

CALIFORNIA HIGH-SPEED TRAIN

Technical Report

DRAFT

Fresno to Bakersfield Section

Aesthetics and Visual Resources

July 2011



Aesthetics and Visual Resources Technical Report

Prepared by:

URS/HMM/Arup Joint Venture

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Acronyms and Abbreviations

| | |
|-----------|--|
| APE | area of potential effects |
| Authority | California High-Speed Rail Authority |
| BNSF | Burlington Northern Santa Fe |
| Caltrans | California Department of Transportation |
| CBD | Central Business District |
| CEQA | California Environmental Quality Act |
| DEM | Digital elevation map (ping) |
| DOT | Department of Transportation |
| E. | East |
| EIR | environmental impact report |
| EIS | environmental impact study |
| FAA | Federal Aviation Administration |
| FHWA | Federal Highway Administration |
| FOE | Finding of Effect |
| FRA | Federal Railroad Administration |
| GIS | geographical information system |
| HMF | heavy maintenance facility |
| HST | high-speed train |
| Mt. | Mount |
| N. | North |
| NEPA | National Environmental Policy Act |
| OCS | overhead catenary system |
| ROD | Record of Decision |
| RTP | regional transportation plan |
| SER | Standard Environmental Reference |
| SR | State Route |
| STIP | State Transportation Improvement Program |
| TPS | traction power substation |

UPRR Union Pacific Railroad
VIA visual impact assessment
W. West

Chapter 1

Introduction

1.0 Introduction

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

In 2005, the Authority and the Federal Railroad Administration (FRA) prepared a Program Environmental Impact Report/Environmental Impact Statement (Statewide Program EIR/EIS) evaluating HST's ability to meet the existing and future capacity demands on California's intercity transportation system (Authority and FRA 2005). This was the first phase of a tiered environmental review process (Tier 1) for the proposed statewide HST system. The Authority and the FRA completed a second Program EIR/EIS in July 2008 to identify a preferred alignment for the Bay Area to Central Valley Section (Authority and FRA [2008] 2010).

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

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

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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 based 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 be primarily 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 to avoid environmental impacts.

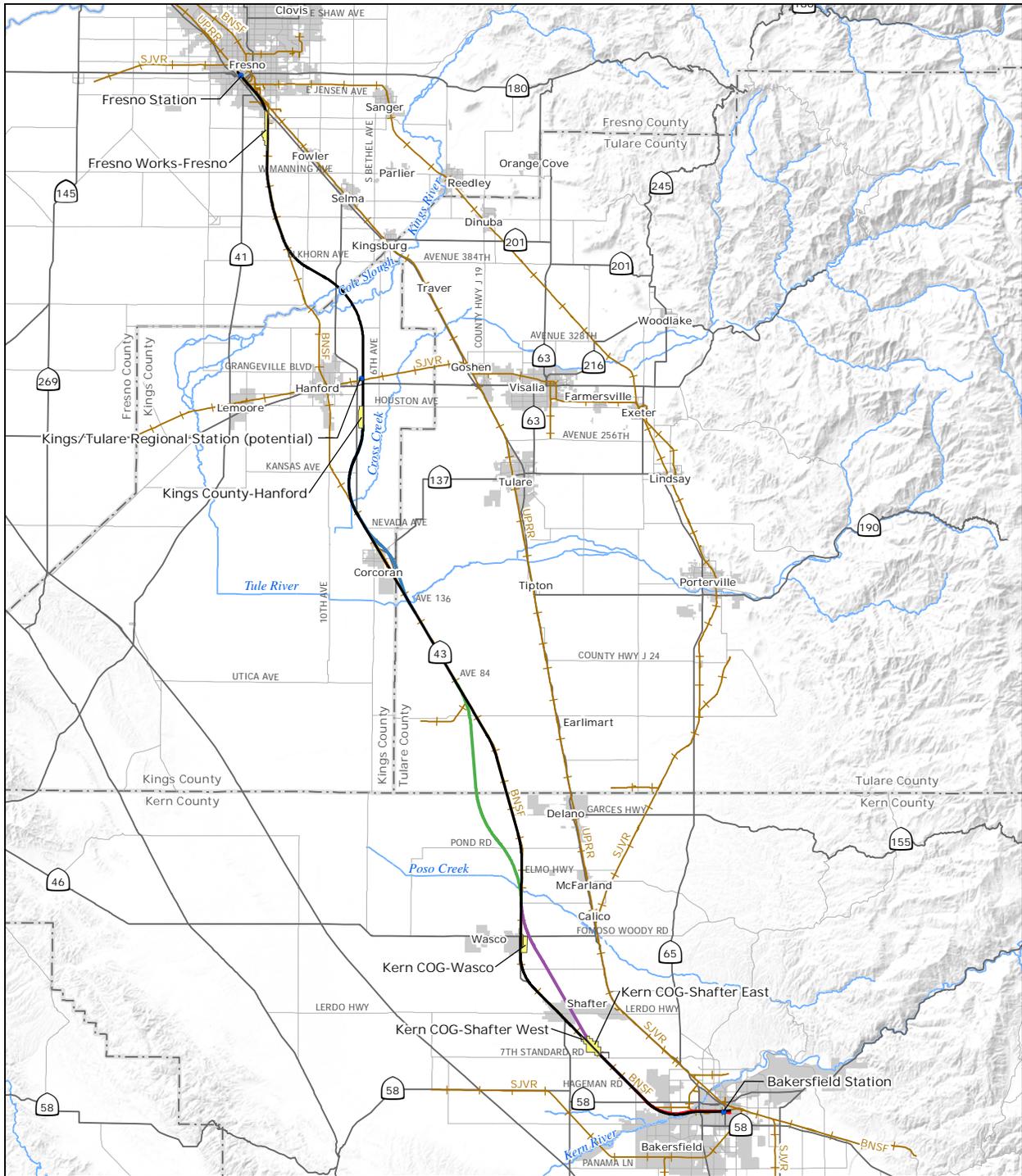
The Fresno to Bakersfield HST Section would cross both urban and rural lands and include a station in both Fresno and Bakersfield, a potential Kings/Tulare Regional Station in the vicinity of Hanford, a potential heavy maintenance facility (HMF), and power substations along the alignment. The HST alignment 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 automobile access. The project footprint would consist primarily of the train right-of-way, which would include both a northbound and southbound track in an area typically 100 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 of 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 which 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 feet 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 five 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).



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: URS, 2011

May 16, 2011

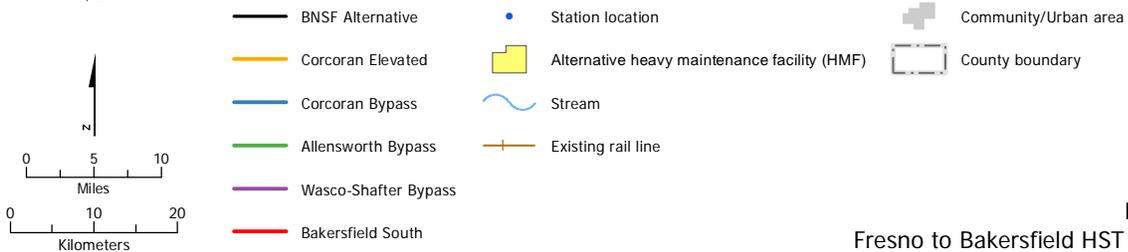


Figure 2-1
 Fresno to Bakersfield HST alignments

A. 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). To assess 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.

B. BNSF ALTERNATIVE ALIGNMENT

The BNSF Alternative Alignment 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 and SR 198. The alignment would also be elevated over Cross Creek, and again at the southern end of the city of Corcoran to avoid a BNSF Railway spur. In Tulare County, the BNSF Alternative would be elevated at the crossing of the Tule River and at the crossing of the Alpaugh railroad spur that runs west from the BNSF Railway mainline. In Kern County, the BNSF Alternative would be elevated over Poso Creek and 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 Alignment 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, bridges over riparian corridors, road overcrossings and undercrossings, and 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 72 feet long from end to end (crossing structure distance), would span a width of approximately 8 feet (crossing structure width), and would provide 4 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.

C. CORCORAN ELEVATED ALTERNATIVE ALIGNMENT

The Corcoran Elevated Alternative Alignment would be the same as the corresponding section of the BNSF Alternative Alignment from approximately Idaho Avenue south of Hanford 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 begins at Niles Avenue and returns to grade at 4th Avenue. 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 cross SR 43 and pass over several local roads on an aerial structure. Santa Fe Avenue would be closed at the HST right-of-way.

D. CORCORAN BYPASS ALTERNATIVE ALIGNMENT

The Corcoran Bypass Alternative Alignment would run parallel to the BNSF Alternative Alignment from approximately Idaho Avenue south of Hanford, to approximately Nevada Avenue north of Corcoran. The Corcoran Bypass Alternative would then diverge from the BNSF Alternative and swing east of Corcoran, rejoining the BNSF Railway route at Avenue 136. The total length of the Corcoran Bypass would be approximately 21 miles.

Similar to the corresponding section of the BNSF Alternative, most of the Corcoran Bypass Alternative would be at-grade. However, one aerial structure would carry the HST over Cross Creek, and another would travel 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.

E. ALLENSWORTH BYPASS ALTERNATIVE ALIGNMENT

The Allensworth Bypass Alternative Alignment 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 Alignment would be approximately 19 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 the Alpaugh railroad spur and Deer Creek. The alignment would pass through Tulare County mostly 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 County Road J22, Scofield Avenue, Garces Highway, Woollomes Avenue, Magnolia Avenue, Palm Avenue, Pond Road, Peterson Road, and Elmo Highway. 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.

The Allensworth Bypass Alternative includes an option to relocate the existing BNSF Railway tracks to be adjacent to the HST right-of-way for the length of this alignment. The possibility of relocating the BNSF Railway tracks along this alignment has not yet been discussed with BNSF Railway; however, if this option is selected, it is assumed that the existing BNSF Railway right-of-way would be abandoned between Avenue 84 and Elmo Highway, and the relocated BNSF Railway right-of-way would be 100 feet wide and adjacent to the eastern side of the Allensworth Bypass Alternative right-of-way.

F. WASCO-SHAFTER BYPASS ALTERNATIVE ALIGNMENT

The Wasco-Shafter Bypass Alternative Alignment would diverge from the BNSF Alternative between Sherwood Avenue and Fresno 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 alternative alignment would be approximately 24 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. 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.

G. BAKERSFIELD SOUTH ALTERNATIVE ALIGNMENT

From the Rosedale Highway (SR 58) in Bakersfield, the Bakersfield South Alternative Alignment would run parallel to the BNSF Alternative Alignment at varying distances to the north. At Chester Avenue, the Bakersfield South Alternative curves south, and runs parallel to California Avenue. As with the BNSF Alternative, the Bakersfield South Alternative would begin at grade and become elevated starting at Palm Avenue through Bakersfield to its terminus at the southern end of the Bakersfield station tracks. The elevated section would range in height from 50 to 70 feet. Dedicated wildlife crossing structures would be placed between 100 and 500 feet to the north and south of the Kern River.

The Bakersfield South Alternative would be approximately 9 miles long and would cross the same roads as the BNSF Alternative. This alternative includes the Bakersfield Station–South 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. An optional 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.

A. FRESNO STATION ALTERNATIVES

Two alternative sites are under consideration for the Fresno Station.

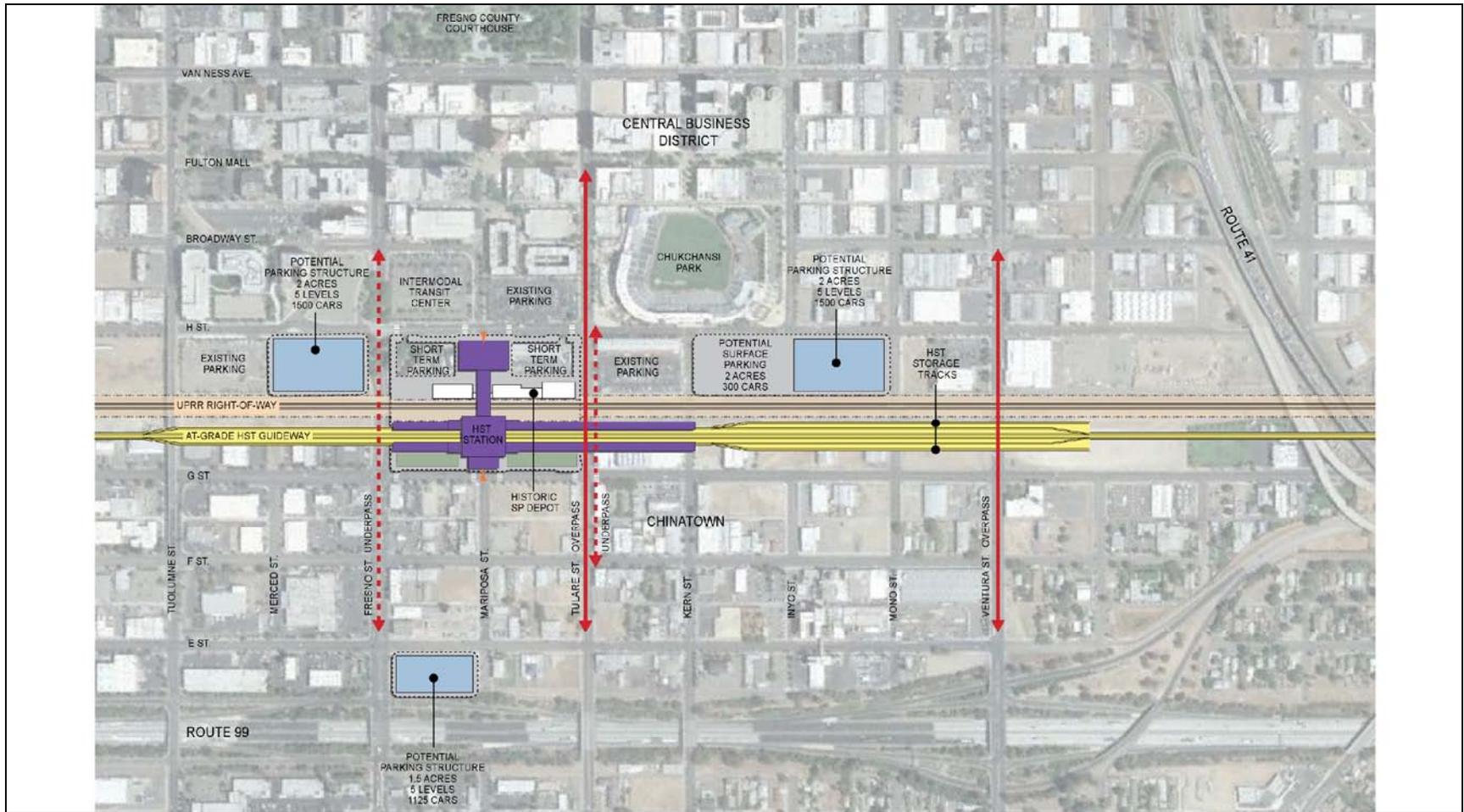
Fresno Station–Mariposa Alternative

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

The two-level station would be at-grade; with passenger access provided both east and west of the HST guideway and the UPRR tracks, which would run parallel with one another adjacent to the station. The first level would contain the public concourse, passenger service areas, and station and operation offices. The second level would include the 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.

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



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

May 16, 2011

- | | | | |
|--|------------------------|--|-------------------------|
| | STATION ENTRANCE | | STATION CAMPUS BOUNDARY |
| | KEY PEDESTRIAN LINKAGE | | RIGHT-OF-WAY BOUNDARY |
| | OPEN SPACE | | ROADWAY MODIFICATION |



NOT TO SCALE

Figure 2-2
Fresno Station-Mariposa Alternative

The site proposal includes the potential for up to three parking structures occupying 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 not assumed to be functionally required for the HST project and are thus, 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, the station would not encroach on the historic Southern Pacific Railroad depot just north of Tulare Street and would not require relocation of existing Greyhound facilities.

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 housing 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.

B. KINGS/TULARE REGIONAL STATION

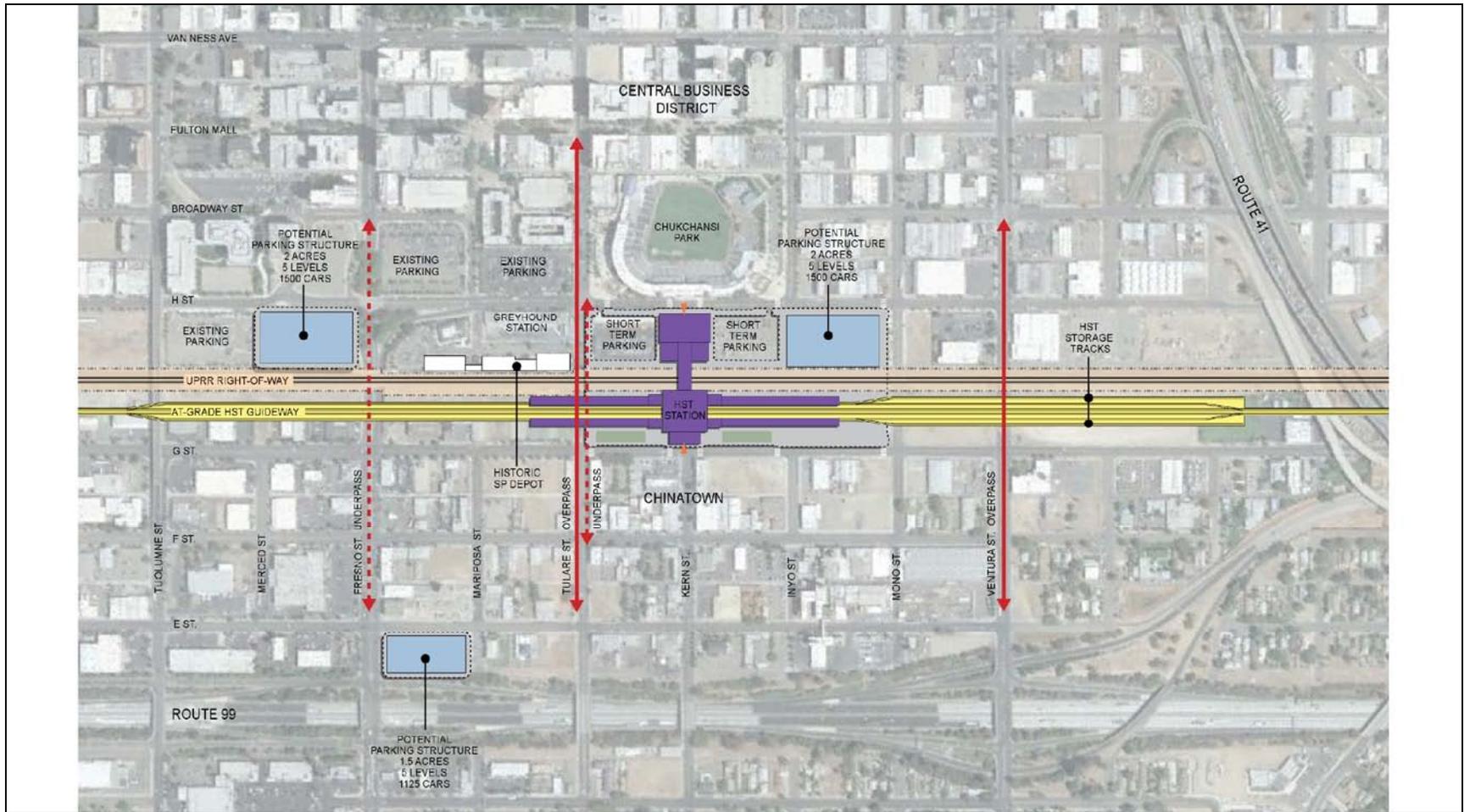
The potential Kings/Tulare Regional Station would be located east of SR 43 (Avenue 8) and north of the Cross Valley Rail Line (San Joaquin Valley Railroad) (Figure 2-4). The station building would be approximately 40,000 square feet with a maximum height of approximately 75 feet. The entire site would be approximately 27 acres, including 8 acres designated for the station, bus transit center, short-term parking, and kiss-and-ride. An additional approximately 19 acres would support a surface parking lot with approximately 1,600 spaces.

C. BAKERSFIELD STATION ALTERNATIVES

Two 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 Alignment (Figure 2-5). 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



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

May 16, 2011



NOT TO SCALE

- | | | | |
|--|------------------------|--|-------------------------|
| | STATION ENTRANCE | | STATION CAMPUS BOUNDARY |
| | KEY PEDESTRIAN LINKAGE | | RIGHT-OF-WAY BOUNDARY |
| | OPEN SPACE | | ROADWAY MODIFICATION |

Figure 2-3
Fresno Station-Kern Alternative



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

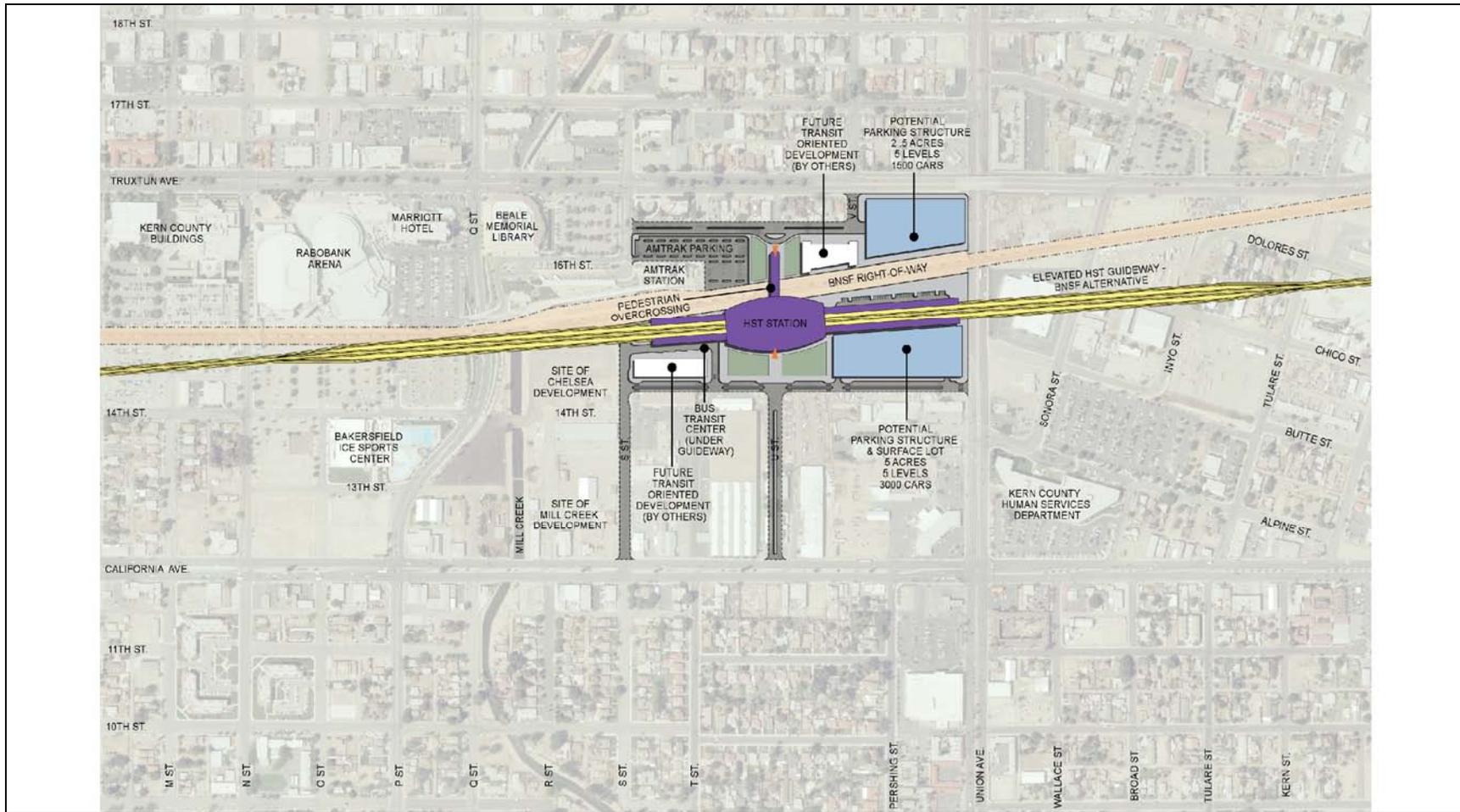
May 16, 2011



NOT TO SCALE

- | | | | |
|---|------------------------|---|-------------------------|
|  | STATION ENTRANCE |  | STATION CAMPUS BOUNDARY |
|  | KEY PEDESTRIAN LINKAGE |  | RIGHT-OF-WAY BOUNDARY |
|  | OPEN SPACE |  | ROADWAY MODIFICATION |

Figure 2-4
Kings/Tulare Regional Station (potential)



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

May 16, 2011



NOT TO SCALE

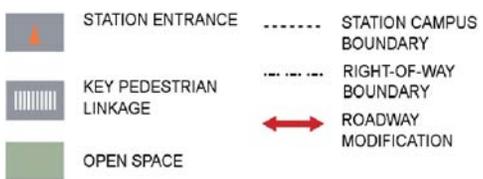


Figure 2-5
Bakersfield Station-North Alternative

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 similarly located in downtown Bakersfield, but situated on the Bakersfield South Alternative Alignment along Union and California avenues, just south of the BNSF Railway right-of-way (Figure 2-6). 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.

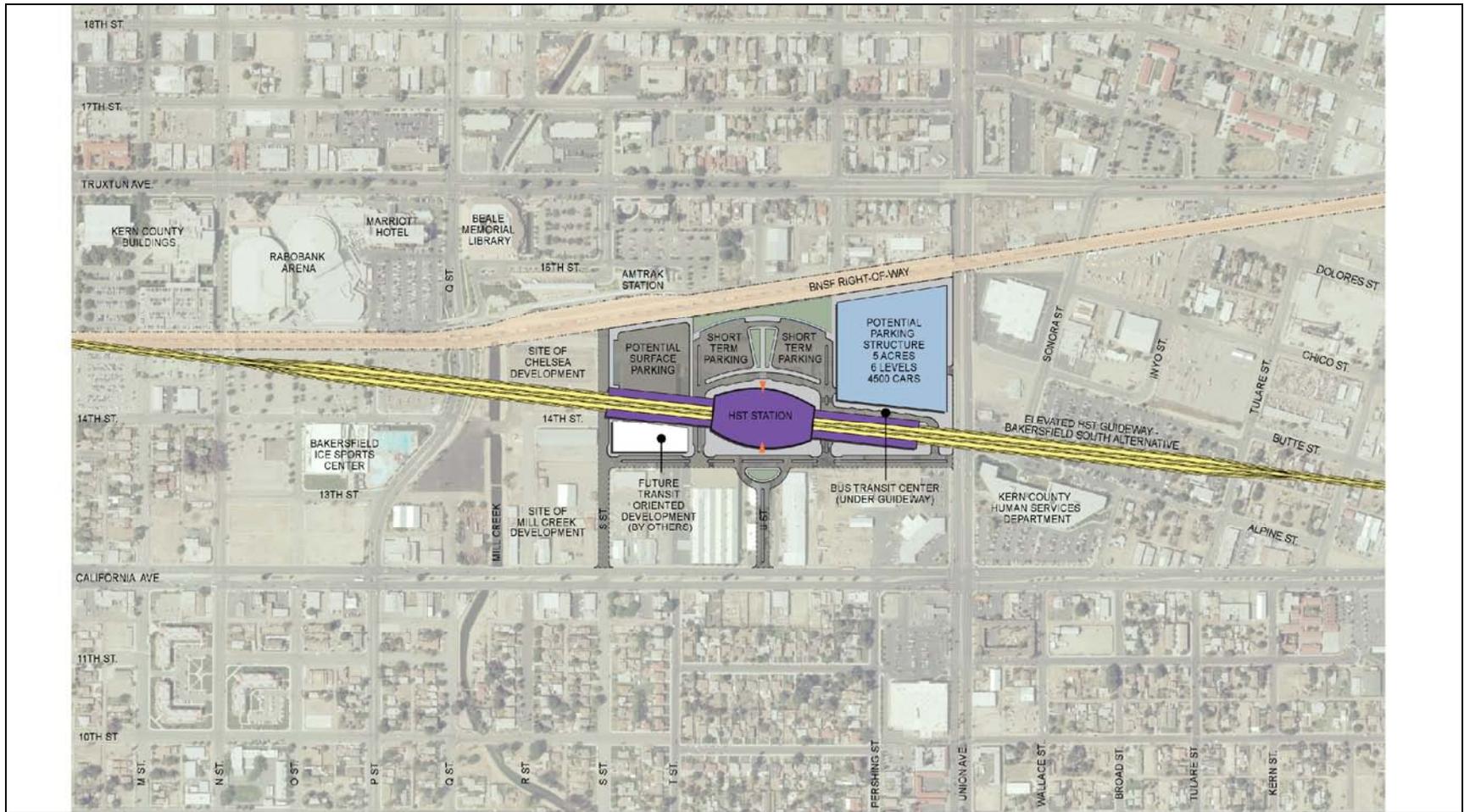
The entire site would be 20 acres, with 15 acres designated for the station, bus transit center, short-term parking, and kiss-and-ride. An additional 5 acres would support one six-level parking structure with a capacity of approximately 4,500 cars. Unlike the Bakersfield Station–North Alternative, this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

2.2.3 Heavy Maintenance Facility (HMF)

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 startup 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 150 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. 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.



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

May 16, 2011



NOT TO SCALE

- | | | | |
|---|------------------------|---|-------------------------|
|  | STATION ENTRANCE |  | STATION CAMPUS BOUNDARY |
|  | KEY PEDESTRIAN LINKAGE |  | RIGHT-OF-WAY BOUNDARY |
|  | OPEN SPACE |  | ROADWAY MODIFICATION |

Figure 2-6
Bakersfield Station-South Alternative

- 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

To provide power for the HST, high-voltage electricity at 115 kV and above would be drawn from the utility grid and transformed down to 25,000 volts. The voltage would then be distributed to the trains via an overhead catenary 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 supply stations (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 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 of the rail bed; application of crushed rock ballast; laying of track; and installation of 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.

Pre-construction 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 guideway 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 overall schedule for construction is provided in Table 2-1.

Table 2-1
 Construction Schedule

| Activity | Tasks | Duration |
|-------------------------------------|---|---------------------------|
| Mobilization | Safety devices and special construction equipment mobilization | March–October 2013 |
| 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 | April–August 2013 |
| Earthmoving | Excavation and earth support structures | August 2013–August 2015 |
| Construction of Road Crossings | Surface street modifications, grade separations | June 2013–December 2017 |
| Construction of Elevated Structures | Viaduct and bridge foundations, substructure, and superstructure | June 2013–December 2017 |
| Track Laying | Includes backfilling operations and drainage facilities | January 2014–August 2017 |
| Systems | Train control systems, overhead contact system, communication system, signaling equipment | July 2016–November 2018 |
| Demobilization | Includes site cleanup | August 2017–December 2019 |

Table 2-1
 Construction Schedule

| Activity | Tasks | Duration |
|--|--|--|
| HMF Phase 1 ^a | Test track assembly and storage | August–November 2017 |
| Maintenance-of-Way Facility | Potentially co-located with HMF ^a | January–December 2018 |
| HMF Phase 2 ^a | Test track light maintenance facility | June–December 2018 |
| HMF Phase 3 ^a | Heavy Maintenance Facility | January–July 2021 |
| HST Stations | Demolition, site preparation, foundations, structural frame, electrical and mechanical systems, finishes | Fresno: December 2014–October 2019 Kings/Tulare Regional: TBD ^b Bakersfield: January 2015–November 2019 |
| Notes: ^a The HMF would be sited along either the Merced to Fresno or Fresno to Bakersfield section. ^b 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 | | |

Chapter 3

Regulatory Framework

3.0 Regulatory Framework

3.1 Federal

3.1.1 Department of Transportation Act, Section 4(f) [DOT Act 49 U.S.C.]

The DOT Act became law on October 15, 1966. It is aimed to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

3.1.2 National Historic Preservation Act [16 U.S.C. Section 470 et seq.]

The NHPA establishes the federal government policy on historic preservation. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Potential adverse effects include changes in the physical features of the property's setting that contribute to its historic significance, or introduction of visual elements that diminish the integrity of the property's significant historic features.

3.1.3 Federal Highway Administration (FHWA)

In its implementation of NEPA, the FHWA has developed specific guidance for the evaluation of visual impacts of highway projects; this guidance is discussed at length in the Methods for Evaluating Impacts section below.

3.2 State

3.2.1 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 aesthetic and visual impacts, and to avoid or mitigate those impacts, when feasible.

3.2.2 State Scenic Highways [Streets and Highway Code Sections 260 to 263]

These Streets and Highway Code sections list highways that are either eligible for designation as a scenic highway or already are designated as a scenic highway.

3.3 Regional Plans, Policies, and Regulations

Table 3-1
 Summary of Regional Plans, Policies, and Regulations

| Policy Title | Summary |
|---|--|
| Fresno County | |
| Fresno County, Fresno County General Plan, Agriculture and Land Use Element, Policy LU-B.11 ^a (Fresno County 2000a). | This policy indicates that new development requiring a County discretionary permit must be planned and designed to maintain the scenic open space character of rangelands, including views corridors of highways. |
| Fresno County, Fresno County General Plan, Open Space and Conservation Element, Goal OS-K, Policies OS-K.1 through OS-K.4 ^b (Fresno County 2000b) | This goal and these policies are concerned with conservation, protection, and maintenance of scenic quality and development that degrades areas of scenic quality. Policies in this section identify methods to achieve this goal, including encouraging private property owners to enter into open space easements; purchasing sites for park use; requiring development adjacent to scenic areas and roadways to incorporate natural features of the site; and requiring development to minimize impacts to scenic qualities. A system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways is also identified. |
| City of Fresno | |
| City of Fresno, Fresno 2025 General Plan, Urban Form Element, Policy 3-C-a, Objective C-5, Policy C-5-a, Objective C-18, Policies C-18-a, C-18-b, C-18-h, C-18-j, Objective C-20, and Policy C-20-e ^c (City of Fresno Planning and Development Department 2002). | The objectives and policies are concerned with improving the overall image in the Fresno Central Plan Area. This includes, but is not limited to, enhancing the visual image of all "gateway" routes entering the Fresno metropolitan area, such as passenger rail rights-of-way. Properties adjacent to both side of a gateway are to provide a sense of entry and transition, and serve as initial information points for visitors. Gateways are to include more prominent landscaping, special lighting, orientation signs, and symbols or logos. Unsightly land uses are restricted or subject to special design/buffering standards. Emphasis is on site and building design in order to preserve functionality and community aesthetics. |
| City of Fresno, Fulton Corridor Specific Plan and the Downtown Neighborhoods Community Plan ^d (City of Fresno 2010). | In January 2010, the City of Fresno began preparation of two new plans for the portions of Downtown Fresno potentially affected by the project. These include the Fulton Corridor Specific Plan, covering the area of downtown in which the project is located; the Downtown Neighborhoods Community Plan, covering the surrounding residential areas. Completion of the Fulton Corridor Specific Plan is anticipated in 2011 and adoption in 2012. Policies of that plan applicable to the project, including the Fresno downtown station, will then supersede the existing 1996 Fulton-Lowell Specific Plan and 1989 Central Area Community Plan, and add specificity to policies currently in place under the Urban Form Element. |
| Kings County | |
| Kings County, County of Kings 2035 General Plan, Open-Space Element, Scenic Resources OS Goal B1, OS Objectives B1.1 to B1.3 ^e (Kings County 1993a). | The open space policies for scenic resources are concerned with maintaining and protecting the scenic beauty of Kings County. Objectives and policies in this section include protection and enhancement of roadways that cross scenic areas or serve as scenic entranceways to cities and communities. |

Table 3-1
 Summary of Regional Plans, Policies, and Regulations

| Policy Title | Summary |
|--|--|
| Kings County, County of Kings 2035 General Plan, Resource Conservation Element, RC Goal D3, RC Objective D3.1, RC Policy D3.1.3 ^f (Kings County 1993b). | The Resource Conservation Element includes objectives and policies concerned with protection of scenic qualities in riparian environments. Conservation of fish and wildlife habitat and protection of scenic qualities are to be guiding principles when potential impacts on riparian environment are evaluated. |
| City of Corcoran | |
| City of Corcoran, Corcoran General Plan 2025, Land Use Element, Objective B, Policies 1.4, 1.37, and 1.41 ^g (City of Corcoran 2007). | Objectives and policies include maintaining and enhancing Corcoran's visual qualities. Scenic entryways (gateways) and roadway corridors are to be developed into the City, including the Whitley Avenue corridor. Special setback and landscape standards, entry signage, open space and park development, and/or land use designations are to be included. Industrial development is not to create significant offsite circulation, noise, dust, odor, visual, and hazardous materials impacts that cannot be adequately mitigated. |
| Tulare County | |
| Tulare County, Tulare County General Plan 2030 Update, Land Use, Policy LU-5.6, Goal LU-7, Policies LU-7.6 and LU-7.12h (Tulare County 2010). | The Land Use goals and policies provide provisions regarding industrial uses and preservation of the character and scale of Tulare County's communities, among other things. Policy LU-5.6 prohibits new heavy industrial uses to a minimum of 500 feet from schools, hospitals, or populated residential areas, unless mitigated. Policy LU-7.6 requires landscaping to adequately screen new industrial uses to minimize visual impacts. Policy LU-7.12 encourages preservation of buildings and areas with special and recognized historic, architectural, or aesthetic value. |
| Tulare County, Tulare County General Plan 2030 Update, Scenic Landscapes, Goal SL-1, Policies SL-1.1, SL-1.2, and SL-4.3 ^h (Tulare County 2010). | The Scenic Landscape goals and policies emphasize the enhancement and preservation of scenic landscapes in Tulare County. Goal SL-1 is to protect and feature the beauty of working and natural landscapes. Policy SL-1.1 requires new development to not significantly impact or block views of natural landscapes by minimizing obstruction of views from public lands and rights-of-way, keeping development below ridge lines, blending structures into the landscape, screening parking areas from view, including landscaping that screens the development, limiting the impact of new roadways and grading on natural settings, and including signage that is compatible and in character with the location and building design. Policy SL-1.2 requires that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds, be designed to reference traditional agricultural building forms and materials, screen and break up parking and paving with landscaping, and minimize light pollution and bright signage. |
| Tulare County, <i>Tulare County General Plan 2030 Update</i> , Scenic Landscapes, Goal SL-1, Policies SL-1.1, SL-1.2, and SL-4.3 ^h (continued) | Policy SL-4.3 encourages rail infrastructure to be planned and designed to limit visual impacts on scenic landscapes by concentrating infrastructure in existing railroad rights-of-way, by avoiding additional grade separated crossings in viewshed locations, and by using new transit stations supporting rail transit as design features in existing and future core community areas. |

Table 3-1
 Summary of Regional Plans, Policies, and Regulations

| Policy Title | Summary |
|--|---|
| Tulare County, <i>Tulare County General Plan 2030 Update</i> , Corridors Framework Plan, Policy C-1.3 ^b | Policy C-1.3 supports the development and adoption of scenic corridor protection plans that protect and enhance the scenic qualities of major transportation routes. |
| Kern County | |
| Kern County, <i>Kern County General Plan</i> , Land Use, Open Space, and Conservation Element (Kern County Planning Department 2007b); Industrial Policies 6 and 7; General Provisions 47, 48, 49, and 66 ⁱ | These policies outline measures for upgrading the visual character of existing industrial areas through the use of landscaping, screening, or buffering; for including design features in industrial areas such as screen walls, landscaping, increased height and/or setbacks, and lighting restrictions so as to reduce impacts on residences due to light, noise, sound, and vibration; for ensuring that light and glare from discretionary new development projects are minimized in rural as well as urban areas; for encouraging the use of low-glare lighting; for incorporating aesthetically pleasing and unifying design features that promote a visually pleasing environment; and for promoting the conservation of oak tree woodlands for their environmental value and scenic beauty. |
| Kern County, <i>Kern County General Plan</i> , Circulation Element, Scenic Route Corridors Policy 2j (Kern County Planning Department 2007a). | The Circulation Element of the Kern County General Plan contains a scenic route corridors section that focuses primarily on State-designated routes within the County. Policy 2 stipulated that various methods of protecting and enhancing the scenic qualities of land and uses within the boundaries of a scenic route corridor be devised and carried out. |
| Kern County, <i>Kern County General Plan</i> , Kern River Plan Element, Open Space Versus Development Policies 3, 4, 5, 6, and 8k (City of Bakersfield 1985; Kern County Planning Department 1985). | The Kern River Plan Element was adopted in 1985 as a part of the General Plans of both the City of Bakersfield and Kern County. Specific policies regarding the aesthetics of Kern River require that buildings, structures, and vegetation be constructed, installed, or planted in a manner that minimizes obstruction of scenic views from highways, streets, trails, parks, or beach areas; that land developments that would detract from scenic quality be screened by vegetation, fencing, or landscaped berms, or be located in a reasonably inconspicuous manner; that natural topography, vegetation, and scenic features be retained to the greatest extent feasible in development along the river; that grading or earthmoving within the secondary floodway blend with existing topography, and that vegetation subsequently be reestablished where it does not conflict with channel maintenance and recharge facilities; that building heights and setbacks not significantly obstruct river views; and that structural improvements be set back as far as possible from the primary floodway line. |
| City of Wasco | |
| City of Wasco, <i>City of Wasco General Plan</i> (City of Wasco 2010a), Policies Statement, Land Use Element, Objective A, Policies 1 and 8 ⁱ (City of Wasco 2010b) | Objectives and policies include maintaining and enhancing Wasco's visual qualities. The Central Business District is to be maintained as the geographical center of the community, and aesthetics along the BNSF Railroad gateway into downtown are to be improved. |

Table 3-1
 Summary of Regional Plans, Policies, and Regulations

| Policy Title | Summary |
|---|---|
| City of Shafter | |
| City of Shafter, <i>Shafter General Plan</i> , Land Use Organization, Policy 5 ^m (City of Shafter 2005) | This policy emphasizes the “entry” function of lands adjacent to the Lerdo Highway and 7th Standard Road interchanges along State Route 99, including lands adjacent to Shafter Airport, and promotes uses that present a positive image of the community. |
| City of Bakersfield | |
| City of Bakersfield, <i>Metropolitan Bakersfield General Plan</i> , Land Use Element, Policies 70 and 71 ⁿ (City of Bakersfield 2007a) | These policies promote the establishment of attractive entrances into communities, major districts, and transportation terminals, centers, and corridors within the planning area, and they encourage landscaping on banks of flood control channels, canals, and roadways, and other public improvements with trees to provide a strong visual element in the planning area. |
| City of Bakersfield, <i>Metropolitan Bakersfield General Plan</i> , Open-Space Element, Policy 5 ^o (City of Bakersfield 2007b) | This policy indicates that a development location should be sensitive to its relationship to the Kern River. |
| Sources: ^a Fresno County 2000a, 2-22. ^b Fresno County 2000b, 5-33. ^c City of Fresno Planning and Development Department 2002, 34-35, 47-49. ^d City of Fresno 2010. ^e Kings County 1993a ^f Kings County 1993b ^g City of Corcoran 2007, 1-2, 1-3, and 1-10. ^h Tulare County 2010, Part 1: 4-30, 4-31, 4-32, 7-3, 7-8, and Part II: 2-1. ⁱ Kern County Planning Department 2007a, 48, 71, 72, and 74. ^j Kern County Planning Department 2007b, 105. ^k Kern County Planning Department 1985, Section 3.2.3: 4-5. ^l City of Wasco 2010b, 2.0-1. ^m City of Shafter 2005. ⁿ City of Bakersfield 2007a, II-15. ^o City of Bakersfield 2007b, VI-5. | |

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Chapter 4

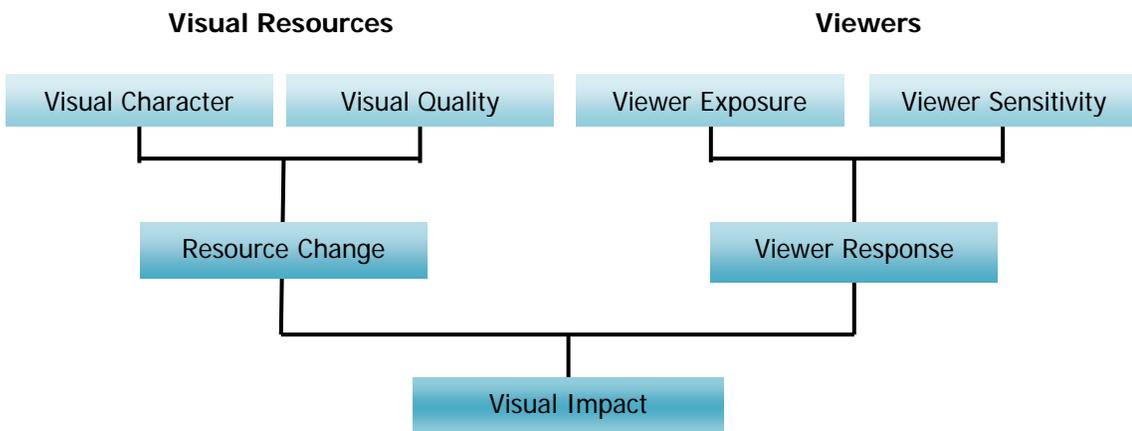
Affected Environment

4.0 Affected Environment

4.1 Assessment Method

This assessment was conducted according to the FHWA Visual Impact Assessment methodology (FHWA 1988), particularly as applied under guidelines of the California Department of Transportation (Caltrans) Standard Environmental Reference (SER), Chapter 27, Visual and Aesthetics Review (Caltrans 2009). This assessment methodology was adapted for this study by the California High-Speed Rail Authority. The conceptual model for this method, as presented in the FHWA handbook, is shown in Table 4-1:

Table 4-1
 FHWA Visual Assessment Model



Indicators of viewer response are identified first, to focus the analyses on where there is the potential for substantial adverse impacts. Viewer response is evaluated in terms of *viewer sensitivity* and *viewer exposure* to project-related visual change. As described in the FHWA methodology, viewer sensitivity is evaluated according to viewer activity type, viewer awareness as affected by the visual setting, and local values and goals. The evaluation of viewer response to visual change was based primarily on viewer activity type and associated scenic expectations, and is augmented with local priorities and values, particularly as expressed in adopted public policy.

