3.16 Aesthetics and Visual Resources

3.16.1 Introduction

This section describes the existing visual environment of the Merced to Fresno Section of the HST System, including scenic resources, and analyzes the potential impacts on aesthetics and visual resources that would result from the HST alternatives. This section also describes the regulatory setting, affected environment, impacts, and mitigation measures for aesthetics and visual resources. The *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012) includes photographs of existing conditions and simulated views at key locations; it also provides additional information on aesthetics and visual resources.

Aesthetics and visual resources are natural and cultural landscape features that people see and that contribute to the public's appreciative enjoyment of the environment. Aesthetic and visual resource impacts are generally defined in terms of the extent to which the project's physical characteristics and potential visibility would change the perceived visual character and visual quality of the viewed landscape. Section 3.13, Station Planning, Land Use, and Development, provides information on issues related to land use compatibility.

The 2005 Statewide Program EIR/EIS (Authority and FRA 2005) concluded that the HST System would have low potential to result in visual impacts on aesthetic and visual resources in the Central Valley, with the exception of changes at the HST stations. The HST alternatives incorporate, to the extent possible, design solutions that lead to development of attractive project facilities that integrate into the landscape context, such that view blockage, contrast with settings, light and shadow effects, and other visual impacts would be minimized. Where possible, the design is at-grade, which reduces visual barriers. It would also lie along existing transportation corridors, thus minimizing changes in visual character.

3.16.2 Laws, Regulations, and Orders

The following federal, state, and local laws, regulations, and agency jurisdiction and management guidance apply to this resource. Consideration of potential impacts to the existing visual environment is informed by federal, state, and local rules and policies. These rules and polices focus on preserving visual quality, minimizing conflicts, improving aesthetic character, and mitigating adverse effects. The federal, state, and local regulations and policies that affect this project are listed below, with a brief explanation.

3.16.2.1 Federal Regulations

Department of Transportation Act, Section 4(f) [DOT Act 49 U.S.C. 303]

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.

National Historic Preservation Act (NHPA) [16 U.S.C. Section 470 et.seq.]

The NHPA establishes the federal government policy on historic preservation. Under the NHPA, significant cultural resources, referred to as historic properties, include any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Potential adverse effects include change in the physical features within the property's setting that contribute to its historic significance and introduction of visual elements that diminish the integrity of the property's significant historic features.

Federal Railroad Administration [64 FR Page 28545]

The FRA's Procedures for Considering Environmental Impacts states that "the EIS should identify any significant changes likely to occur in the natural environment and in the developed environment. The EIS

should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by DOT Order 5610.4."

3.16.2.2 State Regulations

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

State Scenic Highways lists highways that are either eligible for designation as a scenic highway or already are designated as a scenic highway. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view (Caltrans 2010). Because no designated state scenic highways are located within the HST alignments, they are not discussed further in this section. Caltrans design standards would apply to state highway improvements.

3.16.2.3 Local and Regional Plans, Policies, and Regulations

Several city and county plans, including general plans, downtown master plans, community plans, and specific plans address aesthetic and visual resources. Policies and regulations include design guidelines, designating scenic corridors/routes and identifying areas of particular scenic value. Local community design guidelines will be addressed during the subsequent phase of detailed architectural design and system engineering. The Authority will coordinate and collaborate with local jurisdictions, residents, and community leaders in regard to the appropriate mitigation measures and local design guidelines that are most context-appropriate for the locale's built and natural environment. Table 3.16-1 lists the local plans and policies that were identified and considered in the preparation of this analysis.

Table 3.16-1
Local Plans and Policies

Jurisdiction, Plan	Policy	Summary
Merced County Year 2000 General Plan (Merced County 1990)	Open Space Conservation Policy 4	Directs the county to buffer non-recreational land uses from sensitive public recreation lands through site design and technique.
	Open Space Conservation Policies 7, 9, and 10	Specifies proper management for land with high aesthetic value, including stream corridors, highway corridors, and areas where power transmission and distribution facilities should be underground.
	Land Use Policy 4	Specifies design characteristics for all development within a highway interchange center (intersections of highways and roads that require overpasses or other infrastructure).
	Land Use Policy 5	Allows for agricultural land use designations within and adjacent to highway interchange centers as a means for maintaining scenic characteristics and aesthetic goals until such time that viable projects are submitted.
City of Atwater General Plan (City of Atwater 2000)	Policy CO-10.1	Protects scenic resources within the city by using landscaping and other features to enhance and beautify major streets and gateways into and through the city.
	Policy CO-10.2	Avoids excessive signage and other features that could detract from the scenic quality of prominent circulation routes.
	Policy LU-4.1	Encourages actions that enhance the scenic value of corridors, such as landscaping, maintenance, and architectural design.

Jurisdiction, Plan	Policy	Summary
Merced Vision 2030 General Plan (City of Merced 2012)	Policy UD 2.2 (Implementing Actions 2.2.b through 2.2.g)	Mandates the maintenance and enhancement of the unique community appearance of Merced by addressing the scale of building design relative to neighborhood character, discouraging visual monotony along major streets, specifying landscaping requirements, expanding programs for the undergrounding of utility lines, and requiring, where possible, landscaping associated with rail lines.
	Policy OS 1.3 (Implementing Actions 1.3.a through 1.3.c)	Includes criteria for additional scenic route designation, direction to preserve existing scenic corridors, guidelines for review of a project within a designated scenic corridor, and direction for exploration of future scenic corridor designation in South Merced.
Madera County General Plan (Madera County 1995)	Policy 1.H.1	Requires that new development in scenic rural areas be planned and designed to avoid locating structures along ridgelines, on steep slopes, or in other highly visible locations, except under certain conditions.
	Policy 1.H.2	Requires that new developments incorporate sound soil conservation practices and minimize land alterations.
	Policies 1.I.1 through 1.I.4	Address the designation, provision, protection, enhancement, and management of scenic routes.
City of Madera General Plan (City of Madera 2009)	Goals 1 through 10	Address high-quality urban design, sense of community, public art and entryways, streetscapes, walkability, human scale, neighborhood character, attractive downtown, downtown revitalization, and commercial development to enhance the pedestrian environment.
	Policies 2, 3, 11, 12, 13, and 18	Address high-quality urban design; city architectural quality standards; entry point identification; public art in the public and private realms; and sound barrier design, landscaping, and mitigation.
City of Chowchilla 2040 General Plan (City of Chowchilla 2011)	Policy LU 9.1	Promotes an aesthetically pleasing, pedestrian-friendly, and diverse downtown; also directs the city to develop the City of Chowchilla Downtown Master Plan, Volume 1: Master Plan Goals, Objectives, and Policies (see Policy 2.2 below).
	Policy CI 7.1	Discusses sound barrier standards and incorporation of surface treatments and landscaping.
	Policy CI 7.4	Discusses landscaping for development along regional highway rights-of-way.
	Policy OC 13	Identifies biological communities and wildlife habitats as contributing to the overall recreational, educational, and aesthetic values of the city.
City of Chowchilla Downtown Master Plan (City of Chowchilla 2008)	Policy 2.2	Requires new development, remodels, and renovations in the downtown area to be consistent with the downtown master plan's design guidelines and design standards.

Jurisdiction, Plan	Policy	Summary
Fresno County General Plan Policy Document (Fresno County 2000)	Policies OS-K.1 through OS-K.4	Protect the scenic resources of the county and promote development that enhances those resources through the identification of important scenic resources, development review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods, including the discouragement of development that degrades areas of scenic quality.
	Policy OS-H.11	Directs the support of the policies of the San Joaquin River Parkway Master Plan (San Joaquin River Conservancy 2000) to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source.
	Policy OS-I.10	Directs the county to review development proposals for consistency with and accessibility to the trails in the Conceptual Recreational Trail Corridor Map.
City of Fresno 2025 General Plan (City of Fresno 2002)	Policy E-4a	Addresses measures to preserve and develop scenic or aesthetic qualities along scenic corridors or boulevards identified on the Land Use and Circulation Map in the adopted City of Fresno 2025 General Plan.
	Policy F-14a	States that the multipurpose trail will extend as far west as SR 99.
City of Fresno West Area Community Plan (City of Fresno 2002)	Policy W-7d	Provides specifications for walls and earthen berms (raised barriers associated with roadways or transportation corridors) required to protect the integrity of residential areas adjacent to nonresidential developments.
City of Fresno Highway City Neighborhood *Specific Plan* (City of Fresno 1998)	Parks, Recreation, and Open Space Element Policy 5-2	Includes guidance on the visual appearance of pieces of land leftover from development projects (remnant parcels), raised barriers associated with roadways or transportation corridors (berms), and underused land resources.
	Historic Preservation, Cultural Resources, and Entertainment Element Policies 7-3 and 7-4	Includes guidance on the conservation, revitalization, and support for cultural and entertainment resources, including Forestiere Underground Gardens.
City of Fresno Tower District Specific Plan (City of Fresno 1991)	Policy 9	Includes guidance on the enhancement of public open space areas and visual appearance through the landscaping of remnant parcels and berms.

3.16.3 Methods for Evaluating Impacts

A visual resource is a site, object, or landscape feature that contributes to the visual character of the surrounding area or is important because of its visual characteristics or scenic qualities. For this discussion, visual resources also include designated scenic routes and views toward and within natural areas, parks, and urban areas identified as having historical or cultural significance or that include buildings of similar significance or notable, landmark status. Policy documents, cultural resource reports, or observations of scenic value and apparent popularity during fieldwork directed the list of visual resources.

The methodology used to evaluate aesthetics and visual quality impacts follows federal guidelines provided in the *Visual Impact Assessment of Highway Projects* (Federal Highway Administration

[FHWA] 1988) and the state guidelines provided in the *Standard Environmental Reference* (Caltrans 2007). The FHWA visual impact assessment methodology provides an approach and the terminology for analyzing both visual quality and viewer response for transportation corridors. Chapter 27 of the *Standard Environmental Reference* provides an overview of the visual and aesthetics review process that Caltrans uses; Chapter 27 references the FHWA methodology for visual impact assessment.

The FHWA visual impact assessment methodology for visual impact assessment includes the following components:

- Define the project setting and viewshed.
- Determine who has views of the project.
- Identify key viewpoints (KVPs) and views for visual assessment.
- Analyze changes in existing visual resources and viewer response.
- Depict the visual appearance with the project.
- Assess the project's visual impacts.
- Propose methods to mitigate adverse visual impacts.

The following describes terms and concepts that are used when evaluating the visual impacts associated with long, linear transportation project such as the Merced to Fresno Section of the HST System.

Landscape units are used to "break up" long linear projects into logical geographic entities for which impacts from a proposed project can be assessed. These units generally have similar visual characteristics (or character), although the visual characteristics of smaller locations within each landscape unit may differ from the overall unit's character. In order to assist in characterizing the existing visual conditions of the landscape units, and to assist in determining impacts on them, KVPs are used to provide examples of existing views of the landscape within each landscape unit. KVPs are also used to illustrate how a proposed project would change those views. KVPs represent specific locations within a landscape unit from which a proposed project would be visible. These locations are typically selected to either represent (1) "typical" views from common types of viewing areas from which a proposed project could be seen, such as a highway or residential area, or (2) specific areas such as parks, viewpoints, and historic districts that may be impacted by a proposed project. KVPs are very useful for depicting the range of visual character and visual quality found within a landscape unit. The views from KVPs selected for analysis serve as site-specific examples of existing visual conditions so analysts can simulate the view with the proposed project in place to assess impacts. The impact determination for an individual KVP may not be the same as the impact determination for the entire landscape unit in which the KVP is located. This is because when determining impacts to landscape units, the entire landscape unit must be considered, not one specific location. Some KVPs are chosen to be representative of visual conditions within a landscape unit and some are selected to represent sensitive or unique viewing locations. The condition of the viewed landscape seen from a sensitive or unique KVP may be very different than what is more typically seen in the landscape unit; thus the impact determination to KVPs may be different than that of the overall landscape unit.

Viewer groups within the study area represent such people as roadway/highway/rail users, residents, commercial viewers, office viewers, park and trail users, and agricultural and industrial workers. Sensitivity varies among viewer types. Sensitivity to views affects the response.

Low viewer sensitivity exists when there are few viewers who experience a defined view, or they are not particularly concerned or are distracted by the view, such as a commuter on the freeway; high viewer sensitivity exists when there are many viewers who have a view frequently or for a long duration, as well as viewers (many or few), such as those in a residential neighborhood, who are likely to be very aware of and concerned about the view (FHWA 1988). Generally, residents and recreationists are highly sensitive viewers; local business staff and commuters are less sensitive viewers, although viewer sensitivity in established downtown areas can be high. In these areas, particularly in parks or along pedestrian-oriented sidewalks, viewers are likely to have expectations of a built environment particular to an identifiable urban core, including specific structures; expectations related to such views leads to higher viewer sensitivity. The FHWA visual quality analysis system recognizes that most views are seen by a

variety of viewer types with different sensitivities to changes in the viewed landscape. The FHWA system uses the most sensitive viewer type as the basis for determining the potential impact of a proposed project on viewers.

Visual quality is an assessment of the composition of the character-defining features of the landscape. Under the FHWA visual quality analysis system, visual quality is determined by evaluating the viewed landscape's characteristics in terms of vividness, intactness, and unity (which are defined below). Visual quality is rated as very low, low, moderately low, moderate, moderately high, high, or very high. To determine overall visual quality, the vividness, intactness, and unity of a viewed landscape are rated and the ratings of these three factors determine the overall visual quality. The *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012) includes the ratings that were done for the KVPs. The following three factors determine visual quality:

- Vividness is the degree of drama, memorability, or distinctiveness of the landscape components as seen in a particular view.

- Intactness is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features, and out of place features and elements do not break up the landscape. Low intactness means that visual elements in a view are unattractive or detract from the view's quality.

- Unity is the landscape's degree of visual coherence and compositional harmony considered as a whole. High unity frequently attests to the careful design of individual components and their relationship in the landscape or an undisturbed natural landscape.

The existing visual quality of the study area was determined by analysts familiar with the FHWA methodology and who visited the study area on several occasions. Section 3.16.4.2 (Landscape Units, Key Viewpoints, and Establishing Existing Visual Quality) describes how the existing visual quality categories for the study area were determined.

Changes in visual quality and the sensitivity of people who view the impacted landscape determine the level of impact of a proposed project. For this project, level of impact was determined for KVPs according to the following:

- If viewers with high or moderate viewer sensitivity observed a reduction of two or more visual quality categories (for example, from high to moderate), the impact would be considered significant for the CEQA determination and substantial for the NEPA.

- If viewers with high sensitivity observed a reduction of one or more visual quality categories (for example, high to moderately high, or moderate to low), the impact would be considered significant for the CEQA determination and substantial for the NEPA assessment.

- If viewers with moderate sensitivity observed a reduction of one visual quality category, the impact would be considered less than significant for the CEQA determination and moderate for the NEPA assessment.

- If viewers with low sensitivity observed a reduction of zero or more visual quality categories, the impact would be considered less than significant for the CEQA determination and negligible for the NEPA assessment.

In many landscape units (and KVPs) the alternatives would alter visual quality, but not enough to lower the visual quality category. These impacts are considered to be less than significant for the CEQA determination and negligible or moderate for the NEPA assessment. If the visual quality category increased (for example, moderate to moderately high), the impact would be considered beneficial (and would be categorized as negligible under NEPA and less than significant under CEQA). Change to the visual quality of each KVP was determined by applying the FHWA visual quality analysis system, using the

visual quality analyst's professional judgment and familiarity with the Merced to Fresno Section of the HST System. The analyst also reviewed engineering drawings of project components, aerial images, and examined visual simulations of the KVPs. The determination of the impacts on the entire landscape unit was based in large part upon the impacts on the KVPs within the landscape units but also included the analyst's review of engineering drawings of project components within the entire landscape unit and on-the-ground familiarity with the landscape units within the Merced to Fresno Section of the HST System.

Visual or landscape character is an impartial description of what the landscape consists of and is defined by the relationships between the existing visible natural and built landscape features. These relationships are considered in terms of dominance, scale, diversity, and continuity. Visual character-defining resources and features include landforms, vegetation, land uses, buildings, transportation facilities, overhead utility structures and lighting, open space, viewpoints and views to visual resources, water bodies, historic structures, downtown skylines, and apparent upkeep and maintenance of property. Examples of types of visual or landscape character found along the Merced to Fresno Section of the HST System include irrigated row crop agriculture, industrial, automobile-oriented retail shopping centers, single-family residential, undeveloped vacant lots, downtown business district, and parks.

3.16.3.1 Method for Evaluating Effects under NEPA

Pursuant to NEPA regulations (40 CFR 1500-1508), project effects are evaluated based on the criteria of context and intensity. Context means the affected environment in which a proposed project occurs. Intensity refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short- or long-term), and other considerations. Beneficial effects are identified and described. When there is no measurable effect, an impact is found not to occur. The intensity of adverse effects is the degree or magnitude of a potential adverse effect, described as negligible, moderate, or substantial. Context and intensity are considered together when determining whether an impact is significant under NEPA. Thus, it is possible that a significant adverse effect may still exist when the impact has negligible intensity or even if the impact is beneficial.

For aesthetics and visual resources, the level (negligible, moderate, or substantial) of impact intensity under NEPA was determined based on FHWA methodology (see Section 3.16.3 above for detailed methodology). NEPA methods define intensity assessment as a change in existing visual quality, which considers landscape character. The impact assessment evaluated the degree to which the proposed project would change the existing visual quality category of a viewed landscape and considered the viewer sensitivity (high, moderate and low) of people who would view the proposed project in the landscape. An impact with *substantial* intensity is defined as a change in the existing visual quality category by (a) two or more categories (for example, from high to moderate or moderate to low) in an area where people with high or moderate viewing sensitivity would see it; or (b) one category in an area where people with high viewing sensitivity would see it. An impact with *moderate* intensity is defined as a change in the existing visual quality category by one category (for example, high to moderately high, or moderately low to low) in an area where people with moderate viewer sensitivity would see it. An impact with *negligible* intensity is defined as (a) a change in the existing visual quality category by one or more visual quality categories in an area where people with low viewer sensitivity would see it; or (b) areas where the proposed project would not change the existing visual quality categories and would be seen by viewers with high, medium, or low viewing sensitivity.

3.16.3.2 CEQA Significance Criteria

Appendix G of the CEQA Guidelines indicates that the project would result in a significant impact on aesthetics and visual quality in the following instances:

- The project would have a substantial adverse impact on a scenic vista.
- The project would substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historical buildings within a state scenic highway.

- The project would substantially degrade the existing visual character or quality of the site and its surroundings.
- The project would create a new source of substantial light or glare, which would adversely affect day or nighttime area views.

A significant impact would also occur if the project were to (1) introduce elements that would conflict with the visual character of a historic district, a federal- or state-listed or eligible historic property, or (2) substantially affect a feature or area identified as an important visual resource in a local plan, policy, or regulation. By contrast, the project would be considered to result in a beneficial visual impact if it eliminates a dominant feature in the landscape that currently detracts from scenic qualities or blocks scenic vistas. In addition, a significant impact would occur when the visual quality of the landscape changed two or more categories and was viewed by viewers with moderate or high sensitivity; or changed one category and was viewed by viewers with high sensitivity.

3.16.3.3 Study Area

The study area for aesthetics and visual resources includes much of the project's viewshed (i.e., the areas that could potentially have views of project features and the areas from which viewers from project trains could potentially see as they travel through the landscape). The Merced to Fresno Section of the HST System is located on mostly flat terrain and passes through agricultural lands as well as urbanized areas. Viewing distances toward the corridor vary throughout the study area. In agricultural and other open areas, the corridor is visible over rather extensive areas due to the general scarcity of buildings and tall vegetation that can block views. In these areas the study area is considered to be all areas within 0.5 mile of the alignment centerline from which the corridor would be visible. In urbanized areas views toward the corridor are often more restricted by the presence of buildings and tall vegetation. Therefore, the study area in urbanized areas encompasses the area within 0.25 mile of both sides of the centerline of the alignment from which the corridor would be visible.

3.16.4 Affected Environment

This section discusses the affected environment for study area aesthetics and visual resources. Existing visual resources are inventoried, and the landscape units into which the study area has been divided for this analysis are described. The *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012) includes photographs and simulations of the project for each KVP; it also provides additional information on aesthetics and visual resources.

3.16.4.1 Inventory of Visual Resources

For this discussion, visual resources include designated scenic routes, views toward/within natural areas, parks, and urban areas that have been identified as having historical or cultural significance or that include buildings of similar significance or landmark status. Visual resources that have been identified in planning and policy documents, cultural resource reports, or in observations of scenic value and apparent popularity during field work related to aesthetics and visual resources are described below in the next section. The selection of KVPs for this analysis was based on these visual resources.

Section 3.16.5, Environmental Consequences, reviews the effects of the project on 36 KVPs, some of which lie within or near the visual resources described below. Refer to the Section 3.16.5.3 below for descriptive text, photos, and simulations of representative KVPs used for the visual analysis from each landscape unit. Photos and simulations that are not included in this section may be seen for all KVPs in the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012).

Merced to Fresno Section of the HST System Visual Resources

Designated Scenic Corridors in Atwater. The Open Space and Conservation Element of Atwater's General Plan designates Bellevue Road and Buhach Road as scenic corridors (City of Atwater 2000). Santa Fe Drive, as viewed from KVP 31 (see KVP locations on figures provided in Section 3.16.4.2 below),

is also a scenic corridor because it serves as one of Atwater's primary entrances. The city regulates activities that would detract from aesthetic value along these streets. The proposed HST alternative would follow Santa Fe Drive through Atwater. Bellevue Road and Buhach Road intersect with Santa Fe Drive within 0.25 mile of each other along the eastern edge of Atwater, near the proposed Castle Commerce Center HMF site. This area would be included as part of both the UPRR/SR 99 and BNSF alternatives if the HMF were located at Castle Commerce Center.

Designated Scenic Corridors in the City of Merced. Within the city limits, the City of Merced has designated N Bear Creek Drive, N Street from 16th Street to the Merced County Courthouse, and M Street from 18th Street to Bear Creek as scenic routes. N Bear Creek Drive extends to within approximately 0.1 mile of the proposed HST corridor, north of Downtown Merced. As included in the view from KVP 2 (see KVP locations on figures provided in Section 3.16.4.2 below), the intersection of N Street and 16th Street is approximately 0.07 mile away (approximately 400 feet) from the proposed alignment and northwest of the proposed Downtown Merced Station at Martin Luther King Jr. Avenue between W 15th and 16th Streets. The intersection of Martin Luther King Jr. Avenue and W 18th Street is approximately 0.25 mile from the proposed HST alignment.

