California High-Speed Rail Authority

Merced to Fresno Section: Central Valley Wye

Aesthetics and Visual Resources Technical Report

December 2016

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

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ACRONYMS AND ABBREVIATIONS

Authority	California High-Speed Rail Authority
AVR	aesthetic and visual resource
BNSF	BNSF Railway
Caltrans	California Department of Transportation
Central Valley Wye	Merced to Fresno: Central Valley Wye
Central Valley Wye Aesthetics and Visual Resources Technical Report	*Merced to Fresno Section: Central Valley Wye Aesthetics and Visual Resources Technical Report*
EIR	environmental impact report
EIS	environmental impact statement
Environmental Methodology	*California High-Speed Rail Project Environmental Impact Report / Environmental Impact Statement Environmental Methodology Guidelines*
Fed. Reg.	*Federal Register*
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
HSR	high-speed rail
Hybrid Alignment	Merced to Fresno Section: Hybrid Alignment
IAMF	impact avoidance and minimization feature
KVP	key viewpoint
Merced to Fresno Final EIR/EIS	*Merced to Fresno Section Final EIR/EIS*
OCS	overhead contact system
PG&E	Pacific Gas and Electric Company
RSA	resource study area
SR	State Route
Statewide Program EIR/EIS	*Final Program EIR/ EIS for the Proposed California High-Speed Train System*
Supplemental EIR/EIS	*Merced to Fresno Section: Central Valley Wye Supplemental Environmental Impact Report (EIR)/Supplemental Environmental Impact Statement (EIS)*
U.S.C.	United States Code
UPRR	Union Pacific Railroad

EXECUTIVE SUMMARY

The California High-Speed Rail Authority (Authority) has prepared this *Merced to Fresno Section: Central Valley Wye Aesthetics and Visual Resources Technical Report* (Central Valley Wye Aesthetics and Visual Resources Technical Report) to support the *Merced to Fresno Section: Central Valley Wye Supplemental Environmental Impact Report (EIR)/Supplemental Environmental Impact Statement (EIS)* (Supplemental EIR/EIS). The Supplemental EIR/EIS tiers from the original *Merced to Fresno Section Final EIR/EIS* (Authority and FRA 2012a). When the Authority Board of Directors and the Federal Railroad Administration (FRA) approved the Merced to Fresno Section in 2012, they deferred a decision on the wye connection for a future environmental analysis. Since then, the Authority and FRA have identified four new alternatives for consideration.

This technical report characterizes existing conditions and analyzes potential effects of the four Central Valley Wye alternatives on aesthetics and visual resources:

- State Route (SR) 152 (North) to Road 13 Wye Alternative
- SR 152 (North) to Road 19 Wye Alternative
- Avenue 21 to Road 13 Wye Alternative
- SR 152 (North) to Road 11 Wye Alternative

Effects on aesthetics and visual resources are described for each of the landscape units that make up the Central Valley Wye: the San Joaquin River, Rural Agricultural, Freeway and Expressway, Robertson Boulevard, and Fairmead Landscape Units. This technical report addresses effects resulting from the high-speed rail track alignment for the Central Valley Wye. The Central Valley Wye alternatives also include electrical interconnections and PG&E network upgrades, which are not evaluated in this technical report. This report identifies relevant federal, state, regional, and local regulations and requirements; methods used for the analysis of effects; the affected environment; potential effects on aesthetics and visual resources in the Central Valley Wye resource study area that could result from construction and operations of the Central Valley Wye alternatives; and impact avoidance and minimization features (IAMF)[1] that would avoid, minimize, or reduce effects.

Summary of Effects

The direct effects of the Central Valley Wye alternatives on aesthetics and visual resources, organized by landscape unit, are discussed in this section. Because the Central Valley Wye will have no station, no indirect effects (e.g., the effects of subsequent local development stimulated by the presence of a station) are expected on aesthetics and visual resources.

San Joaquin River Landscape Unit

Construction of the Central Valley Wye could degrade views in the San Joaquin River Landscape Unit. Temporary construction activities would cause dust and material stockpiles that could create an untidy appearance, collectively degrading the visual unity and intactness of the surroundings. Within the San Joaquin River Landscape Unit, a high berm and aerial structure would carry the HSR across the San Joaquin River and Eastside Bypass. Long views toward the Sierra Nevada range could be lost, and the Central Valley Wye would introduce a large-scale structure and high fill into a flat and agricultural view. The aerial crossing would degrade the rural character of the river landscape, resulting in a permanent adverse effect on visual quality.