Typically, recreational and residential viewers are assumed to have higher levels of viewer sensitivity to project effects than people working or passing through a viewshed. Residents are generally assumed to have a high level of concern with their home environment, and have extended long-term exposure to changes in that setting. Recreational viewers often have high levels of concern with scenic quality, particularly in settings where scenery is a central focus of the visitor's experience. In contrast, viewers at their place of work are generally assumed to have low levels of viewer sensitivity, particularly in industrial settings. Motorists and commuters are generally assumed to have moderate levels of sensitivity unless noteworthy scenic vistas would be affected, or the affected roadways have scenic designation. A public participating in some types of active recreation may have a lower level of viewer sensitivity because scenery may not be central to the recreation experience.

Viewer exposure may also strongly influence viewers' response to project effects, and includes consideration of the presence or absence of screening or filtering of project features; number of viewers; the distance at which the project would be seen; the extent, frequency, and duration of viewer exposure; and other relevant viewing conditions.

In the analysis, this characterization of visual quality and viewer response serves as the baseline for evaluating potential impacts due to adverse changes in the setting's visual quality. As described in the FHWA's guidelines, visual impacts are evaluated primarily in terms of the degree of change to visual quality as a result of the project. The significance of those impacts is determined in relation to the anticipated viewer response—the viewer sensitivity and visual exposure. Where a high degree of visual change would occur in combination with high levels of anticipated viewer response, the impact would be considered to be substantial. In contrast, views with low levels of visual change coupled with low levels of anticipated viewer response would be considered not to have been adversely affected to a substantial degree. These thresholds of impact are discussed in greater detail in Chapter 5 of this technical report.

Visual assessments are typically conducted through the use of key representative viewpoints. These viewpoints are intended to represent potentially affected high-sensitivity viewer groups within each landscape type. In this study the characterization of visual quality and viewer response has been conducted from such representative viewpoints. Key viewpoints (KVPs) are identified and depicted in this study where high levels of viewer response indicate a particular susceptibility to substantial impacts from visual change. From within this set of representative viewpoints, a subset has been selected for the preparation of visual simulations as presented in Chapter 5 of this report, to represent conditions where project features could potentially have substantial adverse visual effects on sensitive viewer groups or viewer types.

With the key viewing positions identified, the analysis proceeds with the description of the character of the settings for these positions. The settings are described in terms of landscape units, representing distinctive segments of the project viewshed that have similar visual character and visual quality. Visual character refers to the physical attributes of the landscape and is descriptive. Within each major landscape unit, landscape types or subsegments have also been identified to support a relevant description of the visual setting of potential key viewers and viewpoints. Each subtype, in turn, is characterized in terms of two principal attributes: anticipated *visual quality* and *viewer response*.

Visual quality represents a qualitative assessment of the value of a landscape: it is evaluated in terms of the descriptors *vividness*, *intactness*, and *unity*. The three criteria are defined as follows:

Vividness is the visual power or memorability of landscape components as they combine in distinctive visual patterns.

Intactness is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.

Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual manmade components in the landscape (FHWA 1988).

In this study, visual quality is rated on a five-point scale of Low, Moderately Low, Moderate, Moderately High, and High, and the overall rating is derived from the average score of these three factors taken in combination.

4.2 Project Viewshed

Geographic information system (GIS) mapping was not conducted for this study. GIS mapping, typically conducted with U.S. Geological Survey digital elevation mapping (DEM) data, is unable to reflect the effect of land cover, i.e., vegetation, man-made structures, and other features affecting the viewshed other than topography alone. However, in the extremely level San Joaquin

Valley, potential viewsheds are typically limited primarily by distance, and secondarily by land cover features not reflected in GIS mapping. Within the Fresno and Bakersfield study areas, man-made structures and vegetation are the decisive defining factors of the viewshed. DEM topographic GIS mapping was thus not considered to be appropriate for use in this project's particular study area.

The viewshed of the project is highly dependent on the project features themselves. For large at-grade portions of the alternative alignments, potential visibility of the project is quite limited due to the low level of prominence of the project features (rail bed, catenary poles and wires, the trains themselves). Beyond foreground viewing distances of 0.5 mile or even less, these portions of the project would have a limited visual presence. In segments where the project is elevated on berms or low structures the area of visual effect would increase correspondingly. Within urban areas, where the project includes very tall guideways, the potential visibility may increase dramatically. However, in these environments, project visibility is also limited in complex, highly site-specific ways by existing urban development. For practical purposes, then, the project viewshed is defined in this study as the area within which particular project features could have moderate or greater visibility and is addressed in this way under the discussion of individual landscape units and landscape subtypes. Accounting for the anticipated scale of the project features in different segments of the Fresno-Bakersfield corridor, the zone of potential substantial impact is not generally expected to extend beyond a foreground distance of 0.25 mile from the alternative alignments or project features.

4.3 Regional Landscape

In the broadest physiographic terms the entire project is within a single landscape unit, the Central/San Joaquin Valley, the vast level plain between the Sierra Nevada and Coastal Range. The Central Valley extends over 400 miles from north-central California to the Tehachapi Mountains near the southern project terminus and encompasses more than half of the state of California.

The San Joaquin Valley landscape is defined predominantly by vast reaches of agricultural land organized in a rigid north-south, east-west grid, punctuated by large cities such as Fresno and Bakersfield and numerous small, predominantly agricultural towns that generally retain historic old downtowns. Unlike portions of the northern Central Valley in the vicinity of Sacramento, these towns have not yet cohered into large corridors of continuous suburban sprawl but remain as distinct settlements, surrounded by virtually continuous open agricultural land. Unless blocked by orchards, other tall crops, or towns, views tend to extend great distances over the open agricultural fields. In addition to the predominant pattern of agricultural fields and towns, the riparian corridors of major rivers feeding the San Joaquin Valley represent another distinctive component of the valley landscape. The riparian woodlands of these streams have been confined to very narrow corridors but remain a defining feature of the valley landscape. Other distinctive landscape features include the contrasting vertical forms of agro-business facilities; the extensive but usually inconspicuous network of canals and ditches; and the typical configuration of tall, isolated tree groves surrounding older rural residences. The Sierra Nevada and Coast Range stand generally between 40 and 60 miles from the project corridor at their nearest points and can be a defining and vivid landscape feature. However, increasingly, valley haze frequently tends to obscure these scenic views.

4.4 Existing Visual Resources: Landscape Units, Viewer Response, and Visual Quality

The project corridor from Fresno to Bakersfield was characterized in terms of three major, highly distinct landscape units as follows:

- City of Fresno
- Central Valley Rural/Agricultural, including the small traditional towns comprising a subtype within that unit
- City of Bakersfield

Figure 4-1 depicts an overview of these landscape units.

Each of these landscape units is further subdivided into *landscape subtypes* with common visual character associated primarily with land-use types, viewer types, and visual attributes. These subtypes are indicated with green lines on the close-up aerial maps. Where potentially sensitive viewers are present, their sensitivity to adverse impacts on visual quality and the degree of project visibility are rated. Together, these two ratings are predictive of anticipated viewer response to the project. Views that represent instances of potentially substantial visual impact are identified and the viewing positions mapped. Then the views from these points are rated for their existing visual quality. For convenience of discussion, the Fresno and Bakersfield landscape units are described by subsegments going from north to south, as indicated in the overview maps, Figures 4-2 and 4-21. Close-up mapping of each subsection of the alignment showing the location of representative viewpoints follows each of these overview maps of Fresno and Bakersfield.

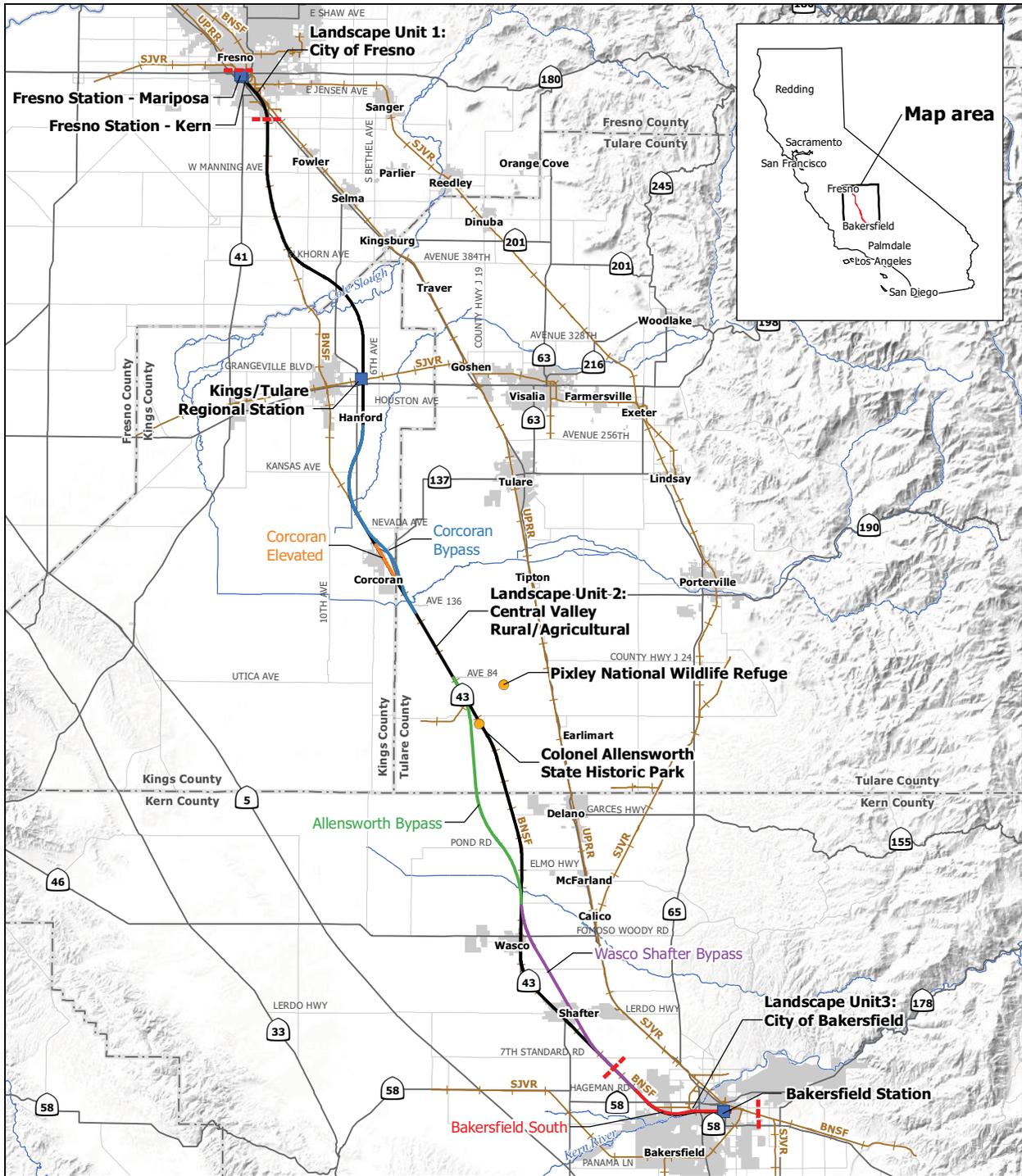
The visual baseline thus reflects potentially affected sensitive public views. Where there are no indications of public sensitivity to adverse visual impacts, views from points within such areas are not depicted or rated for quality, unless needed as context for potential impacts on nearby sensitive viewers.

4.4.1 Landscape Unit 1: City of Fresno

This urban landscape unit is characterized by nearly level terrain, and the full range of urban development types, from medium- and high-rise development in the historic city center, to extensive low-rise residential neighborhoods and industrial areas. Accordingly, the range of viewer response among these land use types ranges from high to low.

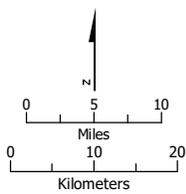
The city of Fresno is oriented into two distinct street grids—the historic city center, oriented perpendicularly to the axis of the northwest-to-southeast-oriented UPRR lines and SR 99; and more recently developed, extensive areas outside of this relatively small district, oriented in a north-south, east-west grid. The city form is also defined to an extent by its various freeways: the historic city center is roughly defined by SR 180, 41, and 99 to the north, east, and southwest, respectively. The visual character of land uses immediately next to the proposed BNSF alternative alignment within Fresno is typified largely by industrial uses associated with the existing railroad right-of-way. In addition, the project would be visible from adjacent land uses of various types and sensitivities, including parts of the city's Central Business District (CBD) and residential neighborhoods. These landscape subtypes are indicated with green lines on Figures 4-3 and 4-8. Key views within these subtypes have been identified according to anticipated viewer response, and the quality of these potentially affected public views is evaluated in the analysis below.

For convenience, the description of this landscape unit is discussed below by sequential subsections proceeding from north to south. Where adverse impacts on sensitive viewers could potentially occur, representative viewpoints are depicted to illustrate the discussion of viewer response and visual quality. Figure 4-2 provides an overview of the landscape subsegments, which are shown in close-up in Figures 4-3 and 4-8.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: URS, 2011

May 24, 2011



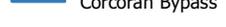
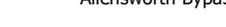
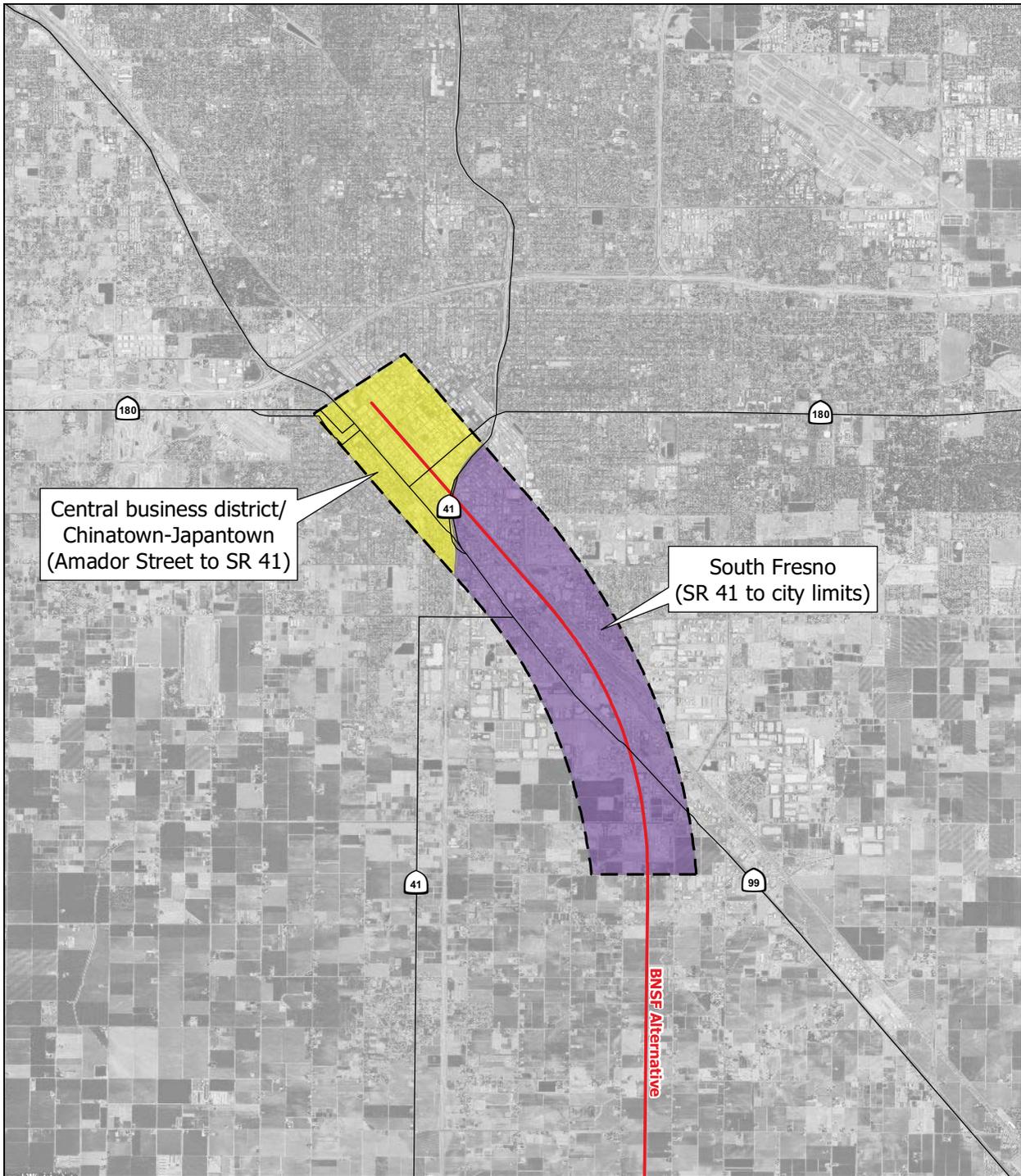
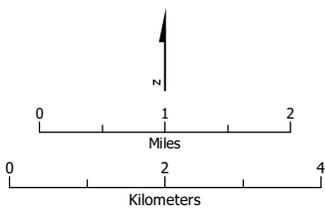
- | | |
|--|---|
|  Corcoran Elevated |  Station |
|  Wasco-Shafter Bypass |  Landscape unit division |
|  BNSF Alternative |  Community/Urban area |
|  Corcoran Bypass |  County boundary |
|  Allensworth Bypass | |
|  Bakersfield South | |

Figure 4 -1
 Fresno to Bakersfield alignments
 and landscape units



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: Environmental Data Resources, 2010; URS, 2010.

May 24, 2011



- Central business district
- South Fresno
- Aesthetics and visual quality study area
- Alternative alignments
- Highway

Figure 4-2
 Landscape Unit 1:
 City of Fresno overview of
 landscape subsegments

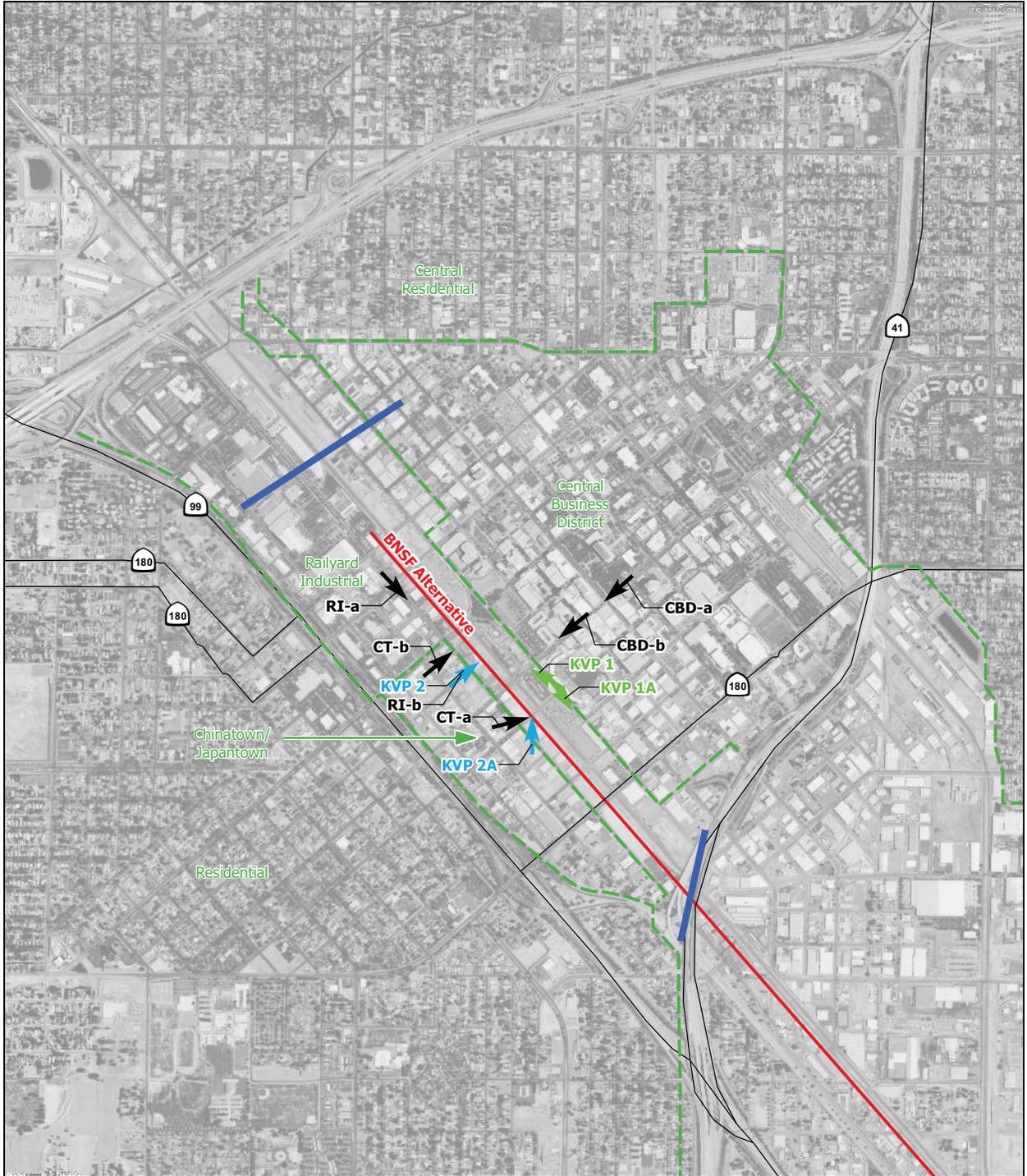
A. CENTRAL BUSINESS DISTRICT/CHINATOWN (AMADOR STREET TO STATE ROUTE 41)

The city's CBD, centering on Fresno and Tulare streets, dominates the section between the northern terminus of the project near Amador Street and SR 41. The alignment in this section adjoins the original city street grid, oriented to the northeast-southwest and perpendicular to the existing UPRR line and SR 99. The most heavily used portions of the city's downtown are within 0.5 mile east of the project alignment, including the county government center, City Hall, the city's convention and major conference centers, public auditoriums and theaters, the redeveloped Fulton Street pedestrian mall, and the Grizzlies minor league baseball stadium (Chuckchansi Stadium), which is approximately 200 feet east of the BNSF Alternative Alignment. The alignment also adjoins the historic Fresno Chinatown district, located to the southwest. Key sensitive viewer groups in this section include viewers of all kinds within the foreground distance in the CBD; viewers within historic Chinatown; and viewers from elevated portions of adjoining freeways near the project alignments.

The CBD viewshed in the project area can be divided into three landscape subtypes: industrial, business district, and Chinatown. The areas of these landscape subtypes, as well as identifying arrows for representative viewpoints for each subtype, are shown on Figure 4-3. Ground-level photos taken from those representative viewpoints are shown on Figures 4-4, 4-5a, 4-5b, and 4-6. Location arrows for KVPs, as discussed in Chapter 5, Environmental Consequences, are also depicted in Figure 4-3. The KVPs serve as the basis of the impact analysis, and are the locations of simulated views of the project.

Industrial

In this landscape subtype, the BNSF Alternative Alignment follows the existing UPRR rail tracks that divide the central city between north and south, traversing an area of industrial use, including auto wrecking, warehouses, storage yards, vacant land, and parking (Figure 4-4). There are no sensitive public views from points within this area. This is because the public that frequents the area predominantly comprises those working at the industrial facilities there, or motorists parking, generally near their place of work. People at their workplace become accustomed to the visual character of their surroundings. Because of this familiarity and their focus principally on work, they are typically not highly concerned with the quality of the aesthetics and visual resources of the immediate surroundings of their workplaces. Where there is no demonstrable sensitivity, public views are not considered to be critical (key) views in relation to visual impact assessments. Therefore, the character of this subtype is not addressed in great detail. However, these areas of low vividness, intactness, and unity comprise the principal site of the alternative alignments within the central city. Although adverse impacts are not anticipated from within these areas, they constitute the setting in which the project would be seen by more sensitive viewers in adjacent areas. Representative character photos are presented to depict the flavor of the affected areas, their limited susceptibility to visual impact, and their influence on the views of the many adjacent sensitive viewers in the project foreground.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2010; DigitalGlobe Imagery, 2009

May 27, 2011

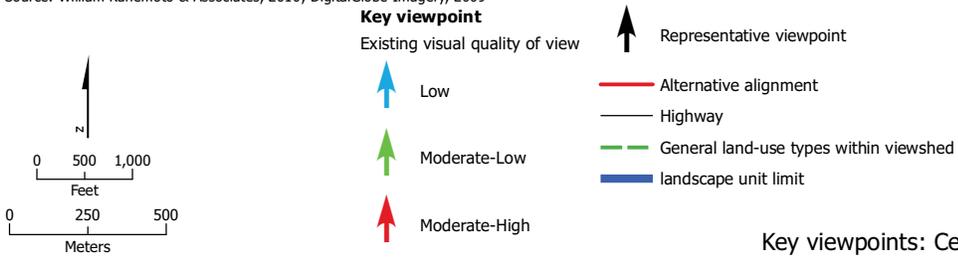


Figure 4-3
 Key viewpoints: Central Fresno landscape unit



RI-a. View from Tuolumne Street looking southeast down BNSF Alternative and Fresno West alignments toward alternative station locations.



RI-b. View from China Alley near Mariposa Street, looking north toward alignments.

Figure 4-4
Representative viewpoints:
Industrial area of Downtown Fresno



CBD-a. Tulare Street at L Street, looking southwest toward alternative station sites, alignment from 1/3 mile (0.5 kilometer).



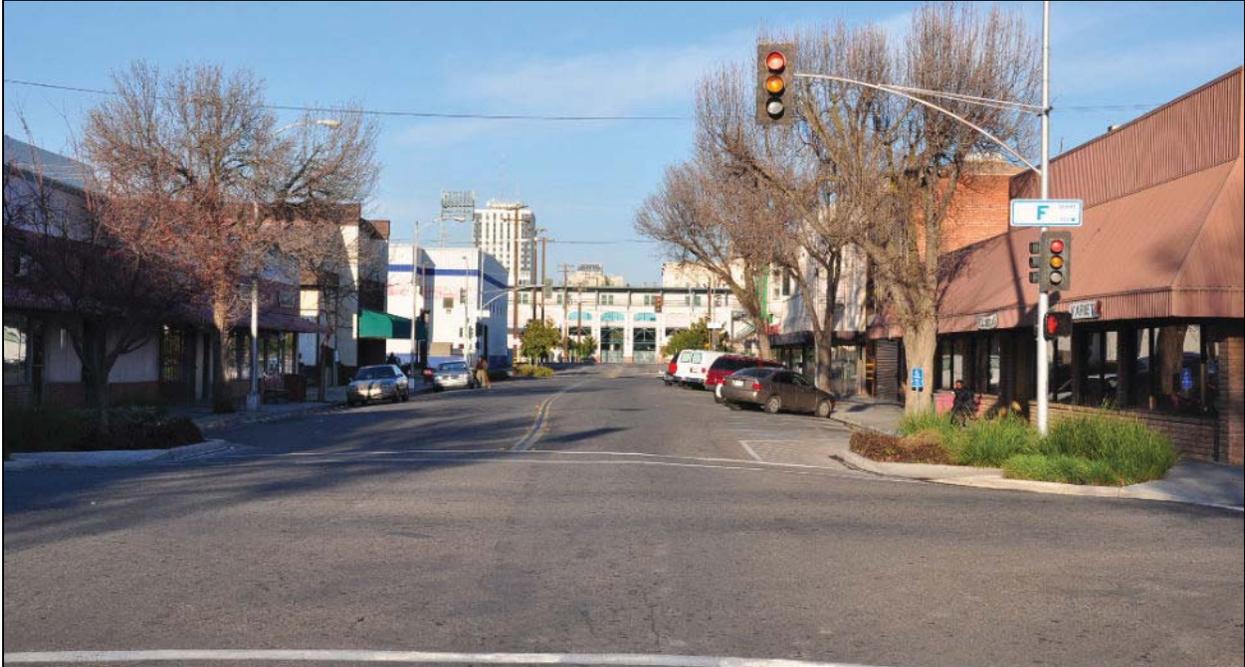
CBD-b. Tulare Street and Fulton Mall, looking southwest toward alternative station sites, alignment from 800 feet (244 meters).



CBD-c. Inyo at H Street, looking west toward alternative station sites, alignment from 500 feet (152.4 meters)



CBD-d. Southern Pacific train station, looking west from Tulare and H Streets



CT-a. View from Kern and F Streets, looking northeast toward station alternatives, alignment at 400 feet (122 meters).



CT-b. View from Mariposa and E Streets, looking northeast toward alignment at 600 feet (183 meters).

Business District

Viewer sensitivity in the central business district is considered to be moderately high based on the concentration and type of use (recreational, visitor-serving, governmental, residential), and the importance of the downtown city image. Viewer exposure in the business district is moderately high overall. The predominance of higher buildings would tend to screen the project from much of this area, creating narrow view corridors down the main northeast-southwest streets that would limit visibility of the project from within the downtown to an area between the taller building facades (see viewpoints CBD-a and CBD-b in Figure 4-5a). However, the number and sensitivity of viewers in the immediate foreground zone of the project alignments and associated station sites remain high. Crowds attending events at Chuckchansi Stadium, substantial numbers of workers and visitors at adjacent retail and governmental offices, and occupants of nearby residential and live-work developments would have direct, unobscured views of the project. Overall, viewer response is expected to be moderately high.

The visual quality of the business district is considered moderately high. The Fresno County governmental center occupies a heavily landscaped four-square-block area between Tulare and Fresno streets, and the downtown includes various historic office buildings and landmarks, street trees, landscaped medians, and similar features that contribute to a relatively high degree of visual intactness and unity. Distinctive early-20th-century masonry office buildings remain throughout the central downtown, including several ranging from 8 to 12 stories high that form the downtown skyline. These and extensive landscaping contribute to moderately high vividness.

Chinatown

Viewer sensitivity within Chinatown is considered to be moderately high, due to the historic significance of the district. Visual exposure to the project from Chinatown is also high; all of the station alternatives have components in Chinatown and this proximity is accentuated by the view corridors over the many vacant lots. Overall, anticipated viewer response is thus moderately high (Figure 4-6).

As in downtown, land uses directly adjoining the BNSF Alternative Alignment on Chinatown's eastern edge are generally industrial in character. Despite localized redevelopment improvements on F Street, Kern Street, and elsewhere, the prevailing visual quality within the Chinatown district is moderately low overall. With some notable exceptions, the district is typified by very heterogeneous, predominantly nondescript low-rise architecture, much of it in disrepair, and a relative scarcity of highly memorable, vivid features. Recent street tree plantings and street corner landscaping enhance the visual unity and intactness of many streets in the area, and help offset the disparate façade treatments that often detract from an overall unity of streetscape character. This effect would increase as landscaping matures. The visual character and quality of the district is strongly influenced, however, by the barren quality of the area's very high proportion of vacant lots, which strongly detract from the intactness of the setting and also expose various industrial uses in the foreground of views toward downtown and the project alignment. Visual intactness and unity are thus moderate. Vividness is moderately low overall for the reasons cited above. Vivid views of downtown are offset by the visual character of industrial land uses and vacant lots in the foreground.

Adjacent Residential Neighborhoods

Portions of older single-family residential neighborhoods west of SR 99 are within foreground distance of the project area. However, within the neighborhoods, views toward the project and downtown are generally blocked by foreground buildings and landscaping. Existing views of the downtown area are thus largely limited to narrow views of the tallest buildings down major northeast-oriented streets. Due primarily to foreground filtering from intervening development, as

well as to distance, potential prominence of the project from this area is low. Though viewer sensitivity is high, overall viewer response in this area is considered low. Therefore, this area is not considered susceptible to project-related visual impacts.

Residential neighborhoods to the north of the CBD also have little or no exposure to the project; foreground development of the CBD effectively blocks all potential view corridors to the project. This area is thus not considered susceptible to project-related visual impacts.

Views from Adjoining Highways

Anticipated viewer response for motorists approaching Fresno is considered to be moderate. Sensitivity of motorists on the freeway is considered moderate. Most commuters and others engaged in work-related travel do not have high levels of concern with views from the road. Nevertheless, these elevated highway views may be among the most formative images of the city for residents and visitors, since they provide some of the few overviews available in the prevailing level terrain. Viewer numbers are very high, although viewer exposure to prominent, visually dominant views of the project alignments from highways would be limited to short segments near downtown.

The downtown skyline and views of the Sierra Nevada are also vivid features of views from elevated portions of SR 41 and SR 180 near downtown Fresno, as shown in Figure 4-7. However, the visual foreground of motorists tends to be dominated by cars and the wide roadways themselves. Overall, the visual quality of highway views is considered moderate.

B. SOUTH FRESNO (SR 41 TO CITY LIMITS)

East of SR 41, the BNSF alternative alignment follows existing railroad lines, deviating to the south near Jensen Avenue, as shown in Figure 4-8. Calwa, a small residential neighborhood, is to the east of the project within foreground distance in the vicinity of Jensen Avenue, though views would be filtered by intervening industrial development and rail yards. With that exception, the adjoining corridor is characterized by associated industrial activity, such as light manufacturing, railroad switching yards, vehicle or material storage, and staging lots, warehouses, and commercial transport facilities.

Viewer sensitivity of residents is considered to be high. However, these areas have very low visual exposure to the project because the orientation of the street grid provides no view corridors toward the project from within the neighborhoods. Potential views of the project alignments are generally blocked or filtered by intervening industrial areas. Therefore, due to the lack of visual exposure, there would be little or no viewer response to the project. In the absence of visual exposure, no key viewpoints were considered necessary in this segment and consideration of visual quality for views in this area is not relevant. The potential for substantial impacts in this section is therefore very low, and representative viewpoints are not depicted.

C. SECTION 106/4(F) VIEWPOINTS

Various National Register-eligible sites appear in the Fresno downtown within foreground distances of the project alignments, notably the historic 1889 Southern Pacific Train Depot at Tulare Street, which directly adjoins the project alignment, depicted in Figure 4-5b, Viewpoint CBD-d. Under the Fresno Station–Mariposa Alternative, a pedestrian overcrossing could pass between the depot building and the adjacent Pullman car shed, leaving both unaffected. Views of and to historic features like the depot are presumed to be of high sensitivity. The historic nature of the structure is evident in its distinctive architectural style. The structure would have high exposure to the project alignment, which would adjoin it.



