enrolled. In the Rosedale Union Elementary School District, the alternative would result in 111 residential relocations and 62 potentially affected students in a school district with 5,226 students enrolled. In the Kern Union High School District, the alternative would result in 269 residential relocations and 78 potentially affected students in a school district with 37,452 students enrolled. These school districts are in the Bakersfield Northwest and Northeast districts, which have 718 and 995 residential vacancies, respectively. Therefore, displaced residents would have ample opportunity to relocate within the same school districts.

Table 5-35
Residential Displacements in School Districts in the City of Bakersfield for the Bakersfield South Bypass Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Bakersfield City Elementary	118	66	27,590
Fairfax Elementary	24	14	2,195
Fruitvale Elementary	18	10	3,259
Rosedale Union Elementary	111	62	5,226
Kern Union High	269	78	37,452

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative would cause many residential relocations in the city of Bakersfield (see Figure 5-1, Sheets 10 through 13).

In the Bakersfield City Elementary School District, the Bakersfield Hybrid Alternative would result in 48 residential relocations and 27 potentially affected students in a school district with 27,590 students enrolled (Table 5-36). In the Fairfax Elementary School District, this alternative would result in nine residential relocations and 5 potentially affected students in a school district with 2,195 students enrolled. In the Fruitvale Elementary School District, this alternative would result in 17 residential relocations and 10 potentially affected students in a school district with 3,259 students enrolled. In the Rosedale Union Elementary School District, the alternative would result in 114 residential relocations and 64 potentially affected students in a school district with 5,226 students enrolled. In the Kern Union High School District, the alternative would result in 185 residential relocations and 106 potentially affected students in a school district with 37,452 students enrolled. These school districts are in the Bakersfield Northwest, Central, and Northeast districts, which have 718, 546, and 995, residential vacancies, respectively. Therefore, displaced residents would have ample opportunity to relocate within the same school districts.

Table 5-36
Residential Displacements in School Districts in the City of Bakersfield for the Bakersfield Hybrid Alternative

School District	Residential Units Relocated	Estimated Students Affected	School District Enrollment
Bakersfield City Elementary	48	27	27,590
Fairfax Elementary	9	5	2,195
Fruitvale Elementary	17	10	3,259
Rosedale Union Elementary	114	64	5,226
Kern Union High	185	106	37,452

5.4.2.2 Station Alternatives

No high concentrations of residential displacements would be associated with the station alternatives. Therefore, no effect to school district funding would occur under any of the station alternatives.

5.4.2.3 Heavy Maintenance Facility Site Alternatives

Although residential displacements would occur in conjunction with some of the proposed HMF site alternatives, no high concentrations of displacements would occur, and if they did, suitable replacement housing resources are generally available in the vicinity, so impacts on school funding would be small.

5.4.3 Agricultural Access Impacts and Road Closures

This analysis examined the potential of the project to act as an “economic barrier” that would restrict access of agricultural operations across the linear project. The analysis identified any specific areas along the project alignment where permanent road closures (i.e., roads that are not routed over the project but rather are terminated at the project) could substantially restrict transportation or access related to agricultural operations. This includes such aspects as moving workers and equipment for cultivating and harvesting fields, as well as delivering products to processing operations and markets. The potential impact of the project on this mobility in the region was measured as the length of any detours associated with road closures that may add substantial cost (time and money) to agricultural operations.

It is beyond the scope of this effort to determine the potential impacts at the individual operation level (i.e., for each farm). Some individual operations may be affected more than others, and this cost to producers and impact on operation feasibility and value must be considered on a case by case basis during the property acquisition portion of the project. Rather, this analysis is focused on identifying any areas where major stretches of the project are projected to result in road closures, thereby limiting access from one side of the project to the other.

Details were obtained on all planned permanent road crossings along the project alignment. The locations of these closures were then spatially located and examined in GIS mapping software to identify the alternative routes available. Potential impacts were measured in terms of the lengths of the resulting detours required to maintain the continued mobility of agriculturally related operations from one side of the alignment to the other. For the purpose of this analysis, detour distances of three miles or less were considered as minor disruptions, whereas detours greater

than three miles were considered a potential effect. Detour distances were determined by finding the nearest equivalent size or larger road to the closed road that would allow passage of the detoured traffic from one side of the project to the other.

The analysis identified only one large primary road along the project that would be closed. This closure, which would occur on the proposed BNSF Alternative, is Pond Road in Kern County. The alternative crossings are Schuster Road to the north of Pond Road and Peterson Road to the south.

There were no areas along the project where considerable detours were required; all closed roads appeared to have nearby crossings within reasonable travel distances (i.e., 3 miles). Therefore, no substantial impacts on mobility for agricultural operations in the region were identified. The only closure resulting in a detour of more than 2 miles was the closure of McCombs Avenue in Kern County. This closure would lead to a detour of approximately 2.5 miles to the nearest northern crossing (Taussig Avenue). However, since Paso Robles Highway is only 1 mile to the south of McCombs Avenue, the effects of this road closure would also be considered minimal. Also of note would be the closure of Fresno Avenue in Kern County. The resulting detours would not exceed 2 miles, but the detour to the south would pass some residential areas in Shafter that could result in traffic slowdowns, conflicts between agricultural equipment movements and urban traffic, and possible disruptions for the affected residences.

Smaller (often unpaved) roads were not identified in the project road closure information and were therefore assumed to result in potential closure. Even assuming all of these smaller roads were permanently closed, there were no areas, outside of the areas identified above, where detours resulting from closures would be greater than 3 miles from another road providing access across the project. However, while these smaller roads may not serve as routes for cross-alignment movement for the agricultural industry as a whole, their closure may have substantially adverse impacts for individual operations that regularly use these roads for day-to-day operations. Thus, these smaller roads may need to be examined on a case-by-case basis during the property acquisition phase of the project to identify individual operations that may face special circumstances and suffer an adverse impact on operation value as a result of these closures.

5.4.4 County and City Property and Sales Tax Effects

The potential impacts of the project on property tax and sales tax revenues collected by county and city jurisdictions were estimated. Reduced property tax revenues were estimated for all permanent property acquisitions. These potential impacts were estimated quantitatively as the estimated reduction in property tax revenue for county and city budgets resulting from the permanent removal of properties from the tax rolls. The longer-term direct operational impacts on property taxes were examined qualitatively through a literature review that examined the potential for changes in property values resulting from train nuisance impacts on residential properties and new station development. Sales tax losses are an indirect impact of construction and were estimated quantitatively for those permanently displaced businesses that collect sales tax for products, goods, or services.

5.4.4.1 County and City Property Tax losses

Reduced property tax revenues would be an effect of the project that would result from acquisition of land for project construction. Reduced property tax revenues would also be a direct effect of project operation because of the potential reductions in property values associated with train nuisances (e.g., noise, visual impacts). A literature review of property value impacts suggests that the potential loss in value is greatest for those properties near the project but distant from the stations, because those properties would not benefit from the improved mobility

and transit access provided by the project. The research supporting both of these findings is presented below.

5.4.4.2 Estimated Changes in Property Tax Revenues

Municipal governments use property taxes to collect revenue more than any other taxing authority. Municipalities gain their authority to levy property taxes from state law. Property taxes are used to help finance local government services such as public schools, fire and police protection, roads, parks, streets, sewer and/or water treatment systems, garbage removal, public libraries, and many other local services. Taxing land and buildings is one of the oldest forms of taxation in the United States. Before income and sales taxes were instituted, local governments used property-based taxes to finance most of their activities. Property taxes remain a major source of revenue for local governments.

Property tax distribution varies slightly from jurisdiction to jurisdiction and from year to year. A certain percentage of the total property tax revenues is allocated directly to each county, and another portion is distributed to the various cities within each county. The remainder is then allocated to special districts, which provide services such as those mentioned above.

To determine the percentage of property taxes that are apportioned to each of the counties and the cities along the project alignment, tax rates based on the Assembly Bill 8 (AB 8) rates were identified. According to the Kings County Auditor/Controller's Office, AB 8 rates are the most accurate way of determining property tax allocations (Dorna 2010, personal communication). The AB 8 rates are based on the 1% general property tax distribution process that was adopted in 1979, which defines procedures for counties to allocate their property taxes. Under AB 8, the State of California allocates to each taxing jurisdiction the amount it received in the prior year, plus the change that has occurred in the current year within its boundaries. The revenue allocation of the 1% general property tax levy is calculated pursuant to Revenue and Taxation Code Section 96.5. The property tax allocation percentage for each agency within a Tax Rate Area is then established.

For this analysis, the "County General" rate was used to reflect the percentage of property taxes that are allocated directly to each county and the individual city rates were used to determine the amount allocated to each city. For Kern and Fresno counties, where one composite city tax rate could not be found, an average of all of the individual Tax Rate Area rates within each city was used to estimate each city's portion of the 1% property tax rate.

The following list is a breakdown of the allocation of the 1% AB 8 rates to the counties and the respective cities:

- 31.1% goes to Fresno County
- 25.8% goes to the City of Fresno
- 15.7% goes to Kings County
- 4.9% goes to the City of Hanford
- 0.2% goes to the City of Corcoran
- 36.5% goes to the County of Tulare
- 17.6% goes to Kern County
- 14.4% goes to the City of Bakersfield
- 0.2% goes to the City of Shafter
- 0.2% goes to the City of Wasco

Estimated county and city tax allocations were based on these current AB 8 rates and exclude allocations to special districts, redevelopment agencies, and schools and colleges (Legislative Analyst's Office 1996). Actual property values were obtained from county tax assessor data sources for each parcel proposed for full acquisition by the project (Fresno County 2010c; Kings

County 2010b; Tulare County 2010d; Kern County 2010). Some parcels were missing value data; property values for these parcels were estimated using the average of the same type of parcels in the same community. Property tax revenue losses for full residential and commercial takings were estimated assuming the loss of the entire value of the property.

Losses from agricultural lands were calculated differently, because these lands are most often larger parcels that may be split by the project but not fully acquired. Given the typical realignment of agricultural fields that occurs as a result of intersecting transportation projects, these resulting split lands will likely not be lost to county and city property tax rolls but rather acquired by neighboring operations that would continue to pay property taxes. Therefore, property tax losses for acquisitions of agricultural parcels were estimated using the loss of value associated with the affected acreage that would actually be lost to future agricultural production. The rate applied to agricultural lands was also calculated differently because agricultural lands protected under conservation agreements (Williamson Act lands) are taxed at lower property values; a lower rate was applied for agricultural parcels. As determined from Section 3.14 (Agricultural Lands), about 52% of the agricultural land impacted was protected conservation acreages. Also, a 2003 report from the state detailed the economic advantages to these landowners enrolling in conservation programs as a 20% to 75% reduction in property tax rates, or about a 50% reduction on average (Governor's Office of Planning and Research 2003). As a result, all agricultural acreages were taxed at a reduction of 26% of the standard property tax rate to account for these reduced revenues (this rate represents a 50% reduction on 52% of the agricultural acreages).

Estimated losses are in line with the expected locations of residential, business, and agricultural displacements detailed in Section 5.2 (Property Displacements and Relocations). Given the small percentage of total revenues that would be lost as a result of project displacements, the overall effect of these revenue losses would be small. However, for jurisdictions currently confronting severe revenue shortfalls and budget crises, even a minor loss of annual revenues could be considered cumulatively considerable.

Alternative Alignments

BNSF Alternative

Along the BNSF Alternative, displacement of residences, businesses, and agricultural lands would result in estimated annual losses of $2.3 million in property tax revenue to county and city budgets in the region. This estimated amount represents approximately 0.4% of the total fiscal year 2009/2010 property tax revenue that the counties and cities in the study area. The highest annual dollar-value losses would occur in Kern County ($1.4 million) and Fresno County ($450,000). Within these county totals, the cities of Bakersfield ($194,574) and Fresno ($114,680) would also experience losses. Losses in the other cities would be marginal. Property tax losses could be balanced over the long run by the increased property tax revenues associated with the intensification of land uses (and increases in property values) resulting from the project.

Table 5-37 provides a summary of the county-level changes in property tax loss associated with each of the alignment alternatives relative to the BNSF Alternative.

Table 5-37
BNSF Alternative Property Tax Revenues Lost during Operation (2010$)

Alternative	Fresno County	Kings County	Tulare County	Kern County
BNSF				
Property value	$44,506,407	$43,599,231	$3,695,385	$134,823,094
Lost property tax revenues ($)	$445,064	$435,992	$36,954	$1,348,231
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	0.156%	0.186%	0.027%	0.122%
Other Alternative Construction Costs relative to BNSF Alternative				
Hanford West Bypass 1 – At-grade option				
Property value	-$966,277	$5,062,380	$0	$0
Lost property tax revenues ($)	-$9,663	$50,624	$0	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	-0.003%	0.022%	N/A	N/A
Hanford West Bypass 1 – Below-grade option				
Property value	-$894,736	$3,547,748	$0	$0
Lost property tax revenues ($)	-$8,947	$35,477	$0	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	-0.003%	0.015%	N/A	N/A
Hanford West Bypass 2 – At-grade option				
Property value	-$941,561	$5,970,409	$0	$0
Lost property tax revenues ($)	-$9,416	$59,704	$0	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	-0.003%	0.025%	N/A	N/A
Hanford West Bypass 2 – Below-grade option				
Property value	-$894,736	$3,648,992	$0	$0
Lost property tax revenues ($)	-$8,947	$36,490	$0	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	-0.003%	0.016%	N/A	N/A
Corcoran Elevated				
Property value	$0	-$26,215,523	-$766,024	$0
Lost property tax revenues	$0	-$262,155	-$7,660	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	-0.112%	-0.006%	N/A

Table 5-37
BNSF Alternative Property Tax Revenues Lost during Operation (2010$)

Alternative	Fresno County	Kings County	Tulare County	Kern County
Corcoran Bypass				
Property value	$0	-$26,784,932	-$934,675	$0
Lost property tax revenues	$0	-$267,849	-$9,347	$0
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	-0.114%	-0.007%	N/A
Allensworth Bypass				
Property value	$0	$0	-$334,224	-$1,119,748
Lost property tax revenues	$0	$0	-$3,342	-$11,197
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	N/A	-0.002%	-0.001%
Wasco-Shafter Bypass				
Property value	$0	$0	$0	-$23,723,778
Lost property tax revenues	$0	$0	$0	-$237,238
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	N/A	N/A	-0.021%
Bakersfield South				
Property value	$0	$0	$0	-$2,115,998
Lost property tax revenues	$0	$0	$0	-$21,160
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	N/A	N/A	-0.002%
Bakersfield Hybrid				
Property value	$0	$0	$0	-$9,281,477
Lost property tax revenues	$0	$0	$0	-$92,815
Lost property tax revenues (% of FY 2009/2010 county general fund property tax revenues)	N/A	N/A	N/A	-0.008%

Source: Analysis of Fresno, Kings, Tulare, and Kern county property tax assessed property values for fully acquired parcels and county property tax revenues from adopted budgets for FY 2009/2010.