Views toward the Sierra Nevada Mountains from Merced County. Panoramic views toward the Sierra Nevada Mountains in highway corridors, as represented in the view from KVP 26 (see KVP locations on figures provided in Section 3.16.4.2 below), are among aesthetic and visual resources specifically described for proper management in the Merced County General Plan (Merced County 1990), as noted in Table 3.16-1. Other natural aesthetic amenities in the area include rivers, hillsides, and areas that comprise a mix of orchards and open-field crops.

Downtown Merced. The Merced County General Plan lists Courthouse Park as a visual amenity (Merced County 1990). The park is approximately 0.5 mile away from the proposed HST alignment. Closer to the alignment and northwest of the proposed Downtown Merced Station, there are several buildings on the NRHP (Mondo Building, Tioga Building, Merced Theater, and El Capitan Hotel), the historic Southern Pacific Depot, and Bob Hart Square. Portions of Downtown Merced are historic districts, some of which are represented in the view from KVP 2 (see KVP location on figures provided in Section 3.16.4.2 below).

W Robertson Boulevard/Highway 233 in Chowchilla. Palm and date trees planted along this roadway identify this location in long-distance views and contribute to the visual character of the roadway corridor and of Downtown Chowchilla. Chowchilla has designated W Robertson Boulevard (SR 233) from SR 99 to SR 152 as a scenic corridor, as represented by the view from KVP 8 (see KVP locations on figures provided in Section 3.16.4.2 below). The State Historical Resources Commission designated W Robertson Boulevard as a Point of Historical Reference (City of Chowchilla 2009). The proposed HST alignment would cross Robertson Boulevard at its intersection with the existing UPRR route on the northeastern edge of Downtown Chowchilla, approximately 0.3 mile southwest of SR 99. Both the BNSF Alternative and Ave 21 Wye would cross Robertson Boulevard south of SR 152.

San Joaquin River. The San Joaquin River Parkway Master Plan (San Joaquin River Conservancy 2000) identifies the San Joaquin River as an aesthetic resource, and there are plans for a trail along the river bluff extending east from SR 99. Creation of a trail system would provide access to the scenic vistas from the bluffs overlooking the river. The San Joaquin River marks the boundary between Fresno and Madera counties and, as seen in views from KVP 14 and KVP 15 (see KVP locations on figures provided in Section 3.16.4.2 below), it provides a natural-appearing buffer between primarily managed agricultural land and the northern extent of the City of Fresno.

Forestiere Underground Gardens in Fresno. The Forestiere Underground Gardens lie on W Shaw Avenue approximately 0.3 mile west of the proposed HST alignment. Because the gardens are underground, the site is not shown from a KVP. The state designated this as a California State Historical Landmark.

Roeding Park in Fresno. Roeding Park is a 159-acre urban park that includes numerous picnic areas, tennis courts, a dancing pavilion, playgrounds, and Chaffee zoo; the park also contains groves of ash,

cedar, pine, eucalyptus, maple, and redwood trees. Fresno estimates 600,000 people visit the park annually. The eastern park edge lies adjacent to the proposed HST corridor, which is visible from KVP 16 (see KVP location on figures provided in Section 3.16.4.2 below).

Downtown Fresno. Several buildings of historical and cultural significance exist in Downtown Fresno, and portions of the downtown area are designated historic districts. The Southern Pacific Depot, as seen from KVP 18 (see KVP locations on figures provided in Section 3.16.4.2 below), is adjacent to the UPRR right-of-way and is listed on the NRHP. The Pantagenes/Warnors Theater, San Joaquin Light and Power Building, and the Bank of Italy/Bank of America Building are in the NRHP. These buildings lie along the Fulton Mall, within approximately 0.25 mile of the two HST station alternatives. Fulton Mall is a six-block-long, outdoor pedestrian mall that has been nominated for listing in the NRHP.

Courthouse Park in Madera. Courthouse Park applies only to the UPRR/SR 99 Alternative. It occupies two blocks in Downtown Madera and lies approximately one block from the proposed HST alignment. KVP 11 (see KVP location on figures provided in Section 3.16.4.2 below) represents the view from the street corner sidewalk on W Yosemite Avenue at the entrance to Courthouse Park. Facilities include picnic areas and space for events. The Madera County Courthouse, which falls within the park, is in the NRHP.

3.16.4.2 Landscape Units, Key Viewpoints, and Establishing Existing Visual Quality Categories

This section describes the landscape units in the study area. These landscape units are the smaller geographic units that were used for determining project impacts. This section also describes the KVPs and explains how existing visual quality categories were determined. The following landscape units were identified between Merced and Fresno for each HST alternative:

- UPRR/SR 99 Alternative:
  - Merced Landscape Unit
  - Merced–Chowchilla Landscape Unit
  - Chowchilla Landscape Unit
  - Chowchilla–Madera Landscape Unit
  - Madera Landscape Unit
  - Madera–Fresno Landscape Unit
  - Fresno Landscape Unit
  - West of SR 99 Landscape Unit (including the Ave 24 and Ave 21 Wye design options)
- BNSF Alternative:
  - Merced Landscape Unit
  - Merced–Le Grand Landscape Unit
  - Le Grand Landscape Unit
  - Le Grand–Madera Acres Landscape Unit
  - Madera Acres Landscape Unit
  - Madera Acres–SR 99 Landscape Unit
  - East of SR 99 Landscape Unit (including the Ave 24 and Ave 21 Wye design options)
  - West of SR 99 Landscape Unit (including the Ave 24 and Ave 21 Wye design options)
  - Fresno Landscape Unit
- Hybrid Alternative:
  - Merced Landscape Unit
  - Merced–Chowchilla Landscape Unit
  - West of SR 99 Landscape Unit (including north-south alignment and the Wye design options)
  - Madera Acres Landscape Unit
  - East of SR 99 Landscape Unit (including the Ave 21 Wye design option)
  - Fresno Landscape Unit

- Heavy Maintenance Facility Alternatives:
  - Castle Commerce Center Landscape Unit
  - Harris-DeJager Landscape Unit
  - Fagundes Landscape Unit
  - Gordon–Shaw Landscape Unit
  - Kojima Development Landscape Unit

Figure 3.16-1 shows the general boundary of each landscape unit and locations of the KVPs. The KVPs represent views within each landscape unit that were selected to assist in describing the landscape character of the landscape unit and the existing visual quality. Figures 3.16-2 through 3.16-6 identify the locations of the KVPs and their view orientations for the vicinities of the Downtown Merced Station, Merced, Le Grand, Chowchilla, Madera, and Fresno and the Downtown Fresno Station alternatives. The figures also indicate the existing visual quality category of the viewed landscape from each KVP and the general range of existing visual quality categories that is found within each landscape unit. It should be noted that the visual quality category for some KVPs is different than that of the landscape units surrounding them. This is because the visual quality categories found within the landscape units are generalized and do not include specific locations (such as KVPs focused on rivers or vineyards), which might have a different and more localized visual quality category.

The following sections describe the visual quality categories found within each landscape unit and describes the KVPs within each landscape unit.

UPRR/SR 99 Alternative

Merced Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the Merced Landscape Unit generally ranges from moderate to moderately low. Downtown Merced mainly has commercial, residential, and public land uses and includes several historical and culturally significant buildings. This area of the city is well-lighted at night by lighting associated with commercial and pedestrian-oriented uses typical for a downtown of this size. Downtown Merced has a traditional grid street pattern, and views toward the existing rail corridor and proposed HST guideway and station area exist from several locations (represented by the view from KVP 4), as well as the nearby elevated SR 99 highway (represented by the view from KVP 5). The locations of KVPs 4 and 5 are shown in Figures 3.16-2 and 3.16-3.

Merced–Chowchilla Landscape Unit and Key Viewpoints

The visual quality of existing views toward the study area from locations within the Merced–Chowchilla Landscape Unit generally ranges from moderately low to moderately high. This landscape unit includes mostly agricultural land; row crops, orchards, and occasional associated structures are visible from SR 99. Viewers are primarily travelers and commuters along SR 99.

In views from SR 99, the Sierra Nevada Mountains are visible to the east. The existing UPRR tracks and SR 99 are part of an existing, wider transportation corridor through the San Joaquin Valley that is recognized in local plans as having high aesthetic value (Table 3.16-1). The corridor also intermittently includes electric transmission facilities represented in views from KVP 6 (location shown in Figures 3.16-3 and 3.16-4), which lies south of Le Grand Avenue. The view from KVP 6 is expansive and has views of trees along the horizon, beyond agricultural lands. This view is typical of the landscape unit, and the presence of relatively long-distance views toward these features results in a moderate degree of vividness.