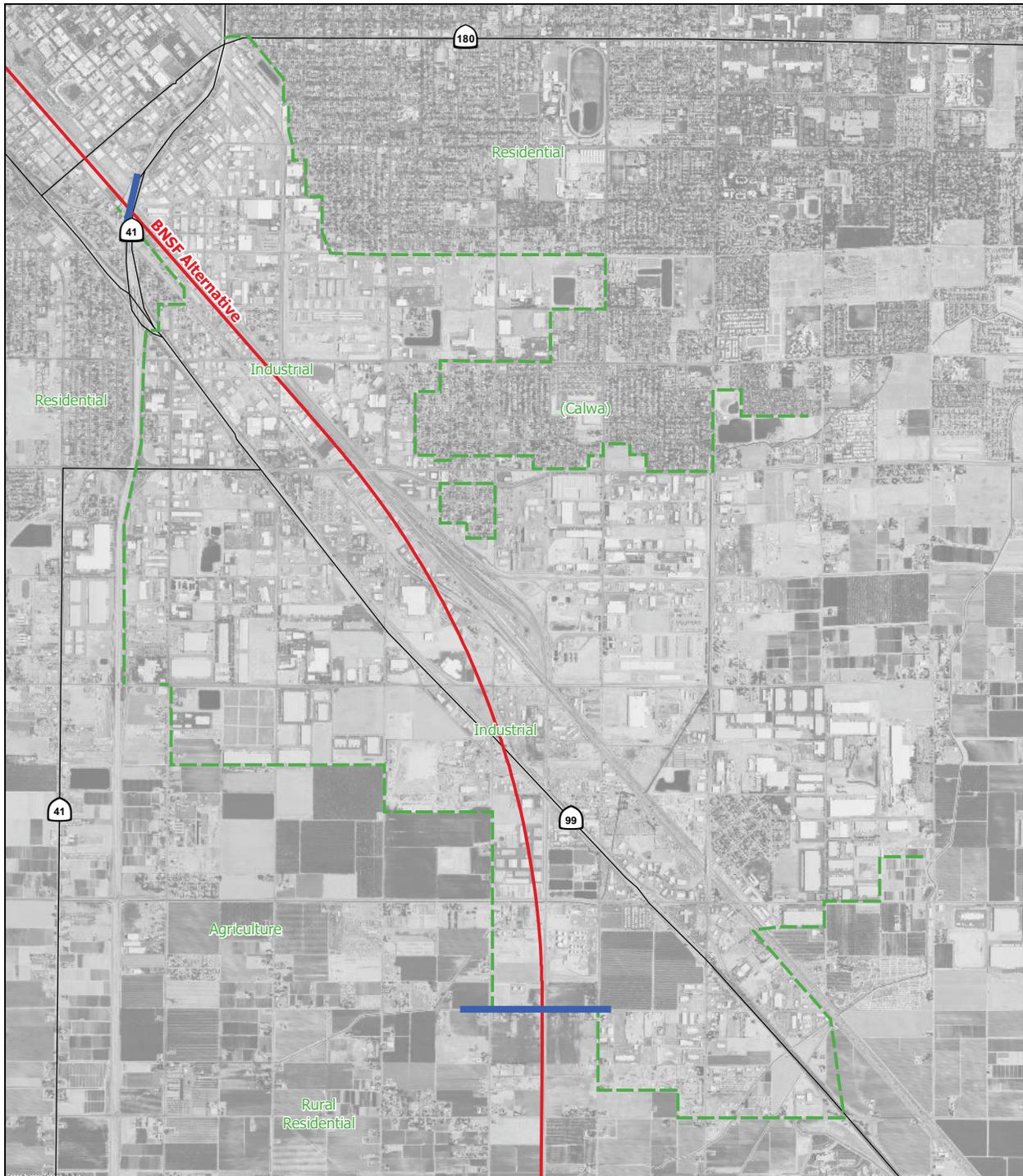
HW-a. View of alignments from eastbound Highway 180, looking southeast down alignment.



HW-b. View toward alignments overcrossing, looking northeast from eastbound Highway 180.

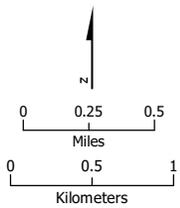


HW-c. View toward alignment overcrossing, looking north from northbound Highway 41.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2010; DigitalGlobe Imagery, 2009

May 24, 2011



- Landscape sub-type boundary
- Sub-segment limit
- Alternative alignment
- Highway

Figure 4-8
 South Fresno landscape subtypes
 and representative viewpoints

It is assumed in this analysis that any eligible historic properties located within the project’s visual near-foreground (0.25 mile) whose national or state historic register eligibility is dependent upon the criteria of “setting” or “feeling” could be adversely impacted by the visual effects of the HST project (USDI 1997). Because some of the project features would be prominent within that distance zone, they could strongly affect the setting and feeling of any eligible historic properties. Numerous eligible historic properties fall within 0.25 mile of the project, although not all of these would be dependent upon the specific eligibility criteria of setting or feeling. For more information, see the *California High-Speed Train Fresno to Bakersfield Section: Historic Property Survey Report (HPSR)* (Authority and FRA 2011c). See also Section 3.17, Cultural and Paleontological Resources, and Chapter 4, Draft Section 4(f)/6(f) Evaluation, in the *California High-Speed Train Fresno to Bakersfield Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS)* in which potentially affected properties are individually reviewed (Authority and FRA 2011a).

Table 4-2 summarizes the visual quality and viewer response of the City of Fresno landscape unit.

Table 4-2

Summary Table – Visual Quality and Viewer Response of Landscape Unit 1: City of Fresno

| Landscape Unit 1: City of Fresno | | | |
|---|-----------------|---|-----------------|
| Subsection | | | |
| Central Business District/Chinatown (Highway 180 to Highway 41) | | | |
| Landscape Subtype | | | |
| Rail Yard Industrial | | | |
| Visual Quality: LOW | | Viewer Response: LOW | |
| Vividness | Low | Viewer Sensitivity | Low |
| Intactness | Low | Viewer Exposure | Low or none |
| Unity | Low | | |
| Central Business District | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderately High | Viewer Exposure | Moderately High |
| Unity | Moderately High | | |
| Chinatown | | | |
| Visual Quality: MODERATELY LOW | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderately Low | Viewer Sensitivity | Moderately High |
| Intactness | Moderately Low | Viewer Exposure | High |
| Unity | Moderately Low | | |

Table 4-2

Summary Table – Visual Quality and Viewer Response of Landscape Unit 1: City of Fresno

| Landscape Unit 1: City of Fresno | | | |
|--|----------------|----------------------------------|----------|
| Central Fresno Residential Neighborhoods | | | |
| Visual Quality: MODERATE | | Viewer Response: LOW | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | Low |
| Unity | Moderate | | |
| Views from Adjoining Highways | | | |
| Visual Quality: MODERATE | | Viewer Response: MODERATE | |
| Vividness | Moderate | Viewer Sensitivity | Moderate |
| Intactness | Moderate | Viewer Exposure | Moderate |
| Unity | Moderate | | |
| South Fresno (Highway 41 to City Limits) | | | |
| Landscape Subtype | | | |
| South Fresno Residential (Calwa) | | | |
| Visual Quality: MODERATE | | Viewer Response: LOW | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | Very Low |
| Unity | Moderately Low | | |
| Acronym: HST = high-speed train | | | |

4.4.2 Landscape Unit 2: Central Valley Rural/Agricultural

Most of the Fresno to Bakersfield corridor is characterized as a single, vast landscape unit comprising agricultural fields, orchards, pastures, and related rural land uses, with considerable continuity of visual character. This large agricultural landscape is punctuated by several small-to-medium sized towns and other visually distinct landscape subtypes and associated viewer groups through which the project corridor passes. The scale and character of this unit are not conducive to description by sequential project subsections as was done in the discussion of the City of Fresno. Rather, the unit is treated as a whole, and characterized in terms of the major affected visual subtypes, some of which recur throughout the entire length of the unit. These are described below. Site-specific discussions are included within the subtypes as appropriate, as in the case of directly affected small towns. Figure 4-1 shows the limits of this landscape unit and landscape subtypes.

A. VALLEY AGRICULTURAL SUBTYPE

This landscape subtype comprises the great majority of the project alignments between the cities of Fresno and Bakersfield. The valley agricultural landscape is characterized by predominantly uninterrupted views of the nearly level San Joaquin Valley, often extending to background distances. This landscape is characterized by a diversity of agriculture-related activities and production facilities. The most apparent expression of this agricultural landscape is a coarse pattern of vineyards, orchards, cultivated fields, and grazing lands, separated by roads, highways, irrigation canals, or ditches organized in a highly regular, north-south/east-west, grid pattern. Within this extensive, open setting of fields are areas containing agro-industrial uses such as feed lots, storage silos, large processing and warehouse facilities, equipment storage areas, and associated infrastructure of wells, pumping facilities, fuel storage, fencing, power transmission lines, towers, and poles. This subtype typically includes small residential areas and associated services that have developed around a particular agricultural facility. These are discussed separately under the Rural Residential subtype.

Typically there are few indications of viewer sensitivity in agricultural areas. Viewers are few and viewer activities are largely work-oriented. Exceptions would occur where designated scenic highways, roads, corridors, and the like cross agricultural lands. However, no such designated routes were identified within the project viewshed. The BNSF Railway line is generally open to public views within this subtype, with little to obstruct views toward the right-of-way. However, in the absence of sensitive viewing positions, project exposure in views from within this subtype is not relevant to this assessment. There would be little or no potential viewer response to the project. Nevertheless, this landscape subtype is the context within which the project would be seen in nearly all sensitive views within rural areas of the project corridor. Representative views of the valley agricultural subtype are provided in Figure 4-9.

Overall, visual quality of this subtype is moderate, though varying depending on specific local circumstances. Differences among field, orchard, vineyard, and crop types offer some seasonal interest and visual variety. However, the level topography, vast scale, and repetitiousness of agricultural uses tend to contribute to a lack of variety, even monotony, resulting in moderately low to moderate vividness. Views of vivid features, such as mountains or natural riparian corridors, are few and of limited prominence. Visual unity and intactness are generally moderately high, presenting a continuity of pattern and character, topography and land use; but views are also regularly interrupted by the vertical and visually utilitarian features of modern industrial agricultural production.

B. RURAL RESIDENTIAL SUBTYPE

The rural residential subtype takes various forms, from isolated homesteads to small aggregations of homes lining the north-south/east-west road grid, to denser more suburban-style settlements of generally small scale, primarily in transitional areas on the periphery of both the cities and small towns.

In general, residences are considered to be of high viewer sensitivity; views are of extended duration, and residents have a high level of concern for the quality of their day-to-day living environment. This may be particularly true in rural areas of relative intactness and, often, visual unity (see the discussion of visual quality, below). Viewer exposure varies primarily by distance, though visual filtering by vegetation and structures certainly affects some viewers. Exposure is also moderated by generally low concentrations of viewers. However, exposure is considered high within the foreground distance zone, because there is generally little to screen or filter views.



V-a. Typical valley agricultural scene.



V-b. Typical valley agro-industry scene.



V-c. Valley orchard scene.

Figure 4-9
Representative viewpoints:
Valley agriculture landscape

Overall, viewer response from residents who live near (less than 0.25-mile from) the project alignments is considered to be moderately high. These near-foreground viewpoints comprise the set of locations of this type that are of potential concern, with high viewer sensitivity and high exposure.

The relevant distance to project features representing potential visual impact would vary according to the project design in that segment. Where the alignment is at grade, the critical distance would be less than in elevated segments, where the project could be more prominent. Though concentrated in the outskirts of the cities and towns, pockets of this subtype occur throughout the Valley landscape unit. Figure 4-10 shows representative viewpoints of the rural residential subtype.

Homes and farms are typically characterized by the presence of fences, barns, storage structures, and equipment for small-scale agricultural operations. Often, older homesteads and farms in these areas are identified by the characteristic presence of large ornamental trees of various types, often quite old and tall, which contribute a distinctive, widely spaced vertical element into the otherwise flat valley landscape. Between these islands of farm structures and trees, the remaining acreage is generally open, used for livestock or agricultural purposes and is simply a part of the pervasive Valley agricultural image. Small stores, rural schools, or parks are also typically associated with these settlements. Many are also associated with particular agro-industrial facilities in the vicinity.

Visual quality within this subtype varies from one rural home site or settlement to another. The visual quality of some settlements may be rated high due to the presence of trees, architectural style, or site landscaping, which contribute to vividness through attractive tree canopies or distinctive architectural forms (weathered barns, water towers, period architecture); and/or generally high visual unity or intactness (for example, the classic old farms with tightly organized, tall tree canopies that appear as highly unified vertical 'islands'). Other sites or congregations of homes may rate low because of structure deterioration, presence of abandoned farm equipment, landform disturbances, or visual clutter and other expressions of low visual unity and intactness. The visual quality of this subtype is strongly influenced by the surrounding agricultural landscape, and is considered moderate overall.

Figure 4-11 depicts an aerial view of the proposed Kings/Tulare Regional Station site, east of Hanford. Because the site is away from town in a rural area, the principal affected viewers would be adjacent rural residences. Figure 4-12 depicts views from these adjacent residences, as well as from the adjoining rural SR 198 (Lacey Boulevard). The affected residences are typical of the more suburban-style settlements found throughout the Valley landscape unit, several of which adjoin the proposed project alignments.



RR-a. Typical valley farmstead.



RR-b. Valley rural residences at alignment foreground (Monmouth).



RR-c. Valley residential settlement looking toward alignment.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2010; DigitalGlobe Imagery, 2009

May 24, 2011

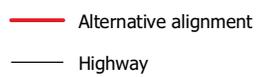
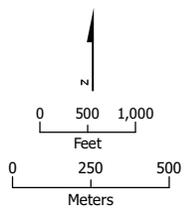


Figure 4-11
 Potential Kings/Tulare Regional Station
 site and representative viewpoints



a. Potential Kings/Tulare regional station site from adjacent rural residence.



b. Potential Kings/Tulare regional station site looking east from SR 43/8th Avenue.

C. RIPARIAN/RIVER CROSSING SUBTYPE

The riparian/river subtype is infrequent within the Central Valley Rural/Agricultural landscape unit and includes the following within the project study area: Kings River, Tule River, Deer Creek, and Poso Creek. Where this subtype occurs, it is characterized by a natural meandering, unchannelized stream with a generally narrow band of riparian vegetation winding through otherwise cultivated lands, orchards, and the like. These streams cross beneath roads and highways that crisscross the Central Valley. This subtype is recognizable and becomes apparent as a ribbon of relatively tall, natural-appearing vegetation at middle-ground viewing distance, and is perhaps the only natural feature providing vertical form and line contrast within the otherwise level valley terrain. Representative viewpoints of this landscape subtype are shown in Figure 4-13.

Viewer sensitivity of the river crossings varies. Viewers in the region are likely to show high sensitivity to impacts on the riparian corridors because of their attractiveness and rarity. The sensitivity of the viewers within this landscape subtype would be a function of use opportunities, such as trails, navigability for boating, and opportunities for fishing. Viewer sensitivity within the riparian corridors is ultimately a function of the presence of established, formal recreational or wildlife-oriented facilities such as parks, parking areas, wildlife viewing areas, and trails. Viewer exposure is considered to be high as the alignment crossings of this subtype may be visible for an extended distance and period of time to a high number of travelers. Overall, viewer response is considered to be moderately high.

The visual quality of these areas is high. The natural riparian forest canopy, where it occurs, contributes one of the few scenically vivid and intact natural features of the valley landscape.

D. RURAL CITY/TOWN SUBTYPE

The rural city/town subtype includes the predominantly agriculture-related communities of Laton, Hanford, Corcoran, Wasco, and Shafter. The BNSF Alternative Alignment passes near the community of Laton and the city of Hanford but skirts them, and would not directly affect them. Farther south, the BNSF Alternative passes directly through the downtowns of Corcoran, Wasco, and Shafter. These communities vary widely in size, from Laton, a small, primarily residential settlement, to Hanford, a small city. However, each community supports a historic, defined central business district with associated parks, schools, medical facilities, and local governmental institutions. In marked contrast to vast areas of suburban sprawl characteristic of portions of the Sacramento (northern Central) Valley, these historic towns remain spatially distinct islands within the wider agricultural landscape, and remain strongly influenced by the latter.

The BNSF Alternative Alignment is visually isolated from the town of Laton by a substantial buffer of orchards and tall riparian woodland east of the town and north of Riverdale Avenue. In this segment the project would primarily affect isolated rural residences, and include two crossings of tributaries of the Kings River. The BNSF Alternative Alignment is also visually isolated from downtown Hanford by distance and intervening development. In this segment, the BNSF Alternative Alignment would be visible in the foreground to rural residents and motorists on SR 198 and SR 43 (Eighth Avenue) in the agricultural area east of Hanford, where the site of the Kings/Tulare Regional Station is proposed. The town centers of Laton and Hanford will thus not be analyzed further.



VR-a. Poso Creek at Highway 43.



VR-b. Alignment crossing at Tule River from Highway 43.



VR-c. Kings River near alignment crossing at Highway 43.

In Corcoran, Wasco, and Shafter, the historic old town sections developed around the BNSF Railway line. Therefore, the BNSF Alternative Alignment, which follows the BNSF Railway corridor, directly adjoins the old town centers, which in all three cases represent areas with higher visual sensitivity and visual quality, as discussed below. Viewer sensitivity for these communities is anticipated to be high because of community concern for the integrity and quality of the downtowns, and the presence of parks and residential areas near the BNSF Alternative Alignment.

In the communities of Corcoran, Wasco, and Shafter, viewer exposure is also potentially high because the BNSF Alternative Alignment is close to the centers of those historic towns. In addition, each town includes various situations where the alignment is close to residential areas and associated schools and parks with moderately high levels of viewer sensitivity. In both downtowns and nearby parks the concentration of potential viewers may also be relatively high, with broad visibility from multiple locations, and extended exposure to view. Each of these towns thus includes key receptor locations with moderately high levels of potential viewer response close to the BNSF Alternative.

In addition to adjacent historic town centers mentioned previously (Whitley Avenue in Corcoran, Seventh Street and the Amtrak station in Wasco, Central Avenue in Shafter), examples of potentially sensitive viewpoints in the immediate project foreground include Centennial and Father Wyatt parks in Corcoran; a residential neighborhood on H Street between Sixth and Ninth streets in Wasco; and Kirchenmann Park, nearby residential neighborhoods between E. Tulare Avenue and E. Lerdo Highway, and the Shafter Cemetery (Shafter Memorial Park) in Shafter. Figure 4-14 is an aerial view of Downtown Corcoran with the locations of representative sensitive viewpoints in the vicinity of the BNSF Alternative. Figure 4-15 provides views of the BNSF Alternative from Downtown Corcoran, Centennial Park, and Father Wyatt Park. Figure 4-16 is an aerial view of Downtown Wasco with the locations of representative sensitive viewpoints in the vicinity of the BNSF Alternative. Figure 4-17 provides views of the BNSF Alternative Alignment from Downtown Wasco, looking toward the Amtrak station and from the Amtrak station. Figure 4-18 is an aerial view of Downtown Shafter with the locations of sensitive viewpoints in the vicinity of the BNSF Alternative. Figure 4-19 provides views of the BNSF Alternative from Downtown Wasco, Stringham Park, and Shafter Memorial Park. Visual quality along the alignment in or near Corcoran, Wasco, and Shafter are variable. Each of these communities is frequently typified by strip development, storage facilities, and related agro-industrial land uses, generally of low visual quality due to visual incoherence often associated with utilitarian and industrial uses. However, in all three towns this railroad-related industrial zone is juxtaposed with the historic old town centers. In each, the main street radiates from the historic railroad station. Visual quality in these old town centers range from moderate to moderately high with corresponding levels of vividness, intactness, and unity. Elements contributing to visual quality include a preponderance of historic architecture, as well as street trees, median plantings, and other elements of main street redevelopment. These features contribute to a prevailing intactness of character and unity of scale typical of the historic main streets. Pockets of moderate visual quality associated with old historic downtown districts thus occur within the BNSF Alternative foreground.

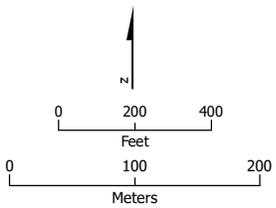
E. HST PASSENGERS

Visual quality for HST passengers would essentially be that of the landscape subtype through which the HST would pass. However, one difference would be enhanced vividness of views from elevated segments. In this extremely level landscape, long views over open land resulting from even slightly elevated viewpoints are rare and improve the quality of views, extending their distance and opening views to a broader expanse of landscape features.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2011; DigitalGlobe Imagery, 2009

May 24, 2011



- Key viewpoint**
- Existing visual quality of view
 - ↑ Moderate-High
- Alternative alignment
- ↑ Representative viewpoint

Figure 4-14
 Key viewpoint: Corcoran



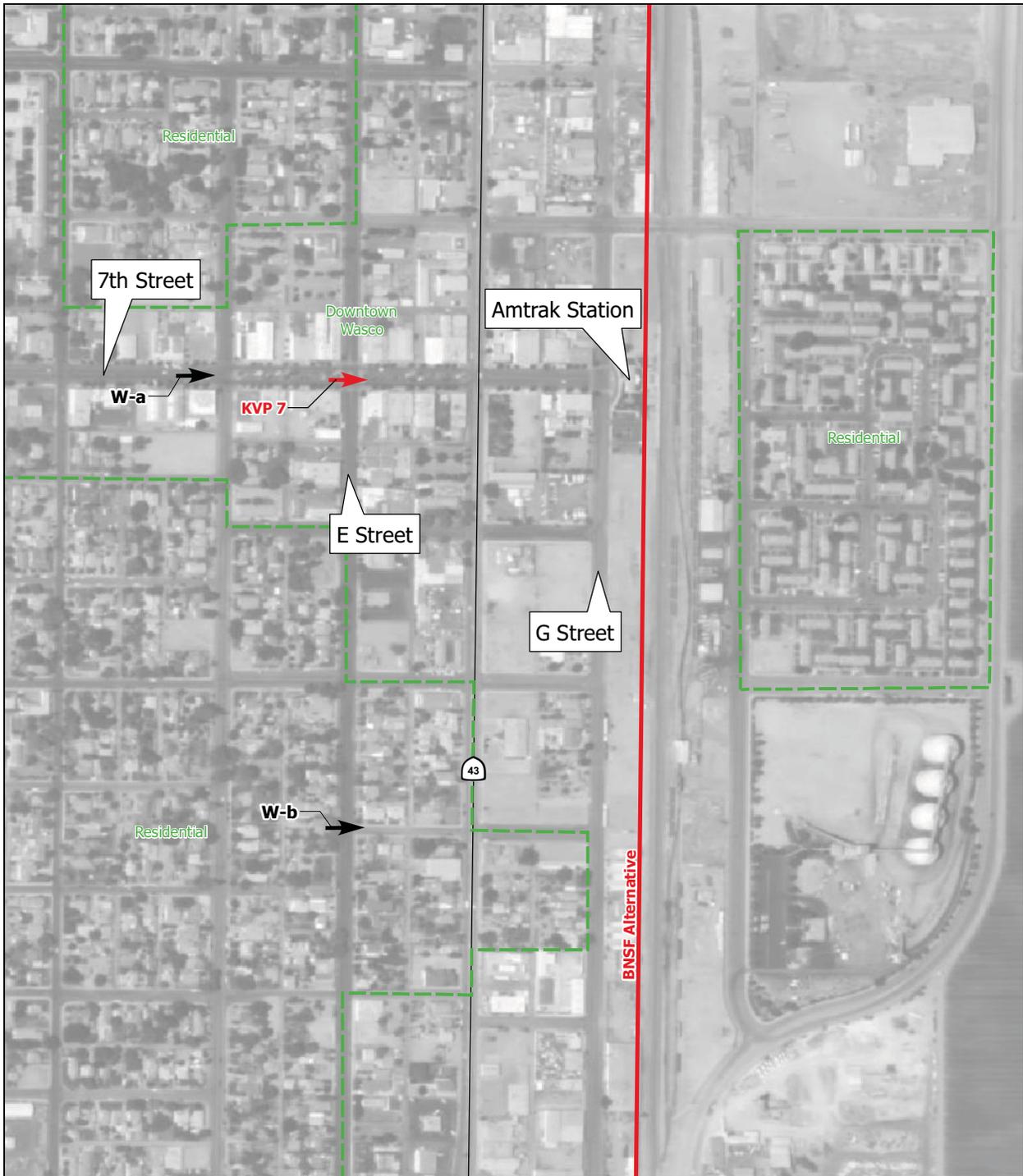
C-a. Alignment from downtown Corcoran.



C-b. Alignment from Centennial Park, downtown Corcoran.



C-c. Alignment from Father Wyatt Park, downtown Corcoran.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2011; DigitalGlobe Imagery, 2009

May 25, 2011

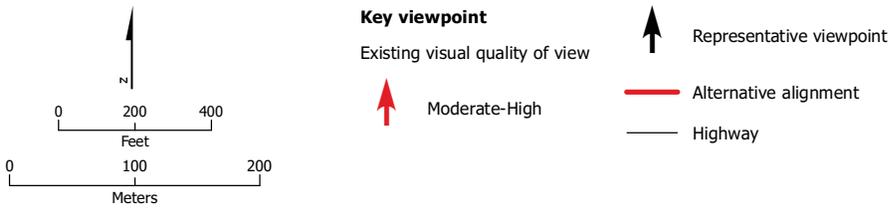


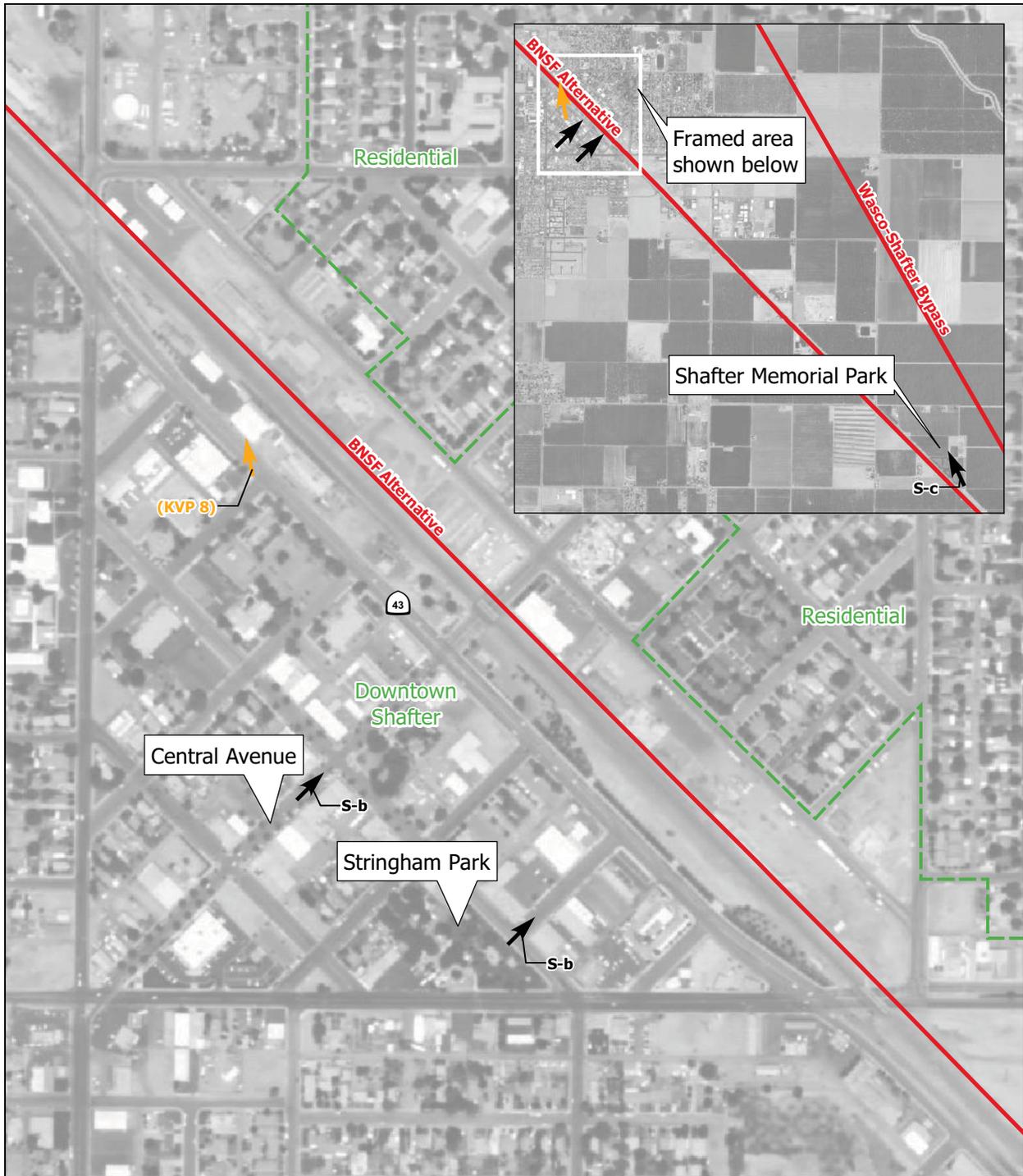
Figure 4-16
 Key viewpoint: Wasco



W-a. Downtown Wasco, looking toward Amtrak station, 7th Street.



W-b. Alignment from residential neighborhood, central Wasco.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2010; DigitalGlobe Imagery, 2009

May 25, 2011

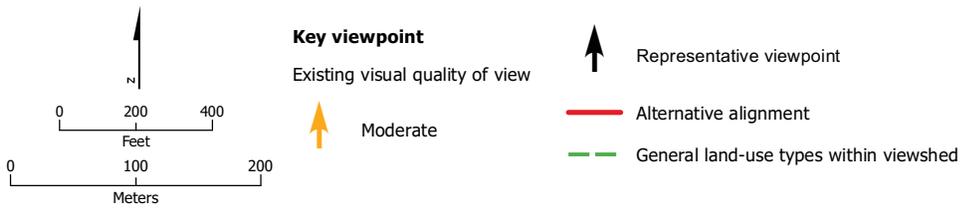


Figure 4-18
 Key viewpoint: Shafter



S-a. Alignment from downtown Shafter.



S-b. Alignment from Stringham Park, downtown Shafter.



S-c. Alignment at Shafter Memorial Park.

F. SECTION 106/4(F) VIEWPOINTS

Section 4(f) of the Department of Transportation Act calls for the preservation of the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Two Section 4(f) viewpoints were identified within this landscape unit: the Colonel Allensworth State Historic Park adjacent to the BNSF Alternative, midway between the towns of Wasco and Corcoran; and the Pixley National Wildlife Refuge, which adjoins the BNSF Alternative for a distance of a little over 1 mile, a short distance north of Colonel Allensworth State Historic Park.

The Colonel Allensworth State Historic Park is a picturesque historic district marking an African-American farm settlement founded in 1908 by the site's namesake, which has been restored since acquisition of portions of the district by the California State Parks in 1974. Because visual integrity of the site's setting is critical to the district's historic integrity and its experience for visitors, visual sensitivity of the park is considered to be very high. Because it adjoins the BNSF Alternative with no visual buffering, visual exposure is also high. Overall viewer response is thus very high.

The park is a unique visual subtype set within the typical valley agricultural landscape. Visual quality of the park is moderately high (Figure 4-20). Although the surrounding landscape is relatively featureless and lacks vivid elements, the intactness of the setting is striking, with few or no anachronistic features to distract from the historic character of the setting. Vividness, though lacking in the landscape, is provided by the homes and structures of the district itself, which are memorable for their historically distinctive and intact quality. The setting is similarly unified, spatially expressing their original agricultural and community functions clearly. In the case of this site, it is considered that the visual integrity of setting is an overriding factor in evaluating visual quality—the intactness of the setting and absence of anachronistic features within the viewshed would be paramount.

Pixley National Wildlife Refuge, located south of Corcoran and north of Allensworth State Historic Park, is another unique visual subtype within the valley landscape, representing the natural, uncultivated San Joaquin Valley landscape. A trailhead and wildlife-viewing platform adjoining a habitat restoration area off of Deer Creek Road and Road 88, roughly 2 miles east of the BNSF Alternative are the only visitor facilities identified. . Viewer sensitivity is considered high. However, viewer exposure to the project at this middle ground distance is considered to be moderately low; at a distance of roughly 1.5 miles, the at-grade HST would be visually subordinate and indistinct. Overall anticipated viewer response is thus considered moderate. For this reason no key viewpoint was selected for this site. Visual quality is moderately high. The flat valley wetland setting is somewhat lacking in vivid features. However, its highly intact, highly unified natural setting lends a striking panoramic experience of undisturbed open space. As in many valued natural landscapes within the Central Valley, it is the absence of incongruous, encroaching man-made elements—the high degree of intactness—that is scenically distinctive. The very featurelessness of the landscape creates an experience of vast space that is itself memorable.



A-a. Allensworth State Historic Park view toward BNSF Alternative.



A-b. Allensworth State Historic Park view toward Allensworth Bypass alternative alignment.

The Santa Fe Railroad Depot in Shafter, also known as the Shafter Depot Museum, directly abuts the BNSF Alternative and is a National Register-eligible historic site. Viewer response is considered high due to the use type, National Register of Historic Places status (high viewer sensitivity), and high viewer exposure to the BNSF Alternative Alignment within the immediate foreground. Visual quality on Central Avenue, Shafter’s main street, is moderately high due to street tree plantings decorative paving, and other streetscape improvements that contribute to moderately high intactness and unity. However, from SR 43 eastward, including the foreground setting of the project alignment, visual quality becomes moderately low, dominated by utilitarian, industrial uses with little visual unity or coherence, almost no vegetation, and no notably vivid or memorable qualities. The Shafter Depot is within this somewhat barren, visually incoherent setting. Visual integrity of the setting would thus not appear to be an important component of the depot’s historic significance.

Table 4-3 summarizes the visual quality and viewer response of the Central Valley Rural/Agricultural landscape unit.

Table 4-3
 Summary Table – Visual Quality and Viewer Response of Landscape Unit 2: Central Valley Rural/Agricultural

| Landscape Unit 2: Central Valley Rural/Agricultural | | | |
|--|-----------------------------|---|-----------------------------|
| Landscape Subtypes | | | |
| Valley Agricultural Subtype | | | |
| Visual Quality: MODERATE | | Viewer Response: MODERATELY LOW | |
| Vividness | Moderate to Moderately Low | Viewer Sensitivity | Low |
| Intactness | Moderately High to Moderate | Viewer Exposure | Moderately Low |
| Unity | Moderately High to Moderate | | |
| Rural Residential Subtype | | | |
| Visual Quality: MODERATE | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderate/Moderately Low | | (Under 0.25 mile |
| Intactness | Moderately High | Viewer Sensitivity | High |
| Unity | Moderately High | Viewer Exposure | Moderately High |
| Riparian/River Crossing Subtype | | | |
| Visual Quality: HIGH | | Viewer Response: MODERATE | |
| Vividness | High | Viewer Sensitivity | Moderately High |
| Intactness | High | Viewer Exposure | Varies from Low to Moderate |
| Unity | High | | |

Table 4-3
 Summary Table – Visual Quality and Viewer Response of Landscape Unit 2: Central Valley Rural/Agricultural

| Landscape Unit 2: Central Valley Rural/Agricultural | | | |
|--|-----------------|---|-----------------|
| Small Town Subtype: Corcoran, Wasco, and Shafter | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderately High | Viewer Exposure | Moderately High |
| Unity | Moderately High | | |
| Section 106/4(f) Viewpoints | | | |
| Colonel Allensworth State Historic Park | | | |
| Visual Quality: HIGH | | Viewer Response: HIGH | |
| Vividness | Moderately High | Viewer Sensitivity | High |
| Intactness | High | Viewer Exposure | High |
| Unity | High | | |
| Pixley National Wildlife Refuge | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: MODERATE | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | High | Viewer Exposure | Moderately Low |
| Unity | High | | |
| Shafter Depot Museum | | | |
| Visual Quality: MODERATE | | Viewer Response: HIGH | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | High |
| Unity | Moderately Low | | |

4.4.3 Landscape Unit 3: City of Bakersfield

This landscape unit is defined as the segment from the unincorporated suburban community of Greenacres (Rosedale) north of the city limits to the vicinity of Baker Street in East Bakersfield. The unit thus extends beyond the city limits of Bakersfield per se, encompassing a variety of subsections with varying character, as described below.

Bakersfield lies at the southern “horseshoe” end of the San Joaquin Valley. To the east lies the Tehachapi Range, a short transverse range connecting the Coast Ranges on the west with the southern end of the Sierra Nevada on the east. About 3 miles northeast of both the BNSF and Bakersfield South alternative alignments are the low foothills of the Greenhorn Mountains, which are situated at the southern end of the Sierra Nevada and which rise to an elevation of 8,295 feet to the east of the city. Together, the Tehachapi Range and the Greenhorn Mountains form an impressive backdrop to Bakersfield.

The Kern River further defines the town geographically, running along the foot of the hills to the north. The project thus lies near the boundary between two major landscape units, the Central Valley and Tehachapi Mountains. However, both the BNSF and the Bakersfield South Alternatives in this unit lie within the Valley landscape type, characterized by nearly level terrain supporting a full range of land uses, from rural residential and some agriculture to the east, to a typical spectrum of urban uses, including low-rise residential development, a mid-rise central business district, public parks, schools, business parks, suburban shopping malls, commercial areas, and industrial facilities.

In the center of town, both the BNSF and Bakersfield South Alternatives follow the existing BNSF Railway corridor and rail yard that currently divide the town center between north and south. As in Fresno, portions of the alignment that follow existing rail lines are largely typified by industrial development, storage areas, and other utilitarian uses of generally low sensitivity and visual quality. However, because the HST would be elevated throughout the city, the area of potential visibility may often extend far beyond the immediate right-of-way, affecting the full range of land use types.

The city's central business district (CBD) is north of existing rail yards in this central segment. Truxtun and Chester avenues form the major axes of the CBD, and both are characterized by prominent center median tree planting and landscaping within the CBD that enhances the quality of the streetscape. California Avenue, south of the BNSF Railway yard, is also a major east-west axis, with intermittent center median landscaping.

As in the city of Fresno, relevant landscape subtypes within Bakersfield are described below, grouped for convenience by project alignment segment, proceeding in sequence from north to south. Figure 4-21 depicts an overview of these subsegments of the alternative alignments. Relevant landscape subtypes are depicted by green lines in the close-up mapping of subsegments in Figures 4-22, 4-24, and 4-26.

A. GREENACRES (ROSEDALE): HAGEMAN ROAD TO CALLOWAY DRIVE

For a segment of roughly 4 miles from the point where SR 43 diverges from the BNSF Railway line north of Bakersfield, both the BNSF and the Bakersfield South alternative alignments follow the existing BNSF Railway right-of-way through an unincorporated suburban residential area, Greenacres (Rosedale), for roughly 2 miles before diverging eastward south of SR 58. Adjacent land uses in this segment include industrial and commercial uses and empty parcels. However, the principal adjoining use consists of dense suburban residential development that continues until the vicinity of Calloway Drive. In addition, the existing BNSF Railway right-of-way in this segment is extremely narrow, with as little as 100 feet separating residences across the right-of-way.

Beginning south of SR 58, both alternative alignments diverge from the BNSF Railway right-of-way, and for roughly 1.5 miles between SR 58 and Calloway Drive both the BNSF and the Bakersfield South alternatives could require the taking of a substantial number of residences. Visual character is typical of single-story, single-family residential development, mostly built during the latter half of the 20th century. Figure 4-22 depicts landscape subtypes and representative viewpoints of potentially affected viewer groups in the vicinity of the project alignments.

Suburban residential development is a land use with high public sensitivity and the potential for adverse visual impacts. Views of the project would be experienced by residents repetitively, would be of extended duration, and would have a high personal significance to the viewers.

Visual exposure to both the BNSF and the Bakersfield South alternative alignments within this subtype is variable. Most or all neighborhoods are partially screened from the existing rail line by

fencing, community walls, and landscaping. However, the net potential viewer response is considered high, due to very close proximity of relatively large numbers of residents (in the hundreds) to the alignment, and to their high viewer sensitivity. Even adverse impacts of low intensity can stimulate controversy within highly sensitive views.

Visual quality of the typical suburban residential setting of Greenacres (Rosedale) is moderate overall. Vividness, intactness, and unity are all generally moderate, and most neighborhoods are characterized by wide front lawns and mature landscaping. Portions of both the BNSF and the Bakersfield South alternative alignments would be elevated in this segment, some number of homes will need to be acquired, and the project will cut through some residential portions of the community.

Both alignments also cross three major arterial roads in this segment, four-lane SR 58, four-lane Calloway Drive, and six-lane Coffee Road. Sensitivity of motorists on these routes is considered to be moderate to moderately low. Viewer activity consists largely of commuting and work-related travel, with a high proportion of trucking and material transport. Figure 4-23 provides views of the BNSF and the Bakersfield South alternative alignments at the crossing of SR 58 and Glen Street.