N/A = Not Applicable

Fiscal impacts for all the alternative alignments were calculated using the same methodology as used for the BNSF Alternative.

Hanford West Bypass 1 Alternative

The construction of the Hanford West Bypass 1 Alternative would result in an estimated annual loss in property tax revenue to the budgets of Fresno County and Kings County of $170,760 for the at-grade option and $156,330 for the below-grade option. The corresponding portion of the BNSF Alternative would result in an annual loss in property tax revenue of $129,799.

Hanford West Bypass 2 Alternative

The construction of the Hanford West Bypass 2 Alternative would result in an estimated annual loss in property tax revenue to the budgets of Fresno County and Kings County of $180,088 for the at-grade option and $157,342 for the below-grade option. The corresponding portion of the BNSF Alternative would result in an annual loss in property tax revenue of $129,799.

Corcoran Elevated Alternative

The Corcoran Elevated Alternative would result in an estimated annual loss of $66,742 in property tax revenue to the budgets of Kings and Tulare County and the cities of Hanford and Corcoran, as a result of project construction. This amount compares with the $336,558 annual loss in property tax revenue associated with the corresponding portion of the BNSF Alternative.

Corcoran Bypass Alternative

The Corcoran Bypass Alternative would result in an estimated annual loss of $59,362 in property tax revenue to the budgets of Kings and Tulare County and the cities of Hanford and Corcoran as a result of displaced agricultural land. This amount compares with the $336,558 annual loss in property tax revenue associated with the corresponding portion of the BNSF Alternative.

Allensworth Bypass Alternative

Tulare and Kern counties would experience an estimated $6,551 annual loss of property tax revenue from displaced agricultural land resulting from the construction of the Allensworth Bypass Alternative. This amount compares with the $21,091 annual loss in property tax revenue associated with the corresponding portion of the BNSF Alternative

Wasco-Shafter Bypass Alternative

The annual losses of property tax revenue associated with the Wasco-Shafter Bypass Alternative are estimated at $85,685. The loss would affect the budgets of Kern County and the Cities of Wasco, Shafter, and Bakersfield, mostly from agricultural displacements. This amount compares with the $322,923 annual loss in property tax revenue associated with the corresponding portion of the BNSF Alternative.

Bakersfield South Alternative

Along the Bakersfield South Alternative, project construction would result in an estimated $987,935 annual loss of property tax revenue to the budgets of Kern County and the Cities of Wasco, Shafter and Bakersfield from displaced residential, business, and agricultural land. This amount compares with the $1,009,095 annual loss in property tax revenue associated with the corresponding portion of the BNSF Alternative.

Bakersfield Hybrid Alternative

Project construction along the Bakersfield Hybrid Alternative would result in an estimated annual loss of property tax revenue of $916,280 to the budgets of Kern County and the cities of Wasco, Shafter, and Bakersfield from displaced residential, business, and agricultural land. The

corresponding portion of the BNSF Alternative would result in an annual loss in property tax revenue of $1,009,095.

Station Alternatives

The property tax losses associated with the station alternatives are summarized in Table 5-38. The station alternatives have the potential to increase property values near the stations and therefore to increase property tax revenues.

Table 5-38
Property Tax Loss for Station Alternatives

Station Alternative	Estimated Annual Property Tax Loss
Fresno Station–Mariposa Alternative	$31,430
Fresno Station–Kern Alternative	$14,779
Kings/Tulare Regional Station–East Alternative (potential)	$150
Kings/Tulare Regional Station–West Alternative (potential)	$23,015
Bakersfield Station–North Alternative	$88,382
Bakersfield Station–South Alternative	$76,023
Bakersfield Station–Hybrid Alternative	$92,931

Heavy Maintenance Facility Site Alternatives

The property tax losses associated with the HMF alternatives are summarized in Table 5-39.

Table 5-39
Property Tax Loss for the HMF Site Alternatives

HMF Site Alternative	Estimated Annual Property Tax Loss
Fresno Works–Fresno	$149,538
Kings County–Hanford	$9,392
Kern Council of Governments–Wasco	$17,208
Kern Council of Governments–Shafter East	$28,494
Kern Council of Governments–Shafter West	$31,069
HMF = heavy maintenance facility	

5.4.4.3 Long-Term Impacts on Property Values

One of the concerns expressed by community residents during scoping meetings was that property values could be adversely affected by the project. The purpose of this section is to summarize findings from previous studies on the impact of rail projects on property values.

There is little doubt that construction of the first railroads in the western United States in the late 1800s had a profound influence on land use and development patterns—and real estate values—

in the vicinity of newly created railroad stations. Indeed, the community profiles prepared for the HST project indicate that most of the communities in the study region that would be potentially affected by the project came into existence as a result of the construction of the first railroads through the San Joaquin Valley.

A wave of publicly funded rail transit construction began in the United States in the late 1970s to provide new suburban-to-downtown commuting options in major metropolitan areas. Many research studies were conducted in the latter decades of the twentieth century in an attempt to quantify the economic impact of these public investments and to isolate and identify the effect of constructing new commuter rail lines on residential and commercial real estate values. Although the results of these studies are somewhat mixed, most of them identify some changes in property values, particularly in the vicinity of new transit rail stations.

Although considerable research has been conducted on the property value impacts of rail transit, especially on residential property values near transit stations, it is not clear how these findings would apply to high-speed rail projects. Some categories of potential adverse impacts associated with commuter rail (noise, vibration, visibility) might be similar to those associated with high-speed rail, but it is unclear whether the property value impacts would be similar. For high-speed rail projects, stations are constructed much farther apart than for commuter rail projects, and most trips are intercity trips rather than moving people between suburbs and city centers.

Studies of the impacts of high-speed train projects on property values are not as numerous as those done for transit projects, because most high-speed train systems have not been in place as long and those were built outside of the United States. The first dedicated high-speed rail line in the world (and still the most heavily used) is the Shinkansen system, which began operating in Japan in 1964. The next high-speed train system, France's TGV, began operation 17 years later, in 1981, and now extends almost 3,000 miles. Seven years later, Italy began operating its first high-speed trains, and subsequently systems have been built in many more countries in Europe and Asia (Givoni 2006). The only high-speed passenger rail service operating in the United States at present is Amtrak's Acela Express service, which began operating in 2000 in the densely populated Northeast Corridor, which connects Boston, New York, and Washington, D.C. (Black 2005). These high-speed train systems use differing technologies and operate at different average and maximum speeds. Some (like Shinkansen) have dedicated tracks, but others (like TGV and Acela) share tracks with conventional freight and passenger lines.

Pertinent studies on the impacts of both commuter transit and high-speed train projects are summarized below, with an emphasis on property value impacts.

Impacts of Rail Transit Projects on Property Values

The results presented in this section are drawn primarily from two literature reviews—one prepared in 1999 summarizing findings from 12 studies of the property value impacts associated with light and heavy rail projects throughout the United States, and the other a literature review completed in 2008 by Reconnecting America's Center for Transit-Oriented Development. The latter focuses more on California studies, but also includes findings from studies conducted in several other major American cities (Chicago, Saint Louis, Dallas, Washington, D.C., Atlanta, and Portland).

Table 5-40 summarizes the findings on the impacts of rail transit projects on residential real estate values. As listed in the findings column, the majority of the studies found that rail transit access had a positive influence on residential property values, with the property value premium for proximity to transit ranging from 2% to 45%. Most of the studies focused on single-family home sales, but several examined condominium sales or apartment rental rates. Only the Landis studies conducted in the early 1990s found no discernible effect, or adverse impacts, associated

with proximity to transit, which some analysts attribute to the economic recession that was occurring at the time the data were collected and/or the relative newness of the transit systems studied (i.e., there may not have been a sufficient number of real estate transactions after the opening of the lines to reflect changes in market value) (Reconnecting America, Center for Transit-Oriented Development 2008).

Table 5-40
Summary of Findings on Impact of Rail Transit on Residential Real Estate Values

Author/Year	Rail Transit Type	Location	Findings
Boyce 1972	Heavy rail	Southern New Jersey (Lindenwold High Speed Line)	+$149 in home price for each dollar of value in commute time savings
Blayney-Dyett Associates et al. 1979	Rapid transit	San Francisco Bay Area (BART)	+17% in single-family home sales price within 500 ft of station
Bajic 1983	Heavy rail	Toronto (Spadina Line)	$2,237 premium for the average home
Voith 1991	Commuter rail	Southern New Jersey (PATCO)	+10% premium for median home price in census tracts served by rail line
Voith 1991	Commuter rail	Suburban Philadelphia (SEPTA)	+3.8% premium for median home price in tracts served by rail line (Philadelphia)
Bernick et al. 1991	Rapid transit	San Francisco Bay Area (BART)	+5% in apartment rental rates w/in 1,320 ft of station
VNI Rainbow Appraisal Service 1992	Light rail	San Diego	+2% increase in single-family home sales price w/in 200 ft of station
Nelson 1992	Heavy rail	Atlanta	+$1,000 in home price for each 100 ft closer to a rail station in low-income census tracts; slight negative effect in high-income tracts
Al-Mosaind et al. 1993	Heavy rail	Portland (MAX Eastside Line)	+10.6% increase in single-family home sale price within 500 meters
Gatzlaff 1993	Heavy rail	Miami (Metrorail)	At most a 5% higher rate of appreciation in sales value compared to the rest of Miami
Landis et al. 1994	Heavy rail	San Mateo County (CalTrain)	Negative effect on proximity to CalTrain
Landis et al. 1994	Rapid transit	San Francisco Bay Area (BART)	+$2.29 per meter closer to BART in Alameda County; +$1.96 per meter in Contra Costa County
Landis et al. 1994	Light rail	Sacramento	No discernible + or – effect
Landis et al. 1994	Light rail	San Jose	-$1.97 per meter closer to light rail

Table 5-40
Summary of Findings on Impact of Rail Transit on Residential Real Estate Values

Author/Year	Rail Transit Type	Location	Findings
Landis et al. 1994	Light rail	San Diego (the Trolley)	+ $2.72 per meter closer to the Trolley
Landis et al. 1995	Light rail	Sacramento	+6.2% in single-family home sale price w/in 900 ft of station
Landis et al. 1995	Light rail	Santa Clara County (VTA)	-10.8% in single-family home sale price w/in 900 ft of station
Cervero 1996	Rapid transit	Pleasant Hill (BART)	+10%–15% in rent for residential units within ¼ mile of BART station
Gruen 1997	Commuter rail	Chicago (Metra)	+20% in single-family home sale price w/in 1,000 ft of station
Cervero et al. 2002	Light rail	San Diego (the Trolley)	+2%–18% in condo sales prices and 0–4% increase in apartment rental rates w/in 2,640 ft of station
Cervero 2002	Light rail	Santa Clara County (VTA)	+45% in apartment rental rates w/in 1,320 ft of station
Garrett 2004	Light rail	St. Louis (Metrolink)	+32% in single-family home price w/in 100 ft.

BART = Bay Area Rapid Transit
PATCO = Port Authority Transit Corporation
SEPTA = Southeastern Pennsylvania Transportation Authority
VTA = Valley Transportation Authority
ft = feet
w/in = within

Source: All author-date cites listed in the first column of this table are listed in full and summarized in Diaz 1999 and Reconnecting America, Center for Transit-Oriented Development 2008.

The studies summarized in Table 5-40 focused on property value impacts in the vicinity of transit stations, due to a presumed relationship between property values and improved accessibility (both of residents to regional jobs and of employers to a larger labor pool). However, this focus does not address the question of property value impacts for real estate near a rail line but not close to a station. Such properties could be exposed to the nuisance impacts associated with rail (noise, vibration, visibility, potential for accidents) without enjoying the benefits of improved accessibility. This question is particularly pertinent to high-speed rail, since the stations tend to be fewer and much farther apart than in commuter rail or light-rail transit systems.

In a study of the property value impacts associated with a variety of disamenities, such as environmental contamination or proximity to linear features like roadways and railroads, Simons (Simons 2006) reviewed several rigorous studies (conducted in Ohio, Georgia, and Norway) of the relationship between residential property values and proximity to rail lines, and concluded that there were negative property value impacts in the single digits (e.g., 2 or 3%) for residential properties within 750 feet of an active railroad track. Furthermore, he found that this negative impact could increase depending on the amount of whistle blowing and the volume of train trips. Another study that examined the residential property value impacts of four commuter rail lines

and six light rail lines around the United States found a wide variety of results in different regions and concluded that home price changes were influenced more by regional housing market conditions than by proximity to railroad tracks (Baldwin and Frank 2008).