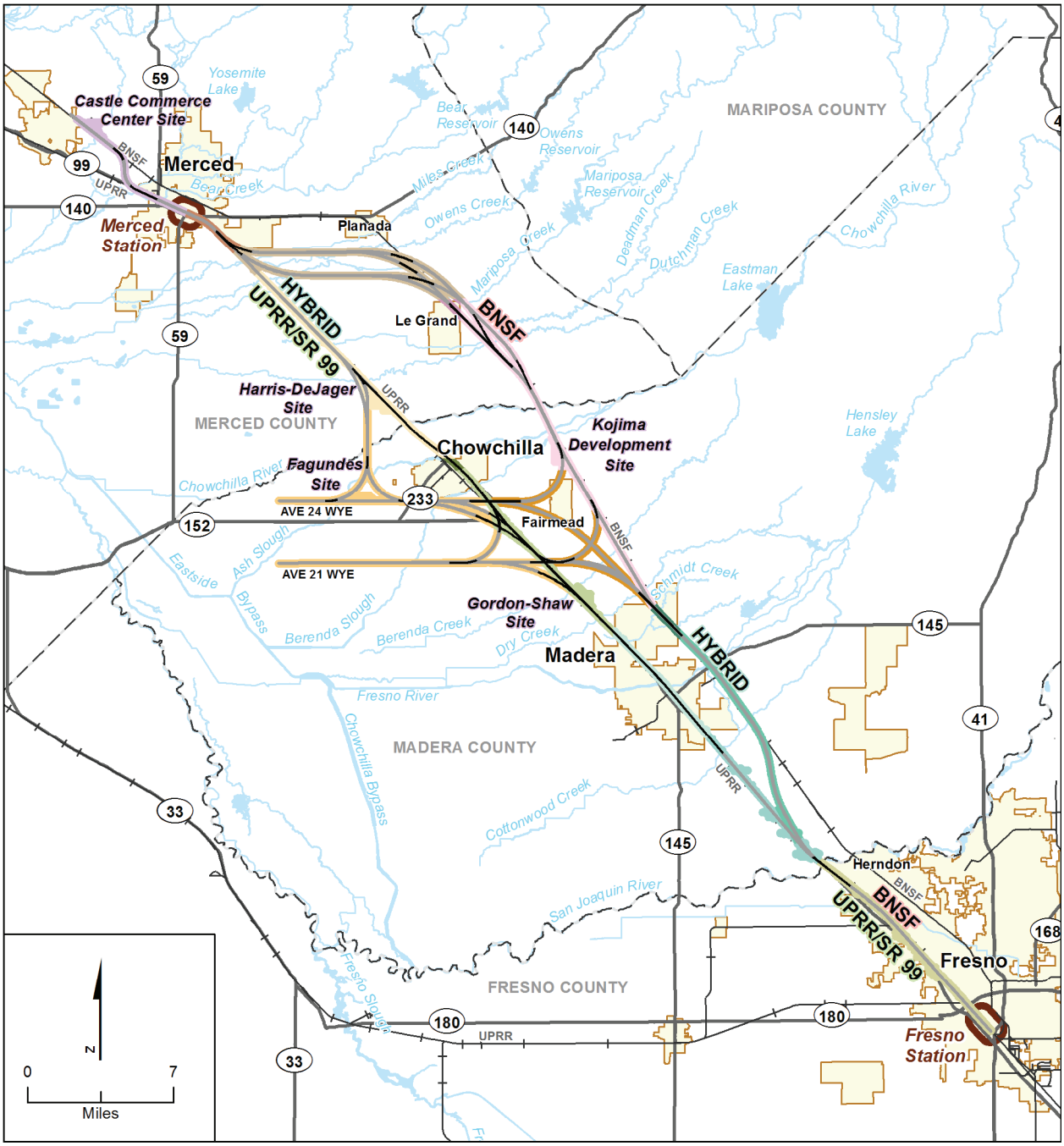


Figure 3.16-1
Landscape Units

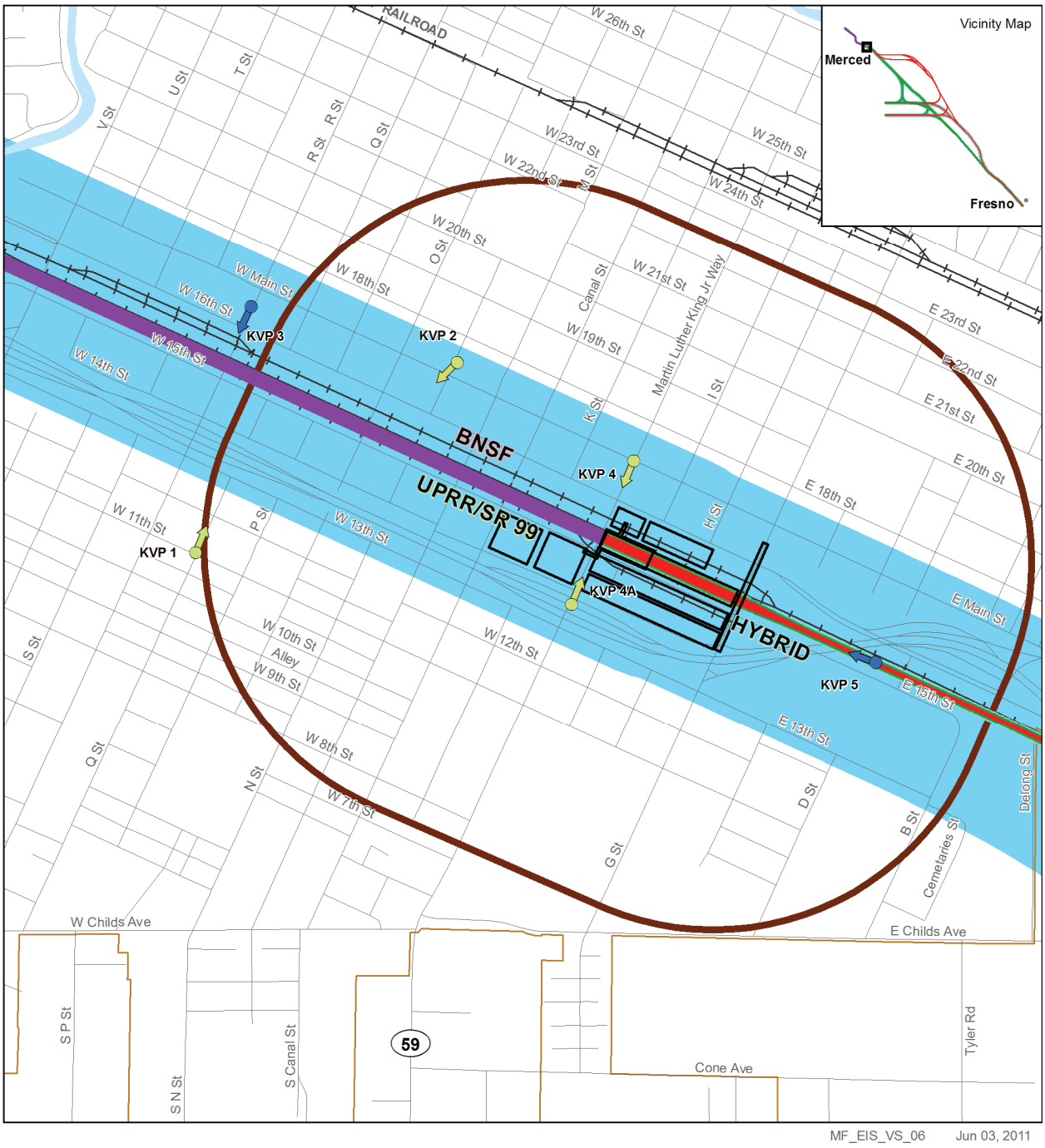


Figure 3.16-2
Key Viewpoints
in the Merced Station Area

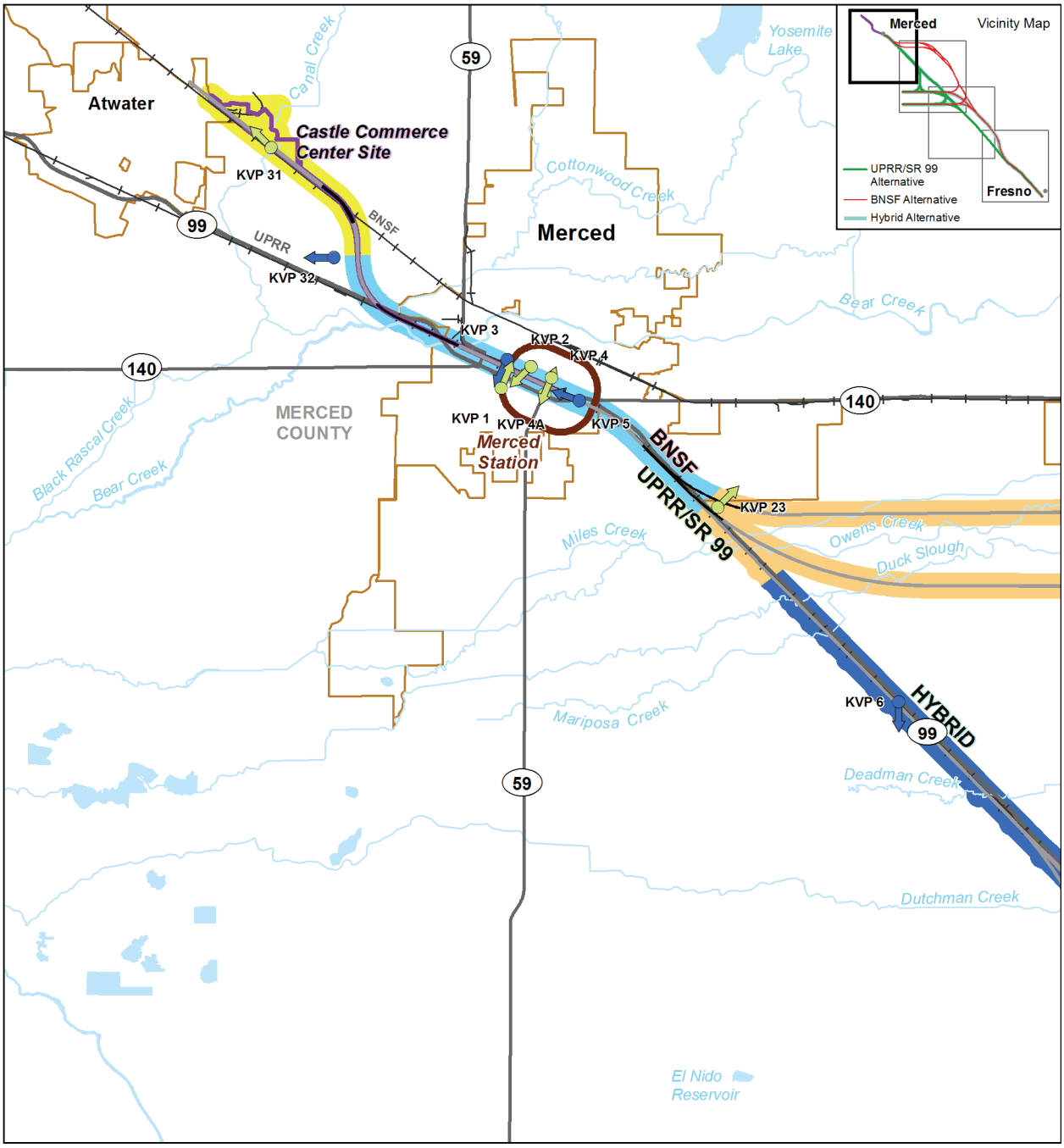


Figure 3.16-3
Key Viewpoints
in the Merced Project Vicinity

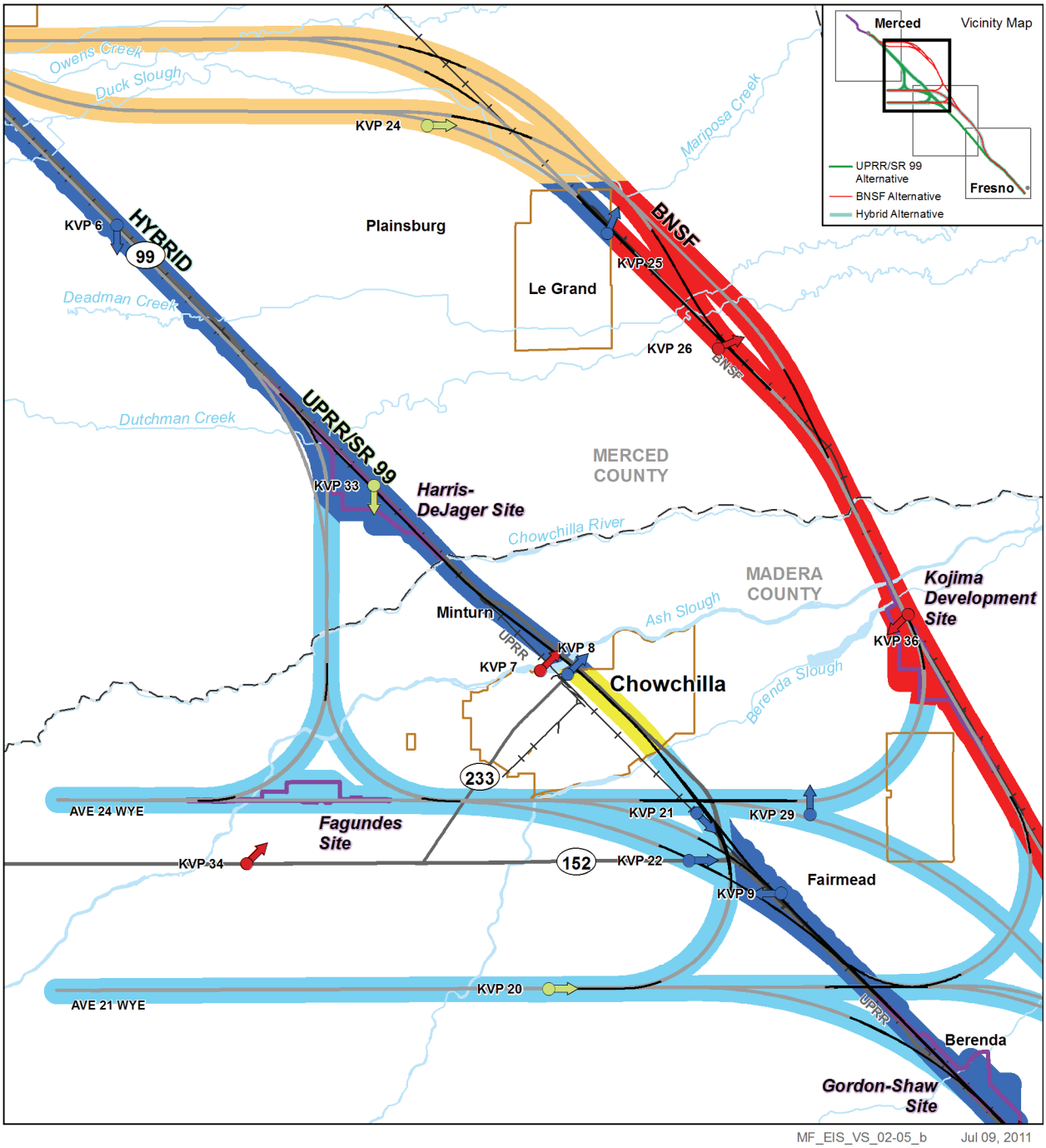
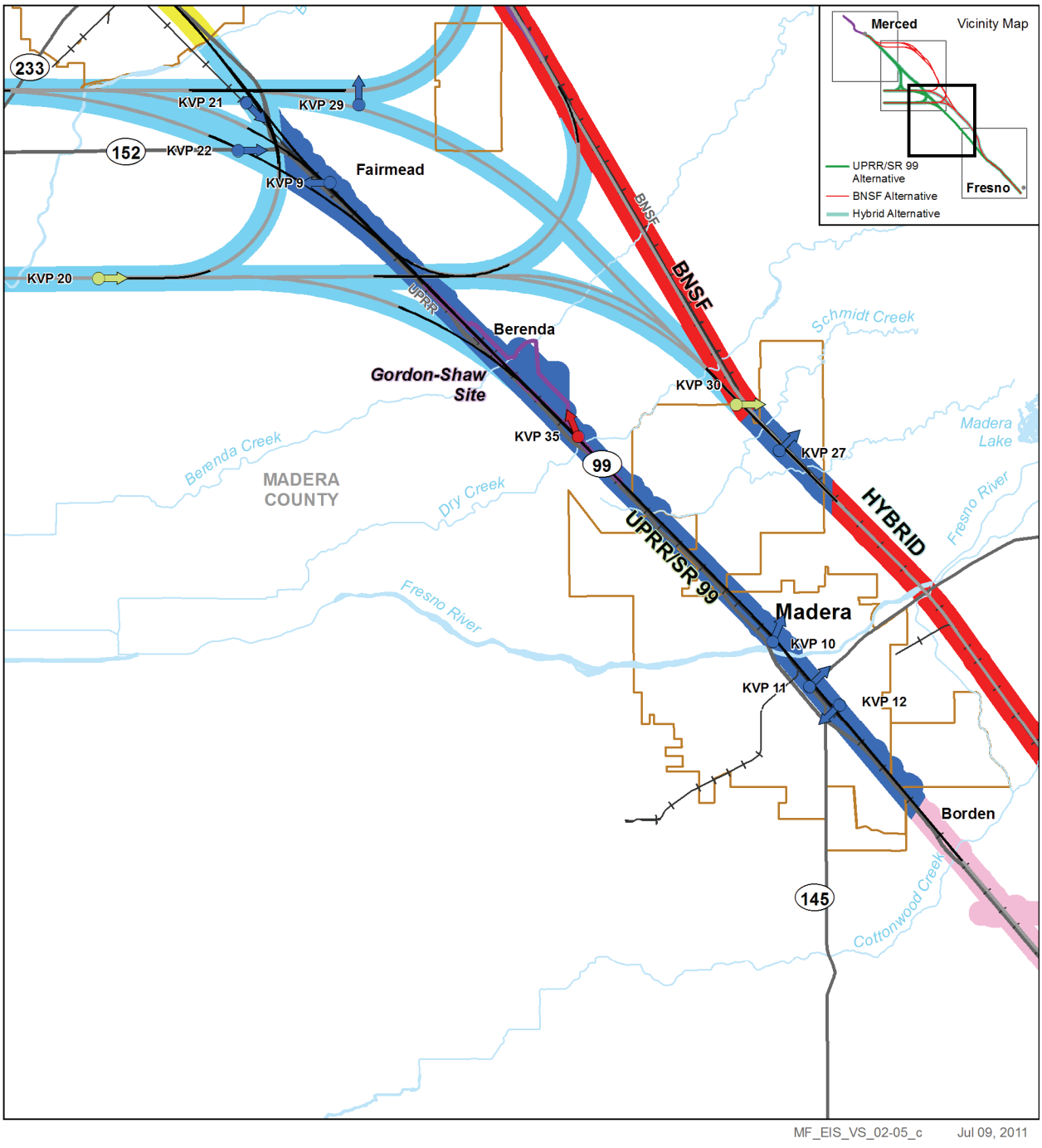


Figure 3.16-4
Key Viewpoints
in the Chowchilla Project Vicinity

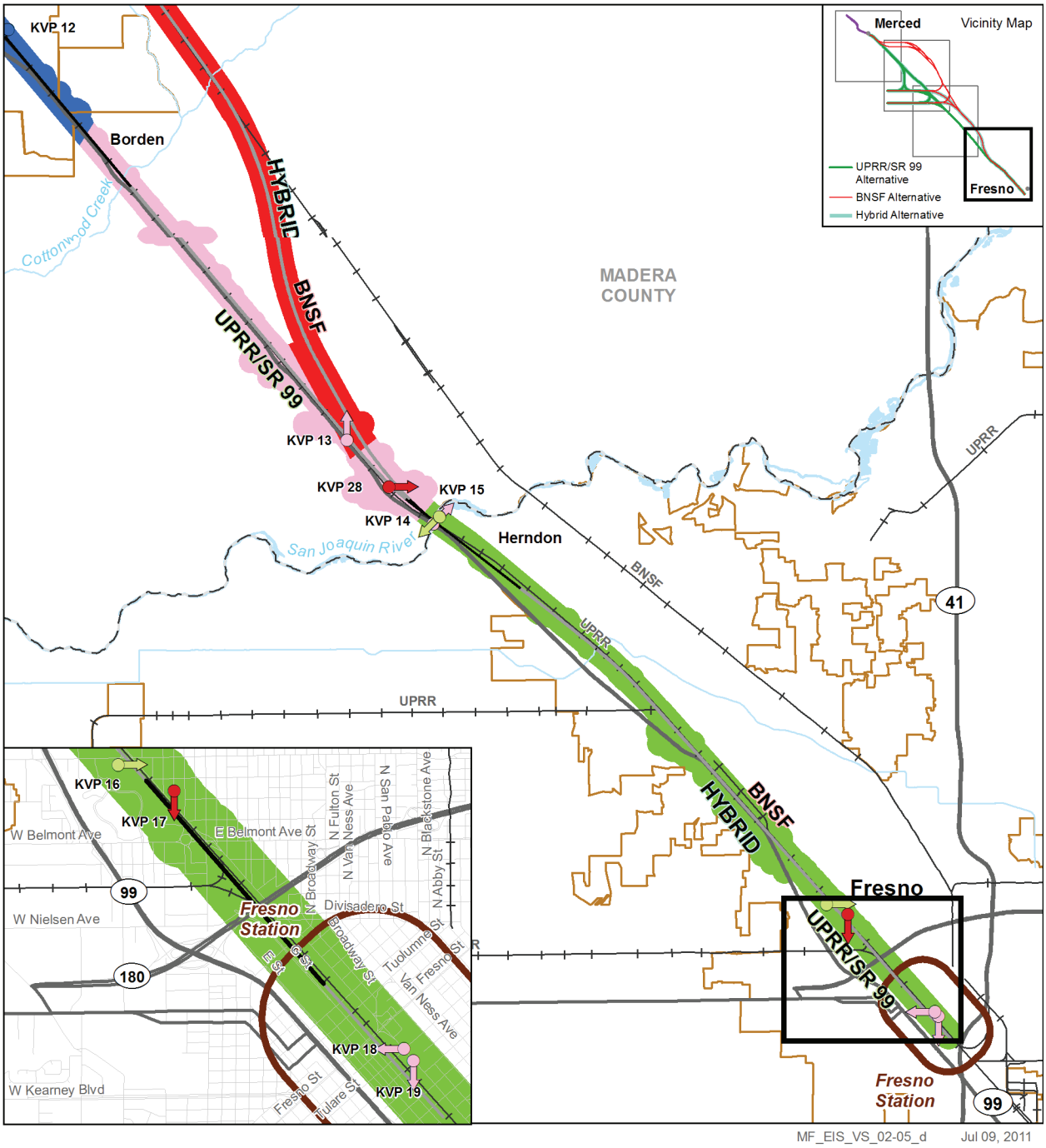


HST Alternative At-Grade or Retained Fill
HST Alternative Elevated
Potential Heavy Maintenance Facility
Station Study Area
City Limit
County Boundary
Railroad
0 2.5 Miles
N

Range of Existing Visual Quality within Landscape
Low
Moderately Low
Moderately Low – Moderate
Low – Moderately High
Moderate
Moderately Low – Moderately High
Moderate – Moderately High
Moderately High

Key View Point, View Orientation, and Existing Visual Quality of View
Low
Moderate
Moderately Low
Moderately High

Figure 3.16-5
Key Viewpoints
in the Madera Project Vicinity



HST Alternative At-Grade or Retained Fill
HST Alternative Elevated
Potential Heavy Maintenance Facility
Station Study Area
City Limit
County Boundary
Railroad
0 2.5 Miles
N

Range of Existing Visual Quality within Landscape
Low
Moderately Low
Moderately Low – Moderate
Low – Moderately High
Moderate
Moderately Low – Moderately High
Moderate – Moderately High
Moderately High

Key View Point, View Orientation, and Existing Visual Quality of View
Low
Moderate
Moderately Low
Moderately High

Figure 3.16-6
Key Viewpoints
in the Fresno Project Vicinity

Chowchilla Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the Chowchilla Landscape Unit generally ranges from moderately high to moderately low. The UPRR/SR 99 Alternative passes through the eastern edge of Downtown Chowchilla, mostly parallel to SR 99 in this landscape unit. Portions of this landscape unit include well-lighted transportation and commercial facilities. Viewer sensitivity ranges from low to high in this landscape unit, which includes views from local roads and SR 99, the northern extent of the SR 233/Robertson Boulevard scenic corridor, and the residential neighborhood on the northern edge of town. A rapid transition in landform and use from the city's northern edge to its southern border characterizes Chowchilla. Thus, this landscape unit includes only the northern part of Chowchilla. The view from KVP 7 (location shown in Figure 3.16-4) includes the less developed area surrounding Ash Slough, and views farther south include more freeway commercial development. The view from Downtown Chowchilla toward the UPRR/SR 99 Alternative is visible from KVP 8 (location shown in Figure 3.16-4), which falls within the eastern gateway to Downtown Chowchilla, near the intersection of SR 233 (Robertson Boulevard) and N Chowchilla Boulevard.

Chowchilla–Madera Landscape Unit and Key Viewpoints

The Chowchilla-Madera Landscape Unit consists of the UPRR/SR 99 Alternative between the southern part of Chowchilla and the north city limits of Madera, a distance of approximately 11 miles. The visual quality of existing views toward the UPRR/SR 99 Alternative from locations in the Chowchilla–Madera Landscape Unit is generally moderately low. The UPRR/SR 99 Alternative passes through a residential area in south Chowchilla, agricultural land, and Fairmead, as represented by KVP 9 (location shown in Figures 3.16-4 and 3.16-5). There also are residential portions of Fairmead adjacent to the UPRR/SR 99 Alternative. Few light sources in this landscape unit exist, with the exception of fixtures mounted on area buildings.

Agriculture, the area's dominant land use, characterizes the Chowchilla–Madera Landscape Unit. Views are expansive and frequently include structures related to agricultural uses alongside orchards, vineyards, and row crops. The land is relatively flat in this area, and eye-level views toward the UPRR/SR 99 Alternative would be available from unincorporated communities within the landscape unit, as seen from KVP 9, which lies in Fairmead.

Madera Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the Madera Landscape Unit is generally moderately low. The UPRR/SR 99 Alternative passes through the center of Madera and is generally aligned with the existing UPRR tracks and SR 99. Street and building lighting typically associated with predominantly residential areas like Madera Acres results in a relatively well-lighted nighttime environment. Madera's visual character is defined by a grid street pattern that frames the layout of the urban area, with the downtown core in a rotated grid that is aligned with the existing railroad right-of-way. Residential areas lie close to the downtown commercial area, and larger public areas and facilities (e.g., parks, fairgrounds, hospitals, and schools) fall on downtown's periphery. Views of the Sierra Nevada Mountains are common from within the Madera Landscape Unit. Views of the Fresno River are less common but do occur close to the river. Industrial areas and business parks are mostly located to the east and west of downtown and do not exist within the landscape unit. This downtown environment includes well-lighted streets.

Unobstructed views toward the HST alternative are available from parks and from within residential areas. North of downtown, views toward the UPRR/SR 99 Alternative, beyond N Gateway Drive, are available from Rotary Park, as seen from KVP 10 (location shown in Figure 3.16-5), and from linear parks along Sharon Avenue and the Fresno River.

The view from KVP 11 (location shown in Figure 3.16-5) represents views from the sidewalk in the commercial area near Courthouse Park, toward SR 145 as it passes through the center of the city. Within this landscape unit, trees are present in views from most east-west oriented streets.

Similar to other views from residential neighborhoods, the view from KVP 12 (location shown in Figure 3.16-5) is mainly composed of single-family homes in a grid street system and a tree-lined street that frames the viewer experience. However, at the intersection of 11th Street and D Street, most trees appear to be on private property and exhibit a variety in species and size. An electric transmission tower, overhead lines, and other utility poles are particularly noticeable components of this view, occupying horizontal, vertical, and diagonal (near to far) space.

Madera–Fresno Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the Madera–Fresno Landscape Unit is generally low. The UPRR/SR 99 Alternative, which is generally near the existing UPRR route, passes through a predominantly agricultural area. Project viewers would be either motorists traveling at relatively high speeds or occasional agricultural workers. Nighttime light sources in this landscape unit are few.

In views from the Madera–Fresno Landscape Unit, the orchards, vineyards, row crops, and other agricultural uses appear at a somewhat larger scale compared with similar uses in landscape units to the north, occupying larger portions of their respective landscapes. The land around the existing UPRR tracks and SR 99 is relatively flat, and landforms, natural features, and built structures that deviate from this flatness are prominent both in views of the area and in views from within the area toward surrounding land. In many views, including from KVP 13 (location shown in Figure 3.16-6), existing highway overpasses are the largest objects visible within the landscape.

Fresno Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the Fresno Landscape Unit generally ranges from moderately high to low. The northern boundary is the San Joaquin River, and the southern boundary is near Chukchansi Park, a baseball stadium near the south side of the downtown commercial core. The variety of land uses in the landscape unit, including parks, industrial uses, residential neighborhoods, and the downtown and other commercial districts, results in the assumption that visual sensitivity ranges from low to high. Portions of the landscape unit are well lighted, but other areas have little or no evening light sources.

Traveling from the north on SR 99 through the Fresno Landscape Unit toward downtown, parks, agricultural lands, residential neighborhoods, and industrial areas of varying size and density are visible. Several areas are associated with the rail or truck goods movement. The visual quality of the views toward the UPRR/SR 99 Alternative from SR 99 (KVP 14) and Camp Pashayan (KVP 15) is similar in that each view has a high degree of vividness because of prominent natural features, which appear mostly undisturbed. The location of KVPs 14 and 15 are shown on Figure 3.16-6. The two views differ in the degree that the UPRR and SR 99 bridges encroach upon the view.

The view from Roeding Park as represented by KVP 16 (location shown in Figure 3.16-6) toward the HST alternatives includes two arterials, N Weber Avenue and Golden State Boulevard (N Motel Drive), with the UPRR tracks in between. KVP 17 (location shown in Figure 3.16-6) is a view from N Vagedes Avenue, within a mostly residential neighborhood on the other side of the roadways and tracks and Roeding Park. The view from KVP 17 toward the HST alternatives is representative of the scale of development and the presence of trees in the neighborhoods north of downtown.

The dominant feature in the view at KVP 18 (location shown in Figure 3.16-6), from Downtown Fresno toward the UPRR/SR 99 Alternative and Downtown Fresno Station, is the Greyhound Bus station (Southern Pacific Depot), which is visible on the opposite side of H Street. The trees that line the street add an element of color to the area during times of the year when leaves are present. This is a fairly nondescript intersection. The view at KVP 19 (location shown in Figure 3.16-6), from Downtown Fresno toward the UPRR/SR 99 Alternative and Fresno Station area, includes the western portion of Chukchansi Park, the tree-lined H Street, and a fire station on the opposite side of H Street. Warehouses and a parking lot are visible beyond these features in the foreground.

West of SR 99 Landscape Unit and Key Viewpoints

The visual quality of existing views toward the UPRR/SR 99 Alternative from locations within the West of SR 99 Landscape Unit generally ranges from moderate to moderately low. Aside from the western portions of cities located along SR 99, this landscape unit includes no incorporated cities or unincorporated communities, although residences and small schools are located throughout this predominantly agricultural area. Some views from residential areas would be toward the proposed alignment. Consistently, the presence of light sources in the landscape is minimal.

The Ave 24 Wye and the Ave 21 Wye would pass through agricultural lands and bisect north/south roadways. The Ave 21 Wye is represented by KVP 20 (location shown in Figure 3.16-4), and through residential areas, as seen in the view from KVP 21 (location shown in Figures 3.16-4 and 3.16-5). KVP 19 is on Avenue 21, west of Road 16. KVP 21 is on Robertson Boulevard (SR 233) south of Chowchilla, near a cluster of residences west of SR 99. KVP 22 (location shown in Figures 3.16-4 and 3.16-5) is on SR 152, immediately west of Road 18. The land in this area, which is immediately west of SR 99, is primarily agricultural, with relatively large orchards and relatively few distinctive features.

BNSF Alternative

The BNSF Alternative would follow the same alignment as the UPRR/SR 99 Alternative through Merced and south of the San Joaquin River. However, it would bypass Chowchilla and Madera by traversing east of SR 99 and passing near or through Le Grand and Madera Acres. This alternative would include either the Ave 24 Wye or the Ave 21 Wye design option, both of which traverse the West of SR 99 Landscape Unit. The visual character and quality previously described for the West of SR 99, Merced, and Fresno landscape units would be the same under the BNSF Alternative. The following sections discuss the visual character and quality for the landscape units associated with the BNSF Alternative not previously described for the UPRR/SR 99 Alternative.

Merced–Le Grand Landscape Unit and Key Viewpoints

The visual quality of existing views toward the BNSF Alternative from locations within the Merced–Le Grand Landscape Unit ranges from moderately high to moderate. KVP 23 (location shown in Figure 3.16-3) is within the northbound lane of SR 99 near Mission Avenue; the agricultural character of the viewed landscape at KVP 23 is typical of many views within this landscape unit. The Sierra Nevada Mountains are visible in the background to the east of many areas within this landscape unit. East of Merced, the landscape transitions rapidly from suburban to large-scale agriculture, with rural residences distributed throughout the area.

Expansive views exist toward the Sierra Nevada Mountains from this area, and they are unobstructed by orchards. The view from KVP 24 (location shown in Figure 3.16-4) is representative of views throughout the eastern portion of the landscape unit, where agricultural lands dominate, but it also includes rural residences, transmission corridors, and water pumping infrastructure. The mix of orchards with open field crop areas is a visual and aesthetic resource identified in the *Merced County Year 2000 General Plan* (Merced County 1990).

In addition to agricultural uses, the Merced–Le Grand Landscape Unit has greater diversity in topography relative to lands to the west. This landscape unit's location at the foothills' base to the east is apparent. Most views within the landscape unit would be by motorists traveling local roads. The presence of light sources within this landscape is minimal.

Le Grand Landscape Unit and Key Viewpoints

The visual quality of existing views toward the BNSF Alternative from locations within the Le Grand Landscape Unit is generally moderately low. The central portion of Le Grand consists of two separate grid patterns of mostly residential and commercial development on the west side of the BNSF tracks and industrial and commercial uses on the east side of the tracks. Sources of light in the area are associated with commercial and residential lighting in town.

KVP 25 (location shown in Figure 3.16-4) is located along Marshall Street, north of Ford Street, within a residential neighborhood. The industrial-appearing structure associated with the Black Rock Milling Company, immediately east of the BNSF tracks, is visible beyond the residences. This KVP represents views toward the in-town BNSF Alternative alignment from a residential area. Residential and industrial uses characterize the view from KVP 25 and other locations adjacent to this portion of the BNSF Alternative alignment.

Le Grand–Madera Acres Landscape Unit and Key Viewpoints

The visual quality of existing views toward the BNSF Alternative from locations within the Le Grand–Madera Acres Landscape Unit is generally moderately high. KVP 26 (location shown in Figure 3.16-4) shows the unique and defining element views toward the Sierra Nevada Mountains. The landscape unit includes relatively few residences. Sources of light are few and are low intensity.

KVP 26 is on Buchanan Hollow Road, immediately west of Santa Fe Avenue and the existing BNSF tracks. Open spaces associated with agricultural uses and the slight variation in topography associated with the lowest extent of the Sierra Nevada Mountain foothills create a memorable, aesthetically vivid landscape. Structures present in the landscape provide evidence of an area that supports rural residences and agricultural development, and suggest that visible open spaces are more likely to be farmland than land in a mostly natural state.

Madera Acres Landscape Unit and Key Viewpoints

The visual quality of existing views toward the BNSF Alternative from locations within the Madera Landscape Unit is generally moderately low. Madera Acres is a residential area with views of the alignment. Light in the area is moderate, but not overly bright. Street and building lighting typically associated with predominantly residential areas, such as Madera Acres, results in a relatively well-lighted nighttime environment. KVP 27 (location shown in Figure 3.16-5) is on Avenue 18¼ southwest of Old Mill Road in Madera Acres.

Madera Acres–SR 99 Landscape Unit and Key Viewpoints

The visual quality of existing views toward the BNSF Alternative from locations within the Madera Acres–SR 99 Landscape Unit is generally moderately high. Few people would be viewing this portion of the corridor; views would mostly be from vehicles traveling at highway speed or along roads providing access to farmlands, represented by KVP 28 (location shown in Figure 3.16-6). Street and building lighting typically associated with predominantly residential areas, such as Madera Acres, results in a relatively well-lighted nighttime environment. No evening light sources exist in the remaining area. KVP 28 is atop the Avenue 7 overpass of SR 99. This view demonstrates the scale of the farmland parcels in the area, as well as the agricultural diversity in the area.