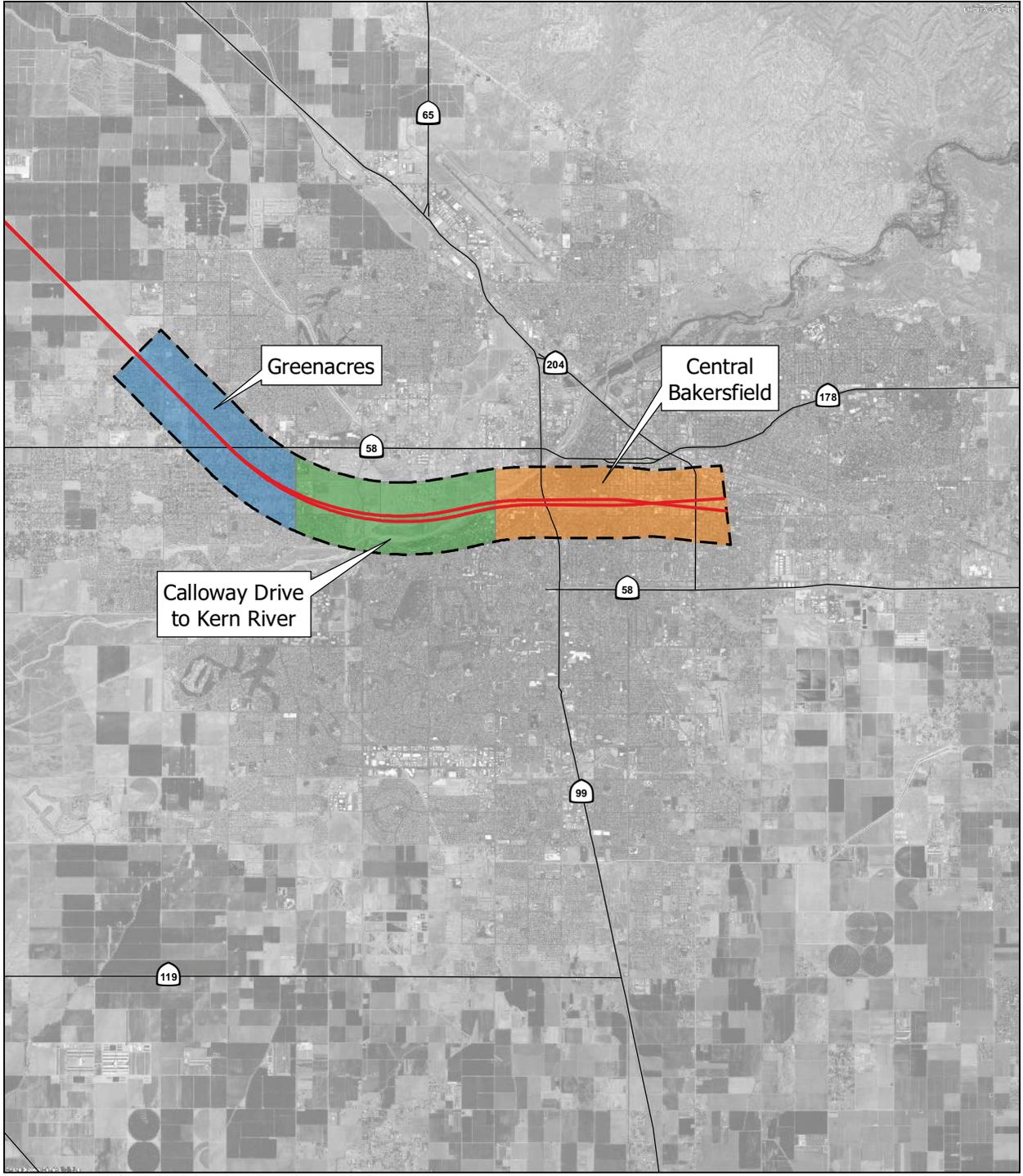
B. KERN RIVER: CALLOWAY DRIVE TO KERN RIVER PARKWAY

From the vicinity of Calloway Drive eastward for approximately 2.5 miles, both the BNSF and the Bakersfield South alternative alignments leave the residential area of Greenacres (Rosedale) and pass through an area north of the Kern River consisting of large areas of vacant land, highly disturbed by extensive grading and landform alteration, and a visually dominant oil refinery to the north. Figure 4-24 depicts landscape subtypes and representative viewpoints of potentially affected viewer groups in the vicinity of the alternative alignments in this subsegment.

Kern River Floodplain Industrial

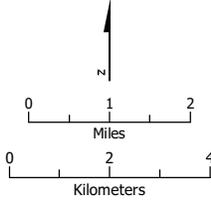
Viewers of this subtype would be largely limited to motorists on Coffee Road in the Greenacres (Rosedale) segment, discussed above; and viewers from Truxtun Avenue and the Kern River Parkway, in the Kern River Parkway segment, discussed below. There are no sensitive viewers within the subtype itself. Viewers within the subtype would be limited mainly to refinery employees.

Figure 4-25, KR-a, provides a representative view of both the BNSF and the Bakersfield South alternative alignments from the Kern River floodplain in this industrial area. This segment is of very low visual quality and viewer response. Visual quality has been adversely affected by disturbed vacant land and an oil refinery.



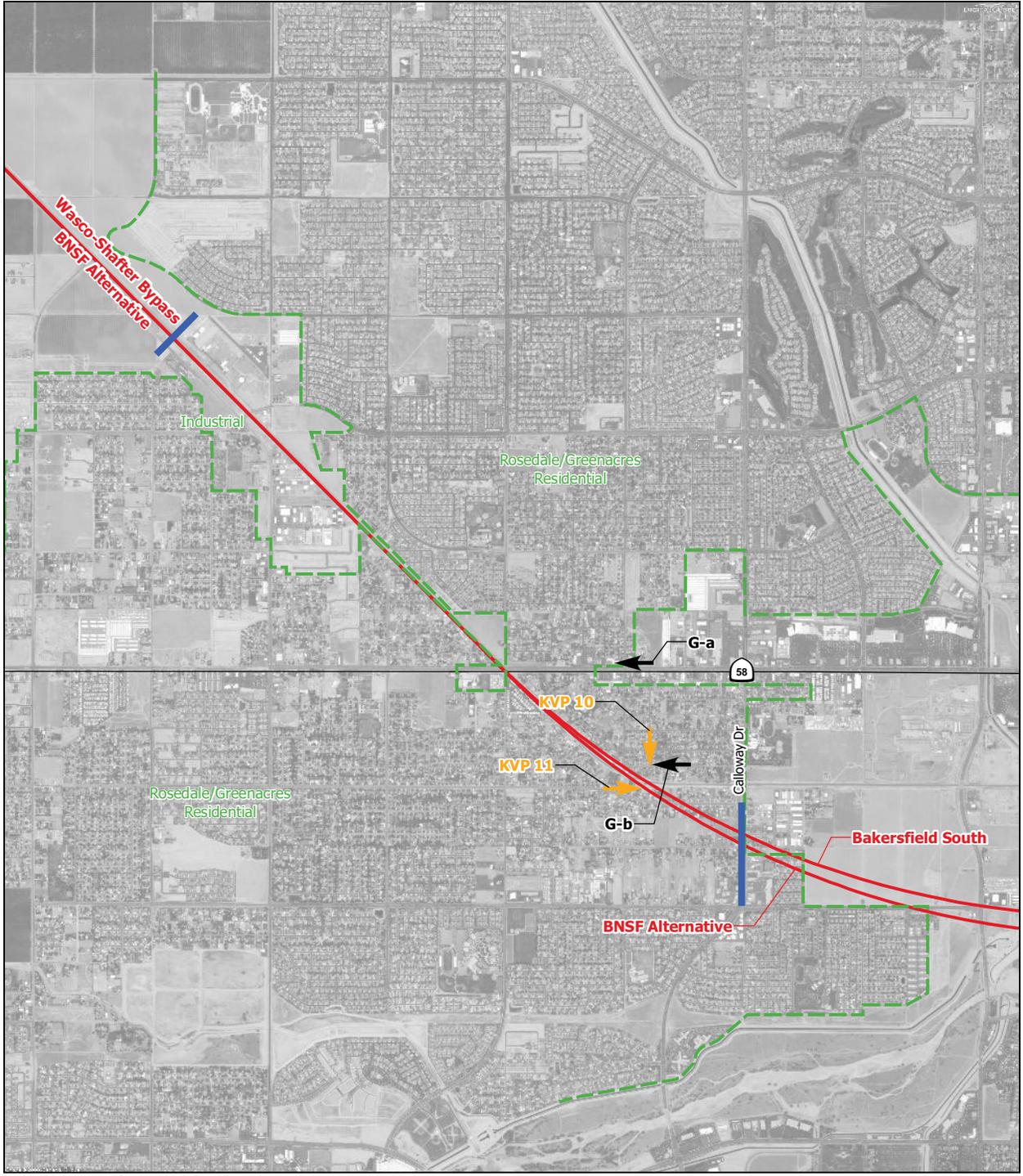
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2010; DigitalGlobe Imagery, 2009

May 25, 2011



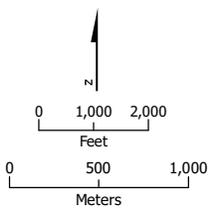
- Central Bakersfield
- Rosedale/Greenacres
- Kern River
- Aesthetics and visual quality study area
- Alternative alignments
- Highway

Figure 4-21
 Landscape Unit 3:
 Bakersfield landscape subsegments



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2011; DigitalGlobe Imagery, 2009

May 26, 2011



Key viewpoint
 Existing visual quality of view
 ↑ Moderate
 ↑ Representative viewpoint

— Alternative alignment
 — Highway
 - - - General land-use types within viewedshed
 — Landscape unit limit

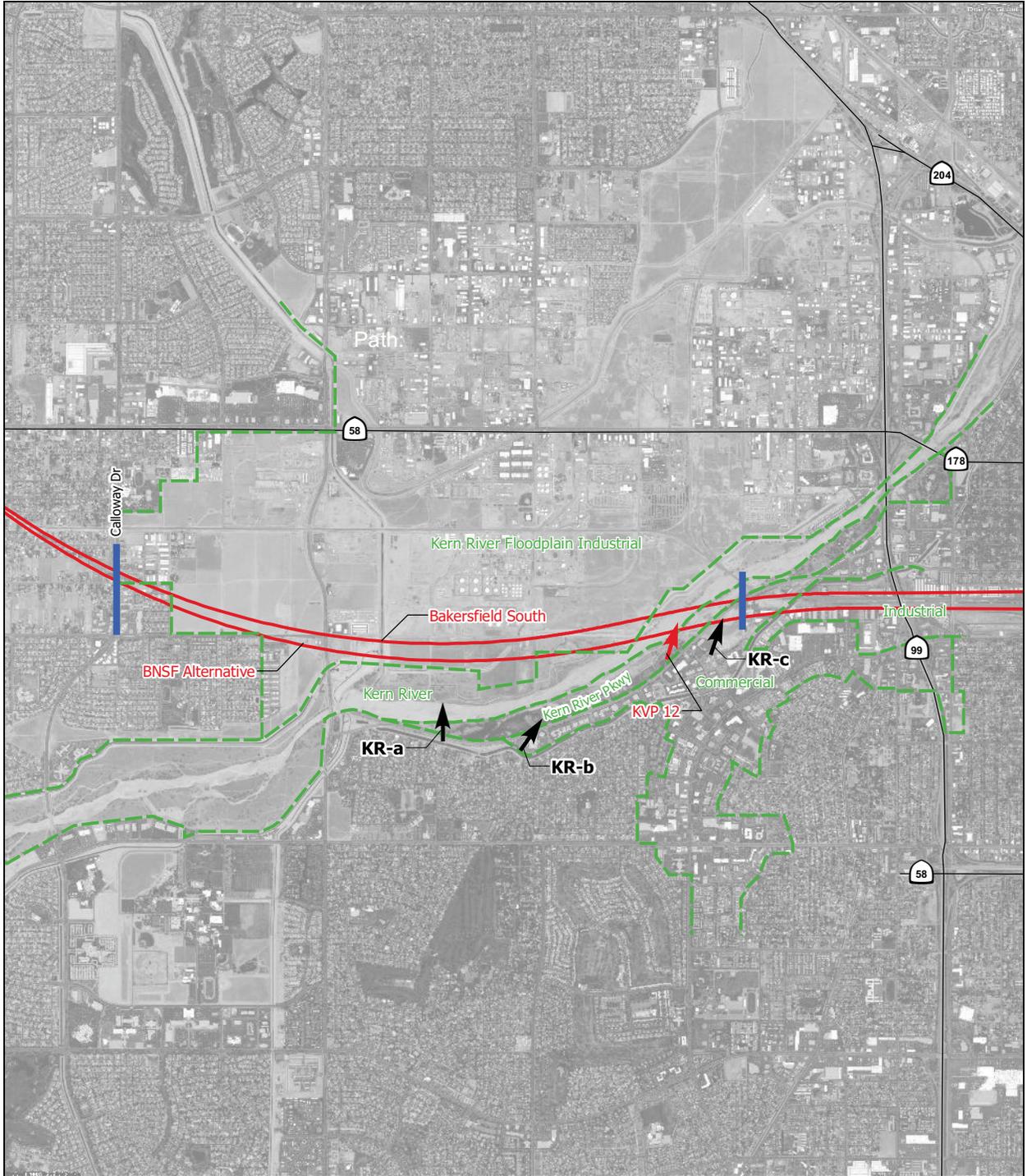
Figure 4-22
 Key viewpoint: Rosedale/Greenacres landscape unit



G-a. Alignment crossing at Highway 58, Greenacres (Rosedale), looking west at ½ mile (0.8 kilometer).

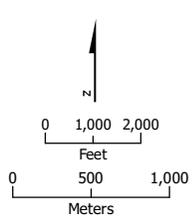


G-b. Alignment crossing, Glen Street, Greenacres (Rosedale), looking west at 500 feet (152.4 meters).



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2011; DigitalGlobe Imagery, 2009

May 26, 2011



Key viewpoint

- Existing visual quality of view
- ↑ Moderate-High
- ↑ Representative viewpoint

- Alternative alignment
- Highway
- - - General land-use types within viewshed
- | Landscape unit limit

Figure 4-24
 Key viewpoint: Kern River landscape unit



KR-a. Kern River floodplain, View from Kern River Parkway looking north, from approximately 0.25 mile (0.4 kilometer).



KR-b. Kern River Parkway, looking north from Truxtun Avenue.



KR-c. Alignment crossing from Kern River Parkway, looking north from 400 feet (122 meters).

Kern River, Kern River Parkway/Truxtun Avenue

At the end of this subsection, both the BNSF and the Bakersfield South alternative alignments cross over the Kern River, which flows seasonally, and the Kern River Parkway, which includes landscaped park areas, a bike trail, and an artificial lagoon just south of both the BNSF and the Bakersfield South alternative alignments. The river serves to separate the broad industrial and suburban areas to the northwest from the older center of town and associated residential areas, shopping centers, and business parks to the east. The segment of the alternative alignments from Coffee Road to the river would be visible primarily from Truxtun Avenue and the Kern River Parkway Bike Trail at foreground distances of ½ mile or less.

Viewer sensitivity of Parkway and bike trail users, a recreational, scenery-oriented viewer group, is high. Visual exposure, however, is moderate. Despite the foreground distances to the alternative alignments, most views from Truxtun Avenue and the adjoining, parallel bike trail are filtered by dense landscaping at the edge of the road, within the parkway, as well as by riparian vegetation on both banks of the river. This and distance reduce visual exposure to a moderately low level for all but the actual alignment crossing of river and road. In the immediate foreground of the alignment crossing, viewer exposure would be high within roughly 0.25 mile to the south on Truxtun Avenue, the parkway, and bike trail. Truxtun Avenue enters an undercrossing beneath the existing rail line to the north, which tends to visually isolate portions of the road and parkway to the north from the alignment crossing. Overall, viewer response in the Parkway/Truxtun Avenue is moderately high.

A small area of retail and office commercial uses line Truxtun Avenue to the southeast in this segment. Viewer sensitivity of these activity types is considered generally moderate. Views of the project from the road and parkway in the vicinity of these land uses are somewhat buffered by landscaping. From the developments themselves, exposure is further limited by their inward orientation, away from the river and parkway and toward the center of the developments, reducing viewer exposure to the project. Viewer response of these uses is, therefore, moderate.

Visual quality of this landscape subtype is moderately high. Although the river is dry and the floodplain appears somewhat barren for much of the year, its vividness is enhanced at those times by riparian vegetation on both banks of the river, including a large area of restored riparian woodland, trails and a large, attractive artificial lagoon which the parkway bike trail passes north of Truxtun Avenue. Abundant landscaping along Truxtun Avenue in this area not only provides an aesthetic amenity but also tends to focus views toward points within the parkway. Figure 4-25, KR-b, provides a representative view of both alternative alignments from the Kern River Parkway. However, the proposed alignment crossing itself is a small segment with moderately low visual quality, in a relatively desolate, unimproved portion of the river corridor near the existing railroad crossing, devoid of vegetation and situated between improved, landscaped portions of the parkway and Truxtun Avenue. Figure 4-25, KR-c, provides a view of both the BNSF and the Bakersfield South alternative alignments at the actual point where the alignments would cross the river into Downtown Bakersfield.

South of Truxtun Avenue in this segment, a number of residences are within foreground distance of the project alignments. However, of these only three have open views from upper story windows to the alternative alignments at a distance of roughly 0.4 mile. The rest are visually isolated from the alignments by backyards, landscaping, community walls, and landscaping along the Kern River Parkway. Given its negligible visual exposure to the project, this residential area is not analyzed further.

C. CENTRAL BAKERSFIELD: KERN RIVER TO UNION AVENUE

SR 99 lies a short distance east of the Kern River Parkway. The segment from here to roughly Union Avenue to the east encompasses central Bakersfield, including the BNSF Railway yard and the city's downtown/central business district, which lies north of the BNSF and the Bakersfield South alternative alignments. Both alternative alignments pass within feet of the heart of the city's downtown center, including most of the major city and county governmental offices, the city arena and convention center, the Condors' pro hockey stadium, as well as a hospital and a high school. Both Bakersfield station alternatives would be at the eastern limit of this segment near Union Avenue. Figure 4-26 depicts landscape subtypes and representative viewpoints of potentially affected viewer groups in the vicinity of the alternative alignments. On Figure 4-26, the orange indicators show locations and orientations of photos in Figures 4-27, 4-28, 4-29a, and 4-29b.)

Rail Yard Industrial

Throughout this segment, both the BNSF and the Bakersfield South alternative alignments parallel the existing rail yard that divides the town between north and south, traversing an area of predictably industrial use, including auto wrecking, warehouses, storage yards, vacant land, and parking. Typical of such areas, viewer response and visual quality are both low, as discussed previously in relation to similar areas in the city of Fresno.

Except for a small portion of the proposed North Station Alternative, nearly all of the project features, including guideways, station, and associated parking structures, would be situated and seen within this landscape subtype. Figure 4-27 provides representative viewpoints of this segment of the BNSF and the Bakersfield South alternative alignments.

Central Bakersfield Residential

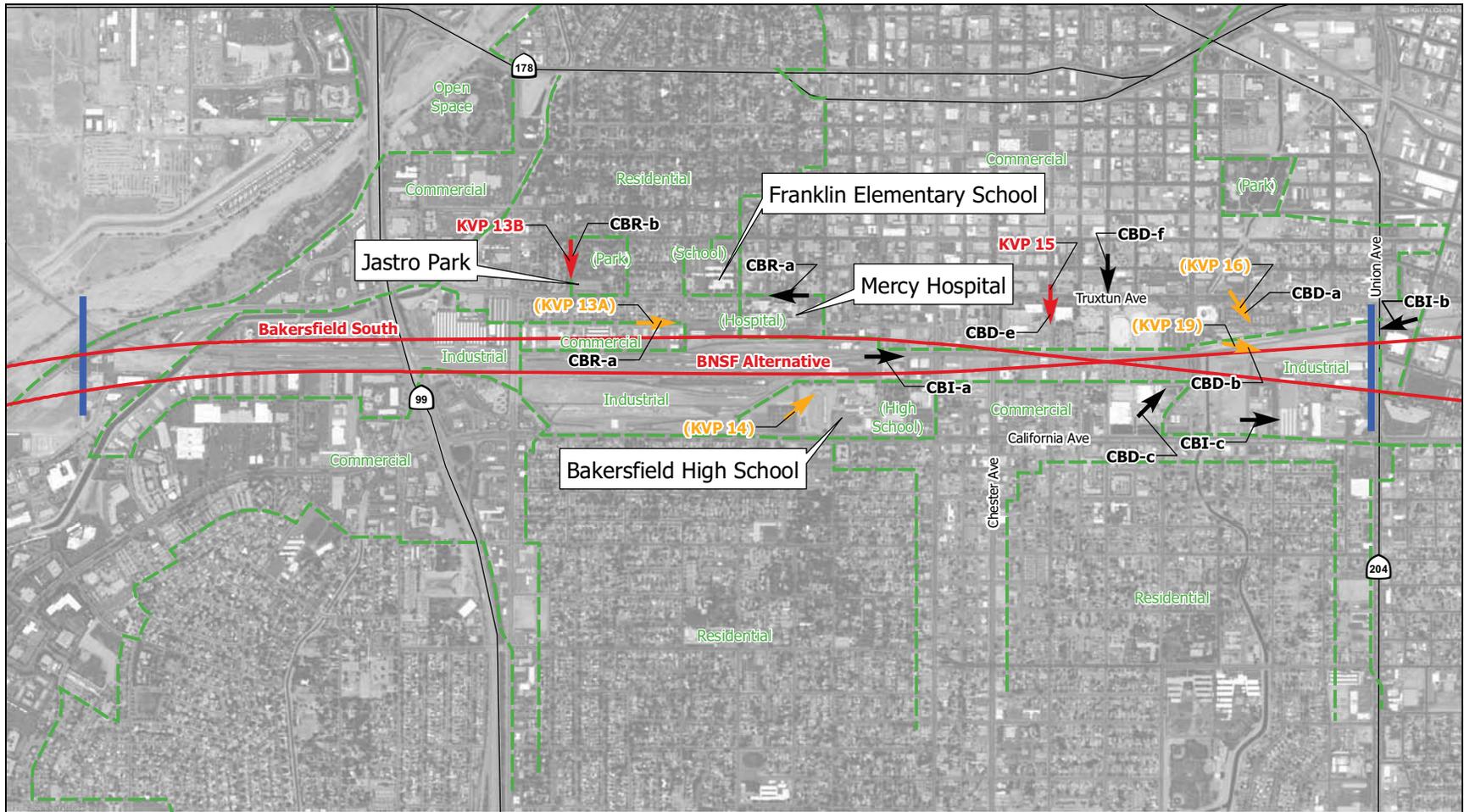
The northern portion of this segment of both alternative alignments west of the central business district and most of the segment south of California Avenue between SR 99 and Union Avenue comprise extensive older residential single-story, single-family neighborhoods dating from the early to the mid-twentieth century.

Viewer sensitivity for urban residential areas is considered to be high. Typically, residents are considered sensitive to visual change due to prolonged periods spent at home and the high value placed on one's home environment generally.

Homes are oriented facing the east-west streets within 0.5 mile of the project alignments. For 0.5 mile between Oak and A streets, residences are as close as 200 feet to the north of the Bakersfield South Alternative Alignment. Neighborhoods to the south are as close as 800 feet from the BNSF Alternative Alignment centerline, on the southern side of California Avenue. Consequently, the alignments are within the foreground distance zone for hundreds of residences, many of which are within the critical 0.25-mile distance zone. Viewer exposure to the project from within these neighborhoods is moderated by the orientation of homes toward the east-west street grid. View corridors oriented toward the alignments would be directed primarily along north-south-oriented collector streets, and not down the residential neighborhood streets themselves. This would tend to limit the periods of exposure of most residents to the times when they are traveling to and from home, rather than while at home. These south-facing view corridors are also highly filtered in many locations by mature street tree canopy. However, because of the proximity to the alignments, visibility and awareness of the project would be high within the critical 0.25-mile distance zone. Awareness of the project would decline rapidly outside of that zone due to diminishing project dominance and filtering of foreground elements.

For 45 residences very close to the alignments on 16th Street between Oak and A streets, exposure is potentially high. Jastro Community Park and Franklin Elementary School are within 550 feet of the BNSF Alternative Alignment centerline in this area, with a moderately high level of visual exposure to the alignments from adjoining south-facing streets (Figure 4-28). Overall viewer response is thus considered high in the 0.25-mile zone, and moderate beyond that distance.

Tree-lined streets predominate within these residential neighborhoods. A preponderance of relatively high density, large-scale, mature tree canopies provide a visually unifying character that also masks the presence of visually incongruous features such as power poles, etc. Overall visual quality is considered moderately high.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: William Kanemoto & Associates, 2011; DigitalGlobe Imagery, 2009

May 27, 2011

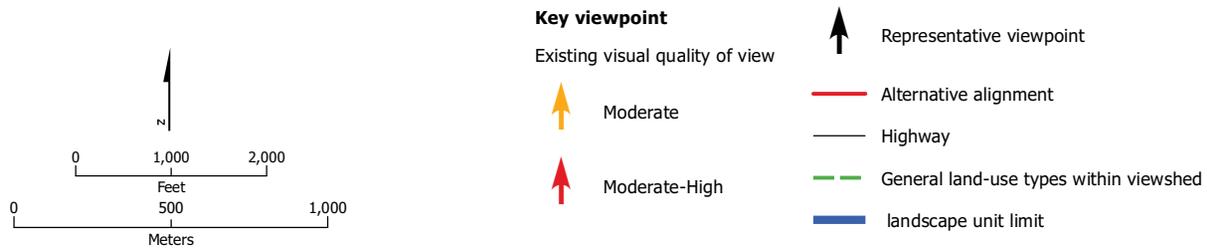


Figure 4-26
 Key viewpoints: Central Bakersfield landscape unit



CBI-a. Project alignments looking east near Chester Avenue, downtown Bakersfield.



CBI-b. Northern station site option, at alignment, looking west at Union Avenue.

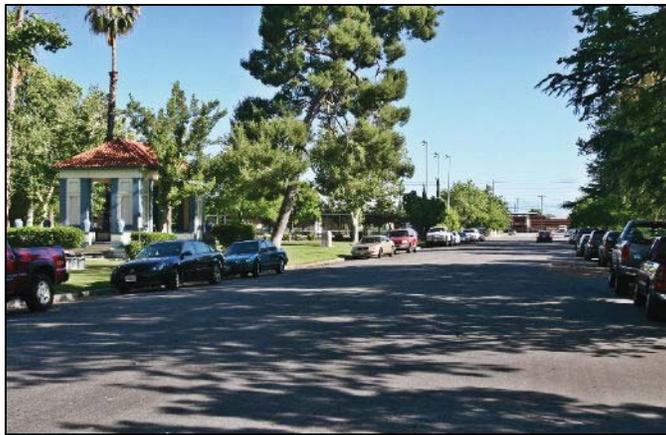


CBI-c. South station site option, looking east from 400 feet (122 meters).

Figure 4-27
Representative viewpoints:
Rail yard industrial project
alignments and station sites



CBR-a. Central Bakersfield residential, from Truxtun Avenue looking west. Homes to left are within 350 feet (107 meters) of Bakersfield South Alternative Alignment.



CBR-b. Jastro Park, looking south, 800 feet (244 meters) toward Bakersfield South Alternative Alignment.



CBR-c. BNSF Alternative Alignment from 16th Street, looking east. Industrial uses on right would be replaced by Bakersfield South Alternative Alignment.

Central Business District

This subsection of the alignment is marked to the west by Mercy Hospital, which directly adjoins the BNSF Alternative Alignment at a distance of 150 feet or less from the centerline. Portions of Bakersfield High School, an eligible state and federal historic site, lie within the proposed right-of-way of the Bakersfield South Alternative Alignment. Truxtun Avenue, the downtown main street, runs east-west paralleling the project alignments, as little as 450 feet to the north. The City of Bakersfield and Kern County governmental centers are along Truxtun Avenue in this segment in the vicinity of Chester Avenue. The city arena and convention center, the Condors' pro hockey stadium, the city library, and the Amtrak station are just east of the government center. The Bakersfield HST Station would stand to the east of these.

Viewer sensitivity is high due to the concentration of high profile public uses in the CBD, and the importance of any actions that have the potential to adversely affect the city's visual image. Visual exposure in this segment is high, due to the high numbers of viewers in the CBD, high potential visibility, and duration of view of the proposed elevated guideways from numerous locations, and due to the immediate proximity of Truxtun Avenue and its important commercial and civic land uses to the alignments. Overall, visual exposure to project features would be moderate from Truxtun Avenue northward within the foreground zone, and high south of Truxtun Avenue. Overall, viewer response is considered to be moderately high. Figures 4-29a and 4-29b provide views toward the alternative alignments in the CBD.

Truxtun and Chester avenues form the central axes of downtown Bakersfield, with civic and office buildings ranging from 1 to 12 stories high in a wide range of styles establishing a predominantly modern downtown image. Both Truxtun and Chester avenues are landscaped with side- and center-median street tree planting and landscaping that lend a moderately high level of intactness and unity to the streetscape. Distinctive nineteenth- and early twentieth-century high-rise buildings are scattered within the district, contributing a vivid and unifying visual element. Overall, visual quality along this streetscape is moderately high.

Highway Viewers

Viewer sensitivity of views from highways passing through Bakersfield is moderate. The highway system may play a secondary role in disclosing the city image simply because it is not extensive, and elevated portions do not present highly vivid views of the skyline or other prominent landmarks and striking features. The only elevated freeway with potentially prominent views of the project is north-south oriented SR 99, about 1.5 miles west of downtown at its nearest point. The project would cross above SR 99 at a height of approximately 60 feet. Viewer exposure to prominent views of this project crossing would be unobstructed but relatively brief, within the immediate foreground of the crossing. Viewer numbers would be very high. Overall, viewer response is considered moderate.

The only elevated freeway with potentially prominent views of the project is north-south oriented SR 99, about 1.5 miles west of downtown at its nearest point. Despite the relative proximity of SR 99 to the downtown area, the city's skyline is not highly evident from this segment or from the vicinity of the project crossing. Motorists thus enjoy views of moderate visual quality, enhanced by their elevated viewing position, which affords wide, panoramic views of the city. However, these views generally lack highly vivid or striking elements. Views of the Green Mountains foothills north of town are visible at times but are relatively low and often obscured by haze. The Tehachapi Mountains are not prominent from these locations within the city.



CBD-a. Northern station option from Amtrak station, looking southeast.



CBD-b. Northern station option from Truxtun Avenue, looking southeast. Station would begin behind building in foreground.



CBD-c. Overview of alignments and station area from Aquatic Center.



CBD-d. Chester Avenue at 19th Street, looking south toward alignment at 0.3 mile (483 meters).



CBD-e. Chester Avenue at 17th Street, looking south toward alignment at 850 feet (259 meters).



CBD-f. N Street at Truxtun Avenue, looking south toward alignment from 800 feet (244 meters).

Figure 4-29b
Representative viewpoints:
L Street near Truxtun Avenue, looking south
toward alignment at 850 feet (259 meters)

East of Union Avenue, the two alternative alignments diverge until reaching the project terminus at the southern end of the Bakersfield Station tracks; at that point, the BNSF Alternative Alignment turns northward, and the Bakersfield South Alternative turns southward. Within the project limits in this section, the alignments are largely within industrial or commercial zones of low or moderately low visual quality. No impacts would be anticipated in these areas because of poor visual quality and the absence of sensitive viewers. Residential areas to the east lie largely outside of the project limits. However, some homes would be relocated or visually affected by the project east of Kern Street near the project terminus.

Table 4-4 summarizes the visual quality and viewer response of the city of Bakersfield landscape unit.

Table 4-4

Summary Table – Visual Quality and Viewer Response of Landscape Unit 3: City of Bakersfield

| Landscape Unit 3: City of Bakersfield | | | |
|--|-----------------|---|----------------|
| Subsections: | | | |
| Greenacres (Rosedale) | | | |
| Landscape Subtype | | | |
| Suburban Residential | | | |
| Visual Quality: MODERATE | | Viewer Response: HIGH | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | High |
| Unity | Moderate | | |
| Kern River: Calloway Road to Kern River Parkway | | | |
| Landscape Subtype | | | |
| Kern River Floodplain Industrial | | | |
| Visual Quality: LOW | | Viewer Response: LOW | |
| Vividness | Low | Viewer Sensitivity | Low |
| Intactness | Low | Viewer Exposure | Moderately Low |
| Unity | Low | | |
| Kern River, Kern River Parkway, Truxtun Avenue | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderately High | Viewer Sensitivity | High |
| Intactness | Moderately High | Viewer Exposure | Moderate |
| Unity | Moderately High | | |

Table 4-4

Summary Table – Visual Quality and Viewer Response of Landscape Unit 3: City of Bakersfield

| Kern River Residential | | | |
|---|-----------------|---|--------------------------|
| Visual Quality: MODERATE | | Viewer Response: LOW | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | Low |
| Unity | Moderate | | |
| Central Bakersfield (Kern River to Union Avenue) | | | |
| Landscape Subtype | | | |
| Rail Yard Industrial/Project Alignments | | | |
| Visual Quality: LOW | | Viewer Response: LOW | |
| Vividness | Low | Viewer Sensitivity | Low |
| Intactness | Low | Viewer Exposure | Low |
| Unity | Low | Light Industrial and Strip Commercial | |
| Central Bakersfield Residential | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: HIGH | |
| Vividness | Moderately High | | (0.25-mile zone) |
| Intactness | Moderately High | Viewer Sensitivity | High |
| Unity | High | Viewer Exposure | Moderately High |
| | | | (Over 0.25-mile) |
| | | Viewer Sensitivity | High |
| | | Viewer Exposure | Moderate/ Moderately Low |
| Central Business District | | | |
| Visual Quality: MODERATELY HIGH | | Viewer Response: MODERATELY HIGH | |
| Vividness | Moderately High | Viewer Sensitivity | High |
| Intactness | Moderately High | Viewer Exposure | Moderately High |
| Unity | Moderately High | | |
| Highway Viewers | | | |
| Visual Quality: MODERATE | | Viewer Response: MODERATE | |
| Vividness | Moderate | Viewer Sensitivity | Moderate |
| Intactness | Moderate | Viewer Exposure | Moderate |
| Unity | Moderate | | |

Table 4-4

Summary Table – Visual Quality and Viewer Response of Landscape Unit 3: City of Bakersfield

| | | | |
|---|----------------|------------------------------|------|
| East Bakersfield—Union to Baker | | | |
| Landscape Subtype | | | |
| East Bakersfield Residential | | | |
| Visual Quality: MODERATE | | Viewer Response: HIGH | |
| Vividness | Moderate | Viewer Sensitivity | High |
| Intactness | Moderate | Viewer Exposure | High |
| Unity | Moderately Low | | |
| Acronyms and Abbreviations: HST = high-speed train km = kilometer SR = State Route | | | |

Chapter 5

Environmental Consequences

5.0 Environmental Consequences

This chapter describes the impact analysis relating to aesthetics and visual quality for the proposed project. It describes the methods used to determine the impacts of the project and lists the criteria used to conclude whether an impact may be considered substantial. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) adverse impacts accompany each impact discussion.

5.1 Impact Methodology

5.1.1 Aesthetics and Visual Impacts

Visual assessment necessarily has a subjective component and is necessarily qualitative in nature. To reduce the subjective element and make the underlying judgments of the analyses more transparent, consistent, and explicit, various formal methods have been developed by agencies to conduct visual assessment in environmental documents.

As described in Section 4.1, this assessment was conducted according to the FHWA Visual Impact Assessment methodology (FHWA 1988), particularly as applied under guidelines of the Caltrans Standard Environmental Reference (SER), Chapter 27, Visual and Aesthetics Review (Caltrans 2009). This assessment methodology was adapted for this study by the California High-Speed Rail Authority. In Section 4.4, the visual setting of the project alternatives was described, in accordance with the FHWA/Caltrans VIA methodology, in terms of the method's two primary measures, *viewer response* and *visual quality*.

With the assistance of visual simulations, site reconnaissance, and site photography, the critical distance zone of roughly 0.5 mile was defined as the area within which the largest project features could potentially be visually dominant and exert strong effects on existing visual quality of the setting. Beyond that distance, substantial impacts are considered unlikely. In many instances, this zone of potentially substantial impact could be as little as 0.25 mile, depending on the scale of the particular project feature and the particular characteristics of the setting.

Under the assessment methodology, project impacts are evaluated as a function of the degree to which the visual quality of the setting would change in the context of anticipated viewer response. Substantial adverse impacts may occur where substantial declines in visual quality of the setting, as identified by the overall decline in the attributes of vividness, intactness, and unity, are combined with high levels of anticipated viewer response (viewer sensitivity and exposure). In accordance with Caltrans guidance, impacts identified in this way are evaluated according to the following general impact criteria (Caltrans 2009):

Low (L)—Minor adverse change to the existing visual resource (i.e., decline in visual quality), with low viewer response to change in the visual environment.

Moderate (M)—Moderate adverse change to the visual resource with moderate viewer response.

Moderately High (MH)—Moderate adverse visual resource change with high viewer response, or high adverse visual resource change with moderate viewer response.

High (H)—A high level of adverse change to the resource and a high level of viewer response to visual change.

These thresholds may be represented in matrix form, as shown in Table 5-1:

Table 5-1
 Matrix of Visual Impact Levels
 Change to Visual Quality Due to Project

| | | | | |
|--|----------|---|----------|-----|
| | | Change to Visual Quality Due to Project | | |
| | | High | Moderate | Low |
| Viewer Response (Sensitivity/Exposure) | High | H | MH | M |
| | Moderate | MH | M | LM |
| | Low | M | LM | L |

Source: WKA, based on Caltrans impact criteria, above.

In the discussions in this technical report, the summary ratings of viewer response and of existing and with-project visual quality are provided to establish the basis for conclusions; the individual constituent components of those ratings are not given in the text. For greater detail on the individual component ratings underlying the visual quality ratings, see Appendix B.

Individual instances of potential visual impact are evaluated in this technical report from key representative viewpoints according to the procedures and thresholds of the assessment methodology. Overall CEQA findings of project impact significance may be found in the project EIR.

5.1.2 Scenic Vistas and Highways

For purposes of this analysis, “scenic vistas” may refer either to designated scenic viewpoints—ones identified in public documents or formally developed for sightseeing—or to views generally of exceptional scenic quality, particularly if widely recognized or identified in public documents. Examples of scenic vistas include the following:

- Public views of definable, widely recognized natural or manmade scenic features of public interest or concern. These may include mountain peaks, bays, rivers, or other natural features of regional importance; or vivid manmade scenic features such as the Golden Gate Bridge, the Statue of Liberty, or highly vivid city skylines.
- Public views from designated view locations, such as a Caltrans public vista point along a highway; a view overlook in a national or state forest or park; or view locations designated in a land use planning document adopted by federal, state, or local government.

If a project feature would block, interfere with access to, or have a strong adverse effect on such views, it would potentially cause a substantial impact. The viewshed of a designated state or local scenic road is considered to be particularly sensitive to visual impacts in this study.

5.1.3 Historic Buildings, Neighborhoods, and Landscapes

In general, public views of historic properties, neighborhoods, and landscapes are considered to be highly sensitive. The FHWA methodology recognizes local values and goals, and cultural significance, as possible contributing factors to viewer sensitivity.

In addition, under Section 106 of the National Historic Preservation Act, the eligibility of historic properties for listing on the National Register of Historic Places may be adversely affected by visual impacts that impair their historic integrity. Aspects of historic integrity that may be affected by visual impacts include integrity of *setting* and *feeling*, if those criteria are qualifying factors in a historic property's eligibility. In addition, visibility is a key aspect of historic integrity. Properties must not only "retain their essential physical features, but the features must be visible enough to convey their significance" (USDI 1997). Visual impacts that adversely affect the eligibility or visibility of identified historic properties could thus represent a substantial adverse impact.

Similarly, public parks, recreation areas, wildlife and waterfowl refuges, and historic sites, as identified under Section 4(f) of the USDOT Act of 1966 (PL 89-670), are defined as high-sensitivity viewpoints in this study.

Potential Section 106 and 4(f) visual impacts were considered in this analysis. Properties of concern were identified by the cultural, 4(f), and visual project teams through record reviews and site reconnaissance. The purpose of the review in this visual analysis is simply to characterize the level and type of visual impact to be expected at these sites, which are presumed in the visual analysis to be of high viewer sensitivity. The main analysis of visual impacts in this study thus reflects the special sensitivity of such sites. The actual determination of Section 106 and 4(f) significance, however, is presented in the Historic Property Survey Report, the Finding of Effect Report, and the 4(f) Section of the EIR/EIS.

5.2 Impacts

Impacts on the existing visual character or quality of the potentially affected sites and their surroundings in the cities of Corcoran, Wasco, Shafter, and Bakersfield, as well as within and near Colonel Allensworth State Historic Park, would be substantial. Impacts on the city of Fresno would be mitigated to a less than substantial level. Impacts on Corcoran, Wasco, Shafter, Bakersfield, and Colonel Allensworth State Historic Park would not be fully mitigated. Impacts on Corcoran, Wasco, Shafter, and Allensworth Historic Park would be avoided or minimized by the Corcoran Bypass, Wasco-Shafter Bypass, and Allensworth Bypass Alternative alignments.

In the rural valley, the high degree of visual contrast created by the HST and the moderately high viewer response of affected adjacent rural residents would result in changes to visual character that would adversely affect visual quality. The HST would remain visually prominent and out of character with the existing agricultural setting. Visual impacts on residents residing within 0.25 mile of the BNSF Alternative Alignment would remain substantial. Views of riparian and river crossings would not be substantially affected, due to the limited recreational use and public access. The HST project would create a substantial new source of light and glare that could be mitigated.

The proposed HST stations would not substantially degrade the existing visual character or quality of their site and their surroundings. The HMF alternatives would substantially degrade the existing visual character or quality of their site and their surroundings. There would be no impact on views from designated scenic highways, as there are no scenic highways in the vicinity of the BNSF Alternative and other build alternatives.

5.2.1 Project Visual Description

In the city of Fresno, the HST alignment would be at grade. Prominent project features would include the Fresno downtown station (28,000 square feet overall), and potential roadway overcrossings at Tulare and Ventura Streets.

Two station options, centered on Kern Street and Mariposa Street respectively, are under consideration in Fresno (see Figure 5-1a, Key viewpoint 1: Downtown Fresno Station–Mariposa Alternative from downtown (H Street at Tulare Street) looking west. See Figures 2-2 and 2-3, for the station locations and the description in Chapter 2 of this report). However, the overall visual characteristics of the station alternatives would be essentially similar.