Although transit rail studies have focused predominately on the effects of improved access on residential property values, some have examined the impacts on commercial property values, as shown in Table 5-41. Similar to the residential findings, most of the studies identified a positive influence on commercial properties in the vicinity of transit stations, with premiums ranging from 1% to as much as 167%. Only the Landis study published in 1994 found no impact.

Table 5-41
Summary of Findings on Impact of Rail Transit on Commercial Real Estate Values

Author/Year	Rail Transit Type	Location	Findings
Falcke 1978	Rapid transit	San Francisco Bay Area (BART)	+1% premium for retail space within 500 ft of a station
Rybeck 1981	Rapid transit	Washington, D.C. (Metrorail)	+9% premium for office space within 300 ft of station
Rybeck 1981	Rapid transit	Silver Springs, Maryland (Metrorail)	+14% premium for office space within 300 ft of station
VNI Rainbow Appraisal Service 1992	Light rail	San Diego (Trolley)	+167% premium for retail space within 200 ft of station
Cervero 1993	Rapid transit	Washington D.C. (Metrorail)	+12.3%–19.6% premium for office space w/in 300 ft of a station
Cervero 1993	Rapid transit	Atlanta (MARTA system)	+11%–15% premium for office space w/in 300 ft of a station
Landis et al. 1995	Rapid transit	San Francisco Bay Area (BART)	No premium impact for office or retail space w/in 2,640 ft of East Bay stations
Weinstein et al. 1999	Light rail	Dallas (DART)	+10% for office space and +30% for retail space w/in 1,320 ft of stations
Weinberger 2001	Light rail	Santa Clara County (VTA)	+15% for office space w/in 2,640 ft of a station
Cervero 2002	Light rail	Santa Clara County (VTA)	+120% for commercial land in a business district w/in 1,320 ft of a station

BART = Bay Area Rapid Transit
MARTA = Metropolitan Atlanta Rapid Transit Authority
DART = Dallas Area Rapid Transit
VTA = Valley Transportation Authority
ft = feet
w/in = within

Source: Reconnecting America, Center for Transit-Oriented Development 2008.

Studies and Findings about the Impact of High-Speed Rail on Property Values

No studies were found that on the specific question of high -speed rail impacts on real estate property values; however, several studies evaluate the broader impacts of high-speed rail projects on growth and development trends and regional economies. Sands (Sands 1993) conducted one of the first reviews of the development effects of the relatively new high-speed rail systems that had been built in Japan, France, and Germany, with a view to identifying the implications for constructing high-speed rail in California. He noted substantial development effects at the regional, urban, and station levels, including changes to population and employment growth rates, ridership, business behavior, and real estate values and activity. These effects were most evident in situations where there was a strong regional economy, excellent links to other transportation modes, and public-sector support for development. In these situations, substantial growth in commercial activity was observed in station vicinities, and overall increases in land values of approximately 20%. Sands predicted that construction of high-speed rail in California would reinforce existing population and employment growth trends, and called for coordination and planning by local government entities and transportation agencies to optimize potential benefits at future station locations.

In a more recent review, Givoni compared the development impacts of high-speed train systems around the world (Givoni 2006). He found that in Japan, regions served by the Shinkansen had higher rates of population and employment growth than those without the service. However, it is not clear whether the higher rates of growth were caused by Shinkansen, or if Shinkansen was built in areas that had higher growth rates. At the station level, the intensity of development that occurred as a result of the new service varied. Where existing stations had been expanded to accommodate Shinkansen, little or no new development occurred around the station. At newly created stations, development appeared to depend on other factors, especially good links to other modes of transportation. (Givoni 2006; Sands 1993).

High-speed rail impacts were also found to vary from station to station in France, with links to other forms of transit again appearing to be key. Substantial growth occurred around the new TGV station in Lyon, where there was high demand for office space and good access to the station, but little development occurred in two other new stations on the same line. Some studies have even found that a connection to the HST network can have a negative impact on the local economy, if unfavorable economic conditions exist in a new station location relative to neighboring cities or regions (Givoni 2006). Similar findings were reported in a 2006 paper prepared by Greengauge 21, reviewing the European experience with economic growth and development associated with new high-speed train stations. The most successful economic stimulus effects were found to be associated with new stations built in regional centers with strong existing service sectors and good transportation links to sub-regional centers (Greengauge 21 2006).

As Givoni concluded, “The evidence from different studies on the effect of HST is mixed and the conclusion is that the introduction of HST alone is not sufficient for social-economic impacts to take place. Such impacts depend on other prevailing conditions,” especially a buoyant local economy that can take advantage of new opportunities offered by improved accessibility, supported by local planning policies “In summary, there is no agreement on the extent to which the HST infrastructure leads to wider socioeconomic impacts….The evidence is mixed and there seems to be disagreement on whether overall impacts, if they exist, are positive or negative.” (Givoni 2006).

In 2010, Andersson et al. published a study of residential property value impacts associated with the Tainan station (Andersson et al. 2010), one of the less urbanized (more suburban) station locations on the relatively new high-speed train system that began operations along Taiwan’s west coast in 2007. Unlike several other stations that were integrated nodes in existing

transportation networks or easily reachable by commuter rail or rapid transit, Tainan station is only accessible by motor vehicle. The authors used several rigorous methods to determine that there had been a small impact on residential values in the vicinity of the new station. They concluded that this was partly the result of its relatively inaccessible location combined with high ticket prices. A typical monthly commuting ticket cost the equivalent of 70% of the median monthly wage in Taiwan (compared with a comparable monthly commuter ticket for trips between Uppsala and Stockholm in Sweden costing about 10% of the median monthly wage). Thus, station accessibility, commute-time savings, and commute costs may all contribute to the complex of factors that can influence (or not influence) real estate values in the vicinity of high-speed rail stations.

Conclusions

The studies that have been done to date related to high-speed rail offer no clear consensus on findings. While good data exist on such outcomes as shifts in travel modes resulting from the introduction of new high-speed train service, economic development impacts "are less clear, harder to observe and quantify, and therefore are more controversial" (Givoni 2006). Successful HST station area development (and presumably related real estate price effects) appear to be linked to a number of factors, including robust local economic conditions, strong travel demand, and excellent links to other forms of transit. It is difficult to extrapolate from studies conducted in high-density urbanized areas of Japan, Korea, and Europe to predict property value effects in American communities that are much more dispersed. For example, Japan's Tokaido line connects Tokyo and Osaka, cities with approximately 30 million and 16 million inhabitants, respectively. Furthermore, these cities are far more densely developed than sprawling Central Valley cities such as Fresno and Bakersfield.

The studies show that the potential exists for the values of residential and commercial properties to appreciate as a result of high-speed train projects. Property value increases can result from both the new access to a high-speed train transportation system and the associated intensification of development that can occur around station locations. However, given the potential for nuisance impacts (such as noise and visual impacts) resulting from high-speed trains passing in close proximity, it is possible that some properties could experience a decrease in value. This potential for a decrease in property value may be particularly true for residences and businesses in locations considerably removed from train stations but exposed to some nuisance impacts of the project. These residences and businesses would enjoy relatively few benefits (mainly those deriving from improved accessibility) to offset the nuisance impacts. This balance between the amount of project benefit enjoyed compared to the nuisance factor endured would be unique for each property and would be only one of the many factors influencing the ultimate market value of any particular property.

5.4.4.4 County and City Sales Tax effects

Many goods in California are subject to sales tax. Revenue from sales tax is an important and one of the largest sources of revenue for the state and local jurisdictions. As of 2010, the State of California has a set sales tax rate of 8.25% on all taxable goods. Table 5-42 provides a breakdown of this base sales tax rate. As the table shows, 6.25% of the base sales tax goes to the state while the remaining 2.00% of the tax collected is returned to the local jurisdictions. If the sale took place in an incorporated city, the tax goes to that city; if the sale took place in an unincorporated location, the tax goes to the county.

Table 5-42
State of California Sales Tax Breakdown

Recipient	Percentage	To fund
State	6.00%	State General Fund
	0.25%	Paying off state bonds
Local jurisdiction	0.50%	Public Safety Services
	0.50%	Health and Social Services
	0.25%	County Transportation Fund
	0.75%	Local General Fund
Total tax	8.25%	N/A

Source: California Bureau of Equalization 2009.
N/A = Not Applicable

Local jurisdiction recipients of the 1.0% of tax revenues consisting of Public Safety Services (0.50%) and Health And Social Services (0.50%) receive revenues from the state tax pool in proportion to their population totals as a percentage of total state population. For example, the city of Fresno is 1.3% of the population of the State of California and therefore receives 1.3% of the 1.0% collected statewide for Public Safety and Health and Social services.

To further increase revenues, counties and cities are allowed to approve increases on top of the base state sales tax rate. If the local jurisdiction decides to increase the sales tax rate, all proceeds from that increase go to the local jurisdiction. Within the study area for this analysis, the Counties of Fresno and Tulare and the City of Fresno were found to have passed additional increases on the state sales tax rate. Such increases on the sales tax rate typically provide funds for a specific program or project, rather than going to the general fund of a city or county. Both Fresno County and the City of Fresno passed the same increases to the sales tax rate, for a total increase of 0.725%. Of that increase, 0.50% goes to the County Transportation Fund, 0.10% goes to the Fresno County Zoo, and 0.125% goes to the Fresno County Public Library. The tax that Tulare County levied was an additional 0.50%, with all of the extra funding going to increase the resources of the County Transportation Fund.

Estimating sales tax loss was done on a jurisdiction-by-jurisdiction basis, using the 2% local portion of the base sales tax rate (including weighting for population for Public Safety and Health and Social services) plus any specific local increases. All businesses in a certain jurisdiction that were identified as displaced through a full parcel acquisition were evaluated by type of industry and estimated total annual sales. Total annual sales and type of industry either were obtained from the Reference USA database or, in cases where the Reference USA database did not have information on the business, were estimated using similar sizes and types of businesses nearby. Aggregating all sales associated with displaced businesses provided an estimate of total sales losses by industry for each jurisdiction.

However, in most cases when a business is shut down, the sales or at least a large percentage of those sales can be expected to be reallocated to a nearby competitor, thereby decreasing the actual total sales that would be lost in the area. This outcome was taken into account by estimated percentages of loss by business type, with some business types—those whose product or service is not as readily available or with fewer local competitors—suffering a higher percentage of lost sales than other types of businesses—those with more common businesses

with many local competitors. For example, an unusual or highly specialized manufacturing business with few if any similar businesses in the local area is more likely to result in a higher percentage of sales tax lost to the local area than a retail business with many local competitors. These estimated percentages by industry type are presented in Table 5-43.

Table 5-43
Estimated Percentage of Sales Lost by Industry

NAICS Code	Description	Local Sales Tax Impact	
11	Agriculture, Forestry, Fishing and Hunting	medium	8.0%
21	Mining, Quarrying, and Oil and Gas Extraction	medium	8.0%
22	Utilities	low	1.0%
23	Construction	medium	8.0%
31-33	Manufacturing	medium	8.0%
42	Wholesale Trade	no tax	0.0%
44-45	Retail Trade	low	1.0%
48-49	Transportation and Warehousing	medium	8.0%
51	Information	no tax	0.0%
52	Finance and Insurance	no tax	0.0%
53	Real Estate and Rental and Leasing	no tax	0.0%
54	Professional, Scientific, and Technical Services	no tax	0.0%
55	Management of Companies and Enterprises	no tax	0.0%
56	Administrative and Support and Waste Management and Remediation Services	no tax	0.0%
61	Educational Services	no tax	0.0%
62	Health Care and Social Assistance	no tax	0.0%
71	Arts, Entertainment, and Recreation	medium	8.0%
72	Accommodation and Food Services	low	1.0%
81	Other Services (except Public Administration)	medium	8.0%
92	Public Administration	low	1.0%

NAICS = North American Industry Classification System

The resulting lost local sales by industry were then each multiplied by the respective local sales tax rate to estimate total sales tax loss by industry for each jurisdiction. As previously discussed, these percentages were 2.725% for Fresno County and the City of Fresno, 2.5% for Tulare County, and 2.0% for all other jurisdictions. Table 5-44 provides the overall estimated sales tax losses by jurisdiction and by alignment as well as the percentage of total jurisdiction sales tax these losses represent. These sales tax revenue losses would be temporary rather than permanent for the most part, because they would occur during the time when affected

Table 5-44
Estimated Sales Tax Losses by Jurisdiction and Alignment

Alignment		Jurisdiction									
		Fresno County	City of Fresno	Kings County	City of Hanford	City of Corcoran	Tulare County	Kern County	City of Wasco	City of Shafter	City of Bakersfield
BNSF	Total $	$41,381	$113,998	$0	$0	$9,720	$0	$223	$3,194	$2,308	$175,545
	Percent	0.09%	0.10%	0.00%	0.00%	0.73%	0.00%	0.00%	0.32%	0.04%	0.33%
Hanford West Bypass 1	Total $	$0	—	$150	$0	—	—	—	—	—	—
	Percent	0.00%	—	0.00%	0.00%	—	—	—	—	—	—
Hanford West Bypass 2	Total $	$0	—	$150	$0	—	—	—	—	—	—
	Percent	0.00%	—	0.00%	0.00%	—	—	—	—	—	—
Corcoran Elevated	Total $	—	—	$0	—	$542	—	—	—	—	—
	Percent	—	—	0.00%	—	0.04%	—	—	—	—	—
Corcoran Bypass	Total $	—	—	$0	—	$0	—	—	—	—	—
	Percent	—	—	0.00%	—	0.00%	—	—	—	—	—
Allensworth Bypass	Total $	—	—	—	—	—	$0	$0	—	—	—
	Percent	—	—	—	—	—	0.00%	0.00%	—	—	—
Wasco-Shafter Bypass	Total $	—	—	—	—	—	—	$2,639	$0	$0	$0
	Percent	—	—	—	—	—	—	0.01%	0.00%	0.00%	0.00%
Bakersfield South	Total $	—	—	—	—	—	—	$0	—	—	$102,275
	Percent	—	—	—	—	—	—	0.00%	—	—	0.19%
Bakersfield Hybrid	Total $	—	—	—	—	—	—	$0	—	—	$143,117
	Percent	—	—	—	—	—	—	0.00%	—	—	0.27%

— =not applicable

businesses are closed for project construction or while displaced businesses relocate to a new location, in many cases within the same taxing jurisdiction. Once the businesses reopen, sales tax revenue generation would resume. Overall, these percentages are a small impact, though for jurisdictions confronting severe revenue shortfalls and budget crises, even a minor loss of annual revenues could be determined to be cumulatively considerable.