Rural Agricultural Landscape Unit

The Rural Agricultural Landscape Unit would experience many of the same temporary and permanent construction and operations effects on aesthetics and visual resources as described

[1] Mitigation measures are not discussed in this technical report, but are included in the Supplemental EIR/EIS. See the Supplemental EIR/EIS, Section 2.2.3.6, Impact Avoidance and Minimization Features, for further information.

for the San Joaquin River Landscape Unit. The SR 152 (North) to Road 13 Wye Alternative, SR 152 (North) to Road 19 Wye Alternative, and the Avenue 21 to Road 13 Wye Alternative would cross Berenda and Ash Sloughs on an aerial structure, the scale of which would disrupt the agricultural scale of the terrain, but the viewer response would be low.

Freeway and Expressway Landscape Unit

The Freeway and Expressway Landscape Unit would experience many of the same temporary and permanent construction and operations effects on aesthetics and visual resources as described for the San Joaquin River Landscape Unit. Additionally, depending on the selected alternative, the HSR would parallel SR 152 for approximately 16 miles from SR 59 to SR 99 in Merced and Madera Counties. Existing intersections would be closed with new interchanges built at major crossroads. Removal of the intersections would visually reinforce the long views down the corridor by removing a visual distraction: the travelers' need to scan the intersecting road for the potential of cross traffic to unsafely interfere with one's path. Additionally, the line of the HSR overhead contact system along the north side of the highway would focus and reinforce the long view down the highway. This would result in a beneficial effect on visual quality.

Robertson Boulevard Landscape Unit

The Robertson Boulevard Landscape Unit would experience many of the same temporary and permanent construction and operations effects on aesthetics and visual resources as described for the San Joaquin River Landscape Unit. The SR 152 (North) to Road 13 Wye Alternative would block and degrade existing residential views and introduce HSR infrastructure to a residential area that would contrast with residences in both scale and materials, and would result in an adverse change in visual quality. Depending on the alternative selected, the Central Valley Wye would block views down Robertson Boulevard and remove a number of palm trees from a Historic Tree Row located along the roadway extending south from the center of Chowchilla. The Central Valley Wye would introduce elements that conflict with the visual character of the historic palms and change a regionally important visual resource and view. IAMFs would reduce the aesthetic and visual impacts of the HSR infrastructure components, such as elevated guideways, by applying design approaches to integrate structures within a community and to reduce the intrusiveness of large, elevated structures. While Central Valley Wye IAMFs would reduce the severity of effects on residential viewers and on Robertson Boulevard tree row, these measures cannot avoid the loss of views and the break in the line of palm trees. This would result in an adverse change in visual quality for residents and motorists on Robertson Boulevard.

Fairmead Landscape Unit

The Fairmead Landscape Unit would experience many of the same temporary and permanent construction and operations effects on aesthetics and visual resources as described for the San Joaquin River Landscape Unit, although there would be more sensitive viewers in close proximity to the HSR alignment. The SR 152 (North) to Road 13 Wye Alternative, SR 152 (North) to Road 19 Wye Alternative, and SR 152 (North) to Road 11 Wye Alternative would descend from aerial structure to grade, as they pass through Fairmead, from a height of more than 40 feet to approximately 10 feet. This segment of the alignment would block and degrade existing residential views across the flat landscape, including those toward the Sierra Nevada range, and would result in an adverse change in visual quality.

1 INTRODUCTION

1.1 Background of HSR Program

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

The Authority commenced its environmental planning process with the 2005 *Final Program EIR/EIS for the Proposed California High-Speed Train System* (Statewide Program EIR/EIS) (Authority and FRA 2005), and then began preparing second-tier, project environmental evaluations for sections of the statewide HSR system. The 2012 *Merced to Fresno Section Final EIR/EIS* (Merced to Fresno Final EIR/EIS) (Authority and FRA 2012a) was the first project-level EIR/EIS that the Authority certified and the Federal Railroad Administration (FRA) approved. The Merced to Fresno Final EIR/EIS identified the Hybrid Alignment as the preferred alternative and examined two design options for an east-west connection to the San Jose to Merced Section, referred to as the "wye connection" (Authority and FRA 2012a: pages 2-3 and 2-21). When the Authority Board of Directors and the FRA approved the Merced to Fresno Section later in 2012, they deferred a decision on the wye connection for a future environmental analysis. The Authority and FRA have prepared the Supplemental EIR/EIS as the next step in the environmental review process to select a Central Valley Wye connection. Chapter 2, Alternatives, of the Supplemental EIR/EIS provides a detailed history of how the Authority developed the Central Valley Wye alternatives.