Under both alternatives, the main station structure would include a 60-foot-tall, two-level, at-grade station of approximately 75,000 square feet. Associated facilities would include up to three 5-story parking structures occupying a total of 5.5 acres; surface parking for approximately 800 cars; and a possible road overcrossing conveying Tulare Street over the railroad tracks. Under the Mariposa station option, an intermodal facility to accommodate bus operations would be located between Fresno and Mariposa Streets east of H Street, and a pedestrian overcrossing would be constructed to carry HST passengers from the station entrance on H Street, between the historic Southern Pacific Railroad depot and the adjacent Pullman car shed, to the HST platform. Neither station layout option would encroach upon the historic train depot. Under both options the majority of HST facilities would be located east of the HST tracks, on the downtown side.

In the rural San Joaquin Valley portions of the corridor between Fresno and Bakersfield, project features affecting viewers would include elevated double-track guideways; at-grade double track in rural areas; over 50 roadway grade crossings requiring construction of over- or undercrossing structures where the project alignments are at-grade and not elevated; and various other project appurtenances, including a 154-acre HMF in one of four possible locations (rural Fresno, Hanford, Wasco, or Shafter), 200-by-150-foot traction power substations (TPS) located every 30 miles along the route, 120-by-80-foot electrical switching stations located midway between each pair of TPSs, and 100-by-80-foot paralleling stations located every 5 miles between the TPS and switching stations. The TPS, switching, and paralleling stations would be located adjacent to the project right-of-way. In addition, the Kings/Tulare Regional Station (17,000 square feet overall, plus at-grade parking lots), would be located within this landscape unit.

In the city of Bakersfield, prominent project features would include the Downtown Bakersfield station (28,000 square feet overall); 118-foot-wide, four-track elevated guideway for 3,000 feet to the north and south of the station; and 50-foot wide, two-track guideways elsewhere. Guideways in Bakersfield would be up to 75 feet tall to rail height, with an additional approximately 24 feet to the top of the overhead catenary system (OCS) power poles. Two station design options, associated with the BNSF Alternative Alignment and Bakersfield South alternative alignment, are under consideration. One, associated with the BNSF Alternative Alignment (Bakersfield Station–North Alternative), would be located immediately east of the existing Amtrak station, roughly one block south of Truxtun Avenue. A five-story, 2.5-acre parking structure would be located on Truxtun Avenue at Union Avenue; and a five-story, 4-acre parking structure would be located south of the guideways west of Union Avenue. Another option, associated with the Bakersfield South Alternative Alignment (Bakersfield Station–South Alternative), would be located farther southeast of the Amtrak station, approximately midway between the BNSF right-of-way and California Avenue. A single six-story, 6-acre parking structure would be located west of Union Avenue south of the railroad right-of-way. Under both options,



Existing View



Conceptual Station Design (Functional Design Treatment)

Figure 5-1a
Key viewpoint 1: Downtown Fresno Station - Mariposa Alternative
from Downtown (H Street at Tulare Street)
looking west

the main station structure would include a 64-foot-tall entrance and mezzanine level, and a 90-foot-tall boarding platform roof/enclosure above the guideways. This option would be more visually isolated from existing public viewpoints than the other. Under both Bakersfield alignment alternatives, elevated guideway would extend into east Bakersfield to the project terminus at Baker Street, passing through a small portion of a residential neighborhood.

In all project segments under all alternatives, a total of up to 10 miles of soundwalls of up to 14 feet in height could be required to mitigate potential noise impacts. These structures would increase the visual dominance and industrial character of the project in both elevated and at-grade segments, resulting in further declines in visual quality, particularly as seen by sensitive viewers within 0.25 mile of the project. Soundwalls could block some views and contrast with the setting's visual character.

5.2.2 No Project Alternative

Under the No Project Alternative, the proposed project would not be constructed, and neither the adverse nor the beneficial impacts of the project would occur. This alternative would be equivalent to the foreseeable future project scenario described under the cumulative impacts discussion in Chapter 6 of this report. Adverse effects on residents in cities and rural areas, identified under the with-project alternatives below, would not occur. Adverse impacts on the downtowns of Hanford, Corcoran, Wasco, and Shafter would not occur. Likewise, anticipated beneficial impacts on the Fresno and Bakersfield downtowns due to introduction of proposed stations would not occur.

5.2.3 High-Speed Train Alignment Alternatives

A. CONSTRUCTION-PERIOD IMPACTS

BNSF Alternative Alignment

Construction of the HST would be staged from seven sites, including two that are in permanent system maintenance yards located in Fresno and Bakersfield, and five additional sites spaced roughly evenly along the length of the right-of-way. The project proposes to use precast span construction, for which mass-produced elevated guideway sections would be manufactured at a central facility and conveyed to the construction site on transporters moving along the completed portions of the guideway. This method would reduce the construction footprint, area of disturbance, and amount of equipment needed to construct the guideways, and also would be faster, lessening the overall time of construction disturbance. Conventional construction methods would be used for at-grade segments. Construction activities are expected to last for approximately 5 years.

Construction activities would cause substantial visual disturbance in any given area, including earth preparation, rail bed or column and guideway construction, and associated truck hauling and other major material and equipment storage and movement. These activities would be highly visible. However, areas disturbed by construction would be remediated after completion.

Staging areas could introduce major visual changes to their immediate surroundings, with unsightly, visually chaotic aggregations of stored material and equipment. In addition, concrete batch plants for production of concrete used in project construction would be introduced within the project right-of-way for the duration of construction. Because of their lengthy period of use, these impacts would be substantial if they are located near any high-sensitivity receptors, such as recreationists or residents. Lighting for nighttime construction would result in substantial disturbances to nearby residents and motorists. Together, construction activities potentially represent a substantial adverse visual effect.

To address potential construction impacts, Mitigation Measure VIS-MM-6, Construction Mitigation Measures, is recommended, as described in Chapter 7.

Other Alternative Alignments

Construction impacts under all of the alternatives other than the BNSF Alternative Alignment would be substantially similar to those described under the BNSF Alternative Alignment. The overall number of project-wide staging sites would remain the same. The overall amount of elevated guideway construction under the non-BNSF alternative alignments could be less than under the BNSF Alternative Alignment. Construction of at-grade segments would be less prominent and affect viewers within a smaller area, and in this way could have less impact than the BNSF Alternative Alignment. However, the anticipated decline in visual quality and resulting impacts would remain substantial under all alternatives for a considerable period of construction. Mitigation Measure VIS-MM-6, Construction Mitigation Measures, is recommended to address these impacts under all alternatives.

B. OPERATIONS IMPACTS

High-Speed Train Project–Common Impacts

Various ancillary project features would be located throughout the length of both the BNSF Alternative Alignment and the other alternative alignments, with corresponding potential project-wide effects. HMF options are discussed under “High Speed Train Heavy Maintenance Facility Alternatives,” below. The precise locations of other ancillary project features, such as TPSs, electrical switching stations, and paralleling stations, are not yet known. A considerable number would be needed; for example, paralleling stations would occur every 5 miles along the route. The dimensions of these facilities would range from 100 by 80 feet (paralleling stations) to 200 by 150 feet (TPSs). These could introduce additional industrial features into the visual foreground of viewers and exacerbate guideway-caused declines in visual intactness, unity, and overall visual quality as seen by high-sensitivity viewers. Where these facilities would be located within 0.25 mile of residences, parks, or other high-sensitivity viewpoints, they would be considered a potential cause of substantial visual impacts.

BNSF Alternative Alignment

In the following discussion, the potential impacts of the BNSF Alternative Alignment are organized by landscape units and, in the rural central valley, by landscape subtype. Following the FHWA VIA methodology, potential impacts identified within each unit are analyzed from key viewpoints representing those situations where viewers with high anticipated viewer response could be exposed to high degrees of change to visual quality as a result of the project.

City of Fresno Landscape Unit

In the setting analysis (Section 4.4.1, above), two viewer groups with potentially high viewer response were identified in Fresno: viewers of all types in the immediate foreground of the project in the CBD to the northeast of the alignment, and viewers of all types in the historic Chinatown district to the southwest.

As described above, principal visually prominent project features in Fresno would include the Downtown Fresno station; associated surface and garage parking, drop-off, and bus transfer facilities; and potential new road overcrossings at Tulare and Ventura Streets. Two station layout options are under study for the BNSF Alternative Alignment, one centering on Mariposa Street and another centering on Kern Street. However, the overall visual effects of the two would be similar. Under both station alternatives, two 5-story parking structures totaling 4 acres of surface area would be constructed along H Street between Tuolumne and Mono Streets; a third 5-story

parking structure of 1.5 acres would be constructed between E Street and SR 99 between Fresno and Mariposa streets. Under the Fresno Station–Mariposa Alternative, 5.75 acres of surface parking would be introduced along H Street; under the Fresno Station–Kern alternative, 4.75 acres would be introduced.

Key Viewpoint 1: Central Business District Viewers (View of Fresno Station–Mariposa Alternative). The most prominent project feature in the Fresno CBD would be the proposed downtown station, which would adjoin Chuckchansi Stadium and the core of downtown, and would be large in scale and extent.

Key viewpoint 1 (Figure 5-1b) is located on the southeast corner of Tulare and H Streets at the main entrance to Chuckchansi Stadium, looking northwest toward the main HST station entrance of the Mariposa Street station alternative.

The architecture of the proposed station has not yet been designed, and is thus shown in the simulation in conceptual form to depict the bulk, massing, and general visual scale only. However, the overall station footprint, layout, volume, and scale as depicted in the simulations reflect detailed proposed conceptual design as developed during the station-planning process to date. The final, specific level of design will be determined through the station-planning process and city design review.

In the context of the adjacent downtown urban form, the proposed station would be larger and taller than most nearby existing development, would be highly prominent, but would not be completely out of scale or character. Other existing structures of similar height or greater, including 10- and 12-story high-rises and 6-story parking structures are located within a block or two of the site. Compared with the predominantly surface parking and industrial uses of the existing project site, the proposed station would represent a substantial improvement in visual quality, from the prevailing low level to a moderately high one characterized by well-designed architecture, greatly enhanced street landscaping, and a high degree of overall visual unity.

Key Viewpoint 2: Chinatown Viewers. Key Viewpoint 2 (Figure 5-2) is located on China Alley between Mariposa and Tulare streets, facing the proposed entrance to the Fresno Station–Mariposa Alternative from the Chinatown district. The proposed station would be the principal project feature visible from the Chinatown district. The overall impact of the project from this area would be similar to that described under Viewpoint 1 above. In the context of the low visual quality of the existing industrial and rail yard setting between G and H streets, the introduction of the station would represent a substantial improvement in visual quality of the streetscape. Vividness and visual unity would be enhanced by unified architectural and streetscape design, compared with the heterogeneous, visually chaotic, utilitarian quality of existing industrial uses. Although the station would intervene between Chinatown and views of downtown across the tracks to the east, those views are currently largely obstructed by tall industrial facilities between G and H streets that would be displaced by the proposed station. Through high-quality architectural and streetscape design, introduction of the station facilities could have the effect of improving the visual coherence and vividness of the streetscape. Overall, while viewer response would be moderately high, introduction of the project into foreground views of Chinatown would have a beneficial impact.



Conceptual Station Design (Functional Design Treatment)
with Tulare Street Underpass



Conceptual Station Design (Iconic Design Treatment)
with Tulare Street Underpass



Existing View



Conceptual Station Design (Functional Design Treatment)



Conceptual Station Design (Iconic Design Treatment)

Figure 5-2b
Key viewpoint 2: Downtown Fresno Station - Mariposa Alternative from Chinatown
(China Alley between F and G Streets) looking north - visual simulations

KVP 1A, 2A: View of the Fresno Station–Kern Alternative. Key viewpoint 1A (Figure 5-3) is the same location as KVP 1, at the entrance to Chuckchansi Stadium at Tulare and H Streets in downtown, but facing south rather than northwest, looking toward the station entrance of the Fresno Station–Kern Alternative, proposed to the southwest of Chuckchansi Stadium. Key viewpoint 2A (Figure 5-4a) depicts the existing view of the site of the proposed Kern Alternative of the downtown HST station from KVP 2A in Chinatown at G Street near Kern Street, looking north. Figure 5-4b depicts a simulated view of the conceptual station design with a generic “functional” design treatment. As suggested in the simulations, effects of the Fresno Station–Kern Alternative would be substantially similar to those under the Fresno Station–Mariposa Alternative, as seen from both downtown and Chinatown. As described above for the Fresno Station–Mariposa Alternative, the effect of the new Kern Street station would be beneficial.

Various options are under consideration for roadway crossings over or under the proposed HST right-of-way in Downtown Fresno. Tulare and Ventura streets, roughly between Fulton Mall and E Street, could be transformed into overcrossings similar to existing ones on nearby Tuolumne and Stanislaus streets. Sensitive receptors and visual sensitivity in the vicinity of Ventura Street are minimal and adverse impacts would not be anticipated. The immediate Tulare street streetscape, however, includes the main entrance to Chuckchansi Stadium and the historic Southern Pacific Depot. A Tulare Street overcrossing would adjoin these sites as well as Fulton Mall, a high-sensitivity location used by high numbers of pedestrian visitors to downtown. As depicted in the lower image of Figure 5-1a, a Tulare Street road overcrossing would introduce a large-scale concrete structure of utilitarian character into the visual foreground of the H and Tulare streetscapes. The overcrossing would intrude into views of the stadium entrance, the proposed HST station entrance, and the historic Southern Pacific Depot, with resulting adverse effects on the visual quality of the streetscape. Though arguably no worse visually than the existing setting, the overcrossing would substantially reduce the potential beneficial effects of station development on this portion of downtown and Chinatown, compromising potential visual intactness and unity.

The road overcrossing is located to the north of the stadium entrance and would thus not cast shadow on the park or park entrance. It would cast shadow on the proposed HST station and Southern Pacific Depot during some hours and seasons of the year. No significant shadow impacts on any nearby recreational or residential uses are anticipated as a result of the project in Downtown Fresno.

As discussed in Chapter 4.4.1, potential views of the project alignments in south Fresno are generally blocked or filtered by intervening industrial areas. Therefore, due to the relative lack of visual exposure, there would be little or no viewer response to the project. In the absence of visual exposure, no key viewpoints were considered necessary in this segment and further analysis of impacts is not relevant.

San Joaquin Valley Rural/Agricultural Landscape Unit

As described in Section 4.4.2, the San Joaquin Valley Rural/Agricultural Landscape Unit makes up the great majority of the proposed project setting, comprising most of the project corridor between the cities of Fresno and Bakersfield. This vast area is discussed under six landscape subtypes: the valley agricultural subtype, making up the greatest part of the project setting; the rural residential subtype; the riparian corridor subtype; the rural city/town subtype; Colonel Allensworth State Historic Park; and Pixley National Wildlife Refuge. Each of these is discussed separately below.



a. Existing View



b. Conceptual Station Design (Functional Design Treatment)

Figure 5-3
Key viewpoint 1A: Downtown Fresno Station - Kern Alternative from
downtown (H Street at Tulare Street)
looking south



a. Existing View



b. Conceptual Station Design (Functional Design Treatment)

Figure 5-4
Key viewpoint 2A: Downtown Fresno Station - Kern
Alternative from Chinatown
(G Street near Kern Street)
looking north

Valley Agricultural Subtype

As discussed in Section 4.4.2, the valley agricultural landscape is typically moderate in visual quality, generally high in intactness, but often monotonous and lacking in vivid features and visual variety. Typical viewers within this unit consist principally of agricultural workers and motorists, with low and moderate levels of viewer sensitivity respectively. Motorists on designated or eligible state or local scenic highways would be considered more highly sensitive to visual impacts, but no such roadways would be affected by the project alignments. Because the level of viewer sensitivity and response of these principal viewer groups is considered to be moderate to low, substantial impacts from the project are thus not anticipated. A third viewer group with high viewer sensitivity, rural residents, is discussed as a separate subtype, below.

Rural Residential Subtype

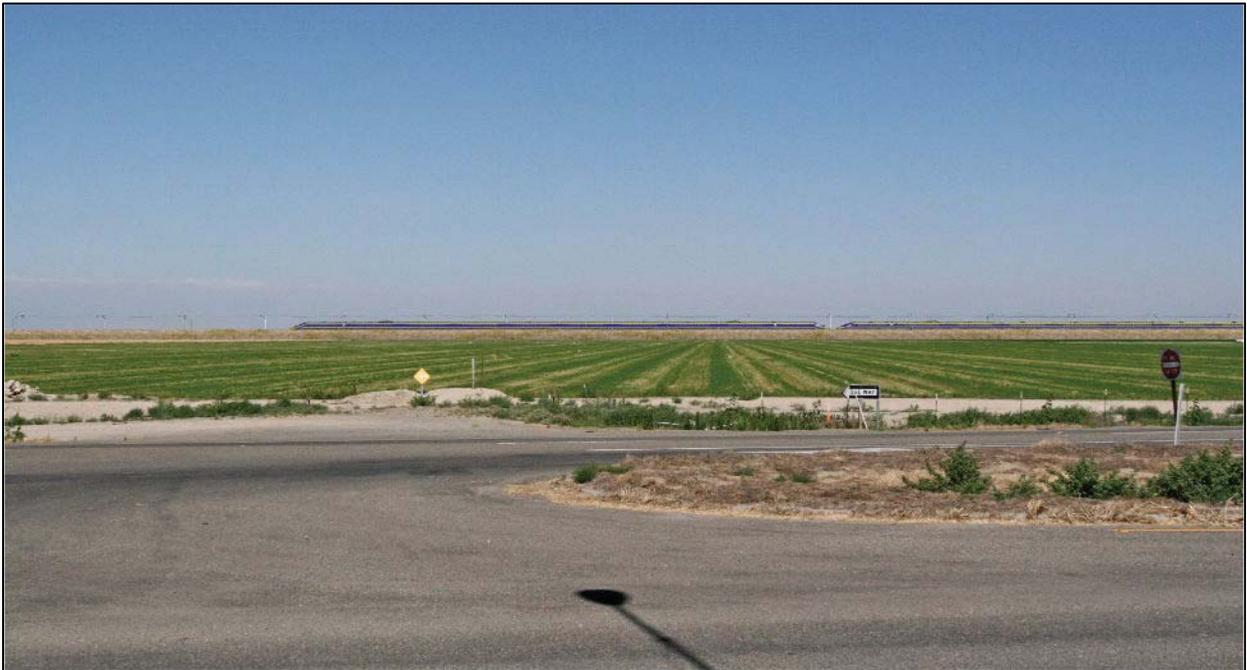
Rural residential settlements represent a distinct landscape subtype within the rural valley. Rural residents are the principal high-sensitivity viewer group to be potentially affected by the HST project in this landscape unit. Thus, instances of potentially substantial impact by the HST project within the Rural/Agricultural landscape unit are likely to occur primarily within this landscape subtype. Although the number of affected residences in a particular location could be low in many instances, the overall number of rural residents affected by the HST within the Rural/Agricultural landscape unit would be substantial, potentially totaling several hundred.

Key Viewpoint 3: Simulations of High-Speed Train At-Grade in Rural Landscape; Simulations of High-Speed Train in Rural Landscape. Key viewpoint 3 (Figures 5-5 and 5-6) consists of simulations of typical views of the project in the rural valley setting, showing at-grade and elevated conditions at distances of 0.25 mile and 0.5 mile. The simulations are not intended to depict a specific location, but rather to illustrate the level of the project's typical visual prominence and effect on viewers at different distances, as seen from locations throughout the rural central valley. The simulation photograph is taken with a "normal" lens (approximately 40-degree-horizontal angle of view).

As indicated by the simulations of the project and supplemented by field reconnaissance and professional judgment, at-grade segments of the HST as seen at distances of 0.25 mile or less could begin to visually dominate, altering the rural character and detracting strongly from the intactness and unity of the existing agricultural landscape. The height of at-grade rail beds would vary but could be as much as 12 feet. Near the right-of-way, the HST trains, elevated berm, security fencing, and detail of the OCS poles and wires would be clearly visible and contribute a highly industrial character that would be incompatible with the rural setting. Beyond this distance, project features, though visible, would affect the setting's visual quality to a moderate to low degree and decrease further with distance. Similarly, the monumental horizontal scale and distinctly industrial form, color, and texture of the elevated guideways, seen at distances of 0.5 mile or less, would begin to visually dominate, and detract strongly from the intactness and unity of this agricultural landscape. Thus, for rural residents, who would have high sensitivity to these changes, at-grade segments within 0.25 mile, or elevated segments within 0.5 mile would represent a potentially substantial impact in the absence of any mitigation. Beyond these distances, project features, though visible, would affect the setting's visual quality to a moderate to low degree.



a. Simulated View - 0.25-mile distance



b. Simulated View - 0.50-mile distance

Figure 5-5
Key viewpoint 3: simulations of high-speed train
at-grade in rural landscape



a. Simulated view - 0.25-mile distance



b. Simulated view - 0.50-mile distance

Figure 5-6
Key viewpoint 3: simulations of high-speed train
on elevated guideway in rural landscape

Key Viewpoint 4: Simulation of HST Local Road Overcrossing. Roadway overcrossings would be required where at-grade segments of the alignment cross existing roads, and would introduce a more urban character into the affected rural settings. Similar to KVP 3, KVP 4 (Figure 5-7) is not intended to depict a specific location, but rather to illustrate the typical level of visual prominence and effect of the many local road overcrossings that would be introduced as part of the HST project. As with KVP 3, the principal affected high-sensitivity viewer group would consist of rural residents in and around their homes. As seen at distances of 0.25 mile or less, overcrossings, including earth embankments and concrete bridges, would visually dominate, altering the rural character and detracting strongly from the intactness and unity of the existing agricultural landscape. For these high-sensitivity residential viewers, these changes would thus represent a potentially substantial impact in the absence of any mitigation. Although the number of residents affected at any one overcrossing would generally be small, overall the number of residents so affected within the Rural/Agricultural landscape unit would be substantial, totaling in the hundreds.

Key Viewpoint 5: Kings/Tulare Regional Station. Key viewpoint 5 (Figure 5-8) is a view of the proposed Kings/Tulare Regional Station, seen from nearby Eighth Avenue (SR 43) at a distance of 0.5 mile looking northeast. The station and guideway would be sited close to a residential settlement of 28 homes along Ponderosa Road and Edna Way, some which would be relocated. Remaining homes would directly adjoin the alignment and elevated guideways.

As depicted in the simulation, the proposed station, though large and very prominent, would be sufficiently distant from the highway to recede in dominance, paralleling the horizon and not intruding appreciably into the skyline. The foreground viewed by passing motorists would be dominated by the canopies of trees in the interior parking lot and along its perimeter. Consequently, the intactness and memorability of the scene from such nearby public viewpoints could be enhanced. The introduction of a large urban facility such as this would, however, lower visual unity of the setting. Intactness would be affected positively by the new, maturing tree canopies, and negatively by the urban character of the station and paved areas. Overall, the effect on visual quality at this distance would be moderately adverse.

Impacts of the Kings/Tulare Regional Station to nearby rural residents would be due primarily to the adjacent elevated guideway, and would be as described above, under KVP 3. The elevated project guideways south of the Kings/Tulare Regional Station would result in removal of several residences along Ponderosa Road and Edna Way north of Lacey Boulevard. The remaining residences would abut the project right-of-way. The roughly 50-foot-tall guideways would introduce a highly dominant feature of urban, industrial character into the immediate foreground of these homes. Given the moderately high viewer response associated with those living in this development, this would represent a substantial impact.

Overall, for rural residents in the Rural/Agricultural landscape unit, who would have high sensitivity to project visual effects, at-grade HST segments and road overcrossings within 0.25 mile, or elevated HST segments within 0.5 mile would thus represent a potentially substantial impact in the absence of any mitigation. Beyond these distances, project features, though visible, would affect the setting's visual quality to a moderate to low degree and decrease with distance from the project features.



a. Existing View



b. Simulated View

Figure 5-7
Key Viewpoint 4 – existing view and simulation of typical new rural road overcrossing (Floral Avenue)



a. Existing View



b. Simulated View

Figure 5-8
Key viewpoint 5: existing and simulated views
of potential Kings/Tulare Regional
Station from 8th Avenue (SR 43)

To address these impacts on nearby residents, Mitigation Measures VIS-MM-2, On- and Off-Site Landscape Screening, and VIS-MM-3, Non-Reflective OCS Components, are recommended, as described in Chapter 7 of this report.

Because of the rural character of the Kings/Tulare Regional Station setting, night lighting and light pollution from the facility could be a concern. Without adequate mitigation and design measures, station and parking lot lighting would contribute to potentially substantial nighttime light pollution in an area that currently enjoys dark night skies. To address potential night lighting impacts, Mitigation Measure VIS-MM-4: Operational Night Lighting Measures, is recommended.

Riparian/River Crossing Subtype

Major creeks and rivers, and their accompanying riparian forest canopy, are a highly distinctive and valued feature of the Central Valley landscape. The BNSF Alternative Alignment would cross four of these, the Kings and Tule rivers, and Cross and Poso creeks, within the rural San Joaquin Valley. The Kings River is the most prominent river crossing within the rural valley, and is identified as an important regional scenic resource in the *2035 Kings County General Plan*. However, the Kings River crossing of the proposed BNSF Alternative Alignment would be located within a setting dominated by fruit tree orchards, which would screen visibility of the HST from all nearby public viewpoints. Consequently, no simulated view of the project is depicted. Effects of the river crossing to viewers on the nearest major roadway, SR 43, would be minor, limited to a momentary elevated view from a short overcrossing of SR 43 above the HST right-of-way. This impact would be minor.

River recreationists have higher levels of sensitivity than motorists. However, of the four river crossings, only the Kings River is wide enough in the vicinity of the project crossing to receive any recreational use. At the Kings River, viewer exposure to the alignment crossing would be limited to a very short segment because meanders in the river and the riparian vegetation on its banks would screen most views. Although strong adverse effects to visual quality could be experienced immediately adjacent to the structure, the project would not substantially degrade the visual character or quality for recreationists beyond a very short distance. This would be a moderate impact. There is no recreational use at the other three crossings and impacts, in the absence of sensitive viewers, would thus be negligible.

Rural City/Town Subtype (Corcoran, Wasco, and Shafter)

The BNSF Alternative Alignment would follow the existing BNSF right-of-way through the downtowns of Corcoran, Wasco, and Shafter. The major sensitive viewer groups in these towns are residents, users of nearby local parks, and visitors to the town centers. Figures 4-14, 4-16, and 4-18 depict the locations of existing views and simulations of the HST in Downtown Corcoran, Wasco, and Shafter. KVP 6, Figure 5-9, is taken from Otis Avenue near Whitley Avenue, Downtown Corcoran's main street, near the Amtrak Station, facing south from a park across the street from the proposed right-of-way. KVP 7 in Wasco, Figure 5-10, is taken from the intersection of 7th Avenue and F Street, Wasco's main street and the heart of the old town, at a distance of roughly 600 feet, facing east. The simulation of the HST in Shafter, KVP 8, Figure 5-11, is from the intersection of Poso Avenue and SR 43, looking north to the historic Shafter Depot Museum at a distance of approximately 350 feet. The elevated guideway in Wasco would rise to approximately 50 feet. In Shafter the guideway would be approximately 65 feet high. The OCS poles would extend about 24 feet above the guideway in all cases.



a. Existing View



b. Simulated View

Figure 5-9
Key viewpoint 6: existing and simulated views of
high-speed train in Corcoran from Otis Avenue
near Whitley Avenue, looking south



a. Existing View



b. Simulated View

Figure 5-10
Key viewpoint 7: existing and simulated views of high-speed train in Wasco from 7th Avenue and F Street, looking east toward the Amtrak Station (slightly altered image)



a. Existing View



b. Simulated View

Figure 5-11
Key viewpoint 8: existing and simulated views of high-speed train in Shafter from Poso Avenue and SR 43 toward the Shafter Depot Museum

Key Viewpoint 6: Corcoran. Key viewpoint 6 (Figure 5-9) is a view of the alignment from Otis Avenue near Whitley Avenue, Downtown Corcoran's main street, near the Amtrak station facing south from the park across the street from the proposed right-of-way. The BNSF Alternative in Corcoran would be at-grade and require relocation of the existing Amtrak station at Whitley and Otis avenues. The loss of visual interest from removal of this building, however, would be compensated by its replacement elsewhere in the downtown area, with a neutral net effect on the visual quality of the downtown setting. Preservation of the prominent existing row of palm trees, street lights, and other landscaping on the east side of Otis Avenue would retain the most vivid features of that streetscape, maintaining its intactness and unity.

Visual effects of the HST itself would be similar to existing freight trains in the same railroad corridor and would thus be largely neutral.

The most prominent anticipated visual effects in Downtown Corcoran would be due to new road overcrossings at Patterson and Flory avenues and to a traction power supply station (TPSS) south of Whitley Avenue. The overcrossings represent a common feature of urban settings with generally moderate visual effects. However, concrete retaining walls of the proposed crossing at Patterson Avenue could directly abut a number of homes and cast permanent shadow on some portion of these. The resulting decline in visual intactness and unity could thus represent a substantial impact on residences on Patterson Avenue. The TPSS would be located within an industrial area of relatively low existing visual quality and would thus have less-than-significant effects.

No substantial glare or night lighting impacts are anticipated from operation of the project in this location.

To address impacts, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall, and Soundwall Design Measures; and Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening are recommended, as described in Chapter 7 of this report.

Key Viewpoint 7: Wasco. Key viewpoint 7 (Figure 5-10) is taken from the intersection of F Street and Seventh Street, Wasco's main street and the heart of the old town, at a distance of about 600 feet. The guideways are roughly 50 feet high to track height in this location, with 24-foot OCS poles above. The view down Seventh Street terminates at the Amtrak station, a recently completed (2008) structure of historic Mission style. In Wasco, the elevated guideway would pass directly above the existing Amtrak station. Unlike in Corcoran, no parks are located within the most critical 0.25-mile distance zone of the alignments in Wasco. As indicated in Key viewpoint 7, Downtown Wasco in general and Seventh Street in particular have benefited from downtown redevelopment, including street tree plantings, other streetscape improvements, and the landmark Amtrak station, all of which lend the setting a moderate or better level of vividness, unity, and overall visual quality.

Project effects on the visual quality of the existing downtown setting would be strongly adverse within a roughly 0.25-mile distance zone. Existing visual intactness and unity in particular would experience a strong decline from the introduction of a visually dominant regional transportation facility of industrial scale and urban character into the small agricultural town setting. The alignment would exert a strong adverse influence on the image and character of the town due to its central location. In the context of viewers' moderate to moderately high response, this would represent a substantial impact.

No substantial glare or night lighting impacts are anticipated from operation of the HST in this location.

To address impacts, Mitigation Measures VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, and VIS-MM-2, Onsite and Offsite Landscape Screening, are recommended. Even with these measures, however, impacts would remain substantial.

Key Viewpoint 8. Shafter. Key viewpoint 8 (Figure 5-11) is taken from the intersection of Poso Avenue and SR 43 looking north to the historic Shafter Train Depot and Museum, which is at a distance of approximately 350 feet. The guideways are roughly 65 feet high to track height in this location, with 24-foot OCS poles above. Shafter's main street, and the heart of the old town, is located three blocks to the south. Like the main streets of Corcoran and Wasco, it has benefited from downtown streetscape improvements, including street tree planting, and decorative lighting, paving, and landscaping treatments. Consequently, the quality and character of the downtown, and Central Avenue in particular, have a moderately high degree of intactness, unity, and overall visual quality.

As in Wasco, project effects on the moderate to moderately high visual quality of the existing downtown and residential settings would be strongly adverse within a roughly 0.25-mile distance zone. Due especially to the height and scale of the guideways, a strong decline in visual intactness and unity would result from the introduction of a visually dominant feature of industrial character into the small agricultural town setting. In the context of viewers' moderate to moderately high response, this would represent a substantial impact on the visual character and quality of the setting.

Mannel, James, and Kirchenmann parks, small neighborhood parks located in the central town area, are within 0.25 mile of the alignment. However, views of the project in each of these cases are limited by intervening development, and substantial visibility of the project is not anticipated.

The elevated guideway would return to ground level a short distance south of town, near Riverside Street. The project would not intrude substantially into the Shafter Cemetery, which adjoins this at-grade portion of the alignment a short distance farther south. A road overcrossing would be located near the cemetery south of Burbank Street, but would be substantially screened by existing cemetery landscaping and orchards,

To address impacts in and around Shafter, Mitigation Measures VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, and VIS-MM-2, Onsite and Offsite Landscape Screening, are recommended, as described in detail in Chapter 7 of this report. Even with these measures, however, impacts would remain substantial.

Other than an alternative alignment, no adequate mitigation measures to address this impact were identified. Although tree planting would screen views of the project from the park, they would also obstruct the long, open, panoramic views that characterize the existing setting, and introduce another incongruous element that could reduce the intactness and unity of the historic setting. An alternative alignment outside of the immediate visual foreground would be the only available measure not having potentially substantial secondary visual impacts.

Pixley National Wildlife Refuge Subtype

As described in Section 4.4.2, the overall anticipated viewer response at the wildlife viewing platform at Pixley National Wildlife Refuge is considered moderate due to distance from the alignment. Although viewer sensitivity is high, the viewing platform is located roughly 1.5 miles east of an at-grade segment of the BNSF Alternative Alignment. At this distance, the project, though visible, would be visually very subordinate and would not draw the attention of viewers in the refuge. Viewer exposure is thus negligible and the overall effect of the HST on intactness, unity, and overall visual quality of the setting would be moderately low. Simulations were thus not considered necessary for this viewpoint.

Colonel Allensworth State Historic Park Subtype

Key Viewpoint 9: Colonel Allensworth State Historic Park. Key viewpoint 9 (Figure 5-12) is taken from within Colonel Allensworth State Historic Park, looking east toward the alignment. The alignment centerline would closely parallel the eastern boundary of the historic district and park, paralleling the BNSF right-of-way on the western, park side of the existing rail line. The alignment centerline is thus slightly over 100 feet from the eastern boundary of the park. At this distance, the project would represent a visually dominant feature contrasting strongly with the existing visual character. The 24-foot-tall OCS system components and wires, and right-of-way fencing, would introduce distinctly industrial elements into the visual foreground that would alter the character of the site and greatly lower visual quality. Above all, high-speed trains of considerable length would pass the park at close distance, the bright colors and rapid motion strongly drawing attention. Because trains are anticipated to run frequently, they would represent an ongoing, even dominating presence. The pristine landscape setting is a major component of the attraction of the historic district, which evokes a vivid experience of the 19th-century agricultural valley landscape. The integrity of the landscape setting is thus a critical part of the park experience. The prominent, incongruous project elements would strongly intrude into that experience, undermining or destroying the integrity of the visual setting. The viewer response of park visitors would be high. This would represent a substantial adverse impact.

City of Bakersfield Landscape Unit

For convenience this landscape unit is discussed by subsections of the alignment, proceeding from north to south, as depicted in Figure 4-21.

Greenacres (Rosedale) Subsection (see Figure 4-22)

Key Viewpoint 10: Verdugo Lane. Key viewpoint 10 (Figure 5-13) is taken from Verdugo Lane in the community of Greenacres (Rosedale), looking south to an at-grade segment of the BNSF Alternative Alignment right-of-way. Greenacres (Rosedale) is an unincorporated suburb northwest of Bakersfield. For virtually the entire 3.6-mile length of this segment, the project alignment would either require relocation of residences, or pass within very short distances of adjacent residences, sometimes abutting them. Over one thousand homes are within 0.5 mile of the alignments in this segment. As depicted in Figure 5-13, visual effects of the project in the at-grade segment in Rosedale would be minor. The project would appear as a limited length of up to 14-foot-high soundwall at the end of streets abutting the project right-of-way. The soundwalls could potentially have an industrial character that appears out of place in the residential setting, resulting in a moderate decline in visual quality. This adverse impact could be avoided with decorative soundwall color or texture treatment, or planting of vines, as described under Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures. The residual level of impact with these measures would be negligible.

Key Viewpoint 11: Palm Avenue. Key viewpoint 11 (Figure 5-14) is taken from Palm Avenue in the community of Greenacres (Rosedale), looking east. A short distance north of Palm Avenue, the BNSF Alternative Alignment would become elevated as depicted in the simulation, and remain elevated to the project terminus in east Bakersfield. The guideways would rise to an ultimate height of roughly 65 feet to track height, with 24-foot OCS poles above. In this location near the beginning of the elevated section, the guideways are seen at a lower height.



a. Existing View



b. Simulated View

Figure 5-12
Key viewpoint 9: existing and simulated
views of high-speed train from Colonel
Allensworth State Historic Park



a. Existing View



b. Simulated View

Figure 5-13
Key viewpoint 10: existing and simulated views
of high-speed train on BNSF Alternative
Alignment at-grade in Rosedale/Greenacres
from Verdugo Lane, looking south



a. Existing View



b. Simulated View

Project impacts on visual quality along the elevated section in Rosedale would be strongly adverse. Though the existing setting is not especially memorable (“vivid”), declines in intactness, unity, and overall visual quality would be very strong. The project would introduce a highly dominant concrete structure of industrial character and up to 65 feet in height into the single-story, low-density setting, and this structure would become the primary visual focus within at least a 0.25-mile corridor surrounding the right-of-way. The structure would exert a dominant presence over adjacent residences. In the context of high anticipated viewer response in this setting, impacts would be substantial. For adjacent properties, the effects of the tall structures would be exacerbated by ground-level views of right-of-way security fencing and the cleared land beneath the guideways.

To address these impacts, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, and VIS-MM-2, Onsite and Offsite Landscape Screening, are recommended. Residual impacts with these measures, however, would remain substantial.

Calloway Drive to Kern River Subsection (see Figure 4-24)

Key Viewpoint 12: Kern River Crossing. Key viewpoint 12 (Figure 5-15) is located along the Kern River Parkway Trail north of Truxtun Avenue about 1.2 miles west of Highway 99 and is approximately 600 feet from the right-of-way. Figure 5-15 depicts the Kern River crossing of the alignment as seen from this viewing position. The guideways are roughly 65 feet high to track height in this location, with 24-foot OCS poles above. The viewpoint is located toward the northeastern limit of a highly improved portion of the river parkway extending roughly 2 miles east of Coffee Road. The parkway in this reach of the river includes extensive riparian habitat restoration and tree planting, a year-round artificial lake, extensive turfed and landscaped parklands, and bike and walking trails. As depicted in Figure 5-15, the project would introduce a highly dominant feature of very urban character into views within the parkway, particularly those within roughly 0.25 mile of the alignment. Vivid elements, including views of an extensive stretch of the Kern River, mountains in the distance to the northeast, and an expansive skyline, would be compromised and partially blocked by intrusion of the structure into the visual foreground. Intactness and unity of views of the river and parkway would also be compromised by intrusion of the urban, industrial structure into a foreground presently dominated by natural features. Overall, the project would result in a strong decline in the overall quality of views from points along the parkway. In the context of moderately high viewer response in this area, this would represent a substantial impact. Because scenic views of the river corridor and mountains are themselves an important part of the existing visual quality of the river corridor and parkway, screening by landscape planting cannot constitute the only mitigation strategy in this location, since it would also result in additional blockage of views.

Consequently, to address impacts in this location, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, is recommended. Mitigation Measure VIS-MM-2 is also recommended, as described in greater detail in Chapter 7 of this report.



a. Existing View



b. Simulated View

Figure 5-15
Key viewpoint 12: existing and simulated views
of high-speed train on BNSF Alternative
Alignment from Kern River Parkway
Bicycle Trail, looking north

Highway 99 at Alignment Crossing. The project alignment would cross Highway 99 immediately east of the Kern River. Because of its location near the primary interchange/off-ramp leading from Highway 99 to downtown, the prominent project structures spanning the freeway would exert a gateway effect to southbound motorists entering the city from the north. The project overcrossing of Highway 99 would be prominent in views from the freeway for only a short distance and brief period of travel, and is thus not expected to strongly lower visual quality from this short affected segment of freeway. However, because of the potential gateway effect resulting from its interaction with the downtown interchange, the structural design considerations recommended for the Kern River crossing segment under Mitigation Measure VIS-MM-1 are also recommended for this portion of the alignment. Attractive structural forms and decorative surface treatments should be applied at the highway overcrossing to avoid detracting from the city entry experience.

Central Bakersfield Subsection (see Figure 4-26)

Key Viewpoint 13: Central Bakersfield Residential Viewers (No Simulation). For roughly 0.5 mile between Oak Street to the west and Mercy Hospital and Bakersfield High School to the east, the alignment would pass within 650 feet (0.12 mile) of residences on 16th Street to the north, within similar distances of residences south of California Avenue to the south, and within 0.25 mile of Jastro Park and other residences in the surrounding neighborhoods (see Figure 5-16). Other residences west of this segment and south of California Avenue would also fall within near-foreground distances of the alignment, although they would not directly face it as in this segment. For viewers within roughly 0.25 mile in these residential areas, the guideways would be a prominent feature in views down north-south-oriented streets. These views would be filtered by tall trees and homes in the foreground, which would tend to limit views directed along the north-south-oriented street corridors in the neighborhoods; that filtering effect would increase with distance. However, within a roughly 0.25-mile zone, and for homes on 16th Street and California Avenue, the contrasting scale and character of the tall concrete structures could not be ignored, and would result in a moderately strong decline in the intactness, unity, and overall visual quality of the existing residential setting. In the context of high viewer response typical of residential neighborhoods in close proximity to the elevated alignments, this would represent a substantial impact.