Alternative Alignments

BNSF Alternative

Along the BNSF Alternative, the total estimated annual losses of sales tax revenue in the region would be $346,369. This amount represents an average of 0.11% of the total fiscal year 2009/2010 sales tax revenue that the counties and cities in the region collected. The highest estimated annual sales tax revenue losses are as follows: the City of Fresno ($113,998), the City of Bakersfield ($175,545), and unincorporated Fresno County ($41,381). The remaining estimated losses result from business displacements in Kern County, and the Cities of Corcoran, Wasco, and Shafter, for a total of $15,445. All of these losses represent approximately 0.7% or less of the sales tax revenues collected in each of these jurisdictions.

Table 5-45 provides a summary of the changes in sales tax loss associated with each of the alternative alignments relative to the BNSF Alternative.

Table 5-45
Relative Change in Sales Tax Loss by Other Alternative Alignments

Alternative	Estimated Annual Tax Loss
BNSF Alternative	$346,369
Relative Change Compared with the BNSF Alternative	
Hanford West Bypass 1	$150
Hanford West Bypass 2	$150
Corcoran Elevated	-$9,178
Corcoran Bypass	-$9,720
Allensworth Bypass	$0
Wasco-Shafter Bypass	-$3,086
Bakersfield South	-$73,270
Bakersfield Hybrid	-$32,428

Hanford West Bypass 1 Alternative

For both the at-grade option and the below-grade option for the Hanford West Bypass 1 Alternative, which would displace businesses in Kings County, the estimated annual loss of sales tax revenue for Kings County would be $150. The corresponding portion of the BNSF Alternative would result in no losses for the county.

Hanford West Bypass 2 Alternative

For both the at-grade option and the below-grade option for the Hanford West Bypass 2 Alternative, which would displace businesses in the Kings County, the estimated annual loss of sales tax revenue for Kings County would be $150. The corresponding portion of the BNSF Alternative would result in no losses for the county.

Corcoran Elevated Alternative

Along the Corcoran Elevated Alternative, which would displace businesses in the city of Corcoran, the estimated annual loss of sales tax revenue for the City of Corcoran would be $542. The corresponding portion of the BNSF Alternative would result in a $9,720 loss for the city.

Corcoran Bypass Alternative

No commercial and industrial business displacements would occur along the Corcoran Bypass Alternative. The corresponding portion of the BNSF Alternative would result in a $9,720 loss for the city.

Allensworth Bypass Alternative

No commercial and industrial business displacements would occur along the Allensworth Bypass Alternative. Therefore, no losses in sales tax revenues would occur to Tulare County or Kern County. Because no permanent business displacements would occur in Tulare County or Kern County along the BNSF Alternative, neither of the alternatives would affect annual sales tax revenues.

Wasco-Shafter Bypass Alternative

Losses along Wasco-Shafter Bypass Alternative would occur outside of the Wasco and Shafter city limits and would result in losses of $2,639 for Kern County. The corresponding portion of the BNSF Alternative would result in annual sales tax losses of $3,194 for the City of Wasco, $2,308 for the City of Shafter, and $223 for Kern County.

Bakersfield South Alternative

The Bakersfield South Alternative would relocate businesses in Bakersfield and result in an estimated annual loss of $102,275 in sales tax revenue to the city. This estimated loss is less than the estimated $175,545 in annual losses that would be attributed to the corresponding portion of the BNSF Alternative.

Bakersfield Hybrid Alternative

The Bakersfield Hybrid Alternative would relocate businesses in Bakersfield and result in an estimated annual loss of $143,117 in sales tax revenue to the city. This estimated loss is less than the estimated $175,545 in annual losses that would be attributed to the corresponding portion of the BNSF Alternative.

Station Alternatives

The sales tax losses associated with the station alternatives are summarized in Table 5-46.

Table 5-46
Sales Tax Losses by Station Alternatives

Station Alternative	Estimated Annual Tax Loss
Fresno Station–Mariposa Alternative	$0
Fresno Station–Kern Alternative	$521
Kings/Tulare Regional Station–East Alternative (potential)	$0
Kings/Tulare Regional Station–West Alternative (potential)	$0
Bakersfield Station–North Alternative	$12,037
Bakersfield Station–South Alternative	$8,385
Bakersfield Station–Hybrid Alternative	$12,256

Heavy Maintenance Facility Site Alternatives

The sales tax losses associated with the HMF site alternatives are summarized in Table 5-47.

Table 5-47
Sales Tax Loss for Heavy Maintenance Facility Site Alternatives

HMF Site	Estimated Annual Tax Loss
Fresno Works–Fresno	$8,464
Kings County–Hanford	$0
Kern Council of Governments–Wasco	$0
Kern Council of Governments–Shafter East	$0
Kern Council of Governments–Shafter West	$112
HMF = heavy maintenance facility	

5.4.5 Physical Deterioration

This section addresses the potential for the project to result in physical deterioration in communities located along the project alignment as well as around the station and HMF locations.[31] This examination is conducted through a review of all potential effects associated with construction and operation that are identified in Chapter 5 of this report. Each of these potential effects is examined to determine if it could reasonably be expected that the resulting changes to a community would lead to physical deterioration. These specific changes are: (a) considerable residential migration out of a community that would be expected to change its character, (b) extensive changes to the business environment in a community that would be expected to result in closures of key "anchor" businesses that support the area and draw in consumers, and (c) large reductions in the fiscal (property and sales tax) revenues collected that

[31] The term physical deterioration is used here to represent the concept of urban decay or blight resulting from the project.

would be expected to reduce the local government's ability to provide necessary services that maintain the quality of the communities.

Overall, assuming special consideration and mitigations by the project in Corcoran and also for the Mercado Latino Tianguis in Northeast Bakersfield, the potential effects identified do not lead to any foreseeable physical deterioration within the communities along the project.

5.4.5.1 Construction

Construction of the project would provide overall economic benefits for the entire region reducing any existing physical deterioration. These economic benefits include gains in sales tax revenues and job creation as a result of construction spending. The new jobs would be created both directly in the construction sector as well as across other related sectors that supply materials, equipment, and services for the project and its workers. See the other sections in Chapter 5 of this report for a more detailed discussion of the anticipated economic effects of project construction.

The project would also have the potential to result in adverse community disruption and economic effects during construction. These effects are examined below for their potential to result in physical deterioration in communities along the project.

Disruption or Division of Existing Communities (from Section 5.1.1)

The impacts of noise, dust, visual changes, and changes in traffic patterns would not affect overall community integrity, but would affect to some extent the quality of life in the communities surrounding project construction zones. As a result, all of the alternatives would result in effects on community interactions during construction. Given that there is no expectation that these types of community interaction effects would result in considerable residential migration from communities or key business closures, no physical deterioration is expected.

Economic Effects (from Sections 5.1.2 and 5.4.4)

HST System construction spending would result in long-term beneficial impacts on sales tax revenues and employment in the region. In the short-term however, there may be adverse effects on property and sales tax revenue and also on the provision of government and community services to accommodate the potential influx of construction workers in the region. This is an important consideration given the current context of challenging county and city budget deficits. However, any short-term effect to local government tax revenues is not expected to occur to the extent where it would result in physical deterioration.

5.4.5.2 Operation

Operation of the project would provide economic benefits and facilitate broader economic expansion for the entire region, thus reducing any existing physical deterioration. These economic advantages include user benefits (travel-time savings, cost reductions, accident reductions) and accessibility improvements for the region's citizens through improved connection of the Central Valley to the rest of California. These benefits accrue not only to travelers on the HST, but also to travelers using other transportation modes in the region because trips would be diverted from highways and airports, resulting in reduced congestion (Cambridge Systematics Inc. 2003, 2007).

The project would also improve accessibility to labor and customer markets in the region, thereby improving the competitiveness of the region's industries and the overall economy. This increase in competitiveness would result from businesses' ability to locate close to a HST station, thus allowing for greater connectivity to the entire state than is currently possible. This increased

connectivity in business operation and employment also translates into improved efficiencies in population growth as new growth concentrates around these stations' areas, thus reducing urban sprawl into the region's agricultural lands (Cambridge Systematics Inc. 2003, 2007).

The project is expected to increase population growth 3% by 2035 in the four-county region in comparison with the No Project Alternative and also result in a 3% increase in regional employment over this same time period (Cambridge Systematics 2010). A recent study determined that this increase in employment would occur across many economic sectors within the region including the service, communications, utilities, finance, insurance, and real estate sectors (Kantor 2008).

This broad-based economic growth would lead to increased fiscal benefits for local jurisdictions through expansion in both the property and sales tax bases for the region. Property tax revenues would increase as property values across the region rise as a result of project benefits and also as new housing to accommodate growth is constructed and added to the tax rolls. Sales tax revenues would increase as a result of increased business activity from the project and from the corresponding growth in the consumer tax base. In addition, the project itself would generate new sales tax revenues through spending related to the HST System operations and maintenance.

The project would also provide a unique opportunity to shape future economic growth in the region. A 2010 study examining these opportunities determined that the HST System would encourage more compact and efficient growth in the region. This growth would encourage development within cities by incorporating more multifamily and attached single-family housing units in downtown areas. This development contrasts to current distributed development trends that result in lower-density, larger-lot, single-family housing located on the outskirts of urban areas.

The resulting economic benefits from this paradigm shift in growth patterns would result in billions of dollars of economic benefits annually to the state in the form of cost savings from more efficient energy use, reductions in infrastructure investment needs, fewer vehicle miles traveled, reductions in greenhouse gas emissions and air pollution, and reductions in household expenditures on energy and water consumption (Calthorpe Associates 2010).

The project would also have the potential to result in adverse community disruption, displacement and relocation, and economic effects during operation. These effects are examined below for their potential to result in physical deterioration in communities along the project.

Disruption or Division of Existing Communities (from Section 5.1.1)

The HST project has the potential to cause both beneficial and adverse impacts on social conditions and the quality of life experienced by residents of study area communities and neighborhoods. The project would improve regional access, reduce travel times, and reduce traffic congestion on many local roadways. People who live and/or work in the general vicinity of the proposed stations would likely benefit the most from the proposed new rail facilities. Those who live along the portions of the alignment without station access would not enjoy the same level of mobility and access benefits and would potentially be exposed to adverse project effects. These effects include the potential to divide adjacent communities by physically removing homes, businesses, and community facilities.

This effect would be substantial for two small, unincorporated communities along alternative alignments (Newark Avenue northeast of Corcoran and Ponderosa Road northeast of Hanford), as well as in the affected neighborhoods of Bakersfield, where right-of-way acquisition would divide communities and disrupt community facilities such as the Mercado Latino Tianguis,

Bakersfield High School, the Mercy Hospital Medical Complex, and several religious facilities. Although mitigation measures can reduce the impact on specific community facilities, in areas where the project would divide communities, impacts would remain large, even with measures to address noise and visual impacts. However, these divisions of community are not expected to result in considerable residential migration from communities, closures of key businesses or a large reduction in local tax revenue collection and therefore no physical deterioration is expected.

Displacement and Relocation of Local Residents and Businesses (from Section 5.2)

Right-of-way acquisition associated with the BNSF Alternative, the Bakersfield South Alternative, and the Bakersfield Hybrid alternatives would result in many residential displacements in the Bakersfield Northwest and Northeast districts. Large numbers of residential displacements would also occur in Corcoran as a result of the BNSF Alternative. However, in all cases there is sufficient numbers of suitable vacant housing in the area and therefore considerable residential migration is not expected.

Commercial and industrial business displacements and required relocations associated with the BNSF Alternative, Bakersfield South Alternative and Bakersfield Hybrid Alternative would occur in Bakersfield's Central and Northeast districts. Numerous displacements would also occur from commercial and industrial business displacements in Corcoran and Fresno's Edison District as a result of the BNSF Alternative. For the Bakersfield and Fresno displacements, sufficient numbers of suitable vacant business structures are located in the area to house these relocations and therefore no changes are expected in the local business environment. In addition, businesses that would be relocated were not identified as key "anchor" businesses and given the overall size of the economies of Bakersfield and Fresno, these relocations do not represent a significant portion of the city's sales tax base or overall sales revenues. One special consideration is the Mercado Latino Tianguis in Northeast Bakersfield relocated under the BNSF Alternative and Bakersfield Hybrid Alternative. This is an important economic center for the community housing many small businesses. To address this issue, the project will propose mitigation to build a new structure to house these businesses before the old structure is demolished. This will ensure the businesses in the Mercado are able to continue to operate without considerable disruption.