East of SR 99 Landscape Unit

The visual quality of existing views toward the BNSF Alternative, from locations within the East of SR 99 Landscape Unit, range from moderate to moderately low. The East of SR 99 Landscape Unit includes all land east of SR 99 excluded in the BNSF Alternative landscape units previously discussed. Under the BNSF Alternative, this area would include the portions of the Ave 24 Wye east of SR 99 and would include the Ave 21 Wye. The landscape area is generally bounded by Berenda Reservoir to the north and Madera Acres to the south. A correctional facility and power generation station are the most noticeable structures in this landscape unit; however, rural residences and ranches are the most numerous. Views near the landscape unit are primarily from local roads and residences. Lights are bright around the correctional facilities, but light from other sources in the area is scarce and low intensity.

KVP 29 (location shown in Figures 3.16-4 and 3.16-5) represents views from throughout the area east of SR 99 and includes a variety of buildings and vegetation along Road 19½. In this area, vineyards contrast with residences and ranch areas. In the view from KVP 30 (location shown in Figure 3.16-5), which lies along Avenue 19 immediately north of Madera Acres, fewer structures are visible. However,

evidence of development is visible, including the Dry Creek Canal and its levee entrance on the north side of the road, the edge of a residential neighborhood visible on the south side of the road, and transmission poles.

Hybrid Alternative

The Hybrid Alternative is a combination of the UPRR/SR 99 and BNSF alternatives in terms of alignment and profile. The landscape units under the Hybrid Alternative were previously described under the UPRR/SR 99 and BNSF alternatives. The Hybrid Alternative includes the Merced, Merced–Chowchilla, West of SR 99, East of SR 99, Madera Acres, Madera Acres–SR 99, and Fresno landscape units, in that order. The Ave 24 Wye portion of the alternative overlaps in the West of SR 99 Landscape Unit with the north-south alignment. The Hybrid Alternative also has an Ave 21 Wye design option, which is slightly east of and has a different curvature than the Ave 21 Wye does with the BNSF and UPRR/SR 99 Alternatives. Summarizing previous descriptions for these landscape units, the north-south alignment has a moderate to moderately low visual quality between Merced, west of Chowchilla, and the areas between SR 99 and the BNSF railway. The visual quality increases to moderately high adjacent to the BNSF north of Madera Acres. Madera Acres has a moderately low visual quality that becomes moderately high south of Madera Acres to the UPRR, immediately north of the San Joaquin River. When entering the City of Fresno, the visual quality varies from low after crossing the river to moderate and moderately high approaching the city, primarily because of features like Roeding Park and historical neighborhoods. Visual quality near the proposed HST station is also varied but is generally low because of the UPRR tracks, industrial buildings, and large roadway bridges.

Heavy Maintenance Facility Alternatives

Five potential HMF locations fall within the study area: Castle Commerce Center, Harris–DeJager, Fagundes, Gordon–Shaw, and Kojima Development. With one exception, each of these sites is within distinct linear landscape units that were previously described. The Castle Commerce Center HMF landscape unit is itself linear and HMF-site specific, because access to the HMF site would require construction of a guideway for an HST branch between the Downtown Merced Station and Atwater. This branch, in a later phase (Phase 2) of the project, could become part of an HST alternative selected to continue to Modesto. Descriptions of the proposed HMF locations and the additional guideway for the Castle Commerce Center HMF follow.

Castle Commerce Center HMF Site and Key Viewpoints

The Castle Commerce Center HMF site would be located along Santa Fe Avenue in Atwater, mostly south of W Bellevue Road on vacant land, as represented by KVP 31 (location shown in Figure 3.16-3). The visual quality of the area's existing views is generally moderate to moderately low, as described below. The Castle Commerce Center HMF would accommodate either the UPRR/SR 99 Alternative or BNSF Alternative. The area where the HMF and associated guideway would be located includes urban and some agricultural areas and a decommissioned air base, which near the site include industrial, commercial, suburban, and rural residential development. Viewers near the proposed HMF site guideway include residents, commuters, workers, and motorists traveling through the area. Current commercial, industrial, and recreational uses are the sources of moderate lighting levels along the Santa Fe Avenue corridor. The HST branch line would generally follow the existing BNSF railway approximately 3 miles south of the HMF site, then cross over to meet with UPRR rail corridor into Merced, ending at the Downtown Merced Station, as shown on Figure 3.16-3. The HST branch would pass under a proposed Martin Luther King Jr. Avenue overcrossing next to the HST station, through commercial and residential areas near the station, past industrial/warehouse areas north of Downtown Merced, across Bear Creek, and on to the HMF site. The downtown area is pedestrian-oriented and in the vicinity of historical buildings. Residential areas are treed and more distant from the HST alignment. This area of the city is well-lighted at night by lighting associated with commercial and pedestrian-oriented uses typical for a downtown of this size and activities. Because Downtown Merced has a traditional grid street pattern, views toward the HST guideway and other parts of the city, particularly with tall buildings, exist from several locations.

However, SR 99 is an elevated highway that can block views from residential neighborhoods located west of the highway toward the eastern parts of the city.

Harris-DeJager HMF Site and Key Viewpoints

The Harris-DeJager HMF (KVP 33) (location shown in Figure 3.16-4) would be located adjacent to the West of SR 99 Landscape Unit, generally between Sandy Mush Road to the north and the Chowchilla River to the south. The HMF would occupy property in an agricultural area that is largely absent of buildings. The visual quality of existing views toward this site is generally moderate. Most views of the site would be by drivers on local roads and SR 99, where vehicles travel at highway speeds. Other viewers would be agricultural workers. Because of the area's predominantly agricultural land use, light sources are relatively few and are concentrated along the SR 99 corridor. Other land uses in the vicinity of the proposed HMF site include a non-operating gas station and a California Highway Patrol weigh station.

Fagundes HMF Site and Key Viewpoints

The Fagundes HMF site (KVP 34) (location shown in Figure 3.16-4) would be located along the north side of Avenue 24, west of SR 99. Views toward the proposed HMF site are of moderate visual quality, which is consistent with the general visual quality in the surrounding area west of SR 99. Few discernable features detract from the unified perception of a landscape entirely dedicated to agricultural production. Established large-scale agricultural facilities are present in the general area but distant from the site. Residences are few. The Sierra Nevada Mountains can be seen in the background from many locations. Most views would be from local roads or from SR 152 to the south. Existing lighting levels in the area are very low.

Gordon-Shaw HMF Site and Key Viewpoints

The Gordon-Shaw HMF site (KVP 35) (location shown in Figure 3.16-5) would be located east of SR 99, generally between the community of Berenda to the north and Avenue 18½ to the south. The visual quality of existing views toward this site is generally moderate; the site is vacant, unfarmed agricultural land adjacent to a large vineyard on the east side of the highway. Most views toward the site are from vehicles passing through agricultural land or traveling at highway speeds along SR 99. There is some strip commercial development across the highway from the site. Thus, viewers also include workers in the commercial area and vineyard. General lighting in the area is adequate for commercial uses on the west side of SR 99, opposite the proposed HMF site, and for industrial-appearing facilities to the north and south of the site. Expansive views from this area include the UPRR and SR 99 corridors.

Kojima Development HMF Site and Key Viewpoints

The Kojima Development HMF site (KVP 36) (location shown in Figure 3.16-4) would be located west of Santa Fe Avenue in the area south of the Berenda Reservoir. Visual quality of views toward the site would be moderately high, consistent with visual view quality of the surrounding area between Le Grand and Madera Acres. This proposed HMF site would be partially visible in the distance from Berenda Reservoir, a recreation area. Existing lighting levels in the area are low. The orchards and field crops visible beyond the existing BNSF tracks are indicative of the area's agricultural land uses.

3.16.5 Environmental Consequences

This section describes potential impacts on aesthetics and visual resources from the proposed HST Project using the NEPA and CEQA impact criteria discussed in Section 3.16.3, Methods for Evaluating Impacts. The development of the project would consider the applicable general plans and policies regarding aesthetic and visual treatment of the infrastructure. The specific design guidelines would be detailed in the project's final design phases.

3.16.5.1 Overview

In general, a greater number and wider variety of impacts on aesthetics and visual resources would exist under the BNSF Alternative than under the UPRR/SR 99 Alternative or the Hybrid Alternative. The Hybrid Alternative would have the least impact on aesthetics and visual resources. The following list compares the number of landscape units that would have an impact with substantial intensity and a significant impact, respectively, under NEPA and CEQA for each alternative:

- The UPRR/SR 99 Alternative would have impacts with substantial intensity on three landscape units under NEPA and significant impacts on three landscape units under CEQA, including the Wye design options.
- The BNSF Alternative would have impacts with substantial intensity on five landscape units under NEPA and significant impacts on five landscape units under CEQA, including the Wye design options.
- The Hybrid Alternative would have impacts with substantial intensity on one landscape unit under NEPA and significant impacts on two landscape units under CEQA, including the Wye design options.

None of the proposed HMFs (Castle Commerce Center, Harris-DeJager, Fagundes, Gordon-Shaw, or Kojima Development) would result in impacts with substantial intensity under NEPA or significant impacts under CEQA. Lighting for safety and security at an HMF would incorporate design-related measures, such as shielding and altering light direction, to avoid and minimize light and glare impacts.

All HST alternatives would have temporary construction-related impacts related to sources of light and glare, as well as visual nuisances, which would be avoided and minimized by construction specifications and practices.

Due to their size, the tall Downtown Merced and Downtown Fresno Stations, with at-grade platforms and elevated pedestrian bridges, would change the viewed landscape of areas near them. In some locations, the HST stations would intrude on or block views. Mitigation measures could moderate and reduce the overall effect of the visual changes associated with the HST alternatives, and the design of HST stations generally would offer a strong focal element unifying the surroundings. HST station design and associated new landscape architectural elements would improve visual quality in areas near the HST stations.

3.16.5.2 No Project Alternative

Much of the growth in the study area is anticipated to be suburban in nature (see Section 3.18, Regional Growth). This growth would add additional residential and commercial developments and associated infrastructure to the viewed landscape. Section 3.19, Cumulative Impacts, identifies a number of proposed projects that would influence the future visual character of the study area. These projects would also increase sources of evening light and glare that could degrade nighttime views. It is assumed that these developments will be suburban in character and given existing design guidelines, will likely have at least moderate visual quality. Such developments tend to offer relatively high degrees of internal unity and intactness. In some locations, views toward open spaces, agricultural fields, and the Sierra Nevada Mountains may be reduced or blocked entirely by new structures associated with the new developments. In addition to new greenfield development (which occurs on undeveloped or agricultural lands, thus changing the area's character), redevelopment activities may result in the alteration of historical structures that add interest and contribute a unique character to the urban fabric of parts of the study area (see Section 3.17, Cultural and Paleontological Resources) and could change these viewed landscapes.

The No Project Alternative would include the widening and expansion of SR 99 and development patterns associated with projected growth. Widening transportation corridors does not necessarily degrade a corridor's visual quality, but the indirect effects of opening adjacent lands to freeway-oriented commercial development, to the extent permitted by local agencies, and increasing the number of billboard-type

signage could include the incremental degradation of expansive views toward the existing agricultural landscape.

Although some redevelopment may occur in the Merced and Fresno downtown areas, based on recent past development patterns, the No Project Alternative would not include an economic incentive to concentrate urban growth in the downtown areas. Therefore, the No Project Alternative does not represent improvements to the generally moderate to moderately low visual quality in these areas.

3.16.5.3 High-Speed Train Alternatives

This section discusses temporary construction impacts and permanent impacts that could result from the project. The impacts are discussed for each HST alternative, including those that would be common to all alternatives.

The Authority's *Urban Design Guidelines for the California High Speed Train Project (*Authority 2011a) briefly discusses the principles of context-sensitive solutions to guide the design of stations. This approach is equally applicable to elevated guideways and will be employed to mitigate visual impacts through context-sensitive design. *Aesthetic Guidelines for Non-Station Structures* (TM 200-06) (Authority 2011b) will also guide design of the HST components. In addition to following the aesthetic guidelines leading into the final design phase, the Authority will coordinate and collaborate with local jurisdictions, residents, and community leaders to determine the applicable local design guidelines for mitigation and the measures that are most context-appropriate. Selection from a menu of mitigation measures (see Section 3.16.6, Project Design Features) will be part of the final design process and specified to the HST design-builder for construction. Mitigation measures would apply to all HST alternatives.

The analysis of impacts described in this section relies on visual simulations to demonstrate effects on visual quality and existing visual character from the HST alternatives. This analysis considers many project components. Characteristics of typical HST components as well as the potential to affect the aesthetic environment are listed in Table 3.16-2.

Table 3.16-2
Characteristics of Typical HST Components

Project Component	Characteristics
Elevated Guideways or Structures (piers/columns, straddlebents)	Piers are columns holding up the guideway; straddle bents are supports made of two columns that support a beam on which the guideway sits. These are often the most visible project components. The aboveground height of the elevated guideway box girders range between approximately 30 and 80 feet above-grade. In some locations, elevated guideways and their associated overhead catenary system (OCS) components can intrude on views, although they may not block them completely. Tall HST stations (and guideways to a lesser extent) can create shadows that could have negative impacts on some areas under some conditions. During final design of elevated guideways, the Authority will coordinate with local jurisdictions on the design of these facilities so that they are designed appropriately to fit in with the visual context of the areas near them. The Authority will establish a process with the city or county with jurisdiction over the land along the elevated guideway to advance the final design through a collaborative context-sensitive solutions approach. The working groups will meet on a regular basis to develop a consensus on the urban design elements to be incorporated into the final guideway designs. The process will include activities to solicit community input in the affected neighborhoods. Associated structures would be designed to be attractive architectural elements or features, and would add visual interest to the streetscapes near them. Some of these structures along with piers can be targets for graffiti. These structures can incorporate textured surfaces and artistic patterns that discourage graffiti and add visual interest to the landscape; in addition surface coatings can be applied to them to facilitate cleaning and the removal of graffiti.
Retained Fill Guideways	A pair of retaining walls with the space between filled with compacted earth and/or rock provides the base for the guideway or roadway. The height of retained fill ranges from below- or

Project Component	Characteristics
	at-grade to generally up to 20 feet high, or up to 30 feet high at roadway overcrossings. Retained fill can be constructed with a wide gap and abutments on both sides that is spanned by a bridge, providing a space for the HST or vehicles to pass underneath. Retained fill can be a less expensive alternative to an elevated guideway on piers. Depending on the height and location of the retained fill, views can be blocked and shadows can create negative impacts on some areas. The walls of retained fill also can be targets for graffiti. The final design process will include coordination with local jurisdictions and take into consideration all applicable design guidelines as part of a collaborative process related to construction. Retaining walls can incorporate textured surfaces and artistic patterns that discourage graffiti and add visual interest to the landscape; in addition, surface coatings can be applied to facilitate cleaning and the removal of graffiti.
At-Grade Guideways	At-grade guideways are generally located in or adjacent to existing streets and railways (UPRR and BNSF); they would be designed to be compatible with the roadway or adjacent streetscape. The height from ground level to the top of rail will typically be a minimum of 4.5 feet, but would fluctuate up to as much as 8 feet depending upon topography. The at-grade track will be on either compacted soil and ballast material or concrete slab on a low berm. Height will vary when transitioning to retained fill or an elevated structure, and to accommodate topography, drainage, etc. When height increases, views of areas beyond the at-grade guideways may be blocked, depending on the location of the track and level of viewers. In addition, shadows can create negative impacts on some areas. Chain-link security fencing would not block views.
Overhead Catenary System	The OCS is a highly visible element from close viewing distances. OCS components (wires and mast poles) become less visible as viewing distances increase. The structures may intrude on views but would not block views because of their open and thin profile and cable-like appearance.
Street Modifications	Street widening or relocating streets can involve the removal of buildings, trees, and other vegetation. In some locations and situations, trees and other vegetation would be replanted with similar plants that mature quickly enough to become similar in appearance with the removed vegetation.
HST Stations	Depending on the size and bulk, HST stations can block views, cast shadows, or add built features to the landscape. Elevated HST stations would generally be more visible than the at-grade stations proposed in the Merced to Fresno Section alternatives. HST stations would be designed to be aesthetically and architecturally compatible with their surrounding areas. The final design process would include coordination with local jurisdictions and take into consideration all applicable design guidelines as part of a collaborative process so that, during design, the HST stations would undergo appropriate design review to incorporate local design elements.
Parking Structures	Depending upon size and bulk, parking structures can block existing views. Parking structures can be designed or assigned criteria to match surrounding architecture types to help them aesthetically fit with their surroundings. Local design guidelines would be taken into consideration and incorporated as part of a collaborative process with local agencies so that parking structures visually and aesthetically blend into the areas where they would be located.
Lighting	Train lighting would be temporary and directed along the guideway, which should not cause glare impact on nighttime views. If not properly designed and shielded, project-related lighting can create glare impacts, increase the ambient light levels in nearby areas, and increase skyglow, which can adversely affect nighttime star viewing. This would be true during construction and operation of the HST System. Design-related measures, such as shielding and altering light direction, would be used where appropriate to avoid and minimize potential impacts, while providing adequate general illumination and lighting for safety and security.
Building Removal	Removal of existing buildings can improve or detract from visual settings depending on building condition, style, scale, and color. Areas where buildings would be removed would be limited to areas that introduce project components or be revegetated to blend in with nearby areas.
Vegetation Removal	Removal of vegetation can open up views that are non-existent or, conversely, expose other non-aesthetic views, such as additional hard surfaces. When possible, the existing vegetation

Project Component	Characteristics
	would be preserved, vegetation replanted, trees replaced, and, where appropriate, temporary vegetative screens used to minimize effects of vegetation removal prior to revegetation.
Retaining Walls	A retaining wall can be used to stabilize a steep cut in a hillside or in pairs to hold earth and rock between them (retained fill) or as bridge abutments. Retaining walls are made with hard materials such as concrete that may require surface design treatments to reduce aesthetic and visual impacts. Retaining walls can incorporate textured surfaces and artistic patterns that discourage graffiti and add visual interest to the landscape; in addition, surface coatings can be applied to facilitate cleaning and the removal of graffiti.
Sound Barriers	Trains and relocated roadway traffic can induce noise impacts that, by FRA requirements, must be mitigated. Typical noise-reduction methods include sound barriers. While the sound barrier placements, whether at-grade or on elevated guideway, are not finally determined yet, the walls could block views, create places for unwanted graffiti, and become unattractive. Sound barriers can be made from transparent materials or include surface design enhancements to work with the area's visual context. Design considerations would be made during final design stages. Section 3.4, Noise and Vibration, includes images of sound barriers built for similar projects.
HMF	An HMF is an industrial site of approximately 154 acres that would include large spans of open rail yard, several buildings, and employee parking. The buildings can potentially block views, similar in scale to large agricultural storage structures. Maintenance facilities, which would be designed to be aesthetically compatible with the surrounding uses and landscape, would involve screening using fencing, walls, berms, or vegetation to help them blend-in with the areas where they would be located. During facility design, the exterior of the maintenance facilities would undergo appropriate design review to emulate the surrounding rural context.
Traction Power Distribution Stations	The stations would vary in size and spacing, depending on whether they are paralleling stations, switching stations, or traction power substations (see Chapter 2, Alternatives). Where appropriate, stations would be screened from public view by landscaping and a wall or fence. Some of the stations would include radio communication towers of an open-truss or solid pole design, and with obstruction warning lights on top, all depending upon the terrain and tower height.

Table 3.16-3 presents a generalized summary of impacts from the HST alternatives within each landscape unit, which can be used to compare the alternatives (in the table, significant impacts and impacts with substantial intensity are in boldface). The change in visual quality at each KVP within each landscape unit is detailed further in the discussion that follows.

Table 3.16-3
Generalized Summary of Aesthetics and Visual Resources Impacts on KVPs under NEPA and CEQA by HST Alternative

Landscape Unit	UPRR/SR 99 Alternative[a]		BNSF Alternative[a]		Hybrid Alternative[a]	
	NEPA Intensity	CEQA	NEPA Intensity	CEQA	NEPA Intensity	CEQA
Merced	Negligible	Less than significant	Negligible	Less than significant	Negligible	Less than significant
Merced–Chowchilla	Negligible	Less than significant	NA	NA	Negligible	Less than significant
Chowchilla	Moderate	Less than significant	NA	NA	NA	NA

Landscape Unit	UPRR/SR 99 Alternative[a]		BNSF Alternative[a]		Hybrid Alternative[a]	
	NEPA Intensity	CEQA	NEPA Intensity	CEQA	NEPA Intensity	CEQA
Chowchilla–Madera	**Substantial**	**Significant**	NA	NA	NA	NA
Madera	**Substantial**	**Significant**	NA	NA	NA	NA
Madera–Fresno	Negligible	Less than significant	NA	NA	NA	NA
Fresno	Negligible	Less than significant	Negligible	Less than significant	Negligible	Less than significant
West of SR 99	**Substantial**	**Significant**	**Substantial**	**Significant**	**Substantial**	**Significant**
Merced–Le Grand	NA	NA	**Substantial**	**Significant**	NA	NA
Le Grand	NA	NA	**Substantial**	**Significant**	NA	NA
Le Grand–Madera Acres	NA	NA	**Substantial**	**Significant**	NA	NA
Madera Acres	NA	NA	**Substantial**	**Significant**	Moderate	Less that significant
Madera Acres–SR 99	NA	NA	Negligible	Less than significant	Negligible	Less than significant
East of SR 99	NA	NA	Moderate	Less than significant	Moderate	Less than significant
Castle Commerce Center HMF	Negligible	Less than significant	Negligible	Less than significant	Negligible	Less than significant
Harris-DeJager HMF	Moderate	Less than significant	NA	NA	Moderate	Less than significant
Fagundes HMF	Negligible	Less than significant	Negligible	Less than significant	Negligible	Less than significant
Gordon–Shaw HMF	Moderate	Less than significant	NA	NA	NA	NA
Kojima Development HMF	NA	NA	Moderate	Less than significant	NA	NA

Notes:
These generalized determinations for landscape units do not necessarily mean that all KVPs in the landscape unit would have the same determinations of impacts; however, most KVPs did have the same impact determinations. For specifics, see Table 3.16-4.

Impacts from the wye design options are included in West of SR 99 and East of SR 99 landscape units.

[a] NA – Not applicable, because the landscape unit is not associated with this alternative.