Existing tall tree plantings in the center median of California Avenue partly filter views toward the project from the south. In-fill planting to increase the density of that screening would substantially lower visibility of the guideways to the south in the long term. Consequently, Mitigation Measure VIS-MM-2, On- and Offsite Landscape Screening, is recommended in that location. To reduce the incompatible industrial character of columns and guideways, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, is also recommended.

Key Viewpoint 14: Bakersfield High School. Key viewpoint 14 (Figure 5-17) depicts the view of the alignment from the stadium bleachers at Bakersfield High School, looking northeast at a distance of approximately 500 feet. The guideways would remain in a two-track configuration roughly 60 feet high in this segment. The alignment would cross through the school campus immediately to the north of 14th Street, necessitating the removal of two school buildings and introducing a highly dominant, incongruous presence into the immediate visual foreground of the north side of the campus. The centerline of the alignment would be less than 150 feet from the school stadium, main campus entrance, and quad.



a. 14th Steeet, looking east.

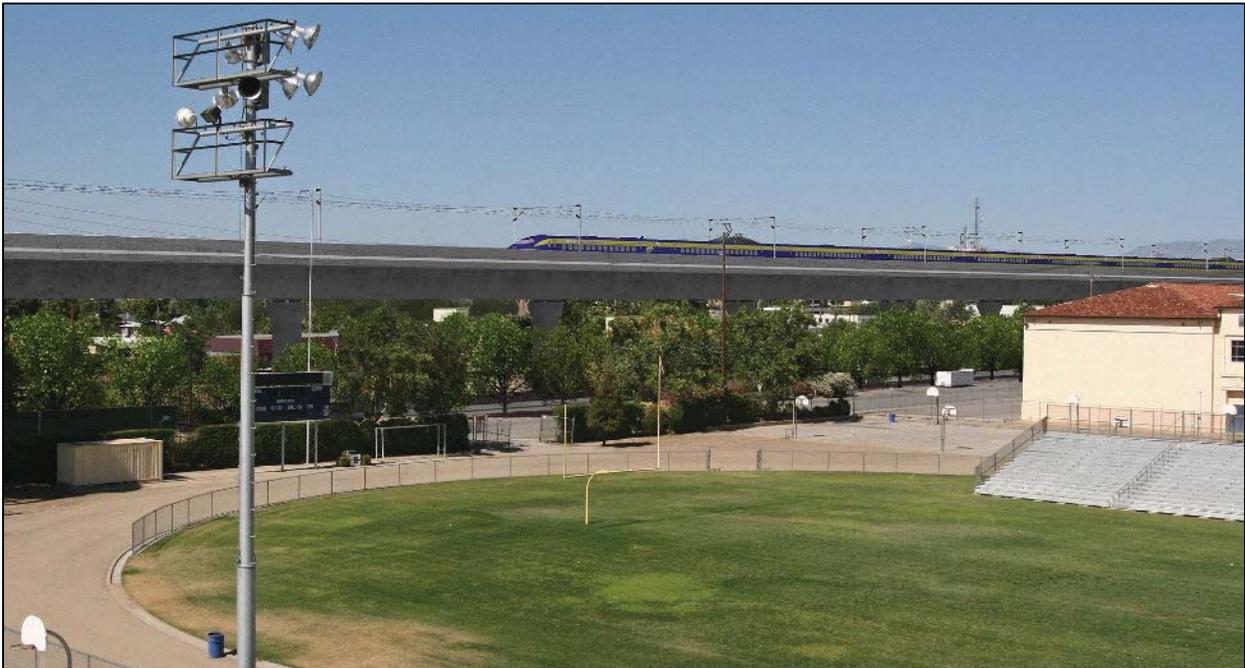


b. Jastro Park, looking south.

Figure 5-16
Key viewpoint 13:
Views of BNSF Alternative Alignment from
Central Bakersfield Residential Neighborhood



a. Existing View



b. Simulated View

Figure 5-17
Key viewpoint 14: existing and simulated views of
high-speed train from Bakersfield High
School stadium, looking northeast

Existing views from Campus Drive and 14th Street include rail yards, a parking lot, and school buildings of undistinguished architecture, seen against a background of more rail lines and of industrial and commercial development with little unity or visual distinction. The existing quality of such views is thus moderately low. However, unsightly off-campus views to the north from points within the campus are largely blocked by the Industrial Arts building and street trees along 14th Street. Views within the campus are thus somewhat enclosed, focusing attention inward and enhancing visual quality within the campus, which thus remains moderate.

Without mitigation, the project would introduce a highly dominant 6-foot-tall concrete structure of incompatible, industrial character, which would replace existing campus buildings with an area of cleared land enclosed by security fencing, and expose unsightly views of rail yard and industrial development. Together, these effects would represent a strong decline in visual quality of the campus, from moderate to low quality, particularly along 14th Street. In the context of high viewer response in this location, this impact would be substantial. The FHWA method also accounts for situations of particularly high levels of concern for local goals and values. In this situation, local goals and values are of sufficient concern that viewer sensitivity is considered very high. In addition, portions of the high school have been found to be eligible national historic properties, further heightening the sensitivity of views from and of the campus.

Because the alignment is located north of the school campus, shadow impacts would not be anticipated.

To screen views of the guideways as well as unsightly views off-campus exposed by the proposed removal of buildings north of 14th Street, Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, is recommended.

Key Viewpoint 15: Central Business District Viewers (Views of Guideways). Key viewpoint 15 (Figure 5-18) depicts the view from L Street near Truxtun Avenue, looking south toward the alignment, and represents a typical view of the guideways in the near foreground of Downtown Bakersfield. For roughly 1 mile between Bakersfield High School and Union Avenue, the alignment parallels the heart of the downtown CBD, located along the Truxtun Avenue corridor to the north. As in the city of Fresno, due to the guideways' considerable height, central location, and prominence through the entire length of the central city, the project would be visible over a large area of downtown to distances of 0.5 mile or more, and become a landmark of the city skyline. Thus, although the project's actual site consists of industrial and rail yard areas of low visual quality, its visual influence would extend far beyond, into heavily used areas of the CBD. Views of the guideways would be largely restricted to narrow, focally directed views down north-south-oriented boulevards constrained by foreground development lining the streets. This screening effect would be particularly true in the densest parts of the CBD, where the guideways would often remain visually subordinate to the numerous mid-rise buildings in the foreground. Although views of the guideways would thus be limited from any particular spot, because of the guideways' pervasive visibility down streets throughout the area and because of their central location through downtown, public awareness would be high. Potentially affected viewers in the central downtown consist primarily of visitors and workers at commercial destinations; however, based on the high concentration and type of use (recreational, visitor-serving, governmental, etc.) and the general importance of the downtown/Truxtun corridor image, viewer sensitivity is considered high, and anticipated overall viewer response potentially moderately high.



a. Existing View



b. Simulated View

Figure 5-18
Key viewpoint 15: existing and simulated views
of high-speed train from L Street near Truxtun
Avenue in Downtown Bakersfield

As depicted in the simulation, within a roughly 0.5-mile zone, prominence of the project could be high, and its effects on visual intactness and unity within the downtown strong. The prominent horizontal line of the guideways at the visual horizon would contrast with the characteristically vertical forms of taller downtown buildings and block a portion of the sky. The guideways would increase the existing urban character and alter the skyline. To the extent that the guideways exhibit an industrial, utilitarian character, they could appear incompatible with the adjacent office, government, institutional, and commercial uses. They could thus detract from the moderately high visual quality of much adjoining downtown development, reducing the intactness and unity of the setting. Overall, the guideways would have a moderate to strong adverse effect on visual quality of the setting, depending on the location. In the context of moderately high viewer response, this decline in visual quality would be substantial.

To reduce incompatibility in the character of the guideways and columns, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, is recommended throughout the Downtown Bakersfield segment, as described in Chapter 7 of this report.

Key Viewpoint 16: Central Business District Viewers (Views of Bakersfield Station–North Alternative). Key viewpoint 16 (Figure 5-19a) is taken from Truxtun Avenue, across the street from the Bakersfield Convention Center, seen in the foreground, looking southeast toward the proposed Bakersfield Station–North Alternative. A portion of the Amtrak station is visible in the background of the photo, at the right of the frame.

As shown in Key viewpoint 16, predominantly low-rise development south of Truxtun Avenue east of Q Street exposes open views of the station and guideways from points along Truxtun Avenue that are blocked by taller, large-scale office and government buildings farther to the west, toward the center of downtown.

General dimensions of the proposed station were described in Section 5.2.1, Project Visual Description. The architecture of the proposed station is not yet final, and it is thus shown in the simulation in conceptual form to depict the bulk, massing, and general visual scale. However, the overall station footprint, layout, volume, and scale as depicted in the simulations reflect the detailed proposed conceptual design as developed during the station-planning process to date. Figures 5-19b and 5-19c depict two levels of possible station design treatment. The upper images depict a simpler “functional” design; the lower images depict a more elaborate “iconic” design treatment. The final, specific level of design will be determined through the station-planning process and city design review.

As suggested in these views of both functional and iconic treatments, with high-quality final design, the main station would complement the surrounding high-profile uses and predominantly modern architecture in the central downtown area, and would represent a memorable (vivid) addition to the downtown area. The large structures would be of greater scale than many of the predominantly mid-rise structures in the area, but similar in scale to several other existing buildings of varying heights in the nearby vicinity. Extensive streetscape landscaping associated with the project would contribute added vividness to the station architecture and intactness to the surrounding setting. There would be a high degree of consistency between the existing foreground of civic and commercial uses and the proposed form, scale, and character of the station. Existing intactness and unity would thus be retained, and vividness enhanced, as noted. Overall, the station would have a beneficial impact on the setting.

As also suggested in the simulations, the more industrial appearance of the guideways, if left as unadorned concrete structures without articulation, ornament, or other design consideration, would contrast noticeably with both the station and its existing surroundings. This potential impact and recommended mitigation were addressed above under Key viewpoint 15.



Source: William Kanemoto & Associates, 2010; VBN Architects, 2011

Figure 5-19a
Key viewpoint 16: Bakersfield Station - North Alternative, existing view



a. Conceptual Station Design (Functional Design Treatment)



b. Conceptual Station Design (Iconic Design Treatment)

Figure 5-19b
Key viewpoint 16: Bakersfield Station - North Alternative
from Truxtun Avenue, visual simulations



a. Conceptual Station Design (Functional Design Treatment)



b. Conceptual Station Design (Iconic Design Treatment)

Figure 5-19c
Key viewpoint 16: Bakersfield Station - North
Alternative, visual simulations

Source: William Kanemoto & Associates, 2011; VBN Architects, 2011; Newlands and Company, 2011

As seen from viewpoints nearer the project right-of-way, the project would be seen within the existing industrial and rail yard setting, characterized by low visual quality. In that setting, the proposed station and associated streetscape development would represent a beneficial impact.

The south side of the proposed station would be developed in an area that is currently industrial in use, characterized by warehouses, manufacturing and storage facilities, and very low visual quality. The site of proposed station and associated facilities is not currently visible from any publicly accessible vantage points in the existing setting, and for that reason it has not been depicted in this analysis. There are currently no sensitive receptors in the vicinity. As depicted in the proposed conceptual station site plan and city-approved specific plans, this area south of the station site would be rezoned and redeveloped to include various mixed-use developments, converting the existing industrial area into a more mixed-use setting. This long-term trend would represent a substantial improvement of the future visual quality of the area. This potentially beneficial cumulative impact is also discussed in Chapter 6 of this report.

From Union Avenue eastward to the project terminus at Baker Street, the BNSF Alternative Alignment would continue for approximately 0.5 mile over a predominantly industrial area of very low visual quality and sensitivity. In the absence of any sensitive viewer groups, project impacts in that area would be negligible. However, the alignment would also require removal of a small number of residences on Dolores Street, and would directly adjoin remaining residences in a small residential neighborhood beginning at Kern Street. Adverse impacts due to the visual quality and character of the elevated guideways on adjacent, high-sensitivity residential viewers would be strong. Impacts on these residents would thus be substantial.

To address this impact, Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, is recommended.

Corcoran Elevated Alternative Alignment

Under the Corcoran Elevated Alternative Alignment, the project would follow the existing BNSF right-of-way, but would be elevated between roughly Niles Avenue in the north to 4th Avenue to the south of Downtown Corcoran. Impacts would be similar to those described under the BNSF Alternative Alignment in the towns of Wasco and Shafter. Due to the scale and height of the elevated guideway, the guideway's effects would strongly intrude into adjacent areas within the foreground distance, up to 0.25 mile. The project would be prominent in sight lines down perpendicular streets within foreground distances, and it would sometimes be visible above nearby rooftops to high numbers of viewers.

Key Viewpoint 17: Corcoran Elevated Alternative from Whitley Avenue. Key viewpoint 17 (Figure 5-20) is taken from Whitley Avenue, Corcoran's main street, near the intersection of Otis Avenue and the Amtrak station, looking east. Strong adverse effects to existing visual intactness and unity would result from the introduction of this visually dominant feature of urban, industrial character into the small agricultural town setting. Due to its central location adjacent to the downtown center, the elevated guideways would exert a strong influence on the image and character of the town, altering the prevailing scale and introducing a strongly urban, industrial character into the town center. Nearby residents, park users, and visitors to the town's main streets would experience strong declines in visual quality. These effects would be exacerbated wherever sound walls are required. In the context of moderately high to high viewer response of adjacent residents and visitors to the town's central business district, the elevated guideways would substantially degrade the existing visual character or quality of the area within roughly 0.25 mile. This would be a substantial impact.



a. Existing View



b. Simulated View

Figure 5-20

Key viewpoint 17: existing and simulated views of Corcoran Elevated Alternative Alignment from Whitley Avenue near Otis Avenue, looking east

Father Wyatt Park, a small active-use neighborhood park in Downtown Corcoran that includes a softball diamond, lies within 145 feet to the northeast of the alignment centerline. Consequently, in addition to potential visual intrusion from the adjoining guideways and columns, the park would experience substantial shadow from the elevated guideways during mid- to late-afternoon hours through much of the year. However, the park would be unaffected by the project's shadow during morning and early midday hours. Because substantial shading of parks is a criterion for shadow impacts in this study, this impact is considered potentially substantial. Furthermore, the planting of tall trees at the western park boundary to provide visual screening of the guideways could contribute further to these shadow effects. These impacts are thus potentially substantial, and unavoidable.

To address impacts of the Corcoran Elevated Alternative Alignment, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, and Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, are recommended, as described in detail in Chapter 7 of this report. Even with these measures, however, impacts would remain substantial.

Corcoran Bypass Alternative Alignment

The Corcoran Bypass Alternative Alignment is located a short distance to the east of the Corcoran city limits, passing entirely through sparsely populated agricultural lands, and would be entirely at-grade. Primary visual effects of this alternative would include views of the at-grade alignment at very short distances, and views of earth embankments and bridges of new road overcrossings at Van Dorsten/5-1/2 Avenue and Corcoran Highway at 5th Avenue. Affected viewers of this alternative would be limited to a small number of rural residents within 0.25 mile of the alignments. A small number of homes (roughly one dozen) could be removed for this alternative, and a small number (roughly two dozen) of the remaining residences would lie within 500 feet or less of the right-of-way or roadway overcrossings. Though few in number, these high-sensitivity, high-exposure viewers could experience strong adverse impacts on visual quality from foreground views of the overcrossing. In the context of viewers' high level of viewer sensitivity and response, this impact is considered substantial. Under the Corcoran Bypass Alternative Alignment, impacts on residences on Patterson Avenue in central Corcoran due to a new adjoining road overcrossing and retaining walls under the BNSF Alternative Alignment would not occur.

To address impacts on affected residences, Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, is recommended for the homes adjacent to the right-of-way or highway overcrossings, if requested by owners.

Wasco-Shafter Bypass Alternative Alignment

The Wasco-Shafter Bypass Alternative Alignment would bypass the towns of Wasco and Shafter a short distance to the east of their city limits, passing entirely through sparsely populated agricultural lands. The alignment would be sited entirely at-grade. Affected viewers of this alignment would be limited to two or three homes remaining within 200 feet of the alignment, and less than one dozen within 0.25 mile of the alignment or project roadway overcrossings. This small number of high-sensitivity/high-exposure viewers could experience substantial declines in visual quality.

To address impacts on affected residences, Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, is recommended for the homes adjacent to the highway overcrossing if requested by owners.

Allensworth Bypass Alternative Alignment

Key Viewpoint 20: Allensworth Bypass. Key viewpoint 20 (Figure 5-21) depicts the Allensworth Bypass Alternative Alignment as seen from Colonel Allensworth State Historic Park at a distance of roughly 1 mile, looking west. As depicted in this view, the project would be at-grade in this segment and remain very visually subordinate to the setting, becoming somewhat more visible when the HST trains passed by, but remaining subordinate. The overall effect on the existing visual quality of the park setting would be subtle and minor.

The Allensworth Bypass Alternative Alignment passes through an area nearly devoid of residents. Consequently no potential sensitive visual receptors outside of the park were identified for this alternative alignment segment.

Bakersfield South Alternative Alignment

Impacts under the Bakersfield South Alternative Alignment would be substantially similar to those described under the BNSF Alternative Alignment, except as otherwise detailed below.

Under the Bakersfield South Alternative, the project guideways would be located approximately 450 feet north of the BNSF Alternative in the vicinity of Bakersfield High School. Although the guideways would remain prominent, their visual dominance would be reduced with increased viewing distance. They would remain partially screened by the intervening existing trees and structures, including the Industrial Arts building north of 14th Street, which would remain. Overall change to visual intactness and quality would remain moderate. Despite the high level of viewer response, impacts would thus remain moderate.

Key Viewpoint 21: Central Business District Viewers (Bakersfield Station–South Alternative). Key viewpoint 21 (Figure 5-22) is taken from S Street south of Truxtun Avenue in front of the existing Amtrak station. The Bakersfield Station–South Alternative would be located 400 to 500 feet south of the Bakersfield Station–North Alternative. Consequently, the station would be less exposed to public viewpoints, including those from Truxtun Avenue, than the North Alternative station. However, overall, visual effects would be similar to those of the North Alternative. As seen from viewpoints near the project right-of-way, the project would be seen within the existing industrial and rail yard setting, which is of low visual quality. In that setting, the proposed station and associated streetscape development would represent a beneficial impact on the setting.

As seen from Truxtun Avenue, the station would be compatible in scale with the surrounding predominantly modern architecture in the central downtown area and would greatly enhance vividness. Extensive streetscape landscaping associated with the project would contribute added vividness to the station architecture and intactness to the surrounding setting. Overall, there would be a high degree of consistency between the existing foreground of civic and commercial uses and the proposed form, scale, and character of the station.



a. Existing View



b. Simulated View

Figure 5-21
Key viewpoint 18: existing and simulated views
of high-speed train on Allensworth Bypass
Alternative, looking west from Colonel
Allensworth State Historic Park



a. Existing View



b. Conceptual Station Design (Functional Design Treatment)

Figure 5-22
Key viewpoint 19: Bakersfield Station - South
Alternative from S Street

As with the BNSF Alternative Alignment, the south side of the proposed station would be developed in an area that is currently industrial, characterized by warehouses and manufacturing and storage facilities, and is of very low visual quality. The site of the proposed station and associated facilities is not visible from any sensitive public viewing positions in this area south of the station site, and for that reason it has not been analyzed further. As with the BNSF Alternative Alignment, the area south of the station site under the Bakersfield South Alternative Alignment would also be rezoned and redeveloped to include various mixed use developments, converting the existing industrial area into a more mixed-use setting. This long-term trend would represent a substantial improvement of the future visual quality of the area.

As under the BNSF Alternative Alignment, the Bakersfield South Alternative Alignment would proceed eastward through a predominantly industrial area of low visual quality and sensitivity, but would also enter the visual foreground of a residential neighborhood in the vicinity of Butte Street, requiring removal of some homes and causing strong reductions in visual quality for the remaining affected homes. Although the number of affected homes would be limited, their sensitivity and response would be high, and impacts would be potentially substantial.

To address potential impacts of the Bakersfield South Alternative Alignment, Mitigation Measure VIS-MM-1, Elevated Guideway, Retaining Wall and Soundwall Design Measures, and Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, are recommended.

Heavy Maintenance Facility Alternatives

A 154-acre HMF could be located in one of four possible locations: in rural Fresno (the Fresno Works–Fresno HMF site); near Hanford (the Kings County–Hanford HMF site); or in rural Kern County (either in the vicinity of Wasco [the Kern Council of Governments–Wasco HMF site] or in the vicinity of Shafter [the Kern Council of Governments–Shafter HMF site]). Two of these sites are located in the Hanford segment of the BNSF Alternative Alignment. The other two are located in rural Kern County, one east of the town of Wasco, the other in a relatively sparsely populated area north of Seventh Standard Road southeast of Shafter. The 154-acre facility would transform a large surrounding area into one with an industrial character and represent a strong decline in the quality of views from any rural residences located within 0.25 mile. All four sites under study are located within a few hundred feet of rural residences, though the number of affected homes varies between sites. Also, the HMF study areas are much larger than the actual facility, and the precise siting of the facility within the study areas is not yet known. Site-specific impacts thus cannot be determined with certainty at this time, nor can relevant key viewpoints or sensitive receptors be identified. The first site, located east of Easton, would be located within a short distance of a large number of rural residences and could have visual effects on an eligible National Register historic district, the Washington Irrigated Colony, near Easton. The Wasco site would also be vulnerable to substantial impacts, given the high concentration of nearby residences. Of the four potential sites, these two sites would therefore be most vulnerable to substantial visual impacts. Activity at all four sites would, without mitigation, represent potentially substantial impacts on nearby rural residents with high anticipated viewer response.

To reduce adverse impacts of the HMF facility on nearby rural residences, Mitigation Measure VIS-MM-2, Onsite and Offsite Landscape Screening, is recommended, as described in Chapter 7 of this report.

Impacts on rural residents from night lighting and light pollution from the facility are also a concern. Without adequate mitigation and design measures, station and parking lot lighting could contribute to nighttime light pollution in areas that currently enjoy dark night skies.

To reduce this impact, Mitigation Measure VIS-MM-4, Operational Night Lighting Measures, is recommended.

Scenic Vistas and Highways

BNSF Alternative Alignment

No listed or eligible state scenic highways, and no adopted local scenic highways or roadways, were identified within the viewshed of this alternative. Consequently, no impacts on scenic highways are anticipated.

No formally designated scenic vistas or vista points were identified in the visual foreground of the project within which project features could cause substantial view blockage or impairment to scenic views or view corridors.

Where areas of high existing visual quality have been identified in the general analysis of aesthetics and visual impacts, above, views of important scenic features seen by substantial numbers of sensitive viewers could be regarded as constituting informal scenic vistas.

The principal such instance is the view of the Kern River and Greenhorn Mountains by recreational visitors in the Kern River Parkway in west Bakersfield. For recreational users of the parkway, views of the river and mountains are among its principal attractions. Distant views of the river and mountains to the northeast would experience visual intrusion and blockage by the proposed project river crossing, as depicted by the visual simulation of Key viewpoint 12 (Figure 5-15). While impacts on foreground views of the river could be reduced by structural design measures and additional parkway landscaping, blockage of distant views up the river and to the mountains could not be mitigated.

No other instances of scenic view blockage were identified for the BNSF Alternative. While views of the Sierra and Coast Range mountains are sometimes prominent and scenic in the San Joaquin Valley, they are more typically obscured by haze and smog and are not typically the focus of attention for viewers in the vicinity of the project alignments. To the extent that views of the mountains do represent scenic vistas, however, they would not be precluded by the project. New scenic views of the valley would be provided to future HST passengers by the elevated viewing position provided in the elevated project segments, which would create unusual panoramic, distant views that are otherwise rare in the valley due to its uniformly level terrain.

Other High-Speed Train Alignment Alternatives

Effects of the non-BNSF alignment alternatives on scenic vistas would be substantially similar to those under the BNSF Alignment. Obstruction of long-distance views of the Central Valley in general could be somewhat less under the non-BNSF alignment alternatives, due to a smaller overall amount of elevated guideway. However, obstruction of outstanding, identifiable scenic features would not differ substantially from the BNSF Alternative under the various non-BNSF alternative alignments.

Effects of the Bakersfield South Alternative Alignment on views from the Kern River Parkway would be similar to those under the BNSF Alternative Alignment and would be substantial.

Historic Buildings, Neighborhoods, and Landscapes

BNSF Alternative Alignment

Section 106 of the National Historic Preservation Act requires projects with federal participation to take into account the effects of the undertakings on historic properties. Over 70 properties were identified for study as historic properties in immediate proximity to the project alternative alignments. Of these, 23 properties within the project's area of potential effects (APE) were found to be potentially affected by the project or alternatives (Authority and FRA 2011c). Some

of these properties would be removed or relocated as a result of the project. Due to their proximity to the alignments and the large scale of the project features, all historic properties not removed or relocated could experience prominent visual effects on their setting from the project features if located within 0.5 mile or less of the alignment.

Under 36 CFR 800.5(a)(2), adverse effects on historic properties may include “introduction of visual, atmospheric or audible elements that diminish the integrity of the property’s significant historic features...” Specifically, historic properties whose eligibility for state or federal listing depends on the criteria of *integrity of setting or feeling* could experience adverse historical impacts from such visual effects. Numerous eligible historic properties fall within 0.5 mile of the project. However, it is important to note that historic status of a property does not necessarily imply visual sensitivity. Many historic properties would *not* rely on the criteria of integrity of setting or feeling for their eligibility, and so are not expected to be adversely affected by or vulnerable to project visual effects.

The project’s Findings of Effect study identified the following 13 properties whose historic value could be adversely affected by *visual* impacts under the BNSF Alternative Alignment. The following list is included for informational purposes only. Findings related to impacts on historic properties may be found in the *California High-Speed Train Fresno to Bakersfield Section: Historic Property Survey Report* and the *California High-Speed Train Fresno to Bakersfield Section: Findings of Effect Report* (Authority and FRA 2011c, 2011b).

- Southern Pacific Railroad Depot, Fresno
- Basque Hotel/E.A. Walrond Building, Fresno
- Holt Lumber Company, Fresno
- South Van Ness Entrance Gate, Fresno
- North Branch of the Oleander Canal, Fresno County
- Washington Canal, Fresno County
- Vierra Farm, Hanford
- Allensworth Historic District, Allensworth
- Santa Fe Freight Depot, Shafter
- San Francisco & San Joaquin Valley Railroad Section House, Shafter
- Harvey Auditorium, Bakersfield High School, Bakersfield
- Stark/Spenser Residence, Bakersfield
- Residence, 1031 E. 18th Street, Bakersfield
- Residence, 2509 E. California Avenue, Bakersfield

Section 4(f) of the Department of Transportation Act calls for the preservation of the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Sixty-one properties were found to constitute 4(f) properties under Section 4(f) of the DOT Act, under all project alternatives. Of these, seven properties were found to have potential direct use impacts under the BNSF Alternative Alignment, and five were found to have potential temporary use impacts. Parks and wildlife areas in this group have been analyzed in detail in the “Environmental Consequences” discussion of the BNSF Alternative Alignment (Chapter 5). Historic sites in this group are referenced in the discussion of Section 106 properties, directly above. All potential instances of “constructive use” under Section 4(f), which would include impacts due to visual effects, were found to be *de minimis* with recommended mitigation measures (Authority and FRA 2011a).

Other Alignment Alternatives

The Draft Project Finding of Effect (FOE) Study identified the following five properties as adversely affected by, among other project effects, direct or indirect visual impacts on their integrity of setting or feeling under the non-BNSF alternative alignments:

- Joe O'Brien Stables, Shafter—Wasco-Shafter Bypass Alternative.
- Kern County Civic Administration Center, Bakersfield—Bakersfield South Alternative.
- Stark/Spenser Residence, Bakersfield—Bakersfield South Alternative.
- San Joaquin Cotton Oil Company, Bakersfield—Bakersfield South Alternative.
- 2509 E. California Avenue, Bakersfield—Bakersfield South Alternative.

The Wasco-Shafter Bypass Alternative Alignment would not affect the Shafter Train Depot in downtown Shafter and therefore would result in less impact than the Through-Wasco-Shafter segment of the BNSF Alternative Alignment. The Allensworth Bypass Alternative Alignment would not affect Colonel Allensworth State Historic Park to a substantial degree, and would therefore result in less impact than the BNSF Alternative in that location.

Of the 61 properties found to constitute 4(f) properties under Section 4(f) of the DOT Act, all were found to constitute *de minimis* impacts under all non-BNSF alternatives, with the following exceptions: Amtrak Station Playground, Kern County Civic Administration Center, and Bakersfield High School would each experience direct use impacts from the project (Authority and FRA 2011c). Potential constructive use impacts resulting from the specifically visual effects of the project could be addressed by the mitigation measures recommended in Chapter 7 of this report.

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Chapter 6

Cumulative Impacts

6.0 Cumulative Impacts

6.1 Introduction

This analysis compares the proposed alignments with the projects identified for cumulative impact analysis, to identify which projects and plans could be visible from vantages that could also include project facilities (see Appendix C for a map and list of cumulative projects). A 0.5-mile distance from the alignment (area of effect) was used to narrow the list of cumulative projects that could have visual impacts that would overlap with those of the HST project. This radius of effect also applies to sites of indirect effects, where known.

The cumulative project list was further refined by reviewing the remaining projects for their potential for any visual impacts. Projects with no surface features (e.g., sewer line projects) or that would not have any visual impacts (such as pavement resurfacing or expansion of existing agricultural uses) were culled from the list. Overlapping construction impacts from the HST project and these projects would, if occurring in the same timeframe, have potential temporary cumulative construction-related impacts. However, it is assumed that the project-specific mitigations for the construction impacts of each project would also reduce their combined, cumulative impacts. For example, under Mitigation Measure VIS-MM-6, the HST project would avoid staging near sensitive receptors or would screen views of staging sites with opaque perimeter fencing. Nighttime construction lighting would be shielded and restricted to the construction area, and post-construction disturbances would be restored to their original condition.

Although specific measures of contributing cumulative projects are not known, it is assumed that where project-specific construction measures would be adverse, corresponding project-specific measures would be required. In that case, any cumulative overlapping construction impacts would also be anticipated to be minor and temporary.

The remaining projects are discussed below. Additionally, four specific plans (Coberly Park, Heritage Ranch, Mission Lakes, and Orchard Park) in the Shafter area were reviewed for potential overlapping effects with those of the HST project.

The remaining projects that could contribute to cumulative impacts with the HST project were further reviewed to determine if they coincided with the most visually prominent project reaches—those sections of the alignment that would be elevated or include other large structures such as stations. This was done in order to better define the HST project's "cumulatively considerable" contribution. (If the rail structures were more visually prominent, they would have a greater contribution to cumulative impacts). Other overlaps of the project alignment also are considered in this evaluation, and their contribution would be cumulatively considerable if the surrounding visual context were judged to be of high quality, the project would present a substantial contrast to existing visual quality, or the site is otherwise visually "sensitive."

6.2 Impacts and Mitigations

6.2.1 City of Fresno Projects

Projects within the HST project's visual area of effect in the city of Fresno include the Fresno Freight Rail Alignment Project, the Ventura Boulevard Widening, a new city of Fresno 3,000,000-gallon storage tank, the SR 99 Monterey Bridge replacement, the CARTS Trucking Yard, and the SR 99 Cedar/North Avenue interchange upgrade. The HST project's facilities would be at-grade in the vicinity of these projects.

A. IMPACT: REDUCED VISUAL QUALITY OF HST VIEWSHED

The HST project and the projects listed above would each contribute incrementally to visual impacts on the surrounding viewshed. The overall change in visual character due to these projects would not be expected to be substantial because all of these projects, as well as the proposed project, would be in areas that are already industrial/transportation infrastructure in character and partially adjacent to elevated highways. The HST project and these other projects would contribute to an intensification of these impacts but not adversely change the overall visual character or quality of the project visual setting.

The HST project's incremental contribution would not be cumulatively considerable because its interaction with all of the identified cumulative projects would be in the context of the industrial/transportation corridor in which they would all occur, which is characterized by very low visual quality and the absence of sensitive receptors. Further, the projects are not expected to cumulatively affect more visually sensitive areas or receptors outside of that corridor.

B. MITIGATION

No mitigation needed.

6.2.2 Villagio and Garner Basin Projects Detention/Recharge Basins

The Villagio and Garner Basin projects, located near the city of Hanford, have both proposed detention/recharge basins near the railroad tracks. The main features of the Villagio project lie outside of the HST project area of visual influence.

A. IMPACT: REDUCED VISUAL QUALITY FOR RESIDENTS AND MOTORISTS IN PROJECT SEGMENT EAST OF CITY OF HANFORD

Depending on the precise design and siting of the combined retention basins of the Villagio and Garner Basin projects, these could potentially contribute considerably to the already substantial project impacts anticipated in this segment due to impacts of the elevated guideways on nearby residents, and could also contribute to cumulative impacts of the combined projects as seen from Eighth Avenue and/or Lacey Boulevard. Cumulative impacts of these three projects are thus potentially substantial.

B. MITIGATION

Because HST project impacts in this location are not considered fully mitigable in the short term, mitigation of the cumulative effects in this location would require siting, design, or landscape screening measures on the part of the retention basin projects. With such measures, cumulative impacts could be reduced. Potentially overlapping construction impacts of the cumulative projects would be as discussed above, and are assumed to be mitigable with project-specific mitigation measures.

6.2.3 Corcoran Police Station

The City of Corcoran Police Station would be located in the HST project's visual foreground in Downtown Corcoran.

A. IMPACT: REDUCED VISUAL QUALITY AS SEEN FROM PORTIONS OF DOWNTOWN CORCORAN IN PROXIMITY TO PROPOSED POLICE STATION AND HST

Under the Corcoran Elevated Alternative Alignment, the HST project would be elevated in that area, resulting in combined views of the police station and the elevated HST tracks. However, the

12,000-square-foot police station would be located in an urbanized portion of the central downtown and would be consistent with existing, nearby institutional uses (city hall, fire station) in both character and scale. It would not substantially change the overall visual character or quality of the area, and when combined with the visual impacts associated with the HST project, it would not substantially contribute to adverse cumulative effects on visual quality. The proposed police station would not interact with the BNSF or Corcoran Bypass alternative alignments.

B. MITIGATION

None needed for specifically cumulative impacts.

6.2.4 Wasco Enterprise Zone

The City of Wasco is proposing an Enterprise Zone for the development of a 328-acre industrial park and a 1,053-acre commercial area. The BNSF Alternative Alignment would run near or within this area, and would be elevated.

A. IMPACT: CUMULATIVELY REDUCED VISUAL CHARACTER AND QUALITY WITHIN THE PROPOSED ENTERPRISE ZONE AND IMMEDIATE VICINITY

Cumulative visual impacts of the project and other proposed development within this area would be substantial because they would cumulatively change the appearance of the landscape from open agricultural lands to an urbanized character, substantially lowering the visual quality of the affected Enterprise Zone area. The proposed HST project facilities, which would be elevated and prominent in this segment, would contribute in a cumulatively considerable way to this impact.

B. MITIGATION

The cumulative contribution of the HST could be substantially reduced by sufficient setback of adjacent uses from the right-of-way, and the planting of substantial, large-scale landscape screening. However, the impacts are considered to remain substantial due to the extended period of time needed for landscape screening of this elevated segment to take effect.

6.2.5 Orchard Park Specific Plan

The proposed Orchard Park Specific Plan (residential and commercial development), located in Shafter, would not have cumulative impacts with the BNSF Alternative Alignment, but would overlap and surround the Wasco-Shafter Bypass Alternative Alignment.

A. IMPACT: CUMULATIVELY REDUCED VISUAL CHARACTER AND QUALITY IN EXISTING DOWNTOWN SHAFTER, AND IN THE FORESEEABLE ORCHARD PARK SPECIFIC PLAN AREA

Cumulative visual impacts of the specific plan in combination with the Wasco-Shafter Bypass Alternative would be considerable in that the alternative alignment is not reflected in the specific plan, and would result in adjacencies between the HST and sensitive residential viewers.

B. MITIGATION

These visual impacts could be reduced by adequate site-specific mitigation measures that would, however, require substantial mitigation actions by both the HST and Orchard Park projects. Such measures could include sufficient setbacks from the HST right-of-way to the nearest residences, requiring major alteration of the proposed specific plan layout, and substantial landscape screening at the right-of-way, which could be applied by the HST project. However, the latter measure alone would not be sufficient, because the HST Wasco-Shafter Bypass Alternative would

require alteration of the proposed specific plan layout. It is not known if this specific plan remains a foreseeable project.

6.2.6 North Shafter Sewer Project

The North Shafter Sewer Project also is proposed in the vicinity of the BNSF Alternative Alignment.

A. IMPACT: CUMULATIVELY REDUCED VISUAL CHARACTER AND QUALITY TO RESIDENTS AND MOTORISTS IN NORTH SHAFTER

Because the project consists only of new underground sewer connections to an existing treatment plant, this project would be primarily subsurface in impact, with visually minor aboveground features. As such, it is not anticipated to contribute substantially to long-term cumulative visual impacts in combination with the HST. Potential temporary construction-related cumulative effects were discussed previously.

B. MITIGATION

No mitigation needed.

6.2.7 Rosedale Ranch Project

The Rosedale Ranch project proposes 1,655 acres of residential, commercial, institutional, and light industrial land uses within the area of effect of both the BNSF Alternative Alignment and the Wasco-Shafter Bypass Alternative Alignment.

A. IMPACT: CUMULATIVELY REDUCED VISUAL CHARACTER AND QUALITY AS SEEN BY MOTORISTS AND FORESEEABLE FUTURE RESIDENTS IN THE VICINITY OF THE PROPOSED ROSEDALE RANCH PROJECT

The adjoining portion of the BNSF Alternative Alignment, which would abut the development's western boundary, would be at-grade in this area, resulting in a moderate contribution to cumulative visual and other aesthetic impacts. The Rosedale Ranch project, combined with the HST project, would contribute considerably to the alteration of the landscape, from a rural open agricultural character to urban/industrial/infrastructure. The project would also pass a proposed asphalt and concrete recycling facility adjoining the Rosedale Ranch site, contributing to cumulative effects in combination with that facility.

B. IMPACT: CUMULATIVELY INCREASED HST PROJECT IMPACTS ON ADJOINING RESIDENTS IN GREENACRES (ROSEDALE)

This project would contribute further to the HST project's already substantial impacts on the visual character and quality of views of adjoining residences in Greenacres (Rosedale), as identified and discussed in the analysis of visual resources. The project-specific impacts have already been identified in that analysis as substantial.

C. MITIGATION

Although the project-specific and cumulative impacts could be mitigated to minor levels in the long term by Mitigation Measure VIS-MM-2, Landscape Screening, the project-level impacts, and thus also the cumulative impacts, are considered to remain substantial because of the very long period, likely exceeding 10 years, until effective mitigation could occur.

6.2.8 Bakersfield Commons Project

Farther east in Greenacres (Rosedale), the Bakersfield Commons project proposes a 255-acre mixed-use development in the vicinity of the project alignment and Coffee Road. The project would include 1.4 million square feet of retail and theater uses, 2 million square feet of commercial space, and over 400 residential units.

A. IMPACTS: CUMULATIVELY INCREASED HST PROJECT IMPACTS ON ADJOINING RESIDENTS IN THE COMMUNITY OF GREENACRES (ROSEDALE); CUMULATIVELY RESULTING IN VISUAL INCOMPATIBILITIES BETWEEN THE PROPOSED BAKERSFIELD COMMONS PROJECT AND HST

Cumulative visual impacts of the Bakersfield Commons project in combination with the HST project would be potentially substantial in that both the BNSF Alternative Alignment and the Bakersfield South Alternative Alignment would require adjacencies between the HST and sensitive future residential viewers. The proposed Bakersfield Commons would also contribute further to the already substantial impacts of the HST guideways on adjoining, existing residential viewers along Windsong Street and Brimhall Road.

B. MITIGATION

Visual incompatibilities between the HST and Bakersfield Commons projects could be substantially reduced by adequate site-specific mitigation measures, including sufficient setbacks from the HST right-of-way to the nearest residences, and substantial landscape screening at the right-of-way. However, these measures would require substantial modification to the proposed development layout and could remain substantial due to the extended period required for landscape screening of the guideways to take effect. Cumulative impacts on existing residents could be mitigated in the long term by Mitigation Measure VIS-MM-2, Landscape Screening, but project and cumulative impacts would remain substantial due to the extended period (over 10 years) needed for effective mitigation to occur.

6.2.9 Mill Creek Lineal Park and Old Town Kern Redevelopment Project

Two additional mixed-use projects, Mill Creek Lineal Park and Old Town Kern Redevelopment Project, are proposed near the proposed HST station in Downtown Bakersfield, under both the BNSF Alternative Alignment and Bakersfield South Alternative Alignment.