In Corcoran, 19 businesses would be relocated by the BNSF Alternative in an area that has been identified as lacking suitable current vacancies to relocate these businesses. Given the relative size of Corcoran, the potential for physical deterioration is greater as a result of these relocations. Overall, the sales revenue from the 19 relocated businesses represents 0.88% of the sales tax revenue received by the City of Corcoran. Also, the total taxable sales of these businesses comprise 7.5% of the total taxable sales revenue collected in the City. These percentages suggest that (1) the potential fiscal effects to local sales tax revenues are minor and (2) the businesses being impacted by the project do represent a considerable percentage of total city taxable sales. Therefore, while the potential for physical deterioration from fiscal effects is small, the businesses are important to the overall City economy and a lack of suitable current vacant replacement properties leaves open the possibility that businesses could find it necessary to relocate outside the city. Therefore, the project will need to consult with the city to ensure these businesses have suitable relocation alternatives in Corcoran and do not vacate the city en masse. In consideration of this point, there are some existing vacancies to house some of these businesses (see specific details of the gap analysis in Section 5.2.3 of this report and in the *Fresno to Bakersfield Section: Draft Relocation Impact Report*) so it is not expected that all of these businesses would relocate outside the City. In addition, the City has vacant land available in its local Business Park for relocating these businesses (City of Corcoran 2011). As a result, it is anticipated that the majority of these businesses will relocate in the area and no physical deterioration will result.

Economic Effects (from Section 5.1.2 and 5.4.4)

Operation of the HST System would result in benefits to the region, including long-term increases in property and sales tax revenues to the region's local governments. Some short-term reductions may occur in these revenues as a result of land acquisition, but in the long term, expected gains would outweigh these short-term losses. As a result, there would be a short-term effect from property and sales tax revenue reductions, which is an important consideration given the context of potential county and city budget deficits. Employment in the region would increase as a result of new jobs created by the project. Again, as a result of likely local budget challenges, there is the possibility of a short-term effect on the provision of government and community services from related population growth from an influx in construction workers. There would be effects on agricultural production in the short term and negligible in the long term as farm operations logically reallocate land resources and relocate agricultural facilities. Overall, these effects would not be expected to result in residential migration from communities, key business closures or reduction in tax revenues and thus physical deterioration is not expected.

5.4.6 Construction- and Operation-Related Sales Tax Gains

This section describes the local sales tax revenues that would be generated during construction and operation of the project. Unless specifically exempted, all transactions for tangible assets related to the project would be subject to sales tax.

5.4.6.1 Construction

Sales tax revenues during construction were derived using the sales tax rates specific to each county (as of April 1, 2010) and the estimated local expenditures on materials and supplies for each year of construction.

The sales tax revenues that would be realized during construction for Fresno, Kings, Tulare, and Kern counties under each of the alternatives would primarily result in beneficial economic effects. Potential sales tax losses as a result of business displacements and closures are discussed in the preceding section. Table 5-48 provides information on the total local expenditures and resulting local sales tax revenues generated by the BNSF Alternative over the construction period. These estimates were generated using cost estimates from Chapter 5 (Project Costs and Operations) of the EIR/EIS document and estimated regional spending for materials and equipment (Authority and FRA 2011a). See Section 5.1.2 Project Job Creation for a breakdown of this regional spending by sector of the economy. The relative differences between the other alternatives and their corresponding portions of the BNSF Alternative are also shown in Table 5-48. For example, the Corcoran Elevated Alternative is estimated to result in $6.67 million less in local spending, and when compared with the BNSF Alternative it would generate $94,000 less in sales tax revenues. The sales tax rates for the four counties are 8.975% for Fresno County, 8.25% for Kings County, 8.75% for Tulare County, and 8.25% for Kings County; however, the counties only receive a portion of these percentages. A detailed breakdown of the sales tax rate indicates that 6.25% of total sales tax revenue goes to the state, with the remaining percentage going to local government funds for transportation, public safety, and local health and human services. Of the 2.0% that goes to the local governments, half of these taxes go into a state fund and are redistributed based on population. Thus, the estimated sales tax revenues calculated for this analysis are based on each county's relative percentage of the statewide population.

Table 5-48
Sales Tax Revenues Generated during Construction

Alternative	Local Project Expenditures (millions 2010$)	Local Sales Tax Revenues (millions 2010$)
BNSF Alternative	$697.66	$9.85
Other Alternative Alignment Construction Costs Relative to BNSF Alternative		
Hanford West Bypass 1	-$11.32	-$0.160
Hanford West Bypass 2	-$8.53	-$0.120
Corcoran Elevated	-$6.67	-$0.094
Corcoran Bypass	-$56.11	-$0.792
Allensworth Bypass	-$13.18	-$0.186
Wasco-Shafter Bypass	-$46.50	-$0.656
Bakersfield South	-$0.62	-$0.009
Bakersfield Hybrid	-$0.16	-$0.002
Source of expenditures is Authority and FRA 2012, Chapter 5.		

The contributions of the project to the sales tax revenues of the four counties are as shown in Table 5-49. Overall, the sales tax revenue generated from construction activities will add to local government finances, but only during the construction period.

Table 5-49
Contribution of Sales Tax Revenues during Construction (millions 2010$)

Alternative	Fresno County	Kings County	Tulare County	Kern County
BNSF Alternative	$4.93	$0.46	$1.97	$2.50
Other Alternative Alignment Construction Costs Relative to BNSF Alternative				
Hanford West Bypass 1	-$0.080	-$0.007	-$0.032	-$0.041
Hanford West Bypass 2	-$0.060	-$0.005	-$0.024	-$0.031
Corcoran Elevated	-$0.047	-$0.004	-$0.019	-$0.024
Corcoran Bypass	-$0.396	-$0.037	-$0.158	-$0.792
Allensworth Bypass	-$0.093	-$0.009	-$0.037	-$0.047
Wasco-Shafter Bypass	-$0.328	-$0.030	-$0.131	-$0.166

Table 5-49
Contribution of Sales Tax Revenues during Construction (millions 2010$)

Alternative	Fresno County	Kings County	Tulare County	Kern County
Bakersfield South	-$0.004	-$0.001	-$0.002	-$0.002
Bakersfield Hybrid	-$0.001	-$0.000	-$0.001	-$0.001

The local sales tax revenues generated from the BNSF Alternative over the construction period are estimated to be around $9.85 million (see Table 5-49). The sales tax revenues lost from displaced businesses under this alternative are estimated to be $346,369 annually (see Table 5-45), which would give the project an overall positive impact on sales tax revenues collected by local governments during the construction period.

5.4.6.2 Operation

Annual sales tax revenues during operation were estimated using the sales tax rates for each county (as of April 1, 2010) and the estimated local expenditures on materials and supplies. Table 5-50 shows the total operation and maintenance expenditures for the project, the portion of these expenditures on tangible assets that are local, and the resulting local annual sales tax revenue. Examples of materials that are assumed to be purchased locally are gasoline, oil, paint, parts, and light bulbs. The sales tax rates for the four counties are 8.975% for Fresno County, 8.25% for Kings County, 8.75% for Tulare County, and 8.25% for Kern County; however, the counties only receive a portion of these percentages. A detailed breakdown of the sales tax rate indicates that 6.25% of total sales tax revenue goes to the state, with the remaining 2.0% going to local government funds for transportation, public safety, and local health and human services. Of the 2.0% that goes to the local governments, half of these taxes go into a state fund and are redistributed based on population. Thus, the estimated sales tax revenues calculated for this analysis are based on each county's relative percentage of the statewide population.

Table 5-50
Annual Sales Tax Revenues during Operation

Annual Total O&M Expenditures (millions 2010$)	Annual Local Project Expenditures (millions 2010$)	Annual Local Sales Tax Revenues (millions 2010$)
$719	$111.45	$1.573
Source of expenditures is Authority and FRA 2012, Chapter 5.		

The contributions of the project to the sales tax revenues of the four counties are as shown in Table 5-51. Although these additional and permanent sales tax revenues account for less than 1% of the total sales tax revenues collected in each county, these additional revenues are beneficial to the economies of the local cities and counties.

Table 5-51
Contribution of Sales Tax Revenues during Operation (millions 2010$)

Category	Fresno County	Kings County	Tulare County	Kern County
Annual local project expenditures	$44.34	$7.27	$20.82	$39.03
Annual local sales tax revenues	$0.787	$0.073	$0.315	$0.399

During the operation of the project, the sales tax gain is estimated to be $1,573,000 annually (see Table 5-50), and the sales tax lost from displacements will begin to decrease due the displaced businesses being re-established at new locations and new businesses moving in to replace those that did not reopen. Project operation would have an overall positive impact on sales taxes collected by local governments.

5.4.7 Cumulative Impacts

5.4.7.1 Methodology

The cumulative impacts analysis identified 167 past, present, and future development projects whose impacts when added to those of the HST had the potential to create a substantial cumulative contribution (see Appendix D for a map and complete list of these projects). A three-step process was used to filter these projects to identify key projects affecting the following resources:

- Community Character and Cohesion. Impacts are present when there is an adverse change in the character and cohesion of an established neighborhood, such as dividing a neighborhood, or an increase in noise, traffic, access restrictions, parking loss or intrusion, or pedestrian safety hazards such that the integrity of the neighborhood as a whole is changed.
- Housing. Impacts are present when substantial numbers of residences are displaced and suitable replacement housing in the vicinity must be found.
- Environmental Justice. Impacts are present when there is a disproportionate number of occurrences or a disproportionate magnitude of adverse impacts on minority and low-income communities.

The study area for this cumulative analysis consists of the communities affected by the HST project. These communities were chosen as the study area because this is the area where all direct and indirect impacts associated with socioeconomics, communities, and environmental justice would occur.

The first step in the cumulative impact analysis was to identify and remove from consideration those projects whose impacts occur outside the study area. Most of the projects that were removed from consideration under this criterion were transportation projects and industrial, commercial, and utility construction projects where the project itself and all of the project's resulting impacts were determined to occur entirely outside of the study area communities.

Examples of the types of transportation projects removed from consideration are the interchange improvements on SR 99 at Shaw Ave in the northwestern portion of the city of Fresno (Project 10) and the Lerdo Highway resurfacing and repair project north of the city of Bakersfield (Project 131). Examples of the industrial, commercial, and utility construction projects are mining projects east of the city of Fresno (Projects 40, 41, 42, 45, and 48) and several solar projects in unincorporated Kern County (Projects 118, 119, 122, 126, 136, 146, and 166). These types of localized transportation and other construction projects occurring far from the communities of interest are not expected to coincide with impacts on community character, housing, or environmental justice associated with the HST project. Overall, this step of identifying projects with potential impacts within the study area resulted in the removal of 122 of the past, present, and future projects from consideration, leaving 45 projects for further evaluation.

The second step in the cumulative impact analysis was to determine the potential impacts of the remaining 45 past, present, and future projects on community character, housing, and environmental justice in the communities already determined to have potential direct or indirect impact from the HST project. Those projects not expected to have the same impacts on community character, housing, and environmental justice as the HST project were eliminated from further consideration. For example, housing projects in Tulare County were dropped from consideration due to the determination that the HST project is displacing a very small number of residential units in this area (two units). Also, projects that would not impact community character or housing but that could raise EJ concerns in Bakersfield's Northwest District were dropped from consideration due to the fact that this area does not contain EJ populations. This step of the analysis eliminated an additional 12 projects, leaving 33 projects for further evaluation.

The third step of the process was to examine the remaining 33 projects and analyze them on a case-by-case basis to determine if impacts resulting from the HST project could represent a substantial cumulative contribution to all impacts on community resources in these areas. When a potential substantial cumulative contribution was identified, the project was then taken into consideration in the analysis conducted in the Cumulative Impacts Section (CH 3.19) of the EIR/EIS. In this section all final cumulative impact determinations are made as well as any proposed mitigation measures.

5.4.7.2 Findings

City of Fresno

Project 8. The Villas at Fig Garden project in northern Fresno is proposing to increase the housing in the area. However this project will temporarily decrease the housing stock in the area by demolishing the 45 current housing units on the site to replace them with 305 new residential units. This temporary decrease in the housing stock has the potential to cause a cumulative impact with the HST project, which is also displacing residential units. However, examination of vacant housing in the city of Fresno determined that current vacancies can accommodate the total number of displaced households, and construction of new housing would not be necessary.

Project 9. The Fresno Freight Rail Realignment Project traverses the entire city of Fresno. It proposes to merge the two alignments of the BNSF and UP railroads that currently go through the city. Project 9 is proposing to either put both railroads along one of the alignments or to build a new rail that goes around the city for both railroads to share. Project 9 would not displace any housing units and would not split any communities that are not already split by a rail alignment. Trains are already traveling through these communities, so no new impacts on the current EJ populations are expected to occur.

Projects 34 and 35. The CARTS trucking yard project and the SR 99 interchange upgrade at Cedar and North Avenues are taking place directly adjacent to one another in the southern Fresno district of Roosevelt, in an area already heavily used for industrial purposes. The CARTS trucking yard project is proposing to construct a complete truck maintenance facility with several fuel tanks. Neither project would displace residents or affect an EJ population. While the CARTS trucking yard project will increase truck traffic to the area, because the area is already exclusively industrial, no community character or community cohesion impacts are expected as a result.

Projects 27, 28, and 29. Three projects in central Fresno along both the BNSF and UP alignments (the Ventura Boulevard widening project, the City of Fresno's water storage tank project, and the SR 99 Monterey Bridge project) are located within 1 mile of each other. While the projects are not displacing any residents or dividing or affecting the community's character, they all are taking place in an area comprised of EJ communities. This area of central Fresno has a very high EJ concentration and construction of all three of these projects at the same time along with the HST project could exacerbate a disproportionate adverse impact on the EJ community.

In summary, the HST project has the potential to result in a substantial cumulative contribution to EJ impacts in the city of Fresno resulting from construction nuisances.

City of Hanford

None of the relevant past, present, or future projects that remained for consideration are located in Hanford, and therefore no direct and indirect impacts of the HST project would result in a substantial cumulative contribution in Hanford.

City of Corcoran

Project 100. Corcoran's police station project is directly adjacent to the HST alignment. The project would not displace any housing, and police operations will continue during project construction so there would be no impacts to the provision of services. The population of Corcoran is comprised of a high percentage of minority and low-income persons. However, this is the only other project identified in the city and will result in improved police services to these populations. Therefore, direct and indirect impacts of the HST project are not expected, so there is no substantial cumulative contribution to impacts associated with other relevant projects in Corcoran.