Construction Period Impacts

Common Aesthetics and Visual Quality Impacts

Visual Impacts on Adjacent Land Uses

Chapter 2, Alternatives, describes the duration of temporary construction activities, which would include pile driving, partial or total road and lane closures, detours (vehicular and pedestrian), partial/limited vehicle access on nearby roads, materials and equipment deliveries, and potentially establishing one or more concrete batch plants, where concrete would be prepared for use in nearby project construction. Large roadway overcrossings and changes to SR 99 may be shorter in duration. Most of the staging sites would be located adjacent to the proposed HST alignment in areas that are generally rural or industrial in nature. Equipment and earthmoving activities are not visually intrusive in these types of settings. In urban areas, staging areas would be largest at the HST stations. Both HST stations would be adjacent to the UPRR right-of-way, where adjacent land uses are accustomed to freight and industrial movements.

Construction activities would cease after completion; therefore, impacts from these activities are considered temporary and therefore would have negligible intensity under NEPA and would be less than significant under CEQA.

The following temporary impacts would be common during the construction period for all HST alternatives and would result in adverse effects near residences, parks, and areas where people congregate, specifically where viewers are assumed to have high visual sensitivity:

- The project would create new sources of light and glare that may temporarily affect day and nighttime views. Construction lighting would result in temporary impacts on areas surrounding construction activities. Lighting associated with nighttime construction would affect aesthetics and visual resources through an increase in ambient light, which may adversely affect nighttime views. This may be an annoyance not only in urban areas, such as Merced and Fresno, but also in residential areas along the alignment.

- Construction activities could create visual nuisance in some urban areas, particularly in areas adjacent to residential and historical resources. Construction equipment, earthmoving, constructing structures, and concrete plant operations may degrade the visual aesthetics for adjacent viewers. Construction can cause dust, and material stockpiles can create an untidy appearance, collectively degrading the visual unity and intactness of the surroundings.

As stated above, because the effects of construction activities would be temporary, they are considered to have negligible intensity under NEPA and would be less than significant under CEQA. Although the construction period effects would be similar under all HST alternatives, the visual degradation would be more noticeable in urban areas adjacent to residences and parkways. Each HST alternative would substantially but temporarily affect the Merced and Fresno downtown areas during construction. The UPRR/SR 99 Alternative would also affect Downtown Madera, and the BNSF Alternative would affect Le Grand and Madera Acres. The Hybrid Alternative would affect only the Merced and Fresno downtown areas and Madera Acres. The HMF sites, whether in urban or rural areas, would have temporary construction impacts similar to those of the HST alternatives.

Project Impacts

As described in Section 3.16.4.2, analysts assessed aesthetic and visual impacts on each landscape unit and KVP by examining changes to visual quality. The degree of change to visual quality was based upon the professional judgment of the visual resource analyst using the FHWA visual quality analysis system (which is the accepted methodology used by federal and state transportation agencies). To determine changes to visual quality within each landscape unit, the analyst relied upon personal familiarity with the Merced to Fresno Section of the HST System, review of engineering drawings of project components, analysis and impact determinations for each KVP, and examination of simulations developed for the KVPs. Changes to the visual quality of the KVPs were determined by comparing existing views with HST

preliminary designs, aerial imagery, and photo simulations, and by completing a form that rated changes in visual vividness, intactness, and unity. The sensitivity of viewers from each KVP was also considered and helped determine the degree of impact. Simulated views included the proposed HST alternative or alternatives that would be visible in the view, any necessary roadway redesign near the HST alternative(s), and, where applicable, the absence of structures that would be removed as part of the project. This section includes text describing the impacts on aesthetic and visual resources for each KVP within the landscape units. This section also includes photographs from some of the KVPs in each landscape unit along with simulated views of the HST Project. This section does not include photographs and simulations of all KVPs, as some are less distinctive and redundant of the photos and simulations that are included for each landscape unit. See the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012) for photographs and simulations of the HST Project from all KVPs.

Common Aesthetics and Visual Quality Impacts

This analysis focuses on common components of the HST alternatives (see Table 3.16-2) that can have direct impacts by changing the character of the landscape and lowering existing visual quality categories. Because no officially designated state scenic highways exist near the HST alternatives, no common impacts on such resources exist, and they are not discussed further. Similarly, impacts related to new light and glare sources, such as general illumination and flashing warning lights, are not discussed further, as project design features would avoid and minimize impacts. The proposed HST stations in Merced and Fresno would be designed to direct lighting downward, and there would be no overhead lights on the HST guideway. Train lights would be directed toward the guideway. Shadows manifest from tall and planar components of the HST, particularly piers, retaining walls, and sound barriers. However, the duration and size of shadows vary throughout the day and so does their effect.

Sound barriers are required to mitigate impacts from noise (see Section 3.4, Noise and Vibration). Sound barriers, as well as retaining walls, can be visual barriers and can contribute to visual degradation, especially when installed at-grade and in proximity to moderately to highly sensitive viewers. Their impact will vary depending upon their design, height, and location. However, sound barriers at ground level are typically installed in urban areas containing features in the landscape such as buildings, trees, signs, vehicles, overpasses, etc., that already block or intrude on scenic views (which, when present, are often distant views). Existing features also can block views of the ground-level sound barriers. Visual quality impacts from ground-level sound barriers can be avoided or minimized by incorporating aesthetic design features and vegetative screening. Sound barriers may be entirely solid or transparent or a combination of the two. When sound barriers are required on elevated guideways they are installed on top of guideway walls, and are not of such additional height as to block views of ground-based features from the vicinity of the guideway that are already blocked by the other guideway structures. Mitigation related to sound barriers is discussed in Section 3.16.6, Mitigation Measures. Some of the visual simulations in this section show sound barriers in locations where they are proposed in Section 3.4, Noise and Vibration. The simulations show sound barriers as solid walls in some cases, and as tinted transparent barriers in others. The final locations, materials, and physical appearance of the sound barriers have not yet been determined, but could be colored and textured to be sensitive to context. The simulations provide an example of how the barriers may appear, but their actual appearance will not be determined until final design.

The HST stations in Merced and Fresno would create a beneficial change in visual character when viewed from adjacent downtown locations. The indirect effects of the project would be most noticeable at the HST stations and are expected to result in an overall increase in visual quality. The HST Project would serve as a catalyst for the development of areas near the HST stations because it would attract people using the HST or being drawn to the area as it develops. The HST stations would increase the potential for economic incentives by creating new destination areas and would influence development patterns near them. This could result in new development projects along with urban design improvements that would increase the appeal of these areas over time. In residential, railroad, highway, and industrial areas, no indirect effects are anticipated.

None of the HMF landscape units would have substantial or significant adverse impacts on aesthetic and visual resources because none meet the threshold for such impacts determined by viewer sensitivity and reductions in visual quality. Indirect impacts of the HMFs would be remote, far into the future, and highly speculative based upon actions by local governments and adjacent landowners.

Change to Visual Quality

Table 3.16-4 provides viewpoint-specific impact summaries for KVPs within each landscape unit. The table lists the change the HST alternatives would have on the existing visual quality category at each KVP, according to the evaluation methodology. The table also classifies these impacts on aesthetics and visual resources according to NEPA and CEQA criteria. This table provides details for comparing the relative changes that each alternative would have within each landscape unit and was used to help develop the impact determinations shown in Table 3.16-3.

Table 3.16-4
Summary of Visual Quality Changes and Impacts at Key Viewpoints

KVP Location	KVP #	Visual Quality Rating – Existing	Visual Quality Rating – With Project	Viewer Sensitivity	NEPA Impact Intensity	CEQA Impact
Merced Landscape Unit – UPRR/SR 99, BNSF, Hybrid Alternatives						
Martin Luther King, Jr. Ave and Main St	KVP 4	Moderately low	Moderate	Moderate	Negligible (Beneficial)	Less than significant (Beneficial)
SR 99 at E 15th	KVP 5	Moderately low	Moderately low	Low	Negligible	Less than significant
Merced-Chowchilla Landscape Unit – UPRR/SR 99, Hybrid Alternatives						
SR 99	KVP 6	Moderately low	Moderately low	Low	Negligible	Less than significant
Chowchilla Landscape Unit – UPRR/SR 99 Alternative						
North Chowchilla	KVP 7	Moderately high	Moderate	Moderate	Moderate	Less than significant
Robertson Boulevard	KVP 8	Moderately low	Moderately low	Moderate	Negligible	Less than significant
Chowchilla-Madera Landscape Unit – UPRR/SR 99 Alternative						
Fairmead	KVP 9	Moderately low	Low	High	Substantial	Significant
Madera Landscape Unit – UPRR/SR 99 Alternative						
Rotary Park	KVP 10	Moderately low	Moderately low	High	Negligible	Less than significant
W Yosemite Avenue	KVP 11	Moderately low	Low	High	Substantial	Significant
E 11th Street	KVP 12	Moderately low	Low	High	Substantial	Significant
Madera-Fresno Landscape Unit – UPRR/SR 99 Alternative						
SR 99	KVP 13	Low	Low	Moderate	Negligible	Less than significant

KVP Location	KVP #	Visual Quality Rating – Existing	Visual Quality Rating – With Project	Viewer Sensitivity	NEPA Impact Intensity	CEQA Impact
Fresno Landscape Unit – UPRR/SR 99, BNSF, Hybrid Alternatives						
San Joaquin River	KVP 14	Low	Low	Low	Negligible	Less than significant
Camp Pashayan	KVP 15	Moderate	Moderately low	Moderate	Moderate	Less than significant
Roeding Park (N Golden State Blvd.)	KVP 16A	Moderate	Moderate	High	Negligible	Less than significant
Roeding Park W Olive Ave	KVP 16B	Moderate	Moderate	High	Negligible	Less than significant
N Vagedes Avenue	KVP 17	Moderately high	Moderately high	Moderate	Negligible	Less than significant
Chukchansi Park	KVP 18	Low	Moderately low	Moderate	Negligible (Beneficial)	Less than significant (Beneficial)
Chukchansi Park	KVP 19	Low	Moderately low	Moderate	Negligible (Beneficial)	Less than significant (Beneficial)
West of SR 99 Landscape Unit – UPRR/SR 99, BNSF, Hybrid Alternatives						
Avenue 21	KVP 20	Moderate	Low	Low	Negligible	Less than significant
Chowchilla Boulevard	KVP 21	Moderately low	Low	High	Substantial	Significant
SR 152	KVP 22	Moderately low	Low	High	Substantial	Significant
Merced-Le Grand Landscape Unit – BNSF Alternative						
SR 99	KVP 23	Moderate	Moderately low	High	Substantial	Significant
E Mariposa Way	KVP 24	Moderate	Moderately low	Moderate	Moderate	Less than significant
Le Grand Landscape Unit – BNSF Alternative						
Marshall Street	KVP 25	Moderately low	Low	High	Substantial	Significant
Le Grand-Madera Acres Landscape Unit – BNSF Alternative						
Buchanan Hollow Road	KVP 26	Moderately high	Low	Moderate	Substantial	Significant
Madera Acres Landscape Unit – BNSF Alternative						
Avenue 18¾	KVP 27	Moderately low	Low	High	Substantial	Significant
Madera Acres Landscape Unit –Hybrid Alternative						
Avenue 18¾	KVP 27	Moderately low	low	Moderate	Negligible	Less than significant

KVP Location	KVP #	Visual Quality Rating – Existing	Visual Quality Rating – With Project	Viewer Sensitivity	NEPA Impact Intensity	CEQA Impact
Madera Acres-SR 99 Landscape Unit – BNSF, Hybrid Alternatives						
Avenue 7	KVP 28	Moderately high	Moderate	Low	Negligible	Less than significant
East of SR 99 Landscape Unit – BNSF, Hybrid Alternatives						
Road 19½	KVP 29	Moderately low	Moderately low	High	Negligible	Less than significant
Avenue 19	KVP 30	Moderate	Low	High	Substantial	Significant
Heavy Maintenance Facility Alternative Landscape Units						
Castle Commerce Center (Q Street)	KVP 1	Moderate	Moderate	Moderate	Negligible	Less than significant
Castle Commerce Center (N Street)	KVP 2	Moderate	Moderate	Moderate	Negligible	Less than significant
Castle Commerce Center (R Street)	KVP 3	Moderately low	Moderately low	Moderate	Negligible	Less than significant
Castle Commerce Center (SR 99 at MLK Ave)	KVP4A	Moderate	Moderately Low	Moderate	Moderate	Less than Significant
Castle Commerce Center (Santa Fe Ave)	KVP 31	Moderate	Moderate	Moderate	Negligible	Less than significant
Atwater (Franklin Rd)[a]	KVP 32	Moderately low	NA	NA	NA	NA
Harris-DeJager (SR 99)	KVP 33	Moderate	Moderately low	Moderate	Moderate	Less than significant
Fagundes (SR 152)	KVP 34	Moderate	Moderately low	Low	Negligible	Less than significant
Gordon-Shaw (Avenue 18½)	KVP 35	Moderately high	Moderate	Moderate	Moderate	Less than significant
Kojima Development (Santa Fe Avenue)	KVP 36	Moderately high	Moderate	Moderate	Moderate	Less than significant

[a] KVP 32 (Atwater – Franklin Road) is not considered in the impacts analysis because it does not face an HST alternative.

NA = Not applicable

As per FHWA methodology, the most sensitive viewer type at each KVP was selected to assist in determining impact.

The following discussion highlights and explains the overall changes (or lack of change) in visual quality category of each alternative on each landscape unit as well as the resulting NEPA and CEQA impacts. It also provides more detailed HST alternative impact discussions regarding KVPs that explain changes to visual quality categories and the resulting NEPA and CEQA impacts. The determination of impacts for the landscape unit recognizes that not all KVPs in the landscape unit would necessarily have the same determinations of impacts. The landscape unit determination was based on the KVPs as important viewing locations and representative samples of visual quality with and without the HST project, tempered by the existing predominant landscape character and range of visual quality and viewer sensitivity throughout the landscape unit.

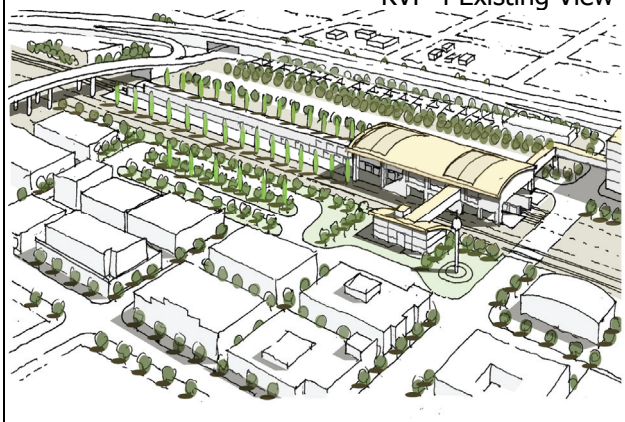
UPRR/SR 99 Alternative

Merced Landscape Unit. In views toward the proposed Downtown Merced Station from SR 99 and from throughout the downtown area, the station's presence would enhance the visual character of this area and would increase visual quality. Viewer sensitivity from pedestrians and drivers in the downtown area is moderate to low. The station and HST guideway would be at-grade through this landscape unit. The HST in the rail corridor would slightly degrade the existing overall visual quality of moderately low to low in the landscape unit, but not enough to lower the category. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA for the Merced Landscape Unit.

There are two KVPs within the Merced Landscape Unit. Because Downtown Merced is laid out in a traditional street grid pattern, views toward the proposed HST alignment and station area are available from a number of different locations. KVP 4 is a view from Martin Luther King, Jr. Avenue and W Main Street looking south toward SR 99. In the view from KVP 4, a commercial district with street parking and road signs exemplify the automobile-oriented portion of downtown. Street trees and shrubbery, which introduce elements to the landscape, dot the area, including off-street parking lots. There is an inconsistent mix of manmade and natural elements. The Merced Cinema, with its distinctive tower landmark above Martin Luther King Jr. Way, contributes to vividness from a greater viewing distance, but less so from the street and sidewalk nearby. Some businesses have signage that encroaches on the streetscape and is out of scale with the size of the businesses. Traffic signal poles also encroach on the streetscape. Most commercial buildings are single story. Compared with the current view, the HST station's structure and adjacent features, both in terms of color and form, would reduce the prominence of linear commercial buildings along Martin Luther King Jr. Way and appear as a relatively vivid addition to the built environment, with a greater degree of intactness and unity. Structures of this size would alter but not substantially degrade the visual character in views from the surrounding area of the station. The addition of new landscape architectural elements associated with the HST station would enhance the visual quality of the area. Thus, the visual quality would increase. Viewer sensitivity is assumed to range from moderate to low in the commercial area. Figure 3.16-7 shows the existing view, a simulated view, and a rendering of the Downtown Merced Station complex from approximately the same orientation as the existing view. These conceptual views illustrate the size and bulk of a "functional" station of the size, bulk, scale, and general architectural appearance of the HST station. The station design may be refined and incorporate additional features that would result in an "iconic," or architecturally distinct, appearance. For this KVP, the change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible (beneficial) intensity under NEPA and a less than significant (beneficial) impact under CEQA.

KVP 4 Existing View

KVP 4 Simulated View



KVP 4 Rendering

Figure 3.16-7
KVP 4 Existing and Simulated View and Rendering

Upper Left, Existing View: Martin Luther King, Jr. Avenue and W Main Street intersection, looking south toward SR 99.
Upper Right, Simulated View: Simulation of Downtown Merced HST Station (Phase 1).
Lower Left, Rendering of: The Downtown Merced Station Complex (Phase 1).

KVP 5 lies within the northbound lane of SR 99, south of Downtown Merced. The number of viewers experiencing this view from the elevated highway is high, but viewer sensitivity is assumed to be low. This is because most viewers are likely to be traveling at relatively high speeds. The duration of view would be brief and not typically directed toward the shoulder of the road and the HST. Figure 3.16-8 shows the UPRR tracks are the dominant linear feature in the existing view.

KVP 5 Existing View

KVP 5 Simulated View

Figure 3.16-8
KVP 5 Existing and Simulated Views

Left, Existing View: View from the northbound lane of SR 99 looking northwest toward the UPRR tracks.
Right, Simulated View: HST guideway approaching the Downtown Merced Station and platforms, shown in the distance.

In the simulated view from KVP 5, the at-grade guideway would appear as a consistent linear feature alongside the UPRR tracks. The proposed G Street overcrossing would be obstructed by the highway's bridge rail. In the distance, the Downtown Merced Station concourse and platform would be visible and prominent. The HST would be similar to the existing overall visual character of the area and would not lower the existing moderately low visual quality. From this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

Merced–Chowchilla Landscape Unit. The proposed HST would lie near the existing UPRR and SR 99 transportation corridor and would be elevated in the southern half of the landscape unit under the East Chowchilla design option. In general, with the HST Project in place, the visual quality of views within the landscape unit would remain as it is. The HST Project would not substantially alter the landscape unit's existing visual character. In this landscape unit the level of change in visual quality from the project, combined with the level of viewer sensitivity, would generally result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

The KVP in this landscape unit is KVP 6, which is shown in Figure 3.16-9. It is a typical representation of the Merced-Chowchilla Landscape Unit and is a view from the southbound lane of SR 99, south of Le Grand Avenue. There would be a relatively large number of viewers from this viewpoint, but viewer sensitivity is assumed to be low because views would be from vehicles traveling at highway speeds. The visual quality of the view with the project would remain moderately low. The project would neither substantially obstruct views nor substantially alter the existing visual character. From this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and less than significant impact under CEQA.

KVP 6 Existing View | KVP 6 Simulated View

Figure 3.16-9
KVP 6 Existing and Simulated Views

Left, Existing View: View to the south from the southbound lane of SR 99, between Merced and Chowchilla. This viewpoint is approximately 0.1 mile south of Le Grand Avenue.
Right, Simulated View: The HST guideway would appear beyond the existing UPRR tracks.

Chowchilla Landscape Unit. With the project in place, the existing visual quality range of moderately high to moderately low would change to moderate to moderately low. The landscape unit extends from north Chowchilla to the downtown area. In some locations on the fringes of Chowchilla, the guideway would appear out of character with the existing setting but would not be close to the viewers. In Downtown Chowchilla, the guideway would be partially obscured by buildings, signs, and trees, and would not contrast with the existing visual character. In this landscape unit, generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

From KVP 7, the HST elevated guideway would partially block views from the fringes of residential development in northern Chowchilla toward the Sierra Nevada Mountains (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]). Visual quality would degrade from the existing moderately high to moderate with the project. Despite the typically high sensitivity of the residential viewers, the distance from residences (one third of a mile) to the HST guideway would reduce the visual sensitivity of residents to a moderate level. The elevated guideway at that distance would not alter the setting closest to the viewpoint and would fit the character of the existing rail corridor. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

The elevated HST guideway as viewed from KVP 8 would pass through mostly commercial and industrial areas, where viewer sensitivity is moderate. The HST would be located adjacent to SR 99 and land use is already consistent with these large types of infrastructure. KVP 8, shown in Figure 3.16-10, shows a view commonly experienced by many travelers leaving Chowchilla via SR 99. From KVP 8, the HST guideway would be partially visible, passing above the western ramp of the SR 233 overpass of SR 99. The view would not be visually out of character with the existing transportation corridor and the HST guideway would not change the existing category of moderately low. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 8 Existing View | KVP 8 Simulated View

Figure 3.16-10
KVP 8 Existing and Simulated Views

Left, Existing View: View to the northeast from the Downtown Chowchilla gateway. The SR 233–SR 99 interchange is visible in the center of the view.
Right, Simulated View: The elevated HST guideway would appear across the center of the view, above the SR 99–SR 233 interchange.

Chowchilla–Madera Landscape Unit. The HST guideway would be elevated through the entire landscape unit, from the southern part of Chowchilla to the north city limits of Madera. The project would substantially change the existing visual character in much of this landscape unit. It would have greater impacts on residential areas where visual quality in many locations would be lowered from moderately low to low and viewer sensitivity is assumed to be high. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

The one representative KVP in this landscape unit is KVP 9. The elevated HST guideway would be a dominant visual feature in the view from KVP 9, as shown in Figure 3.16-11. It would appear closer to residential viewers in Fairmead than the existing UPRR/SR 99 corridor. Fairmead Boulevard, the road that

appears parallel to the UPRR tracks in the existing view, would be realigned to accommodate the HST and would appear closer to the viewpoint. Compared with the existing view, the transportation corridor with the HST appears within the edge of the community and adjacent to the church visible in the view, as opposed to being in the periphery. The simulated view also shows where the Ave 24 Wye would appear along the horizon. The encroachment of the HST alternative and alteration of overall cohesion in the view would reduce visual quality from moderately low to low. The elevated guideway would substantially alter the existing visual character in the vicinity. The viewer sensitivity is assumed to be high in the mainly residential area. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 9 Existing View

KVP 9 Simulated View

Figure 3.16-11
KVP 9 Existing and Simulated Views

Left, Existing View: View to the west toward the UPRR corridor and SR 99 from within Fairmead, a residential area between Chowchilla and Madera.
Right, Simulated View: The elevated HST guideway, shown here with a tinted, transparent sound barrier, would appear in front of the existing UPRR corridor. If the at-grade Ave 24 Wye were selected as part of the project, it would appear between the elevated UPRR/SR 99 Alternative and the UPRR corridor.