A. IMPACTS: CUMULATIVE BENEFICIAL IMPACTS ON A VISUALLY BLIGHTED INDUSTRIAL AREA

Because the proposed redevelopment projects would result in substantial visual improvement to currently industrial areas of very low visual quality, and because the proposed HST stations are anticipated to have beneficial visual impacts on these surroundings, the combined effect of the projects on the surrounding area would be beneficial.

B. MITIGATION

No mitigation needed.

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Chapter 7

Mitigation Measures

7.0 Mitigation Measures

7.1 Mitigation Measure VIS-MM-1: Elevated Guideway, Retaining Wall, and Soundwall Design Measures

To reduce potential contrasts between the industrial character of generic guideways and columns and nearby downtown streetscapes, Mitigation Measure VIS-MM-1, Guideway, Retaining Wall and Soundwall Design Measures, is recommended in the following locations:

7.1.1 Downtown Fresno and Bakersfield Segments of the BNSF, and Bakersfield South Alternative Alignments

Guideways and columns should incorporate graceful curved, thin, or tapered sculptural forms and decorative surface texturing to reduce the industrial character of generic concrete structures. Parapets and other portions of the guideways should also include decorative texture treatments to reduce the utilitarian appearance of the large concrete surfaces, through variety of texture, creation of shadow lines, and other articulation of surfaces to add visual and thematic interest. The design of guideway columns and parapets should be closely coordinated with station and platform architecture to ensure unity and coherence. Tall trees should be integrated into the station streetscape and plaza plans to soften and buffer the sight of guideways and columns. Clinging vines should be considered on columns, retaining walls, and soundwalls in residential and other high-sensitivity locations.

7.1.2 Kings/Tulare Regional Station, Corcoran (BNSF and Corcoran Elevated Alternative Alignments), Wasco (BNSF), and Shafter (BNSF)

Parapets and other portions of the guideways, and roadway overcrossing structures in Corcoran should include decorative texture treatments to reduce the utilitarian appearance of the large concrete surfaces, and to add visual and thematic interest through variety of texture, creation of shadow lines, and other articulation of surfaces. Clinging vines should be considered on columns, retaining walls, and soundwalls in residential and other high-sensitivity locations.

With respect to the Highway 99 Crossing, attractive structural forms and decorative surface treatments should be applied at the highway overcrossing under both Bakersfield alignment alternatives to avoid detracting from the city entry experience.

7.2 Mitigation Measure VIS-MM-2: Onsite and Offsite Landscape Screening

To reduce potential contrasts between the industrial character of visually prominent project features and nearby sensitive receptors, Mitigation Measure VIS-MM-2 is recommended as follows:

7.2.1 Rural Residences

Offsite landscape screening should be offered and provided for affected homes within 0.5 mile of the elevated guideways and station, or within 0.25 mile of at-grade segments and road overcrossings that desire and opt for such screening.

7.2.2 Kings/Tulare Regional Station

Onsite perimeter tree planting is recommended at the boundaries of the proposed station to screen views of parking, the station, and station platforms from offsite viewers. Either hedgerow tree planting at the edge of the right-of-way or offsite hedgerow tree planting along the western boundary of the adjoining residential development north of Lacey Boulevard, if requested by property owners, is recommended.

7.2.3 Heavy Maintenance Facility Sites

Substantial perimeter tree hedgerow screening will be used to screen the HMFs if they affect residences, recreationists, or other sensitive receptors within 0.5 mile. Where residences are located within 0.25 mile of the facility, offsite tree screening should also be employed if desired by the affected property owners to reduce the time needed to achieve acceptable screening.

7.2.4 Corcoran Elevated Alternative

To screen adjoining parks and residences, and to preserve a degree of intactness of community character in views from downtown to the west, planting of hedgerows of fast-growing tall trees at the project right-of-way should be considered through the most affected portions of downtown, particularly in the segment between Brokaw Avenue and Whitley Avenue on both sides of the right-of-way, and on the east shoulder of Otis Avenue between Orange Avenue and Brokaw Avenue, to augment existing hedgerows of lower-growing shrubs previously planted to screen the existing at-grade railroad tracks.

7.2.5 Wasco (BNSF)

To screen adjoining residences and to preserve a degree of intactness of community character in views from downtown to the west, planting of hedgerows of tall trees at the project right-of-way should be considered through the most affected portions of downtown, particularly between Sixth and Ninth streets on both sides of the right-of-way.

7.2.6 Shafter (BNSF)

To screen adjoining residences and to preserve a degree of intactness of community character in views from downtown to the west, planting of hedgerows of tall trees at the project right-of-way should be considered through the most affected portions of downtown, including areas where affected residents lie within 0.25 mile, including the following:

- The west shoulder of SR 43, from Mayer Lane to West Tulare Avenue.
- Both sides of the right-of-way from North Shafter Avenue and East Tulare Avenue on the north to Lerdo Highway on the south.
- The eastern boundary of the right-of-way adjoining Shafter Cemetery.

7.2.7 Greenacres/Rosedale

To screen adjoining residences and preserve community character, planting of continuous, densely planted hedgerows of tall trees and other landscaping should be considered along the entire edge of the right-of-way wherever elevated guideway and residential adjacencies occur. Clinging vines should be considered on soundwalls visible to residential viewers.

7.2.8 City of Bakersfield (Both the BNSF and Bakersfield South Alternative Alignments): Kern River Crossing

Offsite landscape screening should be implemented along the Kern River Parkway to provide new, intermittent screening of the project structures. Occasional groupings of new trees along the parkway should be placed to break up views of long expanses of the guideways, reducing their intrusion and enhancing intactness of the parkway, while preserving view corridors of the river. Extensive tall tree planting at or near the edge of the project right-of-way along the parkway is recommended and should minimize blockage of river views.

7.2.9 City of Bakersfield (Both the BNSF and Bakersfield South Alternative Alignments): Central Bakersfield Residential

To lower visibility of the guideways to near-foreground residences, in-fill tree planting of center medians on California Avenue, and tree planting at the northern project right-of-way along 16th Street should be implemented.

7.2.10 City of Bakersfield (Both the BNSF and Bakersfield South Alternative Alignments): Bakersfield High School

Dense hedgerows of tall trees should be planted along the edge of the right-of-way north of 14th Street, outside of the project security fencing, in order to minimize visibility of the columns and guideways as seen from street-level viewpoints on the school campus and in immediate environs.

7.2.11 City of Bakersfield (Both the BNSF and Bakersfield South Alternative Alignments): East Bakersfield Residential

To provide screening of guideways and cleared rights-of-way, planting of hedgerows of tall trees at the project right-of-way should be considered in those portions of this residential neighborhood affected by the project guideways in the vicinity of the project terminus.

7.3 Mitigation Measure VIS-MM-3: Non-Reflective OCS Components

To minimize high potential glare and contrast from specular reflection off of metallic OCS components, OCS poles and other components will have non-reflective surfaces to minimize reflective glare. This measure is recommended on a systemwide basis.

7.4 Mitigation Measure VIS-MM-4: Operational Night Lighting Measures

To minimize glare impacts on sensitive receptors from nighttime operational lighting and to minimize potential night light pollution in rural areas, to the extent feasible and consistent with safety and security, all temporary and permanent exterior lighting will be designed and installed so that the following occurs:

- Lighting does not cause excessive reflected glare.
- Lighting does not illuminate the nighttime sky.
- Illumination of the project and its immediate vicinity is minimized.

Permanent night lighting will comply with all applicable standards, practices, and regulations, including the following Illuminating Engineering Society documents: RP-33-99 Lighting for

Exterior Environments; DG-13-99 Outdoor Lighting; TM-10-00 Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting.

This measure shall be applied at the following locations:

- HMF sites
- Kings/Tulare Regional Station

7.5 Mitigation Measure VIS-MM-5: Ancillary Facility Siting and Screening

Ancillary project facilities, including TPSs and paralleling and switching stations, should not be sited in proximity to residences, parks, historic properties, cemeteries, or other sensitive visual receptors. Where avoidance is not feasible, facilities will be screened with perimeter landscape screening.

7.6 Mitigation Measure VIS-MM-6: Construction Mitigation Measures

To the greatest feasible extent, construction staging locations will not be located within foreground distance (0.25 mile) of residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors with opaque perimeter fencing.

Nighttime construction lighting will be shielded, directed downward, and restricted to the boundaries of the project site to avoid light trespass through directional lighting. Lighting will be kept to the minimum level consistent with safety.

All areas disturbed by construction, staging, and storage will be regraded to original contours and revegetated.

Chapter 8

References

8.0 References

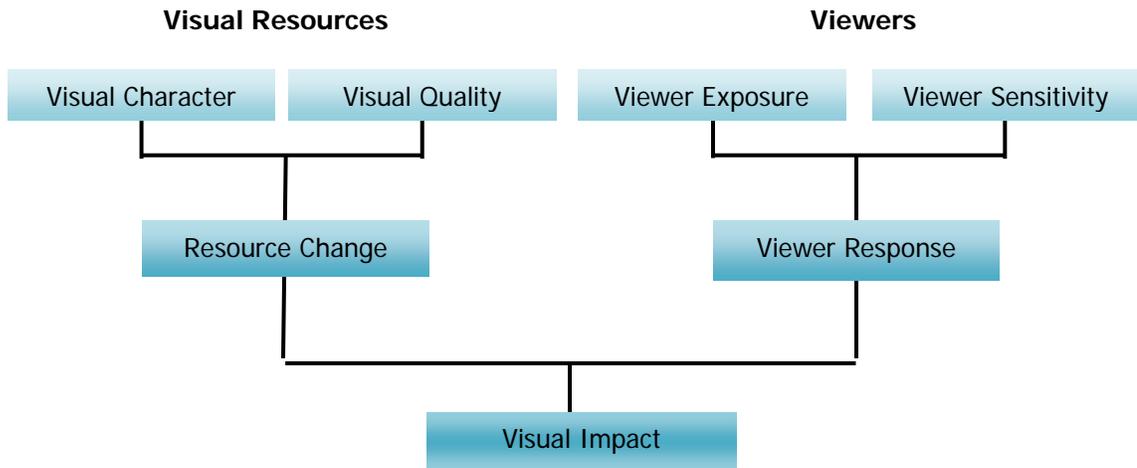
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Appendices

Appendix A
Federal Highway Administration Visual
Assessment Model (1988)

The FHWA visual assessment methodology emphasizes the evaluation of a setting's visual quality and the identification of impacts as changes in visual quality. Visual quality in turn is characterized in terms of three descriptors: *vividness*, *intactness*, and *unity*. Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive patterns. Intactness is the visual integrity of the natural and man-made landscape and its freedom from encroaching elements. Unity is the visual coherence and compositional harmony of the landscape as a whole. The conceptual model underlying the methodology is as follows:



Evaluations of visual quality change and viewer response were used in the present study to determine the level of visual impacts as described in the methodology discussion of the report.

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Appendix B
Summary of Visual Quality and Viewer
Response Ratings by Key Viewpoint

*KEY:
 L = Low
 ML = Moderately Low
 M = Moderate
 MH = Moderately High
 H = High
 B = Beneficial

Visual Quality:

Overall Viewer Response:

| | |
|---|------------|
| V | Vividness |
| I | Intactness |
| U | Unity |

(Viewer Sensitivity
 + Viewer Exposure)

| |
|----------------------------|
| BNSF ALTERNATIVE ALIGNMENT |
| FRESNO SEGMENT |

| KEY VIEWPOINT | Description | V | I | U | Overall Visual Quality | Overall Viewer Response |
|---------------|-------------|---|---|---|------------------------|-------------------------|
|---------------|-------------|---|---|---|------------------------|-------------------------|

| | | | | | | |
|---|--|----|----|----|-------------------|------|
| 1 | View of BNSF Alternative, Mariposa Station from Tulare and H Streets, Looking West (CBD Viewers) | L | ML | ML | ML (Existing) | MH** |
| | | MH | MH | MH | MH (With Project) | |
| | | | | | B (Change) | |

| | | | | | | |
|---|--|----|----|----|-------------------|------|
| 2 | View of BNSF Alternative Station (Mariposa Street Option) from China Alley Between F and G Streets Looking North | ML | L | L | L (Existing) | MH** |
| | | MH | MH | MH | MH (With Project) | |
| | | | | | B (Change) | |

| | | | | | | |
|----|---|----|----|----|-------------------|------|
| 1A | View of BNSF Alternative, Kern Station from Tulare and H Streets, Looking South (CBD Viewers) | L | ML | ML | ML (Existing) | MH** |
| | | MH | MH | MH | MH (With Project) | |
| | | | | | B (Change) | |

| | | | | | | |
|----|---|----|----|----|-------------------|------|
| 2a | View of BNSF Alternative, Kern Station from G Street near Kern St Looking North | ML | L | L | L (Existing) | MH** |
| | | MH | MH | MH | MH (With Project) | |
| | | | | | B (Change) | |

| |
|-----------------|
| HANFORD SEGMENT |
|-----------------|

| | | | | | | | |
|--------|--|---|----|----|----|----------------|-------------------------------|
| 3A, 3B | HST Rural At-Grade Alignment - 1/2 Mile Distance Zone | M | M | MH | M | (Existing) | ML(Non-Resid.) MH (Resid.) |
| | | M | ML | M | M | (With Project) | |
| | | | | | ML | (Change) | |
| | | M | ML | ML | ML | | |
| | | | | | MH | (Change) | |

| | | | | | | | |
|--------|--|----|----|----|----|----------------|-------------------------------|
| 3A, 3B | HST Rural Elevated Alignment - 1/2 Mile Distance Zone | M | M | MH | M | (Existing) | ML(Non-Resid.) MH (Resid.) |
| | | M | ML | ML | ML | (With Project) | |
| | | | | | M | (Change) | |
| | | ML | L | L | L | | |
| | | | | | H | (Change) | |

| | | | | | | | |
|---|---|----|----|----|----|----------------|-------------------------------|
| 4 | Typical HST Rural Road Overcrossing - 1/2 Mile Distance Zone | M | M | MH | M | (Existing) | ML(Non-Resid.) MH (Resid.) |
| | | ML | ML | ML | ML | (With Project) | |
| | | | | | M | (Change) | |
| | | ML | L | L | L | | |
| | | | | | H | (Change) | |

| | | | | | | | |
|---|--|---|----|----|---------------|----------------|-------------------------|
| 5 | Kings/Tulare Regional Station from SR 43, Looking Northeast | M | M | MH | M | (Existing) | M (SR 43) H (Resid.) |
| | | M | ML | ML | ML (SR 43) | (With Project) | |
| | | | | | M | (Change) | |
| | | L | L | L | L (Adj. Res.) | | |
| | | | | | H | (Change) | |

THROUGH CORCORAN SEGMENT

| | | | | | | | |
|---|---|---|----|----|----|----------------|----|
| 6 | Downtown Corcoran: View from Otis St., near Whitley Avenue, Looking South | M | MH | MH | MH | (Existing) | MH |
| | | M | MH | M | MH | (With Project) | |
| | | | | | L | (Change) | |

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

THROUGH WASCO-SHAFTER

| | | | | | | | |
|---|--|---|----|----|----|----------------|----|
| 7 | Downtown Wasco: View from 7th Street and F Street Looking East | M | MH | MH | MH | (Existing) | MH |
| | | M | L | L | ML | (With Project) | |
| | | | | | H | (Change) | |

| | | | | | | | |
|---|--|----|----|----|----|----------------|----|
| 8 | Downtown Shafter: View of Shafter Train Depot near SR 43, looking North | M | MH | MH | MH | (Existing) | MH |
| | | M | L | L | ML | (With Project) | |
| | | | | | H | (Change) | |
| 9 | View from Colonel Allensworth State Historic Park, Looking East | MH | H | H | H | (Existing) | H |
| | | M | ML | L | ML | (With Project) | |
| | | | | | H | (Change) | |
| ROSEDALE (GREENACRES) | | | | | | | |
| 10 | View from Verdugo Lane, Looking south | M | M | M | M | (Existing) | MH |
| | | M | ML | M | M | (With Project) | |
| | | | | | ML | (Change) | |
| 11 | View from Palm Avenue Looking West | M | M | M | M | (Existing) | MH |
| | | ML | L | L | L | (With Project) | |
| | | | | | H | (Change) | |
| BAKERSFIELD NORTH (BNSF ALTERNATIVE) | | | | | | | |
| 12 | Kern River Crossing from Parkway Trail, Looking North | MH | MH | MH | MH | (Existing) | MH |
| | | M | ML | ML | ML | (With Project) | |
| | | | | | MH | (Change) | |
| 13A | View from 14th Street near Myrtle Street, Looking East | M | M | ML | M | (Existing) | H |
| | | ML | ML | L | ML | (With Project) | |
| | | | | | MH | (Change) | |
| 13B | View from Jastro Park, Looking South | MH | M | M | M | (Existing) | H |
| | | M | M | ML | M | (With Project) | |
| | | | | | ML | (Change) | |
| 14 | View from Bakersfield High School Stadium, Looking Northeast | M | M | ML | M | (Existing) | H |
| | | ML | L | L | L | (With Project) | |
| | | | | | H | (Change) | |

| | | | | | | | |
|----|---|----|----|----|-----|----------------|----|
| 15 | View from L Street near Truxtun Avenue, Looking South (CBD Viewers) | M | MH | MH | MH | (Existing) | MH |
| | | ML | M | ML | M | (With Project) | |
| | | | | | M/H | (Change) | |

| | | | | | | | |
|----|--|----|----|----|----|----------------|----|
| 16 | BNSF Alternative Station (Bakersfield North Option) from Truxtun Avenue, Looking Southeast | M | MH | M | M | (Existing) | MH |
| | | MH | MH | MH | MH | (With Project) | |
| | | | | | B | (Change) | |

CORCORAN ELEVATED ALTERNATIVE

| | | | | | | | |
|----|--|---|----|----|----|----------------|----|
| 17 | View from Whitley Avenue, Looking East | M | MH | MH | MH | (Existing) | MH |
| | | M | L | L | ML | (With Project) | |
| | | | | | H | (Change) | |

CORCORAN BYPASS ALTERNATIVE

Same as Key Viewpoints 3A
 See 3A -34B - 3B

WASCO-SHAFTER BYPASS ALTERNATIVE

Same as Key Viewpoints 3A
 See 3A -34B - 3B

ALLENSWORTH BYPASS ALTERNATIVE

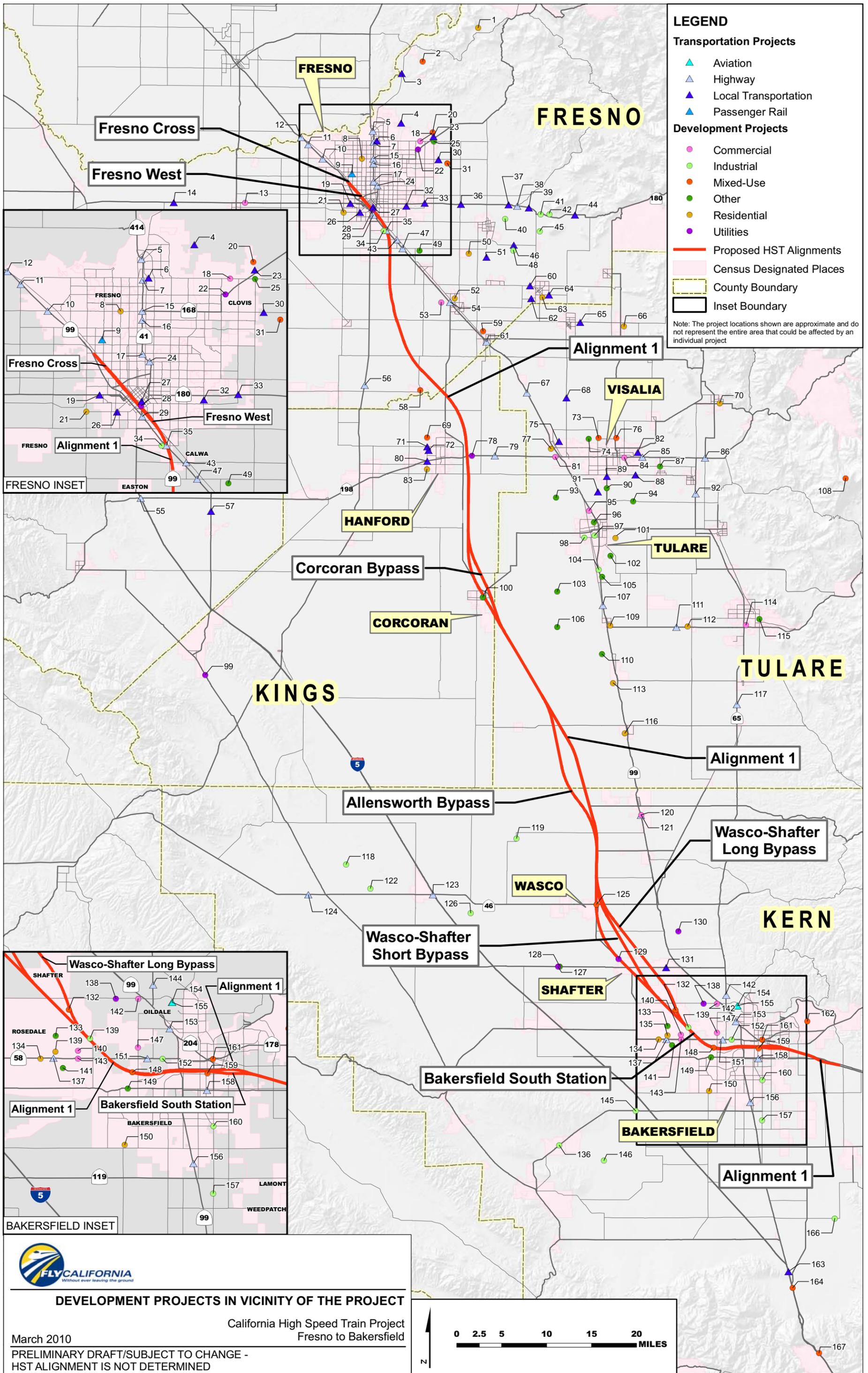
| | | | | | | | |
|----|--|----|----|---|---|----------------|---|
| 18 | View from Colonel Allensworth State Historic Park, Looking Northwest | MH | H | H | H | (Existing) | H |
| | | MH | MH | H | H | (With Project) | |
| | | | | | L | (Change) | |

BAKERSFIELD SOUTH ALTERNATIVE

| | | | | | | | |
|----|--|----|----|----|----|----------------|----|
| 19 | Bakersfield South Alternative (Bakersfield South Station) from S Street near Amtrak Station, Looking Southeast | MH | ML | L | M | (Existing) | MH |
| | | MH | MH | MH | MH | (With Project) | |
| | | | | | B | (Change) | |

** Overall Response Ratings of Fresno Stations reflect a combination of predominantly rail industrial setting, in proximity to some sensitive downtown commercial and government uses

Appendix C
Cumulative Impacts for Past, Present, and
Future Projects



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Table A: Past, Present, and Future Development Projects in Vicinity of the Fresno to Bakersfield High-Speed Train Alignment

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|---|---|--|
| 1 | Midland Pacific Building Corporation | Development of 160 residential units on 309 acres. (Acosta-Mena, 2009) | North and west side of Auberry Road, northeast Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 2 | Friant Ranch Specific Plan | Friant Ranch is proposing to develop a master planned community for the Active Adult population (55 years of age and older) adjacent to the existing community of Friant. The Friant Ranch Specific Plan would serve as an overall framework and regulatory document for the development of a mixed use community with 2,683 single-family age-restricted units, 83 multiple-family age-restricted units, 180 non-age-restricted multi-family units, and 250,000 square feet of commercial space within a Village Core that also provides for up to 50 residential units. The Friant Ranch Specific Plan incorporates two active adult recreation centers, approximately 15 miles of trails and parkways, approximately 20 acres of parks and public open space areas, approximately 92 acres of landscaped slopes, and approximately 275 acres of conservation open space areas (including 245 acres of undisturbed open space and 30 acres of revegetated open space slopes). (Acosta-Mena, 2009) | East of the San Joaquin River, approximately 9 miles north of the Fresno City limits and 21 miles east of the City of Madera. | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 3 | Friant Road widening | Widen Friant Road from Cooper Avenue to Millerton to four lanes. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 4 | Willow-Shepherd Street Improvements Project | The purpose of the project is to widen northbound Willow Avenue and eastbound Shepherd Avenue at and in the vicinity of their intersection of to improve traffic operations and relieve congestion. The project will also construct miscellaneous street improvements, such as the extension of a median island and the installation of curb and gutter. (CEQAnet, 2009) | Willow and Shepherd Avenues, Clovis | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 5 | SR-41 | Southbound auxiliary lane. (Council of Fresno County Governments, 2007) | El Paso Avenue to Friant Road, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---------------------------------------|---|---|--|
| 6 | Herndon Avenue widening | Widen Herndon Avenue from SR-99 to De Wolf Avenue to a six-lane divided road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 7 | SR-41 | Northbound auxiliary lane addition. (Council of Fresno County Governments, 2007) | Bullard Avenue to Herndon Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 8 | Villas at Fig Garden | The project consists of incorporating the existing Fig Garden Financial Center into a mixed-use development that includes a new residential building. The new residential building is proposed on approximately 4.69 acres immediately east of the existing financial center. This property currently contains a 44-unit apartment complex and one single-family home. An approximately 0.73-acre open space/park area will be provided on the east boundary of the Site Addition. The project proposes approximately 305 residential units (i.e., apartments) in a multi-tiered building up to six stories in height with underground parking. The project site would be accessed from W. San Jose Avenue from Palm Avenue, or from within the adjacent Fig Garden Village Shopping Center and the Financial Center parking lot. (CEQAnet, 2009) | Palm Avenue and Shaw Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 9 | Fresno Freight Rail Alignment Project | The project considers several alternatives to realign the Union Pacific and Burlingame Santa Fe railroad alignments through Fresno County. Some alternatives consider shared rights-of-way and trackage rights while other consider parallel alignments. The project is sponsored by both the Council of Fresno County Governments and the California High Speed Rail Authority. (Council of Fresno County of Governments and California High Speed Rail Authority, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 10 | SR-99 | Interchange improvements. (Council of Fresno County Governments, 2007) | Shaw Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 11 | SR-99 | Construct interchange. (Council of Fresno County Governments, 2007) | Grantland Avenue Diagonal, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|------------------------|--|---|--|
| 12 | SR-99 | Caltrans proposes to widen a 2.9-mile segment of SR-99 by constructing two additional lanes in the median to convert the existing four-lane freeway to a six-lane freeway from south of the Grantland Avenue undercrossing in Fresno County, to north of the Avenue 7 overcrossing in Madera County. The work also includes replacing and widening the San Joaquin River Bridge. Three detention basins are proposed to be constructed on the west side of the highway: two basins would be adjacent to the San Joaquin River and one basin would be just north of the Avenue 7 overcrossing. An existing basin east of the highway south of the Avenue 7 overcrossing would be deepened. (Council of Fresno County Governments, 2007) | SR-99 from Grantland Avenue in Fresno County to Avenue 7 in Madera County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 13 | Kerman Walmart Project | The proposed project consists of the development of 184,446-square-foot retail center on the project site. The center would be anchored by an approximately 160,446-square-foot Walmart store that would operate 24 hours a day and retail groceries and general merchandise. Three outlots would be developed along W. Whitesbridge Avenue with a combined development potential of 24,000 square feet. (CEQAnet, 2009) | West Whitesbridge Avenue and South Goldenrod Avenue, Kernan, | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 14 | SR-180 West | Create passing lanes in each direction on SR-180 West from Yuba Avenue to James Avenue. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 15 | SR-180 | Braided ramp construction. (Council of Fresno County Governments, 2007) | SR-41 to SR-168, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 16 | SR-41 | Northbound auxiliary lane. (Council of Fresno County Governments, 2007) | Ashlan Avenue to Shaw Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 17 | SR-41 | Widen ramps to interchanges. (Council of Fresno County Governments, 2007) | McKinley Avenue to Shields Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|-----------------------------------|---|---|--|
| 18 | Clovis-Herndon Shopping Center | The project includes the development of a shopping center with approximately 491,904 square feet of leasable space on approximately 44 acres of a 50-acre site on the northeastern corner of Clovis Avenue and Herndon Avenue, west of Sunnyside Avenue, and south of SR-168. The project includes an approximately 228,754-square-foot WalMart store, nine other major stores with space between 7,500 and 88,400 square feet, and six additional commercial pads ranging from 4,400 to 8,000 square feet. Parking includes approximately 2,558 vehicle stalls plus loading areas. Street improvement and traffic control improvements are planned to accommodate additional traffic generated by the project. Connection to the City's water, wastewater, and the Fresno Metropolitan Flood Control District's stormwater collection and disposal systems are proposed for the newly constructed area. The developer's applications include a Rezone, Site Plan Review, a Conditional Use Permit, and a Director Review and Approval. (CEQAnet, 2009) | Herndon, Sunnyside, Clovis Avenue, Clovis | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 19 | SR-180 West Segment | Construction of a freeway on SR-180 from Brawley to Hughes West. Construction of a frontage road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 20 | Clovis Research & Technology Park | The project totals approximately 153 acres. The project proposes to change the General Plan and Herndon-Shepherd Specific Plan land use designation to Mixed use Area 40 to allow research and technology use as well as live/work units and to amend the Circulation Element to extend Alluvial Avenue through the site from Temperance Avenue to the Nees Avenue off-ramp at SR-168. The project also proposes to reclassify a portion of Nees Avenue to a collector and a portion of Locan Avenue to an industrial standard. The project would be combined with the existing 180-acre research and technology Park for a technology park that totals 333 acres. The types of uses allowed by the proposed research and technology park include certain manufacturing, assembly and research uses, ancillary retail, business services, certain types of transportation and communication, and Live/Work units. The Floor Area Ratio is 0.4 and allows up to approximately 2.4 million square feet of development. (CEQAnet, 2009) | Temperance Avenue and Nees Avenue, SR-168, Clovis | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 21 | Fresno Veterans Home | The proposed project would provide an approximately 235,435-gross-square-foot residential care facility and a skilled nursing facility with a total of 300 beds, both for veterans. Each room would have approximately 380 net square feet. The garden would be easily accessed and designed to support the specific needs of each neighborhood. The proposed veterans home facility would include a main kitchen where food would be prepared to be transported to dining areas within the home. A loading dock would be close to the kitchen. (CEQAnet, 2009) | California Avenue and Marks Avenue, Fresno | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|--|---|--|
| 22 | Clovis Fiber Optics Project (CIP 08-01) | The City of Clovis, in cooperation with the Clovis Unified School District (CUSD), is proposing to install conduit and communication fiber optic cable in the City of Clovis. The new conduit and fiber optic cable would be buried underground in existing public right-of-way, including various CUSD school sites. The objective of the proposed project is to provide a fiber optic communication linkage between the CUSD District Office on the southeastern corner of Herndon and Sunnyside Avenues and all CUSD elementary school campuses within the project area by constructing new conduits, installing fiber optic cable in existing and new conduits, and installing related facilities, such as pull boxes. (CEQAnet, 2009) | Citywide, City of Clovis, Fresno County | Possible overlap of construction activities. |
| 23 | Temperance Avenue widening | Widen Temperance Avenue from Bullard to Shepherd Avenue to a four-lane divided road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 24 | SR-41 | Auxiliary lanes. (Council of Fresno County Governments, 2007) | "O" Street to Shaw Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 25 | Clovis Community Medical Center Healthcare Campus Expansion Project | The Clovis Community Medical Center Healthcare Campus Expansion Project consists of a ten-year expansion plan for additional facilities and improvements and a long-range site development master plan for 25 to 30 years in the future. (CEQAnet, 2009) | Herndon Avenue and Temperance Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 26 | California Avenue widening | Widen California Avenue from Ventura Avenue to West Avenue to a four-lane divided road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 27 | Ventura Boulevard widening | Widen Ventura Boulevard from SR-41 to SR-99 to a four-lane divided road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|---|---|--|
| 28 | City of Fresno Three Million Gallon Water Storage Tank | The proposed project consists of the construction and operation of a 3-million-gallon water storage tank, pipelines, and associated appurtenances on approximately 3.60 acres. The tank will be aboveground, with a maximum height of approximately 32 feet, with a water depth of 30 feet and an inside diameter of 132 feet, and will be surrounded by other related structures or open space. All associated pumps, controls, and utilities will be designed (programmed) and constructed. It should be noted that design of the tank is not final, and the tank may also be located partially or fully underground. (CEQAnet, 2009) | H Street and San Benito Street, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are aesthetics and utilities. |
| 29 | SR-99 Monterey Bridge | Replace the Monterey Street Bridge. (Council of Fresno County Governments, 2007) | SR-99 and Monterey Street, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 30 | Shaw Avenue upgrades | Improve Shaw Avenue from Sunnyside to McCall to a six-lane divided road. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 31 | Southeast Urban Center Specific Plan | Community Center South – 1,840 residential units and 1,138 square feet of nonresidential area. Community Center North – 806 residential units and 675,942 square feet of nonresidential units. Gettysburg/Ashland – 1,607 residential units and 247,421 square feet of commercial development. Eastern Village – 182-acre business campus, 1,378 residential units, and approximately 4,291,531 square feet of nonresidential use. (City of Clovis, 2003) | Clovis | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 32 | Widening of Peach Avenue | The project would widen Peach Avenue from SR-180 to Jenson Avenue. (CEQAnet, 2009) | Peach and SR-180 to Peach and Jenson, Fresno | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 33 | SR-180 East Segment | Construction of a multi-lane freeway on SR-180 from Clovis to Temperance. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--------------------------|--|---|---|
| 34 | C.A.R.T.S. Trucking Yard | The proposed project would consist of construction of a 4,000-square-foot office; cardlock fueling stations for gasoline, diesel (conventional and biofuel) and compressed natural gas with two aboveground 12,000-gallon diesel fuel tanks; a 14,600-gallon, 43-foot-tall aboveground liquefied natural gas tank with three subsidiary aboveground compressed natural gas storage vessels; two aboveground gasoline tanks, 1,000 and 2,000 gallons in size, which may later be replaced by 12,000-gallon aboveground tanks; a 1,584 square-foot canopy over the diesel and gasoline fuel islands; approximately 18,500 square feet of heavy equipment truck/waste bin maintenance facilities for related activities (shop areas and parts storage; waste bin and vehicle painting and repair; truck servicing); parking for 113 employees; parking for at least 44 solid waste vehicles and pieces of heavy equipment; open areas for storage of waste bins; and an onsite ponding basin. (CEQAnet, 2009) | South Orange Avenue and East North Avenue, Fresno | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, air quality, and utilities. |
| 35 | SR-99 | Upgrade interchange. (Council of Fresno County Governments, 2007) | SR-99 to Cedar/North Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 36 | SR-180 East | Widen SR-180 East from Temperance to Academy Avenue to a four-lane divided expressway. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 37 | SR-180 East | Widen SR-180 east from Academy Avenue to Trimmer Springs to a two-lane expressway on four-lane right-of-way. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 38 | SR-180 | Widen to four lanes from Temperance to Cove. | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 39 | SR-180 East | Widen SR-180 East from Trimmer Springs to Frankwood Avenue to a two-lane expressway on a four-lane right-of-way. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|--|--|---|
| 40 | Sanger-Centerville Aggregate Operation Expansion Project | The proposed project would expand the existing 220-acre Sanger-Centerville aggregate mining operation as permitted by CUP Nos. 1466 and 1656 onto an adjacent 440 acres. The project will change the method of extraction from dry mining to wet mining phased over a period of 50 years and increase sales from about one million tons per year to 2.5 million tons per year. The project proposes modifications to the reclaimed end use to create a series of ponds, wetlands and open space vegetated with native species. (Acosta-Mena, 2009) | South of SR-180, west of the Kings River and east of Riverbend Avenue, central Fresno County. | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 41 | Jesse Morrow Mountain | Development and operation of a new hard rock quarry and associated aggregate processing facility on 440 acres of an 824-acre project site. (Acosta-Mena, 2009) | Near SR-180 and Frankwood Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 42 | Jesse Morrow Mountain Mine & Reclamation Project | The project includes hard rock aggregate extraction, a conveyor system to move material to an aggregate processing facility, concrete batch plant, asphalt plant, recycling plant for production of excess concrete and asphalt concrete returns, truck distribution of aggregate products, and various support facilities (e.g., weighing station, office, and maintenance). (Acosta-Mena, 2009) | Assessor Parcel Numbers 158-203-15, 185-020-01, 22-450-16, 18, 19, 23, and 26, 333-240-22, 24, and 26, and 33-100-32, 44, and 46 within sections 11, 12, 13, and 14, Township 14 south, Range 23 East of the Wahtoke, California USGS 7.5-minute topographic quadrangle. | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 43 | SR-99 | Upgrade interchange. (Council of Fresno County Governments, 2007) | Central Avenue and Chestnut Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|---|---|--|
| 44 | Rural Route 180 Project | The California Department of Fish and Game is executing a Lake and Streambed Alteration Agreement, pursuant to Section 1602 of the Fish and Game Code. Caltrans proposes to remove the existing Wahtoke Creek Bridge and replace it with a new simple span, cast-in-place voided Slab Bridge, with two bents located where the existing abutments are and new abutments 29 feet outside the existing abutments. The new bridge will be widened to the north to bring the bridge to current standards design requirements for a two-lane bridge. (CEQAnet, 2009) | Wahtoke Creek Bridge and SR-180, Fresno County (near Fresno at Wahtoke Creek, Caltran Bridge #42-0078) | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 45 | Garawan Farms | Development of a sand and gravel extraction operation on 900 acres. (Acosta-Mena, 2009) | South of Annadale, east of Byrd Slough, west of Reed Avenue and north of Central Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, transportation, noise, air quality. |
| 46 | Kings River Bridge on Goodfellow | The County of Fresno has approved the replacement of the existing bridge with a 34-foot, 10-inch-wide by 520-foot-long cast-in-place concrete box girder. The approaches will be widened from 28 feet to 32 feet for up to 200 feet on either side of the bridge to meet current American Association of State Highway and Transportation Officials roadway width standards. A cofferdam is proposed to be constructed on the upstream side of the riverbed to divert water. The Kings River flows through the center of the project area. The project area consists of the Kings River, a perennial drainage, with Great Valley mixed riparian forest, nonnative annual grassland, and adjacent agricultural fields. (CEQAnet, 2009) | Goodfellow Avenue, 2.0 miles southeast of City of Sanger, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 47 | SR-99 | Interchange improvements. (Council of Fresno County Governments, 2007) | American Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 48 | Kings River Sand & Gravel Quarry Project | Calaveras Materials Incorporated is proposing a sand and gravel (aggregate) extraction and processing facility, and reclamation plan. (Acosta-Mena, 2009) | Bounded by Goodfellow Avenue to the north, Cameron Slough to the east, Kings River to the south, and the Riverbend Alignment to the west, Unincorporated Fresno County. | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|----------------------------------|--|---|--|
| 49 | Juvenile Justice Campus | Acquisition of an approximate 220-acre site for the construction and operation of a Juvenile Justice Campus in Fresno County which would accommodate 1,400 beds in addition to supporting related juvenile justice functions. Project complete. (CEQAnet, 2009) | West of SR-99 between East American Avenue and East Jefferson Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 50 | Del Rey Community Plan Update | Update includes an expansion of the planning area by 296 acres and the development of 455 single-family residences. (Acosta-Mena, 2009) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 51 | Academy Avenue widening | Widen Academy Avenue from Manning Avenue to Industrial Way. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 52 | DAVCO Devel.LL | Development of a 39-unit Community Housing Development Organization residential development on 2.42 acres. (Acosta-Mena, 2009) | Thompson and Huntsman Boulevard, City of Selma | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 53 | Rockwell Pond Commercial Project | A 94-acre regional shopping center, would be developed in two phases. Phase 1 will be initiated as soon as annexation and city entitlements are approved and is anticipated to be complete by 2012. Phase 2 will be initiated about 5 years following Phase 1 and is anticipated to be completed by 2017. Together, the two phases would result in approximately 973,100 square feet of retail uses. (CEQAnet, 2009) | Floral and DeWolf Avenues, Selma | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 54 | SR-99 | Replace bridge structures. (Council of Fresno County Governments, 2007) | SR-43/Floral Road, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 55 | SR-198 | Widen bridge to four lanes. (Council of Fresno County Governments, 2007) | Interchange at I-5, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 56 | SR-41 | Widen to four lanes. (Council of Fresno County Governments, 2007) | King County line to Elkhorn Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 57 | Sr-269 Bridge Improvement | Build new bridge and channel on SR-269 between SR-198 and Huron. (Fresno County, 2010) | Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 58 | Laton Community Plan Update | Update includes an expansion of the planning are by 109 acres (45 acres of Low Density and 49 acres of Medium Density residential, 1.5 acres of Reserve Service Commercial, 1.6 acres of Reserve Central Business District, and .4 acre of Reserve Public Facility). (Acosta-Mena, 2009) | Laton | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 59 | North Kingsburg Specific Plan | Development of 628 acres of industrial (Industrial Corridor) and development of 2,178 residential units (North Kingsburg Residential Village). (City of Kingsburg, 2009). | Kingsburg | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 60 | Manning Avenue Bridge Replacement | The project would replace the structurally deficient Manning Avenue Bridge over the Kings River to improve public safety. The proposed project would also install new curb, gutter, and meandering sidewalk approximately 1,250 feet along both sides of Manning Avenue from the east end of the Kings River Bridge to the I Street intersection curb return. (CEQAnet, 2009) | Kings River Road to the west, I Street/ Manning Avenue intersection to the east, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 61 | SR-99 | Widen to six lanes. (Council of Fresno County Governments, 2007) | Tulare County line to SR-201, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 62 | Central Valley Transportation Center Project | The site is currently in orchard production with a single residence. The new facility would consist of a state-of-the art transportation center from which Kings Canyon Unified School District (District) would maintain and operate a fleet of up to 110 buses and 35 fleet vehicles. The land used by the current District transportation center would be absorbed by the adjacent Reedley High School and be converted to additional sports fields. The proposed Central Valley Transportation Center project (proposed project) would provide the District with new transportation administration and vehicle maintenance facilities, including a 10,900-square-foot education center. These facilities would include a primary administration building with 23 bays for vehicle maintenance, repair, inspection, and wash racks, as well as office, storage, shop, and staff support uses. The proposed project would also incorporate compressed natural gas fueling facilities and solar collection and charging facilities. In addition, there would be auxiliary facilities, and fuel storage and associated dispensers (ethanol, biodiesel, ultra-low sulfur diesel and unleaded regular gasoline). (CEQAnet, 2009) | Huntsman Avenue and Olsen Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 63 | Reedley Family Apartments - General Plan Amendment No. 2007-1, Change of Zone No. 302, & Conditional Use Permit No. 446 | The project applicant is proposing to construct an 80-unit apartment complex consisting of five two-story walk-up buildings ranging in size from 12,640 square feet to 16,416 square feet on a 3.7-acre site. The units will range in size from 572 to 1,027 square feet (1 to 3 bedrooms) and the complex will contain 1.4 acres of open space area, parking for 176 vehicles, a clubhouse (with community room, office, laundry room, kitchen, and bathrooms), and landscaping throughout the site. Other features will include perimeter fencing and onsite lighting to illuminate the property for safety and security. The project includes a General Plan Amendment to re-designate the land use to High Density Residential, and a Zone Change to re-zone the property to RM-2 (Multi-Family Residential – one Dwelling Unit per 2,000 square feet). (CEQAnet, 2009) | South I Street and Shoemaker Avenue, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 64 | Dinuba Avenue/Button Willow Avenue Roundabout | Reconstruct existing four-way stop controlled intersection with a modern single lane roundabout. Project includes placement of underground pipelines, pavement, curbs, sidewalks, lighting, and landscaping. The proposed improvements will extend north, south, east, and west approximately 500 feet in each direction. (CEQAnet, 2009) | Dinuba Avenue and Buttonwillow Avenue, City of Reedley, Fresno County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 65 | Mountain View Avenue/Avenue 416/El Monte Way Widening | The County of Tulare along with the City of Fresno, the City of Dinuba, Caltrans, and the Federal Highway Administration, propose to widen and improve a 12-mile stretch of Mountain View Avenue/Avenue 416/El Monte Way. The work would include widening the roadway to four lanes with a median and/or median lane. (CEQAnet, 2009) | Avenue 416 from Bethel Avenue to Road 92, Kingsburg | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 66 | Pomp | Construction of 33 single-family lots. (Schenke, 2009b) | Orosi | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 67 | Goshen to Kingsburg Six-Lane Project | This project would widen SR-99 from a four-lane freeway to a six-lane freeway. The additional lanes would be constructed in the median. Weaving lanes would be constructed. Various structures within the project limits would be widened to accommodate the additional lanes. Three soundwalls, four infiltration basins, and side ditches would be constructed. A frontage road would be constructed. At Kings River, both the northbound and southbound bridges will be replaced. Temporary gravel fill will be placed to allow access to erect the false-work and drive new bridge piles. At Northern Tributary of the Cross Creek, the northbound bridge will be replaced and the southbound bridge will be widened to accommodate the additional lanes in the median. At Cross Creek, both the northbound and southbound bridges will be widened to accommodate the additional lanes in the median. (CEQAnet, 2009) | SR-99 between Kingsburg and Goshen | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 68 | Road 80 | Widen to four lanes. (Schenke, 2009a). | Road 80 between Visalia and Dinuba, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 69 | Villagio Project | Construction of 1,428 residential units, 135,000 square feet of neighborhood commercial uses, an elementary school, a church, one or two detention basin(s) adjacent to the railroad tracts, and open space and recreational areas. (City of Hanford, 2008) | 12th Avenue and Fargo Avenue, adjacent to the City of Hanford in unincorporated Kings County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 70 | Redfield | Construction of 46 single-family lots. (Schenke, 2009b) | Woodlake | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 71 | 12th Avenue Widening | Widen an existing two-lane County road to a four-lane arterial street, including the installation of a traffic signal and the acquisition of portions of 8 parcels totaling 0.11 acre required for a sidewalk. (CEQAnet, 2009) | 12th Avenue between Liberty and Grangeville, Hanford | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 72 | Greenfield Avenue Extension Project | Construct a street that would extend Greenfield Avenue from west of Della Street to connect to the existing Greenfield Avenue in the County and improve the existing street from Pleasant Way west to 12th Avenue. (CEQAnet, 2009) | Greenfield Avenue from Della Street to 12th Avenue, Kings County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 73 | The Village at Willow Creek Specific Plan | Development of 85,800 square feet of multi-family residential, 9,500 square feet of office, 229,910 square feet of commercial, and 907 parking spaces. (Visalia, 2006) | Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 74 | Northwest School Complex | The project is the purchase of a 160-acre site and the construction and operation of a new high school, middle school, elementary school, sports stadium, performing arts center and a library/learning center. Also a part of this project is the annexation of the 160-acre site into the Visalia city limit and an amendment to the Visalia General Plan changing the land use designation from Urban Reserve to Public Institutional (152 acres) and Neighborhood Commercial (8 acres). (CEQAnet, 2009) | Riggin Avenue and Akers Street, Visalia, | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, transportation, noise, and air quality. |
| 75 | Betty Drive | Widen to four lanes and construct overpass. (Schenke, 2009a) | Betty Drive between SR-99 and Road 80, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 76 | Orchard Walk Specific Plan | Development of 224 residential units and 462,765 square feet of commercial. (Visalia, 2007) | Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 77 | Self Help Enterprises | Construction of 77 single-family lots and 15 multi-family lots. (Schenke, 2009b) | Goshen | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 78 | Garner Basin | The project includes the construction of a single cell 36.6-acre recharge basin. The basin would be excavated to a maximum depth of 8 feet. Excavated material would be used to create the project's levees, for onsite grading, and fill the existing recharge basin area. The remaining excavated material is planned to be sold to other agencies or the public, if necessary. The basin would receive water via the Settlers Ditch from the north and Lakeside Irrigation District's Main Canal from the south. It is anticipated that the basin would be filled when surface water is not available, the basin would be dry. Water depth is anticipated to range from 0 to 6 feet, although typical depth is expected to range from 3 to 5 feet. Groundwater monitoring around the facility would occur semi-annually. (CEQAnet, 2009) | SR-198 and 7th Avenue, Kings County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use and aesthetics. |
| 79 | SR-198 | Widen to four lanes. (Kings County Association of Governments, 2008) | SR-43 to SR-99, Kings County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 80 | 12th Avenue Interchange | Caltrans proposes to modify the SR-198/12th Avenue Interchange (Post Mile 16.9) in the City of Hanford, Kings County, CA. The proposes project would widen the existing 12th Avenue overcrossing bridge and roadway, widen and/or realign the existing ramps, and construct a new loop on-ramp for eastbound the SR-198 in the southwestern quadrant of the interchange. (CEQAnet, 2009) | SR-198 and 12th Avenue, Hanford | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 81 | Commercial Development | Construction of 26 commercial lots for light manufacturing and warehouses. (Schenke, 2009b) | Near SR-198 and SR-99, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 82 | McAuliff Street Construction South of Houston Avenue | The City of Visalia has approved the construction of McAuliff Street between Mineral King Avenue and Houston Avenue, which will require the crossing of Mill Creek and Evans Ditch and subsequent changes in flow control of these two waterways. Mill Creek will require a new headgate structure, a new culvert with headwalls at McAuliff Street, the relocation of the Parshall flume, and the relocation of a flow control measure station. Evans Ditch will require a new headgate structure and a new culvert structure with headwalls at McAuliff Street. The project area covered by the Agreement consists of the Mill Creek and Evans Ditch with Great Valley mixed riparian forest and nonnative annual grassland adjacent to existing agricultural fields and tract housing. (CEQAnet, 2009) | Houston Avenue and Mineral King Avenue, Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