City of Wasco

Project 125. The Wasco Rose City Enterprise Zone project is proposing to develop a commercial and industrial park on currently vacant land. No housing units would be displaced by the project and Wasco's community character and cohesion is not expected to be affected by the project. The population of Wasco is comprised of a high percentage of minority and low-income individuals. However, this project is located outside the central area of the community, and therefore is not expected to affect any of Wasco's EJ communities. Moreover, the project is the only other project proposed for Wasco and will result in improved economic opportunities for the current population as well as additional business relocation opportunities.

The direct and indirect impacts of the HST project is not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in Wasco.

City of Shafter

Project 129. The North Shafter sewer project proposes to connect housing units in north Shafter to the municipal wastewater system, taking them off the septic tank systems they currently use. The project would not displace any housing units and would not divide or change the character

of the community. The project area has very high concentrations of EJ populations, and the project may cause short- term traffic delays when roads are closed so that the new sewage pipes can be installed; however, after it's completed, the project will be an improvement on the services currently provided to residents.

The direct and indirect impacts of the HST project are not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in Shafter.

City of Bakersfield

Project 132. The Rosedale Ranch project in northwest Bakersfield is proposing a mixed-use development with residential, commercial, retail, and industrial buildings. The project will be developed on agricultural land, will not be displacing any housing units, and will not be creating any character or cohesion issues. The project is taking place in Bakersfield's Northwest District, which does not have an EJ population.

Project 148. The Bakersfield Commons project in northwest Bakersfield is proposing a mixed-use development in a large vacant lot that is currently surrounded by both residential and commercial development. Bakersfield's Northwest District does not have an EJ population, so there are no EJ impacts expected from this project. The land is currently vacant, so there would be no displacement or housing impacts. The project has been designed to have minimal impacts on the character of the community: it will place housing units adjacent to other housing units and put commercial buildings near other current commercial buildings.

Project 159. The Mill Creek Linear Park Plan project in Central Bakersfield is a mixed use development project that is part of an effort to revitalize downtown Bakersfield. The project would not displace any housing units and will add 115 new housing units to the area. The project is located in an EJ community but does not divide the community, and is improving community amenities by providing new recreational resources for residents in the immediate vicinity.

Project 139. This is a permit to allow a concrete and asphalt recycling facility in Bakersfield's Northwest District to run five days a week, with 50 to 65 trucks visiting the site each week. The Northwest District does not have an EJ population, so there are no EJ impacts from the project. The site is currently occupied by another industrial use and will not be displacing any housing units.

The direct and indirect impacts of the HST project are not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in Bakersfield.

Unincorporated Fresno County

Projects 1, 2, 20, 21, 31, 49, 50, 52, 59, and 63. Ten housing-related projects in Fresno County were grouped together. These projects are not expected to disrupt the character or cohesion of the communities and do not impact EJ populations. All of the projects do impact housing, but they are not displacing any homes and are actually adding new homes to the area, and thus improving housing resources. Most of these projects are located outside of the communities of interest, but were examined to identify the increases to the housing stock and the greater availability of vacant housing units in Fresno County for residents displaced by the HST project. The few projects that are within the communities are several miles from the HST alignment, reducing concern about cumulative impacts to community character during construction.

The direct and indirect impacts of the HST project would are not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in unincorporated Fresno County.

Unincorporated Kings County

Projects 69 and 83. Two housing-related projects in Kings County were grouped together. These projects are not expected to disrupt the character or cohesion of the communities and do not impact EJ populations. The projects do impact housing, but they are not displacing any homes and are actually adding homes to the area, increasing the regional housing stock. The projects are located outside Hanford and are several miles from the HST alignment, reducing concern about cumulative impacts to community character during construction.

The direct and indirect impacts of the HST project are not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in unincorporated Kings County.

Unincorporated Tulare County

There were no relevant projects in this area and therefore no direct and indirect impacts of the HST project would result in a substantial cumulative contribution in unincorporated Tulare County.

Unincorporated Kern County

Projects 134, 135, 140, 150, 161, 162, and 167. Seven housing-related projects in Kern County were grouped together. These projects are not expected to disrupt the character or cohesion of the communities and do not impact EJ populations. All of the projects do impact housing, but they are not displacing any homes and are actually adding homes to the area, increasing the regional housing stock. Most of these projects are located outside of the communities of interest, but were examined at this step to identify the increases to the housing supply and the greater availability of replacement housing units in Kern County for residents displaced by the HST project. The few projects that are within the communities are several miles from the HST alignment, reducing concern about cumulative impacts to community character during construction.

The direct and indirect impacts of the HST project are not expected to result in a substantial cumulative contribution to impacts associated with other relevant projects in unincorporated Kern County.

Chapter 6
References

6.0 References

6.1 Documents and Websites

Andersson, David Emanuel, Oliver F. Shyr, and Johnson Fu. 2010. "Does High-Speed Rail Accessibility Influence Residential Property Prices? Hedonic Estimates from Southern Taiwan." *Journal of Transport Geography.* Volume 18.

Baldwin, Tim, and Shari Frank. 2008. "Fighting the Myths: Impacts of Transit Rail Lines on Adjacent Property Values." Paper presented at APTA Rail Conference.

Bertaut, Carol, and Laurie Pounder. 2009. "The Financial Crisis and U.S. Cross-Border Financial Flows." In *Federal Reserve Bulletin*. http://www.federalreserve.gov/pubs/bulletin/2009/pdf/bulletin_article_november_2009a1.pdf (accessed January 26, 2010).

Black, Clifford R. 2005. "The Acela Express" *Japan Railway & Transport Review 40*. March . http://jrtr.net/jrtr40/pdf/f18_bla.pdf.

Cal-Atlas. 2009. Cal-Atlas California Geospatial Clearinghouse. "School Districts." https://projects.atlas.ca.gov/frs/?group_id=171 (accessed January 2012).

California Bureau of Equalization. 2009. http://www.boe.ca.gov/news/sp111500att.htm (accessed January 2011).

California Department of Education. 2010. Ed-Data Profiles and Reports. http://www.ed-data.k12.ca.us/Navigation/fsTwoPanel.asp?bottom=%2Fprofile.asp%3Flevel%3D06%26reportNumber%3D16 (accessed March 24, 2010).

———. 2011. Educational Demographics Unit DataQuest Reports. http://www.cde.ca.gov/re/sd/ (accessed March 2012).

California Department of Finance. 2009. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark*. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2009/ (accessed March 25, 2010).

———. 2010. E-5 Population and Housing Estimates for Cities, Counties and the State, 2001–*2010, with 2000 Benchmark. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/view.php (accessed July 8, 2011).*

California Department of Finance, Demographic Research Unit. 2007. Population Projections by Race/Ethnicity, Gender and Age for California and Its Counties 2000–2050. Reports and Research Papers P3. Sacramento, CA, July 2007. http://www.dof.ca.gov/research/demographic/reports/projections/p-3/.

California Department of Food and Agriculture. 2010. *California Agricultural Highlights, 2008–2009*.

California Department of Industrial Relations. 2010. *General Prevailing Wage Determinations*. http://www.dir.ca.gov/dlsr/PWD/index.htm (accessed June 14, 2010).

California Department of Transportation. 1997. *Community Impact Assessment*. Volume 4 of *Environmental Handbook*. June.

———. 2010a. The Economy: California's Labor Market. http://www.labormarketinfo.edd.ca.gov (accessed January 23, 2010).

———. 2010b. Labor Market Info, County Unemployment Rates (Labor Force).

———. 2010c. Labor Market Info, Major Employers for Counties. http://www.labormarketinfo.edd.ca.gov/majorer/majorer.asp (accessed March 17, 2010).

California High-Speed Rail Authority and USDOT Federal Railroad Administration (Authority and FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System.* Vol. 1, *Report.* Sacramento and Washington, DC: California High-Speed Rail Authority and USDOT Federal Railroad Administration.

———. 2009a. ARRA Funding Fact Sheet. October.

———. 2009c. *Project-Level Environmental Impact Report / Environmental Impact Statement: Project-Level Environmental Analysis Methodologies.* Version 2, February 2009.

———. 2010a. *California High-Speed Train Project EIR/EIS Merced to Fresno Section.*

———. 2010b. *Draft Relocation Impact Report from the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System*. 2010.

———. 2011a. *California High-Speed Train Project EIR/EIS: Fresno to Bakersfield Section.*

———. 2011b. *California High-Speed Train Project EIR/EIS: Fresno to Bakersfield Section: Aesthetics and Visual Resources Technical Report.*

———. 2011c. *California High-Speed Train Project EIR/EIS: Fresno to Bakersfield Section: CEQA Impacts Analysis Technical Report.*

———. 2011d. *California High-Speed Train Project EIR/EIS: Fresno to Bakersfield Section: Noise Technical Report.*

———. 2011e. *California High-Speed Train Project EIR/EIS: Fresno to Bakersfield Section: Transportation Technical Report.*

———. 2011f. *California High-Speed Train Project EIR/EIS: Merced to Fresno Section.*

———. 2012a. *Title VI Plan*. Briefing, March 2012 Board Meeting Agenda Item #8, Title VI Policy and Draft Title VI Program Plan. March 1, 2012.

———. 2012b. *Limited English Proficiency Plan*. Briefing, May 2012 Board Meeting Agenda Item #11, Limited English Proficiency Plan. May 3, 2012.

Caltrans Districts 6 and 10. 2009. *Updated Route 99 Business Plan.* Fresno, CA: September. http://www.dot.ca.gov/dist6/planning/sr99bus/businessplan/route99bpfinal.pdf (accessed August 2010).

Cambridge Systematics Inc. 2010. *California High-Speed Rail County-Level Growth Inducement Projections: Developed for Use in Regional Environmental Studies.* July..

Central Valley Business Times. 2011. "San Joaquin Valley Business Confidence Falls to New Low." October 3, 2011.

City of Bakersfield. 2002. *Metropolitan Bakersfield General Plan.* Bakersfield, CA: December 11. http://www.bakersfieldcity.us/weblink7/0/doc/902940/Electronic.aspx (accessed September 2010).

———. 2005a. *Downtown Bakersfield Redevelopment Area.* Bakersfield, CA: January. http://www.bakersfieldcity.us/edcd/Pdfs/Redev_Downtown_Area.pdf (accessed September 2010).

———. 2005b. "Bakersfield Redevelopment Highlights: Old Town Kern-Pioneer Bakersfield Redevelopment Area." Bakersfield, CA: January. http://www.bakersfieldcity.us/edcd/Pdfs/Redev_Old_Town_Kern_Area.pdf (accessed September 2010).

———. 2005c. "Bakersfield Redevelopment Highlights: Southeast Bakersfield Redevelopment Area." Bakersfield, CA: January. http://www.bakersfieldcity.us/edcd/Pdfs/Redev_Southeast_%20Area.pdf (accessed September 2010).

———. 2009. *City of Bakersfield Fiscal Year 2009–2010 Proposed Budget.* http://www.bakersfieldcity.us/administration/documents/FY_2009-10_City_of_Bakersfield_Proposed_Budget_Document.pdf (accessed March 25, 2010).

———. 2010. Bakersfield Municipal Code, Bakersfield, California. Seattle, WA: Quality Code Publishing. Current through Ordinance 4621 and the August 2010 code supplement. http://www.qcode.us/codes/bakersfield/ (accessed September 2010).

City of Corcoran. 2007. *Corcoran General Plan 2025, Policies Statement.* Corcoran, CA: March 19, 2007. http://www.quadknopf.com/community_projects/corcoran/PDF_docs/AdoptedPoliciesStatement_3-19-07.pdf (accessed November 2009).

———. 2009a. *Annual Budget, 2008–2009.* Adopted June 2, 2008. http://www.cityofcorcoran.com/civica/filebank/blobdload.asp?BlobID=2582 (accessed March 17, 2010).

———. 2009b. *Corcoran, California, City Code.* Coeur d'Alene, Idaho: Sterling Codifiers, Inc., July 20, 2009. http://sterlingcodifiers.com/codebook/index.php?book_id=396 (accessed November 2009).

City of Fresno. 2007. *City of Fresno: Downtown Transportation and Infrastructure Study* (Fresno, CA: Wilbur Smith Associates, October 2007), http://www.fresnocog.org/files/TransitDocs/Fresno%20Downtown%20Transportation%20and %20Infrastructure%20Study-Final.pdf (accessed August 2010).

———. 2009. *A Guide to the Adopted Budget, Fiscal Year 2009–2010*. Adopted September 30, 2009. http://www.fresno.gov/NR/rdonlyres/E89BD84B-FF24-45C9-A17A-E63B1328A82E/20216/FY2009_2010AdoptedGuidetotheBudget.pdf.

———. 2010. City of Fresno Municipal Code and Charter of Fresno, California. (Tallahassee, Florida: Municipal Code Corporation, Codified through Ordinance No. 2010-22, effective July 1, 2010), http://library.municode.com/index.aspx?clientId=14478&stateId=5&stateName=California (accessed September 2010).

City of Fresno Parks and Recreation. 2010. http://www.fresno.gov/Government/DepartmentDirectory/ParksandRecreation/default.htm (accessed March 10, 2010).

City of Fresno Planning and Development Department. 1989. Central Area Community Plan (Fresno, CA: July 1989), http://www.fresno.gov/NR/rdonlyres/F5847A9B-1351-4899-B8DE-ADA1D11BAFD6/0/CentralAreaCommunityPlan.pdf (accessed August 2010).

———. 1992. Fulton/Lowell Specific Plan (Fresno, CA: April 1992), http://www.fresno.gov/NR/rdonlyres/E16BCD91-5F4A-4B58-B5AD-F8C558DA332D/0/fulton_lowell.pdf (accessed August 2010).