Madera Landscape Unit. The elevated guideway in this landscape unit would be noticeable in views from throughout the landscape unit. Where the elevated guideway encroaches on residential neighborhoods and the downtown core, it would appear out of scale in some locations and substantially alter the visual character. However, in other views, the elevated guideway would appear as part of a wider transportation corridor and would not substantially alter the existing visual character. The existing visual quality of much of the landscape unit is moderately low. With the project, visual quality would range from moderately low to low. Viewer sensitivity by residents is assumed to be high. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA. This determination of impacts for the landscape unit recognizes that not all KVPs in the landscape unit would necessarily have the same determinations of impacts. The landscape unit determination is based on the KVPs as representative samples of visual quality with and without the HST project, tempered by the existing predominant landscape character and range of visual quality and viewer sensitivity throughout the landscape unit.

The Madera Landscape Unit has three KVPs. KVP 10, shown in Figure 3.16-12, is the view from the eastern edge of Rotary Park along N Gateway Drive in Madera. This somewhat linear park is located between SR 99 and N Gateway Drive. The elevated guideway would appear within the relatively wide, existing transportation corridor. The presence of the elevated HST guideway in an existing transportation

corridor (the Rotary Park access drive, N Gateway Drive, the UPRR tracks, and Sharon Boulevard) would not substantially alter the visual character of the landscape around the park. The elevated guideway would be visible about 300 feet away from the park and along Sharon Boulevard. Relative to the park, there is a cluster of residences northeast and southeast of the HST alignment along Sharon Boulevard, with an intervening drive-in theatre immediately to the east. The residences are oriented away from the elevated guideway, so it would not be a dominant element in the view by residents. The guideway would not lower the existing visual quality category of moderately low. Viewers from Rotary Park and the residences are assumed to have high sensitivity. Drivers on a busy road in the transportation corridor are assumed to have low sensitivity; their views often would be away from the HST, distant from it, and partially obstructed by trees in the roadway median and in the neighborhoods. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 10 Existing View KVP 10 Simulated View

Figure 3.16-12
KVP 10 Existing View

Left, Existing View: View to the northeast from Rotary Park in the City of Madera. The existing UPRR tracks are visible in front of a residential neighborhood.
Right, Simulated View: The elevated HST guideway would be located next to the existing UPRR tracks and Sharon Boulevard. (The guideway would be supported by piers that start below the roadway grade and thus only the top of the piers appear in this view. When viewed from the east side of the HST, the full height of the piers would be visible and would look similar to the simulation in Figure 3.16-13) The simulation shows a tinted, transparent sound barrier.

From KVP 11, shown in Figure 3.16-13, the elevated guideway's support piers would partially obstruct views of buildings toward downtown from the sidewalks and streets of the downtown commercial area of Madera. The elevated guideway would be in an existing transportation corridor including the UPRR tracks and E Street. It would remove several structures along the corridor as it went through downtown, and substantially alter the visual character. Most notably, the guideway would be the tallest structure in the downtown core area and of a different scale. The existing moderately low visual quality of this view would be reduced to low. From this viewpoint at the corner of W Yosemite Avenue and S Gateway Drive, near the entrance to Courthouse Park, the guideway would appear prominent with the sky as a backdrop, creating a uniform horizontal skyline in all such unobstructed views toward the HST from the streets and businesses in the downtown area. However, the canopy of trees in Courthouse Park would obstruct views of the elevated guideway, and the HST would not substantially alter the viewshed from the park. The elevated guideway is prominent in the view from downtown streets and sidewalks, and sensitivity by downtown patrons is assumed to be moderate to high. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

The analysis for KVP 12 found that the relatively wide streets in the adjacent Madera neighborhood would allow unobstructed views toward the elevated guideway (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]). The existing visual quality is moderately low because of the general lack of intactness and unity in the view. The elevated guideway would add a large structural component to a viewshed where viewer sensitivity by residents is assumed high. The presence of the elevated guideway would substantially alter the area's existing visual character. The existing visual quality category is moderately low and would change to low with the HST. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 11 Existing View

KVP 11 Simulated View

Figure 3.16-13
KVP 11 Existing and Simulated Views

Left, Existing View: View to the northeast from the intersection of S Gateway Drive and W Yosemite Avenue in Downtown Madera.
Right, Simulated View: The elevated HST guideway, shown here with a tinted, transparent sound barrier would appear above and adjacent to the existing UPRR corridor.

Madera–Fresno Landscape Unit. The HST alternative would be located alongside existing UPRR tracks throughout most of the Madera–Fresno Landscape Unit. An elevated guideway (from Madera to Borden and near Herndon) and an at-grade guideway (other portions of the landscape unit) would appear as part of a transportation corridor that already includes the UPRR tracks and SR 99. In general, the visual quality in views within this landscape unit would remain low. No large alteration in the landscape unit's visual character would result from the project. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

The Madera-Fresno Landscape Unit contains one KVP. From KVP 13, shown in Figure 3.16-14, the HST alternative would run parallel to the existing UPRR tracks. There is an industrial facility located along the railroad in the vicinity. Viewer sensitivity is assumed to be low by workers in industrial areas. Sensitivity by motorists on SR 99 is assumed to be moderate in such an expansive landscape, where any unusual feature would stand out. The intactness and unity of the view with the project would not change, and the overall visual quality and character of the landscape would not change. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 13 Existing View

KVP 13 Simulated View

Figure 3.16-14
KVP 13 Existing and Simulated Views

Left, Existing View: View to the north from the northbound lane of SR 99, between Madera and Fresno. The existing UPRR tracks are visible.
Right, Simulated View: The at-grade HST guideway would appear parallel to the UPRR tracks.

Fresno Landscape Unit. The HST elevated guideway would be visible from industrial and commercial areas between the San Joaquin River and the northern-most section of Fresno. The HST would be at-grade and below-grade for the remainder of the alignment to the Downtown Fresno station. Because of its location within an established corridor containing rail and other transportation facilities, the HST guideway would not appear out of character with most of the landscape unit. In a few locations where the guideway would encroach on established sensitive areas and would be highly visible, visual quality would degrade and visual character would be altered. However, most areas would maintain their visual quality and character. Near the HST station and associated development in the downtown area, there would be slight improvements in visual quality. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

The HST guideway would be visible beyond the SR 99 and the UPRR bridges. The San Joaquin River is an aesthetic resource identified by Fresno County; however, from KVP 14, the river area includes numerous structures (the UPRR and SR 99 bridges). The addition of the HST bridge would not block a substantially larger portion of the area visible from SR 99, where viewer sensitivity for drivers is assumed low. The visual quality in the area would remain low, and there would be no substantial alteration of the existing visual character in this view. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 15 is located on a trail in an ecological reserve (Camp Pashayan) and represents what viewers outside of the main part of the camp would see of the HST structure (Figure 3.16-15). When viewed from this location, the HST structure would appear in front of and seem taller than either of the two existing bridges (UPRR and SR 99). Much of the vegetation that obstructs views of portions of the existing bridges would also obstruct portions of the HST bridge, although the new structure would appear more dominant in views from this location than the existing bridges. The HST guideway and bridge over the river would be consistent with the visual character of this area. The HST would reduce the existing visual quality from moderate to moderately low. Because viewers from this location already see two existing bridges and recreational activities of viewers would be focused away from the HST, viewer sensitivity is assumed to be moderate. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

KVP 15 Existing View

KVP 15 Simulated View

Figure 3.16-15
KVP 15 Existing and Simulated Views

Left, Existing View: View to the west from the gazebo within Camp Pashayan. Both SR 99 and the existing UPRR bridges across the San Joaquin River are visible.
Right, Simulated View: The HST bridge would appear in front of the existing bridges that are visible from Camp Pashayan.

Two KVPs were selected for Roeding Park. KVP 16A provides a view to the east from inside Roeding Park. It is located approximately 300 feet from Golden State Boulevard along the east edge of the park, where the HST alignment would replace the roadway. Viewer sensitivity by park users is assumed to be high. Trees along the entire east side of the park would partially block or screen views of the HST at-grade guideway and of the potential sound barrier from KVP 16A (see simulated view in Figure 3.16-16A and discussion under mitigation in Section 3.15, Parks, Recreation, and Open Space). Because the HST would not be easy to see from this location and would follow an existing wide transportation corridor, the visual character and visual quality category of the area viewed from this location would not change. As a result, there would be an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 16B is located along the edge of Roeding Park near the park entrance and W Olive Avenue and provides a view to the north towards W Olive Avenue and the back of a commercial center and its parking lot (Figure 3.16-16B). With the HST Project, W Olive Avenue would become an overcrossing that would be supported by retained fill until it reaches the abutment of the clear-span overcrossing of the UPRR and HST. The retained fill wall would introduce a large-scale element into the view from KVP 16B that would change the character of the area viewed beyond the park. The retained fill wall would provide a uniform backdrop to the park that would block views from KVP 16B into the back of the commercial complex and parking lot. Existing trees in the park would partially screen views of the retained fill wall from KVP 16B. The Authority will work with the City of Fresno during final design to develop appropriate visual/aesthetic treatments to the retained fill wall (and span) so that they are compatible with the context of this part of Roeding Park. The retained-fill wall and would not lower the existing visual quality category of moderate and would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

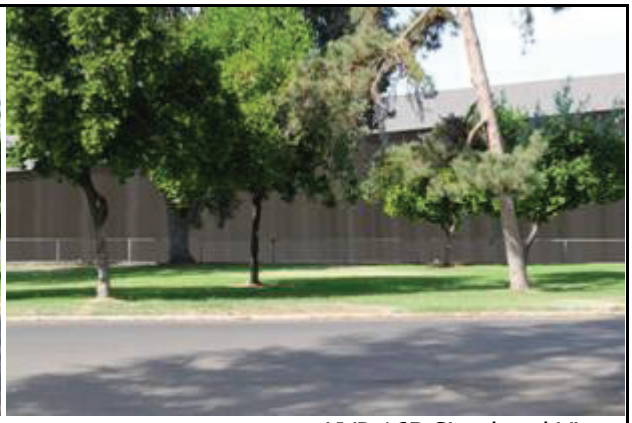
KVP 16A Existing View

KVP 16A Simulated View

Figure 3.16-16A
KVP 16 Existing and Simulated Views

Top Left, Existing View: View to the east from within Roeding Park in the City of Fresno. Golden State Boulevard and the existing UPRR tracks are visible beyond the eastern edge of the park.
Top Right, Simulated View: The at-grade HST guideway as it would appear beyond the eastern boundary of Roeding Park.

KVP 16B Existing View



KVP 16B Simulated View

Figure 3.16-16B
KVP 16B Existing and Simulated Views

Existing View: North view of W Olive Avenue from Roeding Park in the City of Fresno. The back of a commercial complex and it's parking lot can be seen beyond (and "below") the trees in the park.
Simulated View: The retained wall of the proposed Olive Avenue overcrossing is depicted. The retained wall blocks views of the commercial complex and parking lot. Trees in the park partially obscure the retained wall of the overcrossing.

KVP 17 is the view south along N Vagedes Avenue toward the HST, approximately 650 feet away. Trees along Golden State Boulevard and in the residential neighborhood partially obscure the view to the south. The HST guideway essentially would not be visible from this viewpoint, as it would be below-grade in a retained cut to pass under the new E Belmont Avenue overcrossing farther south. The closing of Golden State Boulevard and the new overcrossing would eliminate a roundabout that is visible from the southeast corner of Roeding Park. Open space adjacent to the park would be created and the overcrossing would be supported by a retaining wall and/or landscaped embankment. Viewer sensitivity is

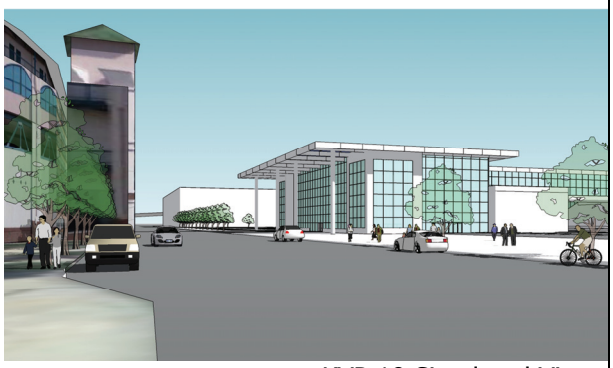
assumed moderate from the residential area because of the distance away and neighborhood trees obscuring views to the south. The visual character of this area would not be altered, and the existing moderately high visual quality category would remain unchanged. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

There are two HST station alternatives being considered for Downtown Fresno: the Kern Street Station Alternative and, two blocks north on Mariposa Street, the Mariposa Street Station Alternative. The Downtown Fresno Station would have an at-grade guideway for loading passengers, as with the Merced Station. Figure 3.16-17 shows existing views from KVP 18 and 19 and simulations of the Mariposa Street and Kern Street stations, respectively, from nearly the same locations and orientations of KVP 18 and 19.

KVP 18 Existing View

KVP 18 Simulated View

KVP 19 Existing View



KVP 19 Simulated View

Figure 3.16-17
KVPs 18 and 19, Existing and Simulated Views

Existing View, Upper Left: KVP 18: View to the west from the main plaza at the western entrance to Chukchansi Park in Fresno, near the intersection of Tulare and H Streets. The historical Southern Pacific Depot is visible toward the area proposed for the Mariposa Street station alternative in Downtown Fresno.
Simulated View, Top Right: KVP 18: Simulated view of Mariposa Street station from approximately the same position as the existing view.
Existing View, Lower Left: KVP 19: View to the south from the ticket office at Chukchansi Park, near the intersection of Kern and H Streets, toward the area proposed for the Kern Street station alternative. The western edge of the ballpark is visible along the left side of the view, and parking and warehouse uses typical of the area are visible across H Street.
Simulated View, Bottom Right: KVP 19: Simulated view of Kern Street station from approximately the same position as the existing view.

Through collaboration with the City of Fresno, the station design may be refined to incorporate additional aesthetic features that would result in a more iconic or architecturally distinct design. The *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* (Authority and FRA 2012) includes images of existing European and Asian functional stations and conceptual images of iconic stations. The visual assessment for KVPs 18 and 19 is for a functional station at the pedestrian level. KVP 18 is of the station area and the Southern Pacific Railroad Depot. KVP 19 is the view to the south from the ticket office at Chukchansi Park, near the intersection of H and Kern Streets in Fresno (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]).

The effects on aesthetics and visual resources under both station alternatives would be similar. With either station, the vividness, intactness, and unity of the area near the stations would increase from low to moderately low, as would overall visual quality. The scale of the HST station would change but not substantially alter the visual character of the area, which includes other large structures. Viewer sensitivity would be high because the station would be located in the downtown area where there are many pedestrians and shoppers. The HST station would have beneficial impacts on the visual quality on this area of Downtown Fresno, as seen from KVPs 18 and 19. For these two KVPs, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible (beneficial) intensity under NEPA and a less than significant (beneficial) impact under CEQA.

West of SR 99 Landscape Unit. West of the SR 99 Landscape Unit are areas where the UPRR/SR 99 Alternative guideway would be at-grade (except where wyes and the UPRR/SR 99 Alternative cross), requiring the construction of roadway overpasses. The overpasses would potentially have long-term adverse visual effects, because the sloped fill structures required to support the elevated roadway would occupy large areas in views. In particular, an overpass within the SR 233/Robertson Boulevard scenic corridor would substantially alter existing views and the visual character in an area where viewer sensitivity is high. A proposed design option to make the road an undercrossing of the HST guideway would be less disruptive of the visual corridor but would still adversely affect the unity of the tree-lined street. The visual quality under existing conditions ranges from moderate to moderately low within the landscape unit. With the project, the visual quality in views would be low. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA. This determination of impacts for the landscape unit recognizes that not all KVPs in the landscape unit would necessarily have the same determinations of impacts. The landscape unit determination was based on the KVPs as important viewing locations and representative samples of visual quality with and without the HST project, tempered by the existing predominant landscape character and range of visual quality and viewer sensitivity throughout the landscape unit.

Three KVPs were included in this landscape unit. KVP 20, shown in Figure 3.16-18, is representative of the West of SR 99 Landscape Unit where there would be the HST guideway at-grade and a sloped-fill overpass. The Ave 21 Wye design option would pass through the area visible from KVP 20, requiring several north/south oriented roads to pass over the HST guideway, as shown for Road 16 in Figure 3.16-18. Replacing the orchards with the large, sloped-fill overpass would alter the agricultural character of the area that the overpass would be built on. It would reduce existing visual quality from moderate to low. Viewer sensitivity and exposure is low and the road is not heavily used. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 20 Existing View

KVP 20 Simulated View

Figure 3.16-18
KVP 20 Existing and Simulated Views

Left, Existing View: View to the east from the eastbound lane of Avenue 21 between Road 15½ and Road 16. *Right, Simulated View:* The Ave 21 Wye design option would be at-grade in this area but would require construction of overpasses, such as this one over Road 16.

KVP 21 is a view to the southeast from Chowchilla Boulevard near Avenue 23½ (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]). The SR 99 overpass of the UPRR tracks is visible in the background. The elevated track of both the north-south HST alternative running between Merced and Fresno and the Ave 21 Wye would be visible in this view. The existing UPRR tracks are to the west of the boulevard. The HST alternative and the Ave 21 Wye would be elevated and run parallel to each other on the east side of the boulevard, until the Ave 21 Wye veers west to cross above the boulevard. The area has scattered residences and clusters of trees dispersed in expansive grasslands. The elevated guideway of the Ave 21 Wye would be dominant in the view. Travelers on the road and nearby residents are assumed to have moderate and high viewer sensitivity, respectively. Because the elevated guideways run parallel to the boulevard and near residences, the duration of exposure to changes in the landscape would be moderately long. The encroachment of the HST alternative and Ave 21 Wye, and alteration of overall cohesion in the view, would substantially alter the visual character and reduce visual quality from moderately low to low. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 22 is a view to the east from the eastbound lane of SR 152, west of Road 18 (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]). The SR 152–SR 99 interchange is beyond a cluster of trees along the horizon. The Ave 24 Wye would be elevated in this area and cross above SR 152, requiring removal of some orchard trees. KVP 22 is in the same general area as KVP 21 and has similar landscape characteristics and viewer groups (residents) and exposure. The view is toward the overcrossing from the roadway. The encroachment of the Ave 24 Wye, and alteration of overall cohesion in the view, would substantially alter the visual character and reduce visual quality from moderately low to low. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity (moderate and high), would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

BNSF Alternative

Impacts in the Merced and Fresno Landscape Units, and the West of SR 99 Landscape Unit with the Wye design options, would be the same as those described under the UPRR/SR 99 Alternative.

Merced–Le Grand Landscape Unit. Typically, views within the Merced–Le Grand Landscape Unit are either expansive over low-growing agricultural crops or are constrained adjacent orchards. Most of the HST guideway in this landscape unit would be at-grade, with local roads overcrossing the guideway.

Closer to the Merced city limits portions of the HST guideway would be elevated and constructed on retained fill. The retained fill and elevated structures would be prominently visible from SR 99 and nearby residences (high viewer sensitivity). The existing visual quality category for much of the landscape unit is moderate; with the HST, the visual quality category of much of the landscape unit would be reduced to moderately low. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA. This determination of impacts for the landscape unit recognizes that not all KVPs in the landscape unit would necessarily have the same determinations of impacts. The landscape unit determination was based on the KVPs as important viewing locations and representative samples of visual quality with and without the HST project, tempered by the existing predominant landscape character and range of visual quality and viewer sensitivity throughout the landscape unit.

KVPs 23 and 24 represent views where the visual character of the landscape would be altered by the BNSF Alternative. KVP 23 is an example where the HST guideway would transition on retained fill to an elevated structure. It would be prominently visible and its scale would dominate the view (see the *Merced to Fresno Section Aesthetics and Visual Quality Technical Report* [Authority and FRA 2012]). The view from this KVP is to the northeast toward the BNSF Alternative from the northbound lane of SR 99, south of Merced. Although the existing landscape in this view is already highly altered, the visual quality of the area would be reduced from moderate to moderately low. The elevated HST guideway would partially obstruct a scenic vista of the Sierra Nevada Mountains to the east when viewed by sensitive viewers such as residents. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

Another good example of the change in this landscape unit is represented in Figure 3.16-19 from KVP 24. The HST guideway would be at-grade at KVP 24, and an elevated intersection would be necessary for roads to cross over the HST.

KVP 24 Existing View | KVP 24 Simulated View

Figure 3.16-19
KVP 24 Existing and Simulated Views

Left, Existing View: View to the east from E Mariposa Way, west of S Burchell Avenue. The southern alternative of the Mariposa Way design option would pass through the intersection of E Mariposa Way and S Burchell Avenue. *Right, Simulated View:* The at-grade wye guideway would require an elevated T-intersection, similar to the one shown.

With the BNSF Alternative, a triangle of the orchard north of E Mariposa Way extending to the intersection with S Burchell Avenue would be removed. The top of the embankment of the intersection overpass would appear above the orchards lining S Burchell Avenue, which would block more of the horizon. Visual quality would be reduced in this view from moderate to moderately low, and the visual

character in the area would be altered but not substantially. Viewer sensitivity for this area is low to moderate, mostly from drivers, as the area has large agricultural parcels with few residents. The mix of orchards with open field crop areas is a visual and aesthetic resource identified in the *Merced County Year 2000 General Plan* (Merced County 1990), which would indicate overall greater sensitivity by the community at a moderate level. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

Le Grand Landscape Unit. The Le Grand Landscape Unit includes the Mission Ave and Mariposa Way design options, which would pass through the town. As demonstrated below, if the HST alternative were to pass through Le Grand, the existing residential character within the viewshed would substantially change. However, if the HST alternative were to extend east of Le Grand (i.e., Mission Ave East of Le Grand and Mariposa Way East of Le Grand design options), it would result in permanent disruption, either partially or fully, of the scenic vista toward the Sierra Nevada Mountains and toward the diverse agricultural land identified as a scenic resource in Merced County by the General Plan. The BNSF Alternative would require roadway overcrossings with retaining walls that would remove orchards and block views in a scenic corridor. The visual quality under existing conditions is generally moderately low within the landscape unit, and with the project the visual quality in some areas would be reduced to low. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA for any design option of the BNSF Alternative within this landscape unit.