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| 83 | Live Oak Master Plan / Live Oak Residential Project | Development of a residential project of approximately 390 acres for 1,560 dwelling units, with parks and open space. Construction of supporting infrastructure, including streets, water, sewer, drainage facilities, and other public utilities in a six-phase project that may take 5 to 10 years to construct. (CEQAnet, 2009) | 12th Avenue and Hume Avenue, Hanford | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 84 | Visalia WalMart Expansion | The proposed project consists of the expansion of the existing 126,783-square-foot WalMart store on East Noble Avenue by 89,755 square feet, increasing the total floor area to 216,538 square feet. The primary departments within the expanded store will be general merchandise sales, grocery sales, indoor garden center; Tire and Lube Express, and ancillary retail and tenant areas (i.e., ATM, fast food restaurant, medical clinic, vision care, hair salon, photo lab, portrait studio, and pharmacy). The proposed project would expand the existing store by approximately 89,755 square feet and would add a 9,748-square-foot outdoor garden center and bagged goods area. WalMart nonetheless has requested that its Conditional Use Permit allow expansion of up to 91,469 square feet of total store area plus the 9,748-square-foot outdoor garden and bagged goods area (which amounts to a post-expansion total area of 228,000 square feet, including the outdoor garden and bagged goods area) so that there is some ability to accommodate any minor refinements that become necessary. The additional 1,714 square feet of floor area included to reach this total of 228,000 square feet will be treated as general merchandise area for purposes of analysis of the EIR. (CEQAnet, 2009) | East Noble Avenue and Ben Maddox Way, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 85 | SR-198 | Interchange improvements. (Tulare County Association of Governments, 2007) | Road 148, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 86 | Tulare Expressway Project | The project proposes to realign SR-65 from Hermosa Avenue near the City of Lindsay, to SR-198 northeast of the City of Exeter. The realignment would build a two-lane expressway on a four-lane right-of-way approximately 9.2 miles in length. All build alternatives include a 0.51-mile portion of SR-245. The purpose of the project is to provide route continuity by providing a more direct route for interregional traffic on SR-65; provide congestion relief by increasing traffic capacity and improving traffic flow to an interregional transportation system; and improve safety and operation of SR-65. There are two build alternatives and a no-build alternative under consideration. (CEQAnet, 2009) | SR-198 and County Road 204, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|--|---|--|
| 87 | Farmersville Middle School Project | The project consists of the development and operation of a middle school on an approximately 20-acre-site. The proposed middle school will be a full-service facility designed to accommodate up to 800 grade 7 and 8 students. The middle school will have classrooms, faculty work areas, administrative offices, multi-purpose facilities, athletic/recreation areas, and parking lots. Portions of the school grounds will be lighted for security and recreational purposes and may be available for community use during non-school hours. (CEQAnet, 2009) | Farmersville Boulevard (Road 164) and Walnut Avenue (Avenue 288), Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 88 | Avenue 280 | Widen to four lanes and construct interchange. (Schenke, 2009a) | Avenue 280 between SR-99 and Exeter, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 89 | Packwood Creek Bridge | A proposal Commercial Developers, Inc., to construct a clear span bridge over the Packwood Creek channel to provide two-way vehicular travel and a sidewalk for bicycle and pedestrian use from the Sequoia Plaza shopping center on the north side of the creek to Cameron Avenue, including connectivity to a future trail along the south side of Packwood Creek. Construction of the project commenced in 2009. The project is a request by the property owner of the shopping center site located adjacent and north of Packwood Creek at the point of crossover. (CEQAnet, 2009) | Cameron Avenue and South Mooney Boulevard, Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 90 | History of Farm Labor and Agriculture Museum | Construct a 17,000-square-foot addition to the Tulare County Museum. (Schenke, 2009b) | 27000 S. Mooney Boulevard, Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 91 | Road 108 | Widen to four lanes. (Schenke, 2009a) | Road 108 between Visalia and Tulare, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 92 | SR-65 | Widen to four lanes. (Tulare County Association of Governments, 2007) | Spruce, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|---|--|--|
| 93 | Hynes Dairy Establishment | The proposed Hynes Dairy Project will establish a new dairy on a site in the AE-40 Zone. As proposed, the dairy facility will accommodate a maximum of 1,600 Holstein milk cows and support stock for a total of 2,741 animal units. The proposed dairy facility will have freestall housing with a flush system for the milking herd, and the support stock will be housed in corrals with flushed alleys. The site has been leveled and developed for irrigated field crop production and is double cropped with alfalfa and corn silage/wheat silage. Not all the crop acres are contiguous to the dairy facilities. (CEQAnet, 2009) | Road 76 and Road 64, Avenue 248 and Avenue 268, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, air quality, and agriculture. |
| 94 | Fire Station 1 and Headquarters Relocation | The project proposes the relocation and construction of Fire Station 1 and the Fire Headquarters building. The project would be comprised of a 7,000-square-foot Fire Station, a 16,500-square-foot building for the Administration, Communication Center, and the County Emergency Operations Center and a 7,480-square-foot engine company maintenance shop and supply/service center. (CEQAnet, 2009) | Avenue 256 and Road 140, Visalia | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 95 | Design Review No. 1024 | A 62.5-acre shopping center potentially providing 707,759 square feet of retail, office, and motel uses. The site plan is designed to account for the public works projects providing for a railroad grades separation and a new interchange. (CEQAnet, 2009) | Cartmill Avenue and M Street, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 96 | Tulare District Hospital Expansion - Phase 1 | Construction of a new five-floor hospital tower (four stories above grade and one below grade basement floor) south of and connected to the existing three-story hospital tower with a helipad on the roof. The new tower will bring the hospital into conformance with state seismic safety regulations, increasing licensed beds from 116 to 143. Also proposed are several onsite building demolitions, closure of a one-block street segment, and realignment of another street to allow parking area reconfigurations for additional stalls. (CEQAnet, 2009) | Cherry Street, Merritt Avenue, Gem Street, Terrace Avenue, Auburn Street, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 97 | Tulare Protein Harvesting and Processing Plant | Construction of a 70-acre beef harvesting and processing plant. (Schenke, 2009b) | Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 98 | South I Street Industrial Park Specific Plan | Annexation of 458 acres from the County into the Tulare City limits to develop an industrial park. (Schenke, 2009b) | Bardsley Avenue and Pratt Street, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, transportation, noise, and air quality. |

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|--------------------|-------------------------------------|---|---|--|
| 99 | Sun City Project LLC, Sand Drag LLC | Development of 300 acres (approximately 39 MW) of fixed-tilt photovoltaic solar panels. (Kinney, 2009) | 36th Avenue and SR-33, Kings County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 100 | City of Corcoran Police Station | The proposed project is the construction and operation of a proposed new police station, which is to be constructed to serve as the headquarters for the City of Corcoran Police Department. The project will consist of an approximately 12,000-square-foot building to house all police operations, including offices, evidence storage, and short-term detention facilities. The project design incorporates photovoltaic panels to generate solar power, exposed wood framing, and natural lighting through the use of skylights. (CEQAnet, 2009) | West of Otis Avenue, north of Ross Court, South of Hanna Road, Corcoran | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 101 | COS Tulare Campus | Development of 500 acres near the school (mostly residential). (Schenke, 2009b) | Southeast corner of Bardsley Avenue and Oakmore Road, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 102 | Tulare Motorsports Complex | Development of a 711-acre site with uses including a 1-mile D-shaped oval super speedway racetrack and drag strip. The potential seating capacity is 52,800 spectators for the super speedway track and 39,800 spectators for the drag strip including grandstands and sky boxes. (Schenke, 2009b) | Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are aesthetics, transportation, noise, and air quality. |
| 103 | Dykstra Dairy | Expansion of an existing dairy from 3,772 animal units (3,200 Holstein milk cows) on 615 acres to 6,474 animal units (3,900 Holstein milk cows) on 1,320 acres. Crop land will increase from 483 farmable acres to 1,157 farmable acres. (CEQAnet, 2009) | Avenue 176, Road 64, Road 80, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, air quality, and agriculture. |
| 104 | Tulare Industrial Complex | Light industrial development on 272.44 acres. (Schenke, 2009b) | Hosfield Road and SR-99, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 105 | UC Davis South Valley Animal Health Laboratory | UC Davis proposes to construct the South Valley Animal Health Laboratory, a new laboratory and office building of approximately 53,000 gross square feet. The building would provide space for a new veterinary diagnostic testing laboratory adjacent to the existing veterinary medicine research laboratory approximately 1/4 mile east of SR-99 in Tulare County south of Tulare. In addition to laboratory and office space, the project would include a crematorium for animal parts and other waste, a backup generator, an onsite water supply well and storage tank, a stormwater retention pond, relocation of existing residential modular buildings, and a new septic system for the disposal of wastewater. (CEQAnet, 2009) | East of Road 112 and SR-99, Tulare | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |
| 106 | Bosman Dairy (PSP 07-022) | The proposed project is an expansion of an existing dairy from 7,200 milk cows plus support stock (10,426 animal units) to 8,800 milk cows plus support stock (15,229 animal units) in the AE-40 Zone (Exclusive Agricultural – 40-acre minimum). The dairy facilities currently encompass 318 acres of the 2,581-acre subject site (no change proposed), land currently devoted to crops and nutrient management is 2,173 acres (no change proposed), the balance of the site is encumbered by irrigation systems, wells, field roads, etc. (CEQAnet, 2009) | Avenue 144 and Road 72, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, air quality, and agriculture. |
| 107 | SR-99 | Improvements. (Tulare County Association of Governments, 2007) | Avenue 200 to Tipton, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 108 | Yokohl Ranch | The Yokohl Ranch Master Development Plan is focused on a town center which includes mixed-use commercial and high-density residential uses which will function as the social and civic activity hub of the community. A public park and private recreation facility complete the town center site that straddles Yokohl Creek in the central portion of valley area. Medium- and low-density neighborhoods extend out from the town center with reduced density as the topography increases. Farther to the east and north, the residential density gradually decreases to very low density (less than one unit per acre). The range of residential densities will allow for a wide range of product types and life styles choices for residents. (Schenke, 2009b) | East of Exeter, north of Lindsay, south of Three Rivers, and approximately 30 miles west of the entrance to Sequoia National Park, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 109 | Naffa | Construction of 164 single-family lots. (Schenke, 2009b) | Tipton | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|-------------------------------------|---|---|--|
| 110 | Pinheiro Dairy Environmental Report | An expansion of an existing legal non-conforming heifer feedlot operation to a new dairy facility. The project proposes a maximum of 3,937 total animal units (2,350 Holstein milk cows plus support stock) on 87 acres of 810.5-acre site in the AE-40 Zone (Exclusive Agricultural – 40-acre minimum). The proposed dairy facility will have freestall housing with a flush system for the milking herd and the support stock will be housed in shaded corrals with flushed alleys. The balance of the site would remain in current agricultural production as farmable acres of corn/wheat silage (double cropped). The current feedlot operation has 529 total animal units on a 555-acre site. (CEQAnet, 2009) | Avenue 120 and Road 112, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, air quality, and agriculture. |
| 111 | SR-190 | Adding passing lanes. (Tulare County Association of Governments, 2007) | SR-99 through SR-65, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 112 | Western Ag | Construction of 21 single-family lots. (Schenke, 2009b) | Poplar | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 113 | Eagle Meadows | Construction of 450 single-family lots. (Schenke, 2009b) | Pixley | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 114 | Riverwalk | The project involves construction and operation of a retail commercial center containing a total of up to 256,471 square feet of retail distributed amongst five building pads. The proposed project includes a total of up to 215,000 square feet associated with the Wal-Mart Supercenter. (CEQAnet, 2010) | Indiana Street and Springville Drive, Porterville | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 115 | New Porterville Courthouse | The Administrative Office of the Courts proposes acquisition of parcels, construction of a new 9-courtroom courthouse, and operation of the proposed courthouse for the Superior Court of California, County of Tulare. The new courthouse will replace the court's current Porterville and Tulare facilities. The new courthouse will have approximately 10 secured parking spaces for the Superior Court and approximately 320 spaces for other staff and the public. The City of Porterville owns the site, and the Porterville Fairgrounds-Municipal Ballpark currently occupies the site. (CEQAnet, 2009) | East Olive Avenue and North Plano Street, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
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| 116 | Afinar | Construction of 174 single-family lots. (Schenke, 2009b) | Earlimart | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 117 | SR-65 | Widen to four lanes. (Tulare County Association of Governments, 2007) | Porterville, Tulare County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 118 | Wagon Wheel Solar | Development of 480 acres (20 MW) of solar. (Casdorph, 2010) | East of SR-33 and north of SR-46, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 119 | Smyrna Solar | Development of 125 acres (20 MW) of solar. (Casdorph, 2010) | Intersection of Pond Road and Peterson Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 120 | SR-99 | Interchange upgrade. (Kern Council of Governments, 2007) | Woollomes Avenue, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 121 | Delano Marketplace | The Delano Marketplace project would include two large anchor stores, retail shops, and restaurants (sit down and fast food) for a total of approximately 456,022 square feet. The large anchor stores would include a 228,751-square-foot WalMart Supercenter and a 172,463-square-foot home improvement store. The WalMart Supercenter store will include general merchandise sales; a garden center; tire and lube express; grocery sales and support space; stockroom/receiving area; ancillary areas; tenant areas (e.g., a fast food restaurant and a vision center); a 14 position gas station on a separate pad; drive-through pharmacy; and a bagged goods pickup area. The WalMart Supercenter will operate 24 hours per day. The proposed home improvement store will include general merchandise sales and a garden center. The proposed project includes nine other parcels for food and retail uses with proposed building sizes ranging from 2,500 to 14,410 square feet, for a total project size of 456,022 square feet. (CEQAnet, 2009) | SR-99 and Woollomes Avenue, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---------------------------------|---|---|--|
| 122 | Lost Hills Solar | Development of 307 acres (32.5 MW) of solar. (Casdorff, 2010) | East of SR-46 and SR-33, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 123 | SR-46 | Interchange upgrade. (Kern Council of Governments, 2007) | Halloway Road to I-5, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 124 | SR-46 | Construction of two new lanes and a median to widen State Route (SR) 46 into a four-lane expressway. The project also includes the installation of four new traffic signals and the upgrade of existing intersections to conform to current design standards. The project will result in impacts to 543 acres of San Joaquin kit fox habitat, as well as 124 acres of potential habitat for San Joaquin antelope squirrel and giant kangaroo rat. The San Joaquin kit fox and San Joaquin antelope squirrel are designated Threatened species and the giant kangaroo rat is a designated Endangered species under the California Endangered Species Act (CESA). (Kern Council of Governments, 2007) | San Luis Obispo County line to Halloway Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 125 | Wasco Rose City Enterprise Zone | The City of Wasco is proposing a State of California Enterprise Zone Application for the 2009 calendar year. Proposed uses of the Enterprise Zone include the development of a 328-acre Industrial Park and development of a 1,053-acre commercial shopping center for a total of 1,381 acres. (CEQAnet, 2009) | SR-43 and SR-46, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 126 | Goose Lake Solar | Development of 94 acres (15 MW) of solar. (Casdorff, 2010) | Corcoran Road and Carmel Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|---|--|---|
| 127 | Wastewater Treatment Plant (WWTP); Centrifuge Project (Project); Clean Water State Revolving Fund (CWSRF) No. C-06-5063-110 | The Project consists of installation of a sludge centrifuge facility that includes a centrifuge feed pump station, a polymer unit, power supply from an existing electrical building, and associated yard structures at the existing WWTP. (CEQAnet, 2009) | Wasco, CA | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and utilities. |
| 128 | Shafter-Wasco Sanitary Landfill Permit Revision (GPA 8, CUP 1, Map 78, Ag Preserve No. 8 Exclusion) | (A) Revise Solid Waste Facility Permit to change boundary from 160.61 acres to 357.48 acres; increase permitted elevation of the landfill; increase permitted capacity of the landfill; (B) General Plan and Appendix E Map Amendment from 8.1 to 3.4.1 for up to 196.87 acres for landfill buffer; (C) amend the legal description of the CUP #1, Map #78 to include additional buffer lands within the permitted facility boundary; (D) petition for exclusion from Agricultural Preserve #8 for 407.69 acres; (E) file Non-Renewal of Williamson Act Contract for landfill buffer areas (247.08 acres) and file a cancellation for a portion of those buffer areas (89.81 acres), and; (F) record a Redundant Deed or Lot Line adjustment to merge the multi-parcel site into one. (CEQAnet, 2009) | Scotfield Avenue and Lerdo Highway, Wasco | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, transportation, noise, air quality, and agriculture. |
| 129 | North Shafter Sewer Project | This project would expand the City's wastewater collection system into an area of the City that is not currently served by the sewer systems and will replace the old septic tank systems, and eliminate the frequent raw sewage back-ups and exposure of residents to potential pollution problems. The project involves construction of approximately 12,450 linear feet of a new 8-inch sewer line, approximately two hundred 4-inch sewer laterals extending to the property lines at all existing developed parcels in the project area, and approximately twelve sewer wyes with plugs for future connection to the remaining undeveloped lots within the project area. (CEQAnet, 2009) | Bounded by SR-43 (east), Park Lane and Mettler Avenue (west), Tulare Avenue (south), Mayer Avenue (north), Kern County | Possible overlap of construction activities. An area of potential cumulative impacts is utilities. |
| 130 | Cawelo S5 Lateral to Conduit F Interconnection Pipeline | A 3-mile-interconnection pipeline will be constructed to allow Chevron production water to be conveyed from the Cawelo Reservoir "B" to the Cawelo Water District Famoso Groundwater Recharge Facility. The pipeline will consist of one 30-inch-diameter C905 Class 200 PVC pipe. The pipeline will be below the ground surface with approximately 4 feet of earth cover and air release valves, gate valves, and blow-off assemblies will be provided along the pipeline. The anticipated trench width is approximately 7 feet. (CEQAnet, 2009) | Wallace Road and Kimberlina Road, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are utilities and mineral and energy. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|--|--|--|
| 131 | Reconstructing and Resurfacing of Lerdo Highway between Carver Street and approximately 850 feet east of Driver Road - Federal Project ID# ESPL 5281-012 | Reconstructing and resurfacing of Lerdo Highway between Carver Street and approximately 850 feet east of the east boundary of Driver Road. The resurfacing and reconstructing of existing lanes located wholly within the City street right-of-way. No work will occur within the state right-of-way. (CEQAnet, 2009) | Lerdo Highway between Carver Street and Driver Road, Shafter | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 132 | Rosedale Ranch Project | Annexation of 1,655 acres of unincorporated Kern County into the City of Bakersfield for the development of residential units, commercial office, retail, institutional, light industrial, and support facilities and uses such as schools, parks, trails, lakes, and other recreational amenities. (CEQAnet, 2010) | Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 133 | Rosedale Union School District-Proposed Elementary and Middle School | The project is the construction of an elementary and middle school on approximately 34.5 acres of land. The elementary school will consist of kindergarten, primary, intermediate, and special education classrooms, along with an administrative building, library, and multi-purpose food service building. The middle school will include classrooms, administrative offices, a library, a gym, and multi-purpose building. This project will also include play areas and paved parking areas, with landscaping throughout the campus. The elementary school will serve approximately 650 to 850 students and house 30 to 50 employees, and the middle school will serve 650 to 800 students with 24 to 40 employees. (CEQAnet, 2009) | Southwest corner of Wegis Road and Noriega Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 134 | Neighborhood Development LLC Project | Development of up to 309 dwelling units, multi-family dwelling units on approximately 10 acres, single-family homes on approximately 50 acres, and 85,000 square feet of commercial space on approximately 12 acres, and open space/park on approximately 6 acres for a total of 78 acres. (CEQAnet, 2009) | Driver Road and Rosedale Highway, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 135 | Bakersfield Land Investment by McIntosh and Associates | Specific Plan Amendment of the Western Rosedale Specific Plan in the Metropolitan Bakersfield General Plan, related zone change, exclusion from an Agricultural Preserve and Vesting Tentative Tracts on three sites to change the permitted uses from agriculture to 1,040 single-family homes on 6,000-square-foot lots and 70 single-family homes on 10,860-square-foot lots. (CEQAnet, 2009) | Brimhall, Reina, Wegis, Driver, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---------------------------------------|---|---|--|
| 136 | Elk Hills Solar | Development of 47 acres (7 MW) of solar. (Casdorff, 2010) | SR-119 east of Valley West Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 137 | SR-58 | Widen to four lanes. (Kern Council of Governments, 2007) | SR-43 to Allen Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 138 | Seventh Standard Substation Project | Construction of a new 115/21 kV low-profile substation, including 115 kV bus structures, six 115 kV circuit breakers, three 115/21 kV power transformers, three 45 MVA transformers, and up to nine distribution circuits at full build out. The proposed project would also include approximately 1,000 feet of 115 kV power line on tubular steel poles. (CEQAnet, 2009) | Seventh Standard Road, and Verdugo Lane, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are utilities and mineral and energy. |
| 139 | CUP 27, Map 101; M&B Land Development | A request for a Conditional Use Permit to allow a concrete and asphalt recycling facility and batch plant currently used by an equipment rental/trucking facility. The existing equipment/ rental facilities would be moved on site to allow space for the new recycling facilities. The operation would take in 250 tons of materials daily, 1,250 tons weekly, and 62,500 tons annually. It would process 200 tons daily, 1,000 tons weekly, and 50,000 tons annually. Prior to processing, materials would be stored on the site. The operation would run from 7:00 a.m. to 5:00 p.m., Monday through Friday and would require 6 employees to operate the onsite equipment. End dump/belly dump trucks would be used to transport the materials at a rate of 10 to 13 trucks daily, 50 to 65 trucks weekly, and 250 to 266 trucks monthly. (CEQAnet, 2009) | Hageman Road, Bakersfield (Parcel No: 529-020-09, Township: 29S, Range 26E, Section: 14, Base: MDB&M) | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 140 | PD 54, Map 81 | Precise Development Plan to build two four-story hotels, totaling approximately 108,000 square feet. The project will consist of a Holiday Inn Express (105 rooms) and a Marriott Towne Place (102 rooms). The Holiday Inn will measure 47 feet, 7 inches in height and the Marriott will measure 43 feet, 3 inches in height. Floor plans show that each hotel will contain the following: a lobby, a pantry, a swimming pool, meeting rooms, offices, gymnasiums, elevators/stairwells, etc. It does not appear that either hotel will contain a formal restaurant. (CEQAnet, 2009) | Renfro and Meacham, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 141 | Silver Oak Park Development | Neighborhood park development (9.79 acres) including children's play area, water cooling station, two lighted tennis courts, a lighted basketball facility, turf volleyball courts, open turf play area with minimal backstops, restrooms, a picnic shelter, picnic pads, parking, walks, landscaping, and associated improvements. The site was previously graded with the surrounding residential tract. Street and utility improvements were also installed. (CEQAnet, 2009) | Heath Rd and Opus One Drive, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, and air quality. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|---|--|---|
| 142 | Saco Ranch Commercial Center (GPA/ZC 06-2247, Annexation No. 608) | The proposed project consists of the annexation of approximately 300.98 acres within unincorporated Kern County into the City's corporate limits, an amendment to the Metropolitan Bakersfield General Plan Land Use Element, and a concurrent zone change. The annexation, general plan amendment, and zone change would permit development of a commercial center containing approximately 300.98 acres of retail, commercial office, and industrial uses in the City of Bakersfield. The proposed net building area is approximately 3,167,996 square feet. Approximately 144 acres of land will be used for retail stores, restaurants, and a movie theater, totaling approximately 1,459,500 square feet of building space. Commercial office uses are proposed on approximately 30.5 acres containing approximately 332,000 square feet of building space. Industrial uses are proposed on approximately 126.4 acres containing approximately 1,376,496 square feet of building space. Access to the proposed project will be provided along Coffee Road (an arterial), Seventh Standard Road (an expressway), Quail Creek Road (a collector on the western boundary), Etchart Road (a collector), Snow Road (an arterial), and Fruitvale Avenue (an arterial). (CEQAnet, 2009) | Coffee Road and Seventh Standard Road Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 143 | PD #6, Map 101-23 Rosedale & Renfro, LP | Precise Development Plan on the 26-acre site to allow for the construction of a multi-store shopping center. The proposed shopping center includes the development of up to 11 commercial pads, including one major anchor tenant in a 145,436-square-foot building, consisting of a proposed Target with an outdoor garden center. The other known tenants at this time include a 14,820-square-foot Walgreens and a 2,275-square-foot Jack-In-The-Box. The remaining 8 pad spaces totaling 66,435 square feet would consist of other retail and restaurant uses. No leases have been signed for these remaining spaces, and future tenants are unknown at this time. Sewage disposal is proposed through connection to the City of Bakersfield. Water is proposed to be supplied through Vaughn Water Company. (CEQAnet, 2009) | Rosedale Highway and Renfro Road, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 144 | SR-65 | Widen to four lanes. (Kern Council of Governments, 2007) | James Road to Merle Haggard Boulevard, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 145 | 5426 CBM; GPA #7, Map 140; ZCC 13, Map 140, PD 8, Map 140, Ag Pres 10 - Excl | Construction of five 4,300-square-foot warehouse buildings with attached 500-square-foot offices. Processing or fabrication will be limited to activities conducted within a building that does not emit fumes, odor, dust, smoke, or gas beyond the confines of the building within which activities occur or produce significant levels of noise or vibration. As proposed, water supply and sewage disposal for the development would be provided via private well and septic system, respectively. Access would be provided via Enos Lane, which is designated as an Arterial Alignment by the Circulation Element of the Kern County General Plan. (CEQAnet, 2009) | Taft Highway and Enos Lane, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, air quality, and agriculture. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|--|---|--|--|
| 146 | Maricopa Sun Solar Project | Development of 6,046 acres (700 MW) of solar. (Casdorff, 2010) | West of I-5 and east of Taft, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 147 | CUP #08-1795 | A request for a Conditional Use Permit to allow the development of a 14.1-acre water park, including paid public parking facilities and a 25,000-square-foot community center with associated parking on approximately 28 total acres. (CEQAnet, 2009) | Riverlakes Drive and Coffee Road, Bakersfield, | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 148 | Bakersfield Commons | The proposed Project involves a 255-acre mixed-use development consisting of mixed-use commercial (proposed lifestyle center), general commercial (proposed office development) and low and high density residential uses. The Project proposes the development of up to 1,400,000 square feet of retail and theater uses, and 600,000 square feet of office uses, comprising a total of 2,000,000 square feet of commercial uses. In addition, the Project would include the development of a total of 425 residential units consisting of 80 single-family detached units and 345 multi-family units. (City of Bakersfield, 2010) | North of Brimhall Road. Generally south of the BNSF railroad and east and west of Coffee Road, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, biology, visual and population and housing. |
| 149 | California State University Bakersfield Baseball Facility Improvements | This project includes the construction and operation of several improvements to the recently constructed baseball practice field. These improvements include a 1,400-square-foot combination concession/ticket sales and restroom building, bleachers accommodating 1,500 people, a 10,000-square-foot pitching/batting tunnel, and completion of an additional 58-space parking lot. The project also includes the installation of lighting for night games/practice. (CEQAnet, 2009) | Stockdale Highway and Don Hart Drive West, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation and aesthetics. |
| 150 | Northwest Communities | Development of 802 single-family residences and approximately 36,000 square feet of commercial development. (Kern County, 2007) | Southwestern part of Bakersfield, CA | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 151 | SR-58 | Widen to six lanes, grade separation to Landco. (Kern Council of Governments, 2007) | Calloway Drive to SR-99, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|--|--|---|
| 152 | Clean Fuels Project by Big West California, LLC | Construct new refining processing units and associated structures and to modify existing structures within the existing refinery. (Kern County, 2008) | 6451 Rosedale Highway Bakersfield, CA | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 153 | SR-99 | Interchange upgrade. (Kern Council of Governments, 2007) | Olive Drive, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 154 | Meadows Field | Construct major new airport terminal with supporting commercial and industrial uses. (City of Bakersfield, 2001) | 3701 Wings Way, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are air quality and noise. |
| 155 | Meadows Field | Runway expansion and improvements. (City of Bakersfield, 2001) | 3701 Wings Way, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are air quality and noise. |
| 156 | SR-99 | Caltrans District 6 in conjunction with the City of Bakersfield, is proposing a new public road connection via an interchange on SR-99 at Hosking Avenue (Post Mile 18.5). The proposed interchange would replace the existing Hosking Avenue overcrossing (one lane in each direction) with a new structure that has three lanes in each direction and sidewalks and shoulders on both sides. The connection to SR-99 would be accomplished with a partial cloverleaf interchange. Loop on-ramps would provide access to SR-99 for eastbound-to-northbound and westbound-to-southbound traffic, while spread diamond off-ramps and direct on-ramps would serve traffic in the northbound and southbound directions. (Kern Council of Governments, 2007) | SR-99 and Hosking Avenue, Bakersfield, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 157 | 99 Houghton, LLC by McIntosh and Associates | Proposed General Plan Amendment, Zone Change, and Exclusion from Agricultural Preserve to industrial use to allow for the development of an industrial park with a maximum of 5,134,253 square feet of net building area. (CEQAnet, 2009) | South Union and DiGiorgio, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, noise, and agriculture. |
| 158 | SR-58 | Widen to eight lanes. (Kern Council of Governments, 2007) | SR-99 to Cottonwood Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|--|--|--|
| 159 | Mill Creek Linear Park Plan | Planned components of the mixed-use project include; 65,000 square feet of commercial development including retail, restaurants, entertainment, recreation and neighborhood services, 80 units of affordable town-home style high rise two- and three-bedroom rental units and 35 upscale market-rate urban style condominiums. (Kunz, no date) | Encompasses the area surrounded by California Street in the south, Q Street in the west, a property line close to BNSF Right-of-Way in the north and the S Street in the east, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 160 | CUP #09-0315 | A request for a Conditional Use Permit to allow for a concrete and asphalt recycling facility on an 11.24-acre site. The operation would allow delivery to the site of a maximum of 1,200 tons of materials daily and 300,000 tons of materials annually. The equipment proposed for the facility includes the operation of off-road diesel trucks, wheeled/truck loaders, and one grader. The operation would run from 6 a.m. to 5 p.m., Monday through Saturday, and would require 3 to 6 employees to operate the onsite equipment. End dump/belly dump trucks would be used to transport the materials at a rate of 88 trucks daily and 500 trucks weekly. (CEQAnet, 2009) | East White Lane and South Union Avenue, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |
| 161 | Old Town Kern-Pioneer Redevelopment Project | Construction of 74 single-family residential units, 30,000 square feet of commercial/retail, 115 units of affordable housing, a swimming pool, a hospital expansion, and a 40,000-square-foot commercial development. (Bakersfield Redevelopment Agency, 2005) | Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 162 | The Canyons: Bakersfield, CA | Residential, commercial, and recreational development on approximately 889 acres. The proposed project consists of amendment to the Land Use and Circulation Elements of the City of Bakersfield General Plan, amendment of the Northeast Bakersfield Specific Parks and Trails Plan, rezoning, and subdivisions for mixed-use including approximately 1,214 single and 120 multiple family residential units, and 8.15 acres of commercial, recreational areas, trails, parks, and open space. (CEQAnet, 2009) | Morning Drive and Paladino Drive and Alfred Harrell Highway, Bakersfield | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 163 | I-5 Interchange Improvement | Interchange improvements at SR-99 and I-5. (Fresno County, 2010) | Fresno County, South of Bakersfield near Wheeler Ridge. South of Legray Road. Intersection of I-5 and SR-99. | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, air quality, and noise. |

| Map ID on Figure A | Project Name | Description | Location | Potential Cumulative Impact Areas |
|--------------------|---|--|--|--|
| 164 | Tejon Industrial Complex – East Specific Plan | Development of 15,153,200 square feet of industrial uses and 275,000 square feet of commercial uses. (Kern County, 2005) | Wheeler Ridge and Laval Road interchange, unincorporated Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |
| 165 | Weldon Solar Project | Development of 500 acres (60 MW) of solar. (Casdorph, 2010) | Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 166 | San Bernard Solar | Development of 43 acres (6 MW) of solar. (Casdorph, 2010) | San Bernard, David Road, east of Edison Road, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are transportation, noise, air quality, and biology. |
| 167 | Tejon Mountain Village by TMV, LLC | The project includes adoption of the Tejon Mountain Village Specific and Community Plan and the Tejon Mountain Village Special Plan to implement the proposed zoning. Implementation of the project would allow for the development of up to 3,450 residential units ranging in lot sizes from 2,400 square feet to over 20 acres, up to 160,000 square feet of commercial development, up to 750 hotel/resort lodging units, two 18-hole golf courses, and additional support facilities. (CEQAnet, 2009) | East of the Interstate 5 and the Lebec Interchange, Kern County | Possible overlap of construction activities. Areas of potential cumulative impacts are land use, aesthetics, population and housing, transportation, noise, and air quality. |

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