———. 1996a. Roosevelt Community Plan (Fresno, CA: January 23, 1996), http://www.fresno.gov/NR/rdonlyres/88802B1F-C9BE-4A38-BD76-762477AD6E76/0/RooseveltCommunityPlan.pdf (accessed August 2010).

———. 1996b. West Area Community Plan (Fresno, CA: February 1, 1996), http://www.fresno.gov/NR/rdonlyres/42942625-30D2-4372-BBD2-DE2C9D01D0D7/0/WestAreaCommunityPlan.pdf (accessed August 2010).

———. 2002. *2025 Fresno General Plan*. 2002. Adopted February 1, 2002. http://www.fresno.gov/NR/rdonlyres/12A301CD-CB31-456D-9BDF-6A73628D22FE/0/2025FresnoGeneralPlan.pdf (accessed January 4, 2010).

———. 2009. Housing Element, 2008–2013 (Fresno, CA: Advance Planning, March 20, 2009), http://www.fresno.gov/NR/rdonlyres/3341D1B6-554C-48CC-9250-489F6F329B5A/0/HEMarch232009Chapter6.pdf (accessed August 2010), pp. 6-1 to 6-21.

City of Fresno Redevelopment Agency. 2006. Destination Downtown (Fresno, CA: February 14, 2006), http://www.downtownfresno.org/assets/files/Vision2010.pdf (accessed August 2010).

City of Hanford. 2002a. Circulation Element, City of Hanford General Plan (Hanford, CA: June 18, 2002), http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID=4732 (accessed November 2009).

———. 2002b. Hazards Management Element, City of Hanford General Plan (Hanford, CA: June 18, 2002), http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID=4734 (accessed November 2009).

———. 2002c. Land Use Element, City of Hanford General Plan (Hanford, CA: June 18, 2002), http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID=4730 (accessed November 2009).

———. 2002d. Open Space, Conservation and Recreation Element, City of Hanford General Plan (Hanford, CA: June 18, 2002), http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID=4733 (accessed November 2009).

———. 2009a. Hanford Parks, Recreation and Open Space Master Plan (Hanford, CA: Norris Design, Fall/Winter 2009), http://www.ci.hanford.ca.us/depts/rec/masterplan.asp (accessed November 2009).

———. 2009b. Title 17 – Zoning, Hanford Municipal Code (Office of the City Clerk, amended May 19, 2009), http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID=2398 (accessed November 2009).

———. 2010. "Hanford Police Department." http://www.ci.hanford.ca.us/depts/police/default.asp.

City of Shafter. 2005a. City of Shafter General Plan (Shafter, CA: prepared by LSA Associates, Inc., April 2005, Draft), http://shafter.com/DocumentView.aspx?DID=242 (accessed September 2010).

———. 2005b. Mission Lakes Specific Plan (Shafter, CA: prepared by The Planning Center, March 2005), http://www.shafter.com/DocumentView.aspx?DID=43 (accessed September 2010).

———. 2006. Orchard Park Specific Plan (Shafter, CA: prepared by Sage Community Group, Inc., July 2006), http://www.shafter.com/DocumentView.aspx?DID=65 (accessed September 2010).

———. 2008. *Annual Operating Budget 2008-2009*. 2008. Adopted June 17, 2008. http://www.shafter.com/DocumentView.aspx?DID=239 (accessed March 17, 2010).

———. 2010. Shafter Code of Ordinances (Tallahassee, FL: Municipal Code Corporation, Codified through Ordinance No. 632, passed May 18, 2010), http://library.municode.com/index.aspx?clientId=16892&stateId=5&stateName=California (accessed September 2010).

City of Wasco. 2008a. *Adopted Annual Operation Budget, Fiscal Year 2008/2009.* 2008. http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Finance/Budget/Budget08-09.pdf (accessed March 17, 2010).

———. 2008b. Downtown Revitalization Study and Downtown Business Marketing Plan (Wasco, CA: Applied Development Economics, December 2008), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/Wasco%20Presentation_12-17-08.pdf (accessed August 2010).

———. 2009. Five Year Implementation Plan, 2009-2010 through 2013–2014 (Wasco, CA: Urban Features Incorporated, December 2009), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Council/RDA%205yr%20Implementation%20Plan.pdf (accessed August 2010).

———. 2010a. Agricultural Element, City of Wasco General Plan (Wasco, CA: Quad Knopf, adopted October 2002, amended June 2010), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/GPA_Chapter_4.pdf (accessed September 2010).

———. 2010b. Circulation Element, City of Wasco General Plan (Wasco, CA: Quad Knopf, adopted October 2002, amended June 2010), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/GPA_Chapter_5.pdf (accessed September 2010).

———. 2010c. Housing Element, City of Wasco General Plan (Wasco, CA: Quad Knopf, adopted October 2002, amended June 2010), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/GPA_Chapter_6 (accessed September 2010).

———. 2010d. Land Use Element, City of Wasco General Plan (Wasco, CA: Quad Knopf, adopted October 2002, amended June 2010), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/GPA_Chapter_2.pdf (accessed September 2010).

———. 2010e. Safety Element, City of Wasco General Plan (Wasco, CA: Quad Knopf, adopted October 2002, amended June 2010), http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/GPA_Chapter_7.pdf (accessed September 2010).

———. 2010f. Wasco Municipal Code: A Codification of the General Ordinances of the City of Wasco, California (Seattle, Washington: Code Publishing Company, current through Ordinance 608, passed May 18, 2010), http://www.codepublishing.com/ca/Wasco/ (accessed September 2010).

Council of Fresno County Governments. 2007. *2007 Fresno County Regional Housing Needs Allocation Plan* (Fresno, CA: April 2007), April 2007. http://www.fresnocog.org/files/Publications/New%20Folder/RHNA%20Plan%20-%20April%202007%20Draft.pdf (accessed August 2010)

County of Kings. 2009. *2009-2010 Final Budget*. 2009. http://www.countyofkings.com/admin/budgets/Kings%20County%20Adopted%20Budget%202009-2010.pdf (accessed March 17, 2010).

———. 2009. *Armona Community Plan, 2009–2035.*

Cowan, Tadlock. 2005. *California's San Joaquin Valley: A Region in Transition*. CRS Report for Congress. December 12, 2005...

Department of Transportation Order. 1997. 5610.2 Appendix Definitions, sub.[g]. 1997. http://www.fhwa.dot.gov/environment/ejustice/dot_ord.htm (accessed February 19, 2010).

Diaz, Roderick B. 1999. "Impacts of Rail Transit on Property Values." In *Proceedings of the 1999 Commuter Rail/Rapid Transit Conference*. American Public Transportation Association. May 22-27, 1999.

Eberhardt School of Business. 2009. *Unemployment in the San Joaquin Valley in 2009: Fish or Foreclosure.* Business Forecasting Center August 11, 2009.

Economic Development Research Group. 2010. *The Economic Impacts of High-Speed Rail on Cities and their Metropolitan Areas*. Prepared for the US Conference of Mayors. 2010.

Economics and Statistics Administration and Bureau of Economic Analysis. 1997. *Regional Multipliers – A Users Handbook.* Third Edition. March 1997.

Federal Railroad Administration (FRA). 2005. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. Washington, DC: U.S. Department of Transportation, October. http://www.fra.dot.gov/downloads/RRDev/final_nv.pdf. Accessed January 2011.

Fresno County. 2000a. Agriculture and Land Use Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/AgElement_rj.pdf (accessed August 2010), pp. 2-2 to 2-22.

———. 2000b. Economic Development Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Economic_Development_Element_rj.pdf (accessed August 2010), pp. 1-1 to 1-12.

———. 2000c. Housing Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_REVISED_Final_Housing_Element/pdf/ AdoptedElement032503.pdf (accessed August 2010), pp. 7-77 to 7-93.

———. 2000d. Open Space and Conservation Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf (accessed August 2010), pp. 5-1 to 5-37.

———. 2000e. Public Facilities and Services Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Public_Facilities_Element_rj.pdf (accessed August 2010), pp. 4-1 to 4-22.

———. 2000f. Transportation and Circulation Element, Fresno County General Plan Policy Document (Fresno, CA: October 3, 2000), http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Transportation_rj.pdf (accessed August 2010), pp. 3-1 to 3-20.

———. 2008. *County Budget for the Fiscal Year Ended June 30, 2009.* Adopted June 20, 2008. 2008. http://www.co.fresno.ca.us/Departments.aspx?id=118.

———. 2010a. Fresno County Bicycle Transportation Master Plan (Fresno, CA: 2010), http://www.co.fresno.ca.us/DepartmentPage.aspx?id=37187 (accessed August 2010).

———. 2010b. Fresno County Spatial Crop Data. Department of Agriculture. County of Fresno. 2010.

———. 2010c. Fresno County Tax Assessor Parcel Data. County Assessor. County of Fresno. 2010.

———. 2011. *Laton Community Plan Update.* Fresno, CA, 2011. http://www.co.freno.ca.us/ViewDocument.aspx?id=43594 (accessed December 2011)

Fresno County Sheriff. 2009. "Organizational Assessment of the Fresno County Sheriff's Office Final Report." http://www.fresnosheriff.org/Index.htm. February 6, 2008. (accessed December 2011).

Fresno Local Agency Formation Commission. 2007. "Community Service Districts: Municipal Service Reviews and Spheres of Influence Update." July 2007.

Givoni, Moshe. 2006. "Development and Impact of the Modern High-speed Train: A Review," Transport Reviews, 26:5, 593-611. September 2006.

Greengauge 21. 2006. "High Speed Trains and the Development and Regeneration of Cities," June 2006.

Governor's Office of Planning and Research. 2003. "California Land Conservation (Williamson) Act Technical Advisory Document". 2003.

Hoover, Mildred Brooke, and Douglas E. Kyle. 2002. *Historic Spots in California.* Stanford, CA: Stanford University Press, 2002.

Kern Council of Governments. 2001. Kern County Bicycle Facilities Plan (Bakersfield CA, October 2001), http://www.kerncog.org/docs/ped_bike/bikeplan.pdf (accessed August 2010).

———. 2007. 2007 Regional Housing Needs Assessment (Bakersfield CA, June 2007), http://www.kerncog.org/docs/housing/RHNA.pdf (accessed August 2010).

Kern County. 2009. *Final Budget 2009-2010*. 2009. http://www.co.kern.ca.us/cao/budget/fy0910/adopt/finalbudget.pdf (accessed January 4 2010).

———. 2010. Kern County Tax Assessor Parcel Data. County Assessor. County of Kern. 2010.

Kern County Planning Department. 2003. Kern River Specific Trails Plan (Bakersfield, CA: September 9, 2003), http://www.co.kern.ca.us/planning/pdfs/KRSTP.pdf (accessed September 2010).

———. 2007a. Circulation Element, Kern County General Plan (Bakersfield, CA: March 13, 2007), http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp2Circulation.pdf (accessed September 2010).

———. 2007b. Land Use, Conservation, and Open Space Element, Kern County General Plan (Bakersfield, CA: March 13, 2007), http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp1LandUse.pdf (accessed September 2010).

———. 2008. County of Kern Housing Element, 2008-2013 (Bakersfield, CA: December 9, 2008), http://www.co.kern.ca.us/planning/pdfs/he/HE2008_toc.pdf (accessed September 2010).

Kings County. 2010a. Kings County Spatial crop data. Department of Agriculture and Measurement Standards. County of Kings. 2010.

———. 2010b. Kings County Tax Assessor Parcel Data. County Assessor. County of Kings. 2010.

Kings County Association of Governments. 2003. Kings County Transit Development Plan (Kings County, CA: September 2003), http://www.co.kings.ca.us/kcag/Plans_Programs/Other%20Plans/2003%20TDP%20Plan.pdf (accessed August 2010).

———. 2005. *2005 Kings County Regional Bicycle Plan* (Kings County, CA: June 22, 2005), http://www.countyofkings.com/kcag/Plans_Programs/Other%20Plans/2005%20Bike%20Plan.pdf (accessed August 2010).

———. 2008. *2008 Kings County Regional Housing Needs Allocation Plan.* (Kings County, CA: August 27, 2008), http://www.countyofkings.com/kcag/Plans_Programs/Final%20RHNA%20Plan%202008.pdf (accessed August 2010).

———. 2010a. "Land Use Element," Objective 2B.1, Chapter 11. In: *Armona Community Plan.* http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Final%20Docs/11%20Armona%20Community%20Plan.pdf (accessed June 2012).

———. 2010b. *Kings County 2011 Regional Transportation Plan.* Hanford, CA: Kings County, July 28, 2010. http://kingscog.org/assets/2011%20RTP.pdf (accessed August 2010).

Kings County Planning Department. 2010a. "2009-2014 Housing Element," 2035 Kings County General Plan (Kings County, CA: June 2010), http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Kings%20County%20Housing%20Element_2010-06-01b_final.pdf (accessed August 2010), pp. 5-1 to 5-49.

———. 2010b. "Circulation Element," 2035 Kings County General Plan (Kings County, CA: adopted January 2010), http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Final%20Docs/ 05%20Circulation%20Element.pdf (accessed August 2010), pp. C-1 to C-57.

———. 2010c. "Health and Safety Element," 2035 Kings County General Plan (Kings County, CA: adopted January 2010), http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Final%20Docs/ 07%20Health%20and%20Safety%20Element.pdf (accessed August 2010), pp. HS-1 to HS-53.

———. 2010d. "Land Use Element," 2035 Kings County General Plan (Kings County, CA: adopted January 2010), http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Final%20Docs/ 02%20Land%20Use%20Element.pdf (accessed August 2010), pp. LU-1 to LU-50.

———. 2010e. "Open Space Element," 2035 Kings County General Plan (Kings County, CA: adopted January 2010), http://www.countyofkings.com/planning/2035%20draft%20general%20plan/Final%20Docs/04%20Open%20Space%20Element.pdf (accessed August 2010), pp. OS-1 to OS-17.