The Le Grand Landscape Unit contains one KVP. As seen from KVP 25 (Figure 3.16-20), the elevated HST guideway would require the removal of residences in the neighborhood. Removal of the residences would also open views beneath the guideway toward the industrial facility on the opposite side of the BNSF tracks. The visual character of the neighborhood would substantially change with the HST alternative. The overall visual quality of the view would change from moderately low to low. Viewer sensitivity in this residential area is assumed to be high. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 25 Existing View

KVP 25 Simulated View

Figure 3.16-20
KVP 25 Existing and Simulated Views

Left, Existing View: View to the northeast from within a residential neighborhood in Le Grand. The Black Rock Milling Company industrial site is visible beyond the residences near the end of the street.
Right, Existing View: The Black Rock Milling Company would be mostly visible with the HST Project.

Le Grand–Madera Acres Landscape Unit. The Le Grand–Madera Acres Landscape Unit includes more elevated HST in Merced County and more at-grade HST in Madera County. This landscape unit has scenic vistas to the east of the Sierra Nevada Mountains. This landscape unit has relatively few residences, and viewer sensitivity in the area is assumed to be moderate. The visual quality under existing conditions is generally moderately high within the landscape unit; however, with the project, the visual quality would be low. Elevated HST and new road overcrossings for at-grade HST would result in a substantially altered landscape character. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 26 is the representative view selected for this landscape unit. Except for the Mariposa Way East of Le Grand design option, all BNSF Alternative design options would pass through the intersection of Buchanan Hollow Road and Santa Fe Avenue, which is visible from KVP 26. Because the guideway would be at-grade in this area, overpasses would be required for existing roadways with retained throughways. The elevated crossing of the HST Buchanan Hollow Road and Santa Fe Avenue would occupy most of the view from KVP 26, removing a portion of the orchard south of Buchanon Hollow Road and would partially block the scenic vistas to the east of the Sierra Nevada Mountains, as shown in Figure 3.16-21. These changes would reduce the view's visual quality from moderately high to low (two categories) and would have a substantial change to the area's visual character, in that the most scenic features in the view would be removed or otherwise obscured. Viewer sensitivity by drivers, including local residents using the road, is moderate because they are in relatively low numbers. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 26 Existing View

KVP 26 Simulated View

Figure 3.16-21
KVP 26 Existing and Simulated Views

Top Left, Existing View: View to the east from Buchanan Hollow Road, west of Santa Fe Avenue. The Sierra Nevada Mountains are visible along the horizon.
Top Right, Simulated View: The at-grade guideway would require raised road crossings and elevated intersections, as shown here, which would partially block views of the Sierra Nevada Mountains.

Madera Acres Landscape Unit. The Madera Acres Landscape Unit includes land along the HST alternative within the community of Madera Acres. The visual quality under existing conditions is generally moderately low within the landscape unit. The elevated guideway and expanded rail corridor of the three elevated wye design options would be a substantial change of the visual character of this landscape unit, which contains residential areas with high viewer sensitivity. They would also change the existing moderately low visual quality to low and would result in an impact with substantial intensity under NEPA and a significant impact under CEQA. The at-grade BNSF and the Hybrid alternatives would both expand the rail corridor and somewhat change the visual character in the Madera Acres Landscape

Unit. A design option associated with these alternatives would raise the HST 8 feet when crossing SR 145 to avoid modifications to the roadway underpass. This would affect the visual quality of the nearby surrounding area. However, this area is zoned industrial and therefore the visual sensitivity is low. The at-grade BNSF and Hybrid alternatives and design options would not lower the existing moderately low visual quality of this landscape unit to low. The alternatives would result in an impact with moderate intensity under NEPA and less than significant impact under CEQA.

The Madera Acres Landscape Unit includes one KVP. As seen from KVP 27, shown in Figure 3.16-22, the at-grade BNSF and Hybrid alternatives (which would have the same appearance from this location) and one of the three elevated wye design options would be located near the existing BNSF tracks. The HST Project would enlarge the existing rail corridor to the extent that it would expand into adjacent residential areas. The elevated wye design option would introduce an elevated structure into the view from this KVP. It would alter the edge of the community and substantially alter the area's visual character, where viewer sensitivity is assumed high. The existing moderately low visual quality would be reduced to low, which would result in an impact with substantial intensity under NEPA and a significant impact under CEQA. The at-grade BNSF or Hybrid alternatives would somewhat change the visual character of the area but would not reduce the moderately low visual quality to low. These alternatives would result in an impact with moderate intensity under NEPA and less than significant impact under CEQA.

KVP 27 Existing View

KVP 27 Simulated View Hybrid and BNSF Alternatives

Figure 3.16-22
KVP 27 Existing and Simulated Views

Left, Existing View: View to the northeast from Avenue 18¼ (Old Mill Way), southwest of Old Mill Drive, within a residential neighborhood in Madera Acres. The existing BNSF tracks are visible beyond Old Mill Drive. *Right, Simulated View:* One of the three elevated Wye options and the at-grade BNSF or Hybrid Alternative guideway, shown here with sound barriers, would appear in front of the existing BNSF tracks.

Madera Acres–SR 99 Landscape Unit. The Madera Acres–SR 99 Landscape Unit includes land along the BNSF Alternative between Madera Acres and SR 99, where the guideway would be rejoined with the UPRR corridor. There would be several new road overcrossings of the at-grade HST guideway, about 1 mile apart. Although these would both be visible amid lands that are primarily agricultural in character, as represented by the view from KVP 28, shown in Figure 3.16-23, the area has a very low population. Visual quality under existing conditions ranges from moderately high to low within the landscape unit. The HST would be seen in some areas by drivers of rural roads, but as with rural residents, their numbers would be low and infrequent; therefore, viewer sensitivity is assumed to be low. Visual quality would be reduced to moderate with the project. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

The landscape unit includes one KVP, at the southern end of the landscape unit, that is representative of several overcrossing locations to the north. The visual quality at KVP 28 under existing conditions is moderately high; however, with the project, the visual quality would change to moderate. With the HST alternative, the new Avenue 7 overcrossing along with the at-grade guideway and its OCS would somewhat change the visual character of this view, and the intactness and unity of views to the east from SR 99. Long-distance views toward the horizon, where foothills are a backdrop in a diverse agricultural landscape, would be partially blocked by the overcrossing. Viewer sensitivity is assumed to be low because of the small number of drivers and residents. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 28 Existing View

KVP 28 Simulated View

Figure 3.16-23
KVP 28 Existing and Simulated Views

Left, Existing View: View to the east from the Avenue 7 overpass of SR 99. The variety of agricultural crops visible from this location is typical of the surrounding landscape.
Right, Simulated View: The at-grade BNSF Alternative would be crossed over by Avenue 7 at this viewpoint, and would rejoin the elevated UPRR/SR 99 Alternative approximately 1 mile south of this location.

East of SR 99 Landscape Unit. The Ave 24 Wye and the Ave 21 Wye would traverse the East of SR 99 Landscape Unit. Except where these wyes cross the UPRR or BNSF, or Dry Creek (approaching Madera Acres), the HST guideway is at-grade. Throughout the East of SR 99 Landscape Unit, the existing network of roads and transmission lines is such that the addition of a prominently visible linear feature, such as the at-grade guideway of the wyes, would not appear out of character with the existing visual setting. However, the relatively short lengths of elevated guideway would appear out of character as a dominant feature of the landscape. In general, the visual quality under existing conditions ranges from moderate to moderately low; with the project, the visual quality of views within the landscape unit would range from moderately low to low. Most areas through which the HST would pass are sparsely populated and agricultural, except at the north and south boundaries of the landscape unit that terminate near residential areas in Fairmead and north Madera. In this landscape unit generally, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA. This determination of impacts for the landscape unit recognizes that not all KVPs in the landscape unit would necessarily have the same determinations of impacts. The landscape unit determination was based on the KVPs as important viewing locations and representative samples of visual quality with and without the HST project, tempered by the existing predominant landscape character and range of visual quality and viewer sensitivity throughout the landscape unit.

There are two KVPs in this landscape unit. From KVP 29 (which is in the vicinity of Fairmead), the northern extent of the Ave 24 Wye would be visible approximately 250 feet south of Avenue 24 as the

HST crosses Road 19½, which would be closed. Because the guideway at this location would change from elevated to at-grade 360 feet east of this KVP, the height of the guideway would be low and on retained fill as it crosses (and closes) Road 19½. Visual quality would remain moderately low with the project. Neither the retaining walls nor the OCS poles and wires associated with the guideway would be out of character with the landscape's features (which includes electric transmission towers, telephone poles, wires, vineyard trellises, and isolated palm trees). Viewer sensitivity is assumed moderate due to scattered residences that are somewhat distant from these two roads and cross-country from the HST; the few residents closer to the HST would have high sensitivity, For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 30 (Figure 3.16-24) was selected to represent one of the few short sections of elevated guideway from the wye connection (seen in the foreground) in this landscape unit. KVP 30 also includes a view of the more prevalent at-grade guideway (seen behind the simulation of the elevated guideway) of the north-south BNSF Alternative. There are residences in the vicinity of this viewpoint, so viewer sensitivity would be high. The at-grade guideway of the BNSF Alternative would be somewhat in character with the flat terrain and other nearby linear features such as the existing railroad and a canal. From this KVP, the level of change in visual quality from the BNSF Alternative, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA. The elevated guideway of the Ave 24 Wye and Ave 21 Wye, however, would be out character with the viewed landscape. The elevated guideway would be the tallest feature in the viewed landscape and would intrude on views of tall trees in the background of the view. Because of the presence of the elevated guideway and obscured view of trees, visual quality would be reduced from moderate to low. For this KVP, the level of change in visual quality from the project, combined with level of viewer sensitivity, would result in an impact with substantial intensity under NEPA and a significant impact under CEQA.

KVP 30 Existing View

KVP 30 Simulated View

Figure 3.16-24
KVP 30 Existing and Simulated Views

Left, Existing View: View to the east from Avenue 19, near Pickfair Way along the northern edge of Madera Acres. Dry Creek Canal is visible on the north side of the road.
Right, Simulated View: The BNSF Alternative would be at-grade and is behind the elevated guideway of the Ave 24 and Ave 21 Wyes (shown here with a tinted, transparent sound barrier) crossing above Avenue 19.

Hybrid Alternative

The Hybrid Alternative follows the UPRR/SR 99 Alternative through the Merced, Merced–Chowchilla, Fresno, and West of SR 99 landscape units (where the UPRR/SR 99 Alternative uses the West Chowchilla design option/Ave 24 Wye); therefore, the Hybrid Alternative would result in the same changes and effects on those landscape units as the UPRR/SR 99 Alternative.

The Hybrid Alternative then follows the BNSF Alternative along the southbound leg of the Ave 24 Wye or the Ave 21 Wye design option with the Hybrid Alternative through the East of SR 99 Landscape Unit to the BNSF right-of-way. The alignment continues along the BNSF tracks to Madera Acres (where it passes through in an at-grade profile) and Madera Acres-SR 99 landscape units to the Fresno Landscape Unit at the San Joaquin River, where it joins the UPRR/SR 99 Alternative; therefore, the visual quality evaluation for those landscape units would be the same as under the BNSF Alternative.

Heavy Maintenance Facility Alternatives

The proposed HMF sites are located in areas that are agricultural and rural, or industrial, as in the case of the proposed Castle Commerce Center site. Figure 3.16-1 shows the locations of the HMF sites. The Castle Commerce Center HMF site would be very similar in character with nearby land uses. The other four sites would be somewhat consistent with the visual character because of the presence of industrial-scale agricultural facilities or commercial buildings nearby. Viewer sensitivity is low or moderate in these areas. Figure 3.16-25 shows the typical HMF site plan. Typically, the HMF would include one large building of almost 730,000 square feet, smaller support buildings, maintenance shops, and storage areas, all on approximately 154 acres. Parking areas, rail lines, and internal circulation are all at-grade improvements that would have low visual impacts. Night lighting of parking lots and building surrounds for security would be provided by downward-directed, full cutoff light fixtures, which would avoid or minimize night impacts from illumination. Additionally, the HMF would require strict access controls around its borders and internally. Security fencing, berms, and landscaping would provide some screening of the trains and facilities from viewers on adjacent highways and from nearby businesses or farms. However, the size and various facilities of the complex would present challenges to designing the HMF so that they would be completely screened from view from nearby areas. For the HMFs, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in impacts with either moderate or negligible intensity under NEPA and less than significant impacts under CEQA.

The following paragraphs describe each of the HMF sites and discuss their effects on aesthetics and visual resources.

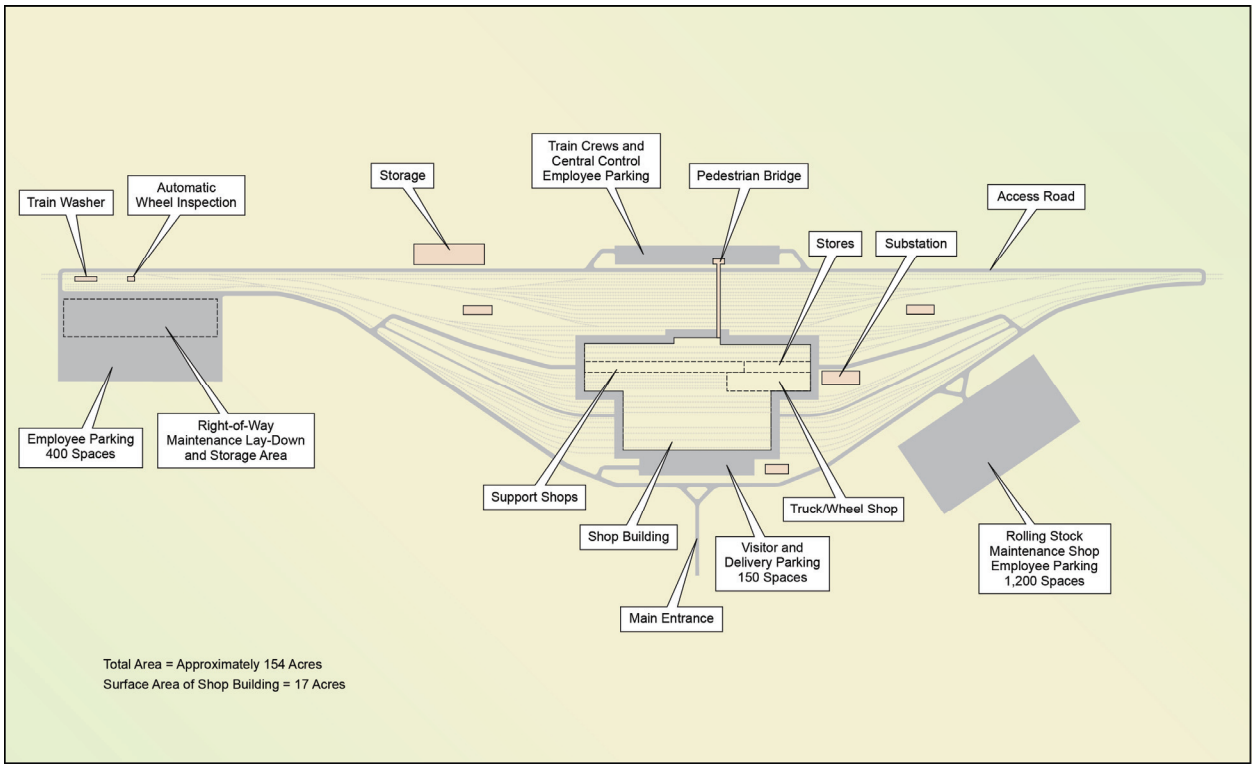


Figure 3.16-25
Typical HMF Layout

Castle Commerce Center HMF Site and Key Viewpoints. If the Castle Commerce Center HMF alternative were selected, the HST guideway would be on an approximately 8–mile-long branch line along SR 99 and Santa Fe Avenue (County Road 37) that would lead the HMF site. The length of this HST branch line is unique compared to the other HMF sites. This branch line would go from the Downtown Merced Station and layover area to the northwest and Atwater. The guideway north of the downtown station would parallel the UPRR and be on retained fill to Bear Creek. Street undercrossings, overcrossings, or closures would be required at as-yet unidentified locations in Merced, except as known for Martin Luther King, Jr. Avenue adjacent to the station. Over and beyond Bear Creek, a stretch of elevated pier structure would be required for an overcrossing of the UPRR tracks, then go to at-grade, then elevated again to cross the BNSF tracks, then paralleling Santa Fe Avenue at-grade to the HMF site. The guideway would be consistent with the character of the existing railroad corridor it would share, and the linear elevated element would be consistent with SR 99 on an embankment. The addition of overcrossings or undercrossings of the HST guideway in Merced would lower the visual quality of some views proximate to the HST. The HST guideway would not substantially alter views from within designated historical areas.

The guideway on retained fill of up to 20 feet through west of the Downtown Merced Station would block views of other parts of the city landscape, as does the existing SR 99 embankment. Shadow would be constant on the north side of the retained fill. The range of visual quality under existing conditions is moderate to moderately low, not only in Merced but also proximate to the HMF site in Atwater. Viewer sensitivity in Merced is mostly moderate, but higher in residential areas (although they are away from the HST). Outside of the city, viewer sensitivity is moderate to low. With the project, the visual quality of views within the landscape unit would range from moderate to low. The HMF site itself would not decrease visual quality for this landscape unit, and the portions through northwestern Merced would slightly decrease visual quality in that area. For the Castle Commerce Center HMF landscape unit, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

The lead tracks from the Merced station to the HMF would bisect some residential neighborhoods along the way, but they are separated already by railroad corridor and SR 99. From neighborhoods south of the HST and SR 99, viewer sensitivity generally is high, but would be tempered by neighborhood conditions to be moderate. KVP 1 represents a typical neighborhood view (location is shown in Figure 3.16-2). Looking north on Q Street, the guideway on retained fill would be partially obscured but visibly small above and beyond the SR 99 embankment. Trees along streets in the neighborhood would partially obscure views and visual quality would slightly decrease but remain moderate. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 2 (location shown in Figure 3.16-2) of the Castle Commerce Center HMF alternative is a view of the grand boulevard of N Street, which provides a vista toward the HST alignment. The project simulation at KVP 2, shown in Figure 3.16-26, illustrates the proposed HST guideway on retained fill. It would add a large scale, linear feature to the portion of the view beyond the historic district and within the existing UPRR corridor. From this location, the Tioga Building and palm trees in the boulevard block a substantial portion of the HST guideway. The presence of the HST in this view would result in a less unified view. Overall visual quality would remain moderate. With the project, the existing features of the area would remain dominant in views, where viewers are assumed to have moderate visual sensitivity. The HST would be partially visible from the historic district; however, the HST does not pass through the historic district, and follows an existing railroad corridor with adjacent new developments (general commercial, strip malls, etc.). Because the City of Merced has designated N Street from 16th Street to the Merced County Courthouse, and M Street from 18th Street to Bear Creek, as scenic routes, CEQA significance criteria apply in this case specifically with respect to state scenic highways. The HST alignment, being in an established railroad corridor, would not substantially damage scenic resources or vistas. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 2 Existing View | KVP 2 Simulated View

Figure 3.16-26
KVP 2 Existing and Simulated Views

Left, Existing View: View to the southwest from N Street, near Main Street and the Tioga Building, in Downtown Merced. *Right, Simulated View:* The HST guideway on retained fill is visible from the Downtown Merced historic district.

The visual simulation for KVP 3 (location shown in Figure 3.16-2) depicts a retained-fill alignment and undercrossing at R Street and W 16th Street (Figure 3.16-27). KVP 3 is approximately 1.75 miles northwest of the proposed Downtown Merced Station. R Street is one of several existing at-grade crossings that would be considered for an undercrossing of the HST on retained fill through Merced. Existing visual quality is moderately low at this location due to the rail corridor, strip development, parking lots, and low density of businesses along both cross streets. Street trees are sparse. With the HST Project, visual quality would slightly decrease but remain moderately low. The addition of the guideway on retained fill approximately 20 feet high at this location would visually separate the businesses on either side of the rail corridor, which already decreases the continuity of the landscape. The retained fill would block more distant views, but they are not of scenic value or interest. Shadow on the north side of the retained fill would be constant but would not extend beyond the rail corridor nor reduce visual quality in the view. The retained fill would add an element of larger and taller scale than the mostly low buildings and parking lots in the area, although its linearity would be consistent with the rail corridor, and viewer sensitivity ranges from moderate for business patrons and drivers on R Street to low for drivers along W 16th Street. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

KVP 3 Existing View | KVP 3 Simulated View

Figure 3.16-27
KVP 3 Existing and Simulated Views

Left, Existing View: View to the south and the intersection of R Street and W 16th Street and the at-grade crossing of the UPRR in Downtown Merced.
Right, Simulated View: This is a representative location where the HST might cross-over a street on a bridge supported by abutments on retained fill, which would be continuous in the existing rail corridor from the Downtown Merced Station to Bear Creek.

KVP 4A (location shown in Figure 3.16-2) is a view from SR 99 looking north along Martin Luther King, Jr. Avenue. The simulation of KVP 4A in Figure 3.16-28 shows the proposed Martin Luther King, Jr. overcrossing next to the proposed Downtown Merced Station and parking garage. The overcrossing would allow the HST to pass underneath and proceed through Merced to the Castle Commerce Center HMF at Atwater. The overcrossing would extend from Main Street to W 14th Street at a maximum height of approximately 38 feet. The overcrossing structure would partially obstruct the view of the Merced Cinema tower. The width of the new roadway would remove mature street trees as well as existing vegetation in the turn pockets on Martin Luther King, Jr. Avenue. The overcrossing would be larger in scale than some nearby buildings and would dominate views along the nearby parts of Martin Luther King, Jr. Avenue. Visual quality in areas near the overcrossing would decrease from moderate to moderately low. Viewer sensitivity is assumed to be low to moderate (low for motorists, moderate for pedestrians), based upon the criteria described in Section 3.16.3, Methods for Evaluating Impacts. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

KVP 4A Existing View

KVP 4A Simulated View

Figure 3.16-28
KVP 4A Existing and Simulated Views

Left, Existing View: View to north from SR 99 above MLK Avenue in Downtown Merced.
Right, Simulated View: The overcrossing of MLK Avenue (Phase 2), the HST station and parking garage in Downtown Merced.

KVP 31 (location shown in Figure 3.16-3) is the representative view from Santa Fe Avenue (County Road 37) toward the Castle Commerce Center HMF site. The site is vacant and partially screened from land uses across the street. Because the site is near developed industrial and business properties, the facility would not be out of character with surrounding land uses and low-density development. Viewer sensitivity of drivers on the roadway and employees of nearby businesses is assumed to be moderate. The HMF would not affect the moderate visual quality in the vicinity of the Castle Commerce Center and decommissioned air base. For this KVP, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

Harris-DeJager HMF Site and Key Viewpoint. KVP 33 (location shown in Figure 3.16-4) is the representative view from SR 99 of the Harris-DeJager HMF site. The HMF would be a large visual feature of industrial character, which would be somewhat consistent with the character of the surrounding agricultural landscape with large agricultural facilities. The site is adjacent or SR 99 and is surrounded by large parcels in agricultural use. The site is well-removed from farm residences. Visual quality would decrease from moderate to moderately low. Viewer sensitivity is assumed to be low due to the low density of the population nearby and low driver awareness; however, some rural residents are assumed to have moderate sensitivity to such a change in land use. For the Harris-DeJager HMF site, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

Fagundes HMF Site and Key Viewpoint. KVP 34 (location shown in Figure 3.16-4) is the representative view toward the Fagundes HMF site from Avenue 23, about 1 mile south of the site on Avenue 24. The HMF would be a large visual feature of industrial character, which would be somewhat consistent with the surrounding agricultural landscape. In particular, there are some large-scale agricultural buildings nearby, across Avenue 24 from the HMF, that moderate the degree of change to the landscape. Visual quality would decrease from moderate to moderately low. Viewer sensitivity is low due to the low density of the population nearby and view distance for drivers toward the facility from Avenue 23 (SR 152). Avenue 24, which the HMF would front, is a local road with less traffic volume than Avenue 23 (SR 152). For the Fagundes HMF site, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with negligible intensity under NEPA and a less than significant impact under CEQA.

Gordon-Shaw HMF Site and Key Viewpoints. KVP 35 (location shown in Figure 3.16-5) is the representative view toward the Gordon-Shaw HMF site from SR 99. The HMF would be a large visual feature of industrial character, which would be somewhat consistent with the visual character of the surrounding landscape. The landscape nearby includes a small commercial strip surrounded by agricultural lands. The moderately high visual quality would decrease to moderate with the project. Viewer sensitivity is moderate because of the businesses opposite the proposed facility, low density of the population in the surrounding area, and moderate driver awareness upon entering a commercial zone. For the Gordon-Shaw HMF site, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

Kojima Development HMF Site and Key Viewpoints. KVP 36 (location shown in Figure 3.16-4) is the representative view from Santa Fe Drive of the Kojima Development HMF site. The HMF would be a large visual feature of industrial character, which would be somewhat consistent with the surrounding agricultural landscape and large agricultural facilities. Visual quality would decrease from moderately high to moderate. This area is sparsely populated. Drivers on SR 99 through an agricultural area would have moderate sensitivity to the abrupt change in visual character, and the few rural residents in the area are assumed have high sensitivity. For the Kojima Development HMF site, the level of change in visual quality from the project, combined with the level of viewer sensitivity, would result in an impact with moderate intensity under NEPA and a less than significant impact under CEQA.

3.16.6 Project Design Features

The Authority has adopted design standards and Design Guidelines that are established to create a minimum aesthetic quality to a long lasting infrastructure. Many of these elements are articulated in Table 3.16-2 found in Section 3.16.5.3 High-Speed Train Alternatives. The Authority's *Urban Design Guidelines for the California High Speed Train Project* (Authority 2011a) briefly discusses the principles of context-sensitive solutions to guide the design of stations. This approach is equally applicable to elevated guideways and will be employed to mitigate visual impacts through context-sensitive design. *Aesthetic Guidelines for Non-Station Structures* (TM 200-06) (Authority 2011b) will also guide design of the HST components. These standards and guidelines work to minimize and avoid aesthetic effects on the adjacent surroundings where possible.

3.16.7 Mitigation Measures

The project will include avoidance and minimization measures consistent with the Program EIR/EIS documents. Along with a number of more specific design guidelines and solutions mitigation will include design of the proposed facilities so that they are attractive and appropriately integrated into their settings, reduce potential view blockage and blight (such as in residential neighborhoods or downtown core areas), and minimize light/shadow impacts. The time it will take to establish these mitigation measures and the effort it will require to maintain them are two criteria that will be considered in selecting the site-specific mitigation measures. For example, mitigation will be achieved more quickly when fast-growing species of vegetation are selected and irrigation is applied; mitigation will be maintained longer when durability and ease of cleaning are factored into construction materials. The selection of native vegetation and use of surface coatings that are resistant to weather and graffiti are specific examples of addressing these two factors. Some visual impact mitigation measures are already addressed in Section 3.15, Parks, Recreation, and Open Space; therefore, those measures are already assumed and not repeated.

As part of final design and the construction management plan, the Authority will work with local jurisdictions to develop appropriate visual/aesthetic treatments. These treatments will need to reflect reasonable costs and meet engineering design parameters. Appropriate treatments will vary by location, but will be compatible with the context of areas adjacent to them. Treatments may include some or all of the following:

- Fencing or screening.

- Vegetation around guideway structures, columns, and other project components, such as HMFs and traction power distribution stations.
- Colors, patterns, and textures on guideway structures, columns, and noise barriers.
- Pavement treatments at stations.

The following mitigation measures will further lessen the impacts on aesthetics and visual resources that have been identified above.

3.16.7.1 Construction Period

The construction mitigation measures listed below for aesthetics and visual resources are consistent with mitigation measures for similar scale transportation projects, and have proven to be effective in minimizing impacts noted above.

VQ-MM#1: Minimize Visual Disruption During Construction and from Construction Activities. Adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:

- Minimize pre-construction clearing to that necessary for construction.
- Limit the removal of buildings to those that would obstruct project components.
- When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views.
- After construction, regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and type to that which was removed upon completion of construction, based upon local jurisdictional requirements. If there are no local jurisdictional requirements to follow, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage that was similar to the coverage provided by the trees that were removed for construction.
- To the extent feasible, do not locate construction staging sites within immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days.

VQ-MM#2: Minimize Light Disturbance During Construction. Where construction lighting will be required during nighttime construction, shield such lighting and direct it downward in such a manner that the light source is not visible offsite, and so that the light does not fall outside the boundaries of the project site to avoid light spillage offsite.

3.16.7.2 Project

Mitigation measures for operational impacts to aesthetics and visual resources are consistent with those approaches discussed in Chapter 7 of the FHWA (1988) visual impacts guidance manual. That manual discusses various landscapes and elements of the built and natural environments associated with similar scale transportation projects. The manual indicates (page 101) that highway agencies must coordinate environmental assessment activities with subsequent design, construction, and maintenance phases of the project to ensure the full realization of any mitigation actions. The mitigation measures have proven to be effective in minimizing the impacts noted above.

VQ-MM#3: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context.

During final design of elevated guideways and the Merced and Fresno stations, the Authority will coordinate with local jurisdictions on the design of these facilities so that they are designed appropriately to fit in with the visual context of the areas near them. This will include the following activities:

- For stations: During the station design process, establish a local consultation process with the City of Merced and the City of Fresno to identify and integrate local design features into the station design through a collaborative context-sensitive solutions approach. The process will include activities to solicit community input in their respective station areas. This effort will be coordinated with the station area planning process that will be undertaken by those cities under their station area planning grants.

- For elevated guideways in cities or unincorporated communities: During the elevated guideway design process, establish a process with the city or county with jurisdiction over the land along the elevated guideway to advance the final design through a collaborative context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements to be incorporated into the final guideway designs. The process will include activities to solicit community input in the affected neighborhoods.

Actions taken to help achieve integration with the local design context during the context-sensitive solutions process will include the following:

- Design HST stations and associated structures such as elevators, escalators, and walkways to be attractive architectural elements or features that add visual interest to the streetscapes near them.

- Design HST station parking structures and adjacent areas to integrate visually into the areas where they would be located. Where the city has adopted applicable downtown design guidelines, the parking structures and adjacent areas will be designed to be compatible with the policies and principles of those guidelines.

- For the elevated guideways and columns, incorporate architectural elements, such as graceful curved or tapered sculptural forms and decorative surfaces, to provide visual interest. Include decorative texture treatments on large-scale concrete surfaces such as parapets and other portions of elevated guideways. Include a variety of texture, shadow lines, and other surface articulation to add visual and thematic interest. Closely coordinate the design of guideway columns and parapets with station and platform architecture to promote unity and coherence where guideways lie adjacent to stations.

- Integrate trees and landscaping into the station streetscape and plaza plans where possible to soften and buffer the appearance of guideways, columns, and elevated stations. This will be consistent with the principles of crime prevention through environmental design.

- For the stations, structures, and related open spaces: incorporate design features that provide interest and reflect the local design context. These features could include landscaping, lighting, and public art.

The designs within cities and unincorporated communities will reflect the results of the context-sensitive solutions design process. During the context-sensitive solutions design process, the HST Project's obligations and constraints related to planning, mitigation, engineering, performance, funding, and operational requirements will be taken into consideration.

VQ-MM#3a: Integrate the Elevated Guideways with Affected City Parks, Trails, and Urban Core Design Guidelines. During development of the final design, the Authority will work with the affected cities and counties to develop a project site and landscape design plan for the areas disturbed by the project. As a result of following these plans, the design features identified in VQ-MM#3 and the park mitigation measure PK-MM#3 will be implemented.

VQ-MM#3b: Screen Elevated Guideways Adjacent to Residential Areas. Consistent with the design features developed under VQ-MM3, the Authority will plant trees along the edges of the rights-of-way in locations adjacent to residential areas. This will help reduce the visual contrast between the elevated guideway and the residential area. The species of trees to be installed will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The crowns of trees used should ultimately be tall enough so that upon maturity they will partially, or fully, block or screen views of the elevated guideway from adjacent at-grade areas. Trees should allow ground-level views under the crowns (with pruning if necessary) while not interfering with the 15-foot clearance requirement for the guideway. The trees will be continuously maintained and appropriate irrigation systems will be installed within the tree planting areas.

VQ-MM#4: Replant Unused Portions of Lands Acquired for the HST. After construction is complete, the Authority will plant vegetation within lands acquired for the project (e.g., shifting roadways) that are not used for the HST or related supporting infrastructure. Plantings will allow adequate space between the vegetation and the HST alignment and catenary lines. All street trees and other visually important vegetation removed in these areas during construction will be replaced with similar vegetation that, upon maturity, will be similar in size and character to the removed vegetation. The vegetation will be continuously maintained and appropriate irrigation systems will be installed within the planting areas. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaped areas will be continuously maintained and appropriate irrigation systems will be installed.

VQ-MM#5: Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST. Upon the completion of construction, the Authority will plant the surface of the ground supporting the overpasses (slope-fill overpasses) and retained fill elements with vegetation consistent with the surrounding landscape in terms of vegetative type, color, texture, and form. During final design, the Authority will consult with the affected cities and counties regarding the landscaping program for planting the slopes of the overcrossings and retained fill. Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed, if needed. Where wall structures supporting the overpasses or retained fill are proposed, the structure will employ architectural details and low-maintenance trees and other vegetation to screen the structure, minimize graffiti, and reduce the effects of large walls. Surface coatings will be applied on wood and concrete to facilitate cleaning and the removal of graffiti. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable time after notification.

VQ-MM#6: Provide Sound Barrier Treatments. The Authority will design a range of sound barrier treatments for visually sensitive areas, such as those where residential views of open landscaped areas would change or in urban areas where sound barriers would adversely affect the existing character and setting (see sound barrier description in Table 3.16-2). The Authority will develop the treatments during final design and integrate them into the final project design. The treatments will include, but are not limited to, the following:

- Sound barriers along elevated guideways may incorporate transparent materials, where sensitive views would be adversely affected by solid sound barriers.
- Sound barriers will use non-reflective materials and will be of a neutral color.
- Surface design enhancements and vegetation appropriate to the visual context of the area will be installed with the sound barriers. Vegetation will be installed consistent with the provisions of VQ-MM#5. Surface enhancements will be consistent with the design features developed under VQ-MM#3, and will include architectural elements (i.e. stamped pattern, surface articulation, and decorative texture treatment as determined acceptable to the local jurisdiction. Surface coatings will be used on wood and concrete sound barriers to facilitate cleaning and the removal of graffiti.

VQ-MM#7: Screen Traction Power Distribution Stations and HMF. Upon completion of station or HMF construction, the Authority will screen the traction power substations (located at approximately 30-mile intervals along any of the HST alternatives) and HMF from public view through the use of landscaping or solid walls/fences. This will consist of context-appropriate landscaping of a type and scale that does not draw attention to the station. Plant species will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed within the landscaped areas. Walls will be constructed of cinder-block or similar material and will be painted a neutral color to blend in with the surrounding context. If a chain-link or cyclone fence is used, it will include wood slats in the fencing. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable period as agreed between the Authority and local jurisdiction.

Figure 3.16-29 shows a power substation in an urban environment that is partially screened by landscaping and fencing.

None of the mitigation measure options are anticipated to result in secondary effects. The mitigation measures are typical of those elements of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to the context, and in coordination with local jurisdictions.

Figure 3.16-29
Example of Power Substation in Urban Setting, with Landscape Screening and Fence

3.16.8 NEPA Impacts Summary

The No Project Alternative would include changes unrelated to the project, such as SR 99 expansion, additional roadways, and additional development, which could also affect aesthetics and visual resources. Widening transportation corridors does not necessarily degrade a corridor's visual quality, but the indirect effects of opening adjacent lands to freeway-oriented commercial development, to the extent permitted by local agencies, and increasing the number of billboard-type signage could include the incremental degradation of expansive views toward the existing agricultural landscape. Collectively, these changes result in an impact of moderate intensity in areas that generally do not include high visual quality and along corridors with few sensitive viewers; therefore, the incremental changes would be significant under NEPA.

All HST alternatives would have temporary impacts related to new sources of light and glare during construction. These impacts are of negligible intensity and since they are localized, temporary, and with appropriate mitigation, minimized; they are not significant under NEPA.

The evaluation takes into account the context of the existing visual quality (whether it has a high, medium or low visual quality), the presence of sensitive viewers and the duration of the impact. The project effects on a landscape unit are permanent infrastructure, particularly the portions with elevated structures (because of their size) which can be seen from many view corridors affecting the local environment and views. A contributing component to the visual effects is placement of sound barriers. Impacts from sound barriers due to view blockage could be mitigated somewhat by the use of transparent materials for those on elevated structures; for those along an at-grade portion, various surface treatments and vegetative screening would be applied as necessary. Regardless, these components contribute to the visual blockage and overall impact on the visual quality for an effect of moderate and substantial intensity. An at-grade profile tends to result in a negligible or moderate intensity depending on surrounding visual quality.

The summary of effects of negligible, moderate and substantial visual changes and viewer sensitivity is recorded in Table 3.16-4. Based on the context of existing visual quality and presence of sensitive viewers (as recorded in Table 3.16-4), a visual effect of substantial intensity in the following landscape units would result in a significant effect under NEPA:

- Chowchilla-Madera Landscape Unit for the UPRR/SR 99 Alternative.
- Madera Landscape Unit for the UPRR/SR 99 Alternative/
- West of SR 99 Landscape Unit for all alternatives.
- Merced-Le Grand Landscape Unit for the BNSF Alternative.
- Le Grand Landscape Unit for the BNSF Alternative.
- Le Grand-Madera Acres Landscape Unite for BNSF Alternative.
- Madera Acres Landscape Unit for BNSF Alternative.

At the stations, all alternatives possess the ability to improve the visual quality in the Merced and Fresno downtown urban centers for an effect of substantial intensity. These are also areas of high viewer sensitivity and the change would be long in duration and may result in contributing to other aesthetic improvement by being a catalyst for new development. Together, this results in a significant beneficial effect under NEPA.

The architecture of the HST stations and landscape improvements in Merced and Fresno proximate to the stations would enhance the visual quality to a level of significant beneficial impacts under NEPA. Furthermore, the indirect impacts of the HST stations could reach beyond the immediate station area and increase the overall visual quality of the larger downtown area. The HST Project would increase the potential for economic incentives through new development and redevelopment in the HST station areas. This is because the HST Project would create a new destination attraction and energize areas near it from people either using the HST or being drawn to the HST station areas. This would likely influence urban design to include treatments establishing vividness, highly engaging designs, and uniformity over time. In residential, railroad, highway, and industrial areas, the train would pass through non-stop, and no indirect effects would be anticipated. Land use and visual character are already consistent with these types of linear infrastructure.

The HMF sites would result in changes of negligible intensity on aesthetic and visual resources. Physical and vegetative screening could reduce visual impacts. Land use regulations could avoid or minimize the potential for any indirect effects to the visual character and quality of rural areas from other types of industrial development that might be encouraged by location of an HMF. These facilities are proposed in rural areas where large agricultural distribution facilities are common. They would not result in blocking views; lighting would be downward in direction, so changes to the landscape would be of negligible intensity and would not be significant under NEPA.

With the traction power substations, there could be impacts with substantial, moderate, or negligible intensity on aesthetics and visual resources, depending on the size and location of the stations. However, these facilities are located distant from sensitive viewers or can be screened such that over time they become integrated into the landscape. Mitigation with physical or vegetative screening and location selection will be effective methods to avoid or minimize impacts to moderate or negligible intensity and would not be significant under NEPA.

3.16.9 CEQA Significance Conclusions

The project would have significant impacts under CEQA to the same landscape units as listed with substantial impacts under the NEPA Impacts Summary (Section 3.16.7). Conclusions of significant or less than significant impacts under CEQA are based on the same rationale and preponderance of degradation

as stated for impacts under NEPA (above). Similarly, all HST alternatives would have the same temporary impacts during construction. Regarding adverse impacts on aesthetics and visual resources from HST stations and HMFs, there would be less than significant impacts from any of these facilities. The traction power substations have potential significance depending on their size and location. Significant impacts that cannot be mitigated by various methods (as listed in Section 3.16.6) result from vertical elements of the HST (particularly walls and elevated guideway) that block views of visual resources, lower visual quality, and change the landscape character. Where significant impacts cannot be avoided, mitigation measures would reduce impacts but would not reduce the level of significance, except possibly by using physical or vegetative screening, as listed in Table 3.16-5. Similarly, and related to VQ#11 (Table 3.16-5), the effectiveness of sound barrier mitigation depends on height, location and materials of the sound barrier. Because those factors are not yet known, the conclusion for this document is that the impacts of VQ#11 mitigated by VQ-MM#6 would be significant.

Table 3.16-5
Summary of Significant Aesthetics and Visual Resources Impacts and Mitigation Measures

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
VQ#1: Visual Disturbance during Construction. For all alternatives, construction activities would cause visual impacts in urban areas.	Significant	**VQ-MM#1:** Minimize Visual Disruption from Construction.	Less than significant
VQ#2: Nighttime Lighting during Construction. Nighttime lighting would be more frequent under the UPRR/SR 99 Alternative, although all alternatives would affect Merced and Fresno urban areas.	Significant	**VQ-MM#2**: Minimize Light Disturbance from Construction.	Less than significant
VQ#3: Lower Visual Quality in the Chowchilla–Madera Landscape Unit. The UPRR/SR 99 Alternative would create a permanent elevated guideway in front of the church and a residential neighborhood in Fairmead. No other alternative would have this effect.	Significant	**VQ-MM#3:** Incorporate Design Criteria for Elevated and Station Elements that can Adapt to Local Context;	Significant
VQ#4: Lower Visual Quality in the Madera Landscape Unit. The UPRR/SR 99 Alternative would create a permanent elevated guideway as the tallest structure in the downtown historical core. No other alternative would have this effect.	Significant	**VQ-MM#3:** Incorporate Design Criteria for Elevated and Station Elements that can Adapt to Local Context; **VQ-MM#3b:** Screen Elevated Guideways Adjacent to Residential Areas.	Significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
VQ#5: Lower Visual Quality in the West of SR 99 Landscape Unit. Each alternative using the Ave 24 Wye design option would degrade the visual quality with a large overcrossing of SR 233, which is a locally designated scenic and historical corridor.	Significant	**VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant
VQ#6: Lower Visual Quality in the West of SR 99 Landscape Unit. Each alternative using the Ave 21 Wye design option would degrade the visual quality with a large road overcrossing of the HST that would remove orchards and fields and block views.	Significant	**VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant
VQ#7: Lower Visual Quality in the Merced–Le Grand Landscape unit. The BNSF Alternative would require roadway overcrossings, which would be supported by relatively large mounds of earth retained by walls. Construction of the overcrossings would remove orchards and block views in a locally designated scenic corridor. No other alternative has this effect at this location.	Significant	**VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant
VQ#8: Lower Visual Quality in the Le Grand Landscape Unit. Visual quality would degrade from any of the BNSF design options through or east of Le Grand. This effect does not occur under other alternatives.	Significant	**VQ-MM#3:** Incorporate Design Criteria for Elevated and Station Elements that can Adapt to Local Context; **VQ-MM#4:** Replant Unused Portions of Lands Acquired for the HST.	Significant
VQ#9: Lower Visual Quality in the Le Grand–Madera Acres Landscape Unit. The BNSF Alternative would require an overcrossing at Buchanan Hollow Road and Santa Fe Avenue, which would block panoramic views toward the Sierra Nevada Mountains. This effect does not occur under the UPRR/SR 99 and the Hybrid alternatives.	Significant	**VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
VQ#10: Lower Visual Quality in the Madera Acres Landscape Unit. The three elevated Wye options would degrade residential neighborhoods and would require a large overcrossing of the HST alternative and the existing BNSF tracks. This effect does not occur under the UPRR/SR 99, the at-grade BNSF, or the Hybrid Alternatives.	Significant	**VQ-MM#4:** Replant Unused Portions of Lands Acquired for the HST. **VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant
VQ#11: Sound Barrier and Retaining Wall Would Block Views. All the alternatives equally would require the use of sound barriers along the guideway and overcrossing retaining walls in urbanized areas, potentially blocking existing views, depending on the barrier or wall height, location, and materials.	Significant	**VQ-MM#6:** Provide Sound Barrier Treatments. **VQ-MM#5:** Provide Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST.	Significant
VQ#12: Traction Power Distribution Stations Would Alter Visual Character or Block Views. All of the alternatives would require the placement of stations at approximately 30-mile intervals along the alignment, which would potentially alter the visual character of adjacent lands and/or potentially block views toward areas beyond the alignment, depending on the size and location of the stations.	Significant	**VQ-MM#7:** Screen Traction Power Distribution Station.	Less than significant