Laton Lions Club. n.d. "Laton Lions Club Rodeo." http://www.latonrodeo.com/ (accessed May 28, 2010).

Legislative Analyst's Office. 1996. "Property Taxes: Why Some Local Governments Get More Than Others." Policy Brief. August 21, 1996.

Loopnet. 2010. Commercial and Industrial Real Estate Database Search. 2010. http://www.loopnet.com (accessed July 3, 2010).

Norris Design. 2009. *Hanford Parks, Recreation and Open Space Master Plan, Draft Master Plan, Fall 2009*. 2009. http://www.ci.hanford.ca.us/Recreation%20Department_files/DRAFT%20MASTER%20PLAN%2010%2027%2009.pdf (accessed November 16, 2009).

North of the River Recreation and Park District. n.d. North of River District Map. http://www.norfun.org/District_map_for_Printing-BW.pdf (accessed October 20, 2009).

Primedia. 2010. Rental Apartment and Home Database Search. 2010. http://www.rentals.com/ (accessed July 28, 2010).

Reconnecting America, Center for Transit-Oriented Development. 2008. Capturing the Value of Transit. Prepared for the United States Department of Transportation, Federal Transit Administration. 2008.

Reference USA. 2010. U.S. Businesses Database. http://www.referenceusa.com/. Division of Infogroup.

Rice, Richard B., William A. Bullough, and Richard J. Orsi. *The Elusive Eden: A New History of California*. Second Edition. Boston: McGraw-Hill Company, 1996: 233-254, 289.

Rodriguez, Robert. 2010. "Kings County Crop Value Drops 25%." *The Fresno Bee*. June 15, 2010. http://www.fresnobee.com/2010/06/15/1971923/kings-county-crop-value-drops.html.

Sands, Brian D. 1993. "The Development Effects of High-Speed Rail Stations and Implications for California." The University of California Transportation Center. University of California, Berkeley. California High Speed Rail Series Working Paper. UCTC No. 115. April 1993.

Simons, Robert A. 2006. "When Bad Things Happen to Good Property." Washington, DC: Environmental Law Institute, May 2006.

Tulare County. 2009a. *2008 Tulare County Annual Crop and Livestock Report*. Department of Agriculture. County of Tulare. 2009.

———. 2009b. *Recommended Budget 2009-2010.* September 15, 2009. http://www.co.tulare.ca.us/pdfs/200910RecBudget.pdf (accessed March 17, 2010)..

———. 2010a. Tulare County General Plan 2030 Update (February 2010), http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/GeneralPlan2030Update.pdf (accessed August 2010).

———. 2010b. Housing Element 2009 Update (March 2010), http://www.co.tulare.ca.us/civica/filebank/blobdload.asp?BlobID=5570 (accessed August 2010).

Tulare County Association of Governments. 2007a. "Action Element," 2007 Tulare County Regional Transportation Plan (May 21, 2007), http://www.tularecog.org/rtp.php (accessed August 2010)

———. 2007b. 2007 *Tulare County Regional Bicycle Transportation Plan.*

University of the Pacific. 2012. "California and Metro Forecast, 2012." Stockton, CA: Eberhardt School of Business, April 30, 2012.

U.S. Census Bureau. 2000a. (SF-1) DP-1 Profile of General Demographic Characteristics. 2000.

———. 2000b. (SF-3) DP-2 Profile of Selected Social Characteristics. 2000.

———. 2000c. (SF-3) DP-3 Profile of Selected Economic Characteristics. 2000.

———. 2000d. (SF-3) DP-4 Profile of Selected Housing Characteristics. 2000.

———. 2000e. (SF-1) P4 Hispanic or Latino, and Not Hispanic or Latino by Race (Total Population). 2000.

———. 2000f. (SF-1) P20 Households Language by Linguistic Isolation. 2000.

———. 2000g. (SF-3) P88 Ratio of Income in 1999 to Poverty. 2000.

———. 2000h. (SF-3) H19 Household Type (Including Living Alone) By Age of Householder. 2000.

———. 2000i. (SF-3)_P43. Sex by Employment Status for the Population 16+ Years. 2000.

———. 2000j. (SF-1) Summary Table, Demographic Summary Table. 2000.

———. 2001. *Emergency and Transitional Shelter Population: 2000*. Census 2000 Special Reports, CENSR/01-2.2001. October 2001. http://www.census.gov/prod/2001pubs/censr01-2.pdf (accessed April 12, 2010).

———. 2007. B18101, Sex by Age by Disability Status. 2007.

———. 2008. Data Tables. Demographic and Housing Estimates. 2008.

U.S. Census Bureau American Community Survey. 2005–2007. Summary Table, Selected Social Characteristics. 2005–2007.

———. 2006–2008a. B03002 "Hispanic or Latino Origin by Race". 2006–2008.

———. 2006–2008b. B11001 "Household Type (Including Living Along)". 2006–2008.

———. 2006–2008c. B16002 "Household Language by Linguistic Isolation". 2006–2008.

———. 2006–2008d. B17002 "Ratio of Income to Poverty Level in the Past 12 Months". 2006–2008.

———. 2006–2008e. Summary Table, Selected Demographic and Housing Estimates. 2006–2008.

———. 2006–2008f. Summary Table, Selected Economic Characteristics. 2006–2008.

———. 2006–2008g. Summary Table, Selected Housing Characteristics. 2006–2008.

———. 2006–2008h. Summary Table, Selected Social Characteristics. 2006–2008.

———. 2007. Summary Table, Selected Social Characteristics. 2007.

———. 2008a. B03002 "Hispanic or Latino Origin by Race". 2008.

———. 2008b. B11001 "Household Type (Including Living Along)". 2008.

———. 2008c. B16002 "Household Language by Linguistic Isolation". 2008.

———. 2008d. B17002 "Ratio of Income to Poverty Level in the Past 12 Months". 2008.

———. 2008e. Summary Table, Selected Demographic and Housing Estimates. 2008.

———. 2008f. Summary Table, Selected Economic Characteristics. 2008.

———. 2008g. Summary Table, Selected Housing Characteristics. 2008.

———. 2008h. Summary Table, Selected Social Characteristics. 2008.

———. 2009. C25085 "Price Asked". 2009.

U.S. Department of Housing and Urban Development. 2010. HUD Aggregated USPS Administrative Data on Vacancies. 2nd Quarter. June 30, 2010. http://www.huduser.org/portal/datasets/usps.html (accessed July 19, 2010).

U.S. Department of Labor. 2009. Occupational Employment and Wages, 2008. Economic news release. Washington, DC: Bureau of Labor Statistics, May 1, 2009.

URS (URS Corporation). 2009. *Cost Escalation Rate Study for Caltrans District 4 Projects*. Prepared for the California Department of Transportation. May 2009.

Zillow. 2010. Home Real Estate Database Search. 2010. http://www.zillow.com/homes/ (accessed July 7, 2010).

6.2 Persons and Agencies Consulted

Arce, Larry. 2010. Larry Arce, Executive Director, Fresno Rescue Mission, Fresno, CA. Personal Communication regarding the displacement of Fresno Rescue Mission facilities to Mara Feeney, Mara Feeney & Associates. June 23, 2010.

Barfield, Gregory. 2010. Gregory Barfield, Homeless Coordinator, City of Fresno, CA. Personal Communication regarding the displacement of Fresno Rescue Mission facilities to Mara Feeney, Mara Feeney & Associates. June 23, 2010.

Brown, Danny. 2010. Danny Brown, Economic Development Coordinator, City of Wasco, CA. Personal communication regarding the economic importance of the Jackson and Perkins Rose Nursery to Mark Metcalfe, URS. July 1, 2010..

Dorna, Ute. Ute Dorna, Kings County Auditor/Controller's Office. Personal communication regarding the most accurate way to calculate property tax allocation to the counties and cities along the project alignment to Aryan Assadi, URS., June 2, 2010.

Edwards, Randy. 2010. Randy Edwards, Dairy Appraiser, Edwards, Lien and Toso Inc. Personal communication to Guyton Durnin, URS, May 13, 2010.

Gill, Louis. 2012. Louis Gill, Executive Director, Bakersfield Homeless Shelter. Personal communication to Mara Feeney, Mara Feeney & Associates, April 4, 2012.

Higginbotham, Gerald. 2010. Gerald Higginbotham, Dairy Farm Advisor, University California Cooperative Extension, CA. Personal communication to Guyton Durnin, URS, May 13, 2010.

Kinney, Chuck. 2010. Chuck Kinney, Kings County, CA. Personal communication (telephone interview) regarding demographics and characteristics of rural communities in Kings County to Sean Rudden, URS, March 19, 2010.

Prout, Margie. 2010. Margie Prout, Executive Assistant, Fresno Rescue Mission, Fresno, CA. Personal communication regarding the demographics of the homeless population served by the Fresno Rescue Mission to Sean Rudden, URS, July 30, 2010.

Rudden, Rus. 2010. Rus Rudden Construction Manager URS Corp. Personal communication to Sean Rudden, Construction Manager, URS, April 27, 2010.

Smith, Peter. 2010. Peter Smith, Kern Council of Governments, CA. Personal communication (telephone interview) regarding demographics and characteristics of rural communities in Kern County to Sean Rudden, URS, March 19, 2010.

Sweeny, Jake. 2010. Jake Sweeny, City of Shafter, CA. Personal communication (telephone interview) regarding community characteristics of the city of Shafter to Mara Feeney, URS, February 3, 2010.

Waters, Jason. 2010. Jason Waters, Tulare Council of Governments, CA. Personal communication (telephone interview) regarding demographics and characteristics of rural communities in Kings County to Sean Rudden, URS, March 19, 2010.

Chapter 7
Preparer Qualifications

7.0 Preparer Qualifications

The following individuals have made significant contributions to the development of this technical report:

Mark Metcalfe, Ph.D., Primary Author

Dr. Metcalfe has 18 years of experience in conducting socioeconomic analysis for projects encompassing a wide spectrum of local and regional economic issues. Throughout his current work, he is responsible for developing and implementing methodologies to create necessary affected environment and environmental consequence documentation for NEPA and CEQA projects. This includes authoring both technical reports and writing EIR/EIS sections for the environmental document. Issues examined in his work include regional growth; land use; substantial and significant changes to community character and cohesion; disproportionate and adverse effects on environmental justice populations; impacts to residents, employees and broader local economies resulting from displacement of residences, businesses and public facilities; project-related short- and long-term employment creation; community access and circulation; project fiscal impacts to local jurisdictions, impacts to agricultural operations and overall cumulative project impacts. He has 10 years of experience as a leader of multidisciplinary teams and has authored 20 professional publications on all aspects of his work.

Mara Feeney, Contributing Author

Mara Feeney obtained an undergraduate degree in Anthropology and a Master's degree in Community and Regional Planning. She has more than 30 years of professional experience in conducting socioeconomic impact analysis, land use impact analysis, environmental justice evaluations, and community outreach. She has worked on a wide variety of projects throughout the United States and Canada—many of them large-scale and controversial resource development or public works projects. Her assignments on multidisciplinary teams have included evaluation of potential impacts on land use, regional employment and income, population and demographic characteristics, public finance, adopted local plans and policies, farmland, housing, community infrastructure and services, recreation, environmental justice, and quality of life. She is thoroughly familiar with the requirements of NEPA and CEQA, and was an instructor in environmental impact reporting at Sonoma State University.

Sean Rudden, Contributing Author

Sean Rudden holds a degree in economics from Sacramento State University and is continuing his education towards a degree in urban land development. He has a varied background in economics, planning, and sustainability. Projects he has worked on range from land use studies, CEQA/NEPA permitting projects, energy reduction campaigns, economic profiles, and disaster preparedness plans.

Talia Edelman, Contributing Author

Ms. Edelman holds a degree in Environment and Development from the London School of Economics and a degree in Geography from the University of California, Los Angeles. Her previous experience includes projects covering a range of areas (e.g., population, water, ecosystem evaluation) using a variety of techniques, including economic, geospatial, and cultural analysis.

David Halsing, Contributing Author

David Halsing has 12 years of experience in analyzing and modeling natural resources, environmental economics, hazards, and other environmental issues, and has delivered a number

of environmental studies, benefit-cost analyses, greenhouse gas inventories, and decision-support tools to clients in federal, state, and regional governments. He has prepared or contributed to several environmental documents and conducted environmental permitting on several major projects. Projects and tasks completed under his management and leadership have been used in land-use planning, water quality management, the evaluation of investments in spatial data infrastructure, conservation planning, watershed and protected area design, and policy/program development.

Linda Peters, Independent Technical Reviewer

Linda Peters is the manager of the Planning Division of the San Francisco Office of URS. An environmental planner/archaeologist with 15 years of consulting experience, Ms. Peters has an excellent working knowledge of the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) processes, and she has prepared environmental documents and cultural resources reports for a wide range of projects throughout California, Arizona, Nevada, Utah, and Wyoming. She has worked for the past 10 years preparing NEPA/CEQA documents for a variety of local, state, and federal agencies. Specifically, she has an exceptional working knowledge of U.S. Department of Transportation requirements for federally funded projects, and understands the appropriate protocols and procedures to successfully obtain environmental clearance on projects in a timely manner. Since 2001, she has prepared Section 4(f) evaluations for projects funded by the FHWA, FTA, FRA as both stand-alone documents and as chapters or sections in NEPA documentation. Ms. Peters worked in conjunction with the FHWA and ADOT to develop the ADOT/FHWA Local Government Section/Transportation Enhancement and Scenic Roads Section Checklist and Completion Guidelines.

Appendix A
Methodologies

Appendix B
Community Baseline Data

Appendix C
Impacts to Agricultural Production

Appendix D
Cumulative Projects