1.2 Organization of this Technical Report

In addition to this introductory chapter, this technical report comprises the following sections:

- Section 2, Merced to Fresno Section: Central Valley Wye, provides a description of the Central Valley Wye alternatives.
- Section 3, Laws, Regulations, and Orders, identifies the federal, state, and local laws, guidance, and policies relevant to aesthetics and visual resources for the Central Valley Wye.
- Section 4, Methods for Evaluating Effects, describes the methods used to determine and evaluate potential effects.
- Section 5, Affected Environment, describes existing conditions.
- Section 6, Effects Analysis, describes potential direct effects, both adverse and beneficial.
- Section 7, References, provides a list of the references cited in this technical report.
- Section 8, Preparer Qualifications, identifies the individuals involved in preparing this report and their credentials.

Additional details on aesthetics and visual resources are provided in Appendix A, Key Viewpoints. This appendix offers a consolidated collection of all the key viewpoints used to analyze specific views, with locations marked on aerial photographs and the existing conditions and photosimulation for each key viewpoint presented side by side.

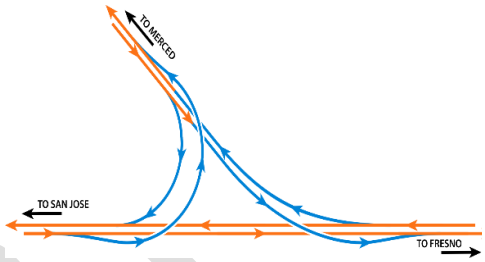
2 MERCED TO FRESNO SECTION: CENTRAL VALLEY WYE

The Central Valley Wye would create the east-west HSR connection between the San Jose to Merced Section to the west and the north-south Merced to Fresno Section to the east.[2] The four Central Valley Wye alternatives addressed in the Supplemental EIR/EIS (Figures 2-1 to 2-4) are:

- SR 152 (North) to Road 13 Wye Alternative
- SR 152 (North) to Road 19 Wye Alternative
- Avenue 21 to Road 13 Wye Alternative
- SR 152 (North) to Road 11 Wye Alternative

This section describes the common design features of the four alternatives, followed by descriptions of each alternative.

Central Valley Wye Schematic



2.1 Common Features

The Central Valley Wye alternatives would cross rural areas in unincorporated Merced and Madera Counties, and would travel through the southern portion of Chowchilla and the rural-residential community of Fairmead. Volume 3 of the Supplemental EIR/EIS provides detailed design drawings that support the descriptions of the Central Valley Wye alternatives.

The HSR alignment would be entirely grade-separated, meaning that crossings of roads, railroads, and other transport facilities would use overpasses or underpasses so that the HSR would operate independently of other modes of transport. The HSR right-of-way would also be fenced to prevent public or vehicle access. The Central Valley Wye project footprint would primarily consist of the train right-of-way, which would accommodate two sets of tracks in an area with a minimum width of 100 feet. Additional right-of-way would be required to accommodate grade separations, embankments, traction power facilities, and transitional portions of the Central Valley Wye that allow for bidirectional interface between north-south and east-west trending alignments.

The Central Valley Wye alternatives would include at-grade, below-grade, and above-grade (elevated) track segments. The at-grade track would be laid on an earthen railbed raised 6–10 feet (embankment heights are in excess of 35 feet) off the ground level, set on ties with rock ballast; fill and ballast for the railbed would be obtained from permitted borrow sites and quarries. Below-grade track would be laid in open cut, trench, or cut-and-cover tunnel at a depth that would allow roadway and other grade-level uses above the track. Elevated track segments would span some waterways, roadways, railroad, and other HSR tracks, and would consist of precast, prestressed concrete box girders, cast-in-place concrete box girders, or steel box girders. The height of elevated track sections would depend on the height of existing structures below, or clearances to existing roads or other HSR facilities, and would range from 35 to 90 feet above grade. Columns would be spaced approximately 100–120 feet apart on average.

2.2 SR 152 (North) to Road 13 Wye Alternative

The SR 152 (North) to Road 13 Wye Alternative (Figure 2-1) follows the existing Henry Miller Road and SR 152 rights-of-way as closely as possible in the east-west direction, and the Road 13, SR 99, and BNSF Railway (BNSF) rights-of-way in the north-south direction. Deviations from these existing transportation routes or corridors are necessary to accommodate design

[2] The term *wye* refers to the Y-like formation created at the point where train tracks branch off the mainline to continue in different directions. The transition of mainline track to a wye requires splitting two tracks into four tracks that cross over one another before the wye "legs" (segments) can diverge in opposite directions to allow two-way travel. For the Merced to Fresno Section of the HSR system, the two tracks traveling east-west from the San Jose to Merced Section must become four tracks—a set of two tracks branching toward Merced to the north and a set of two tracks branching toward Fresno to the south.

requirements; specifically, wider curves are necessary to accommodate the speed of the HSR compared to lower-speed roadway alignments. The SR 152 (North) to Road 13 Wye Alternative would not follow existing transportation rights-of-way where it transitions from following one transportation corridor to another.

2.2.1 Alignment and Ancillary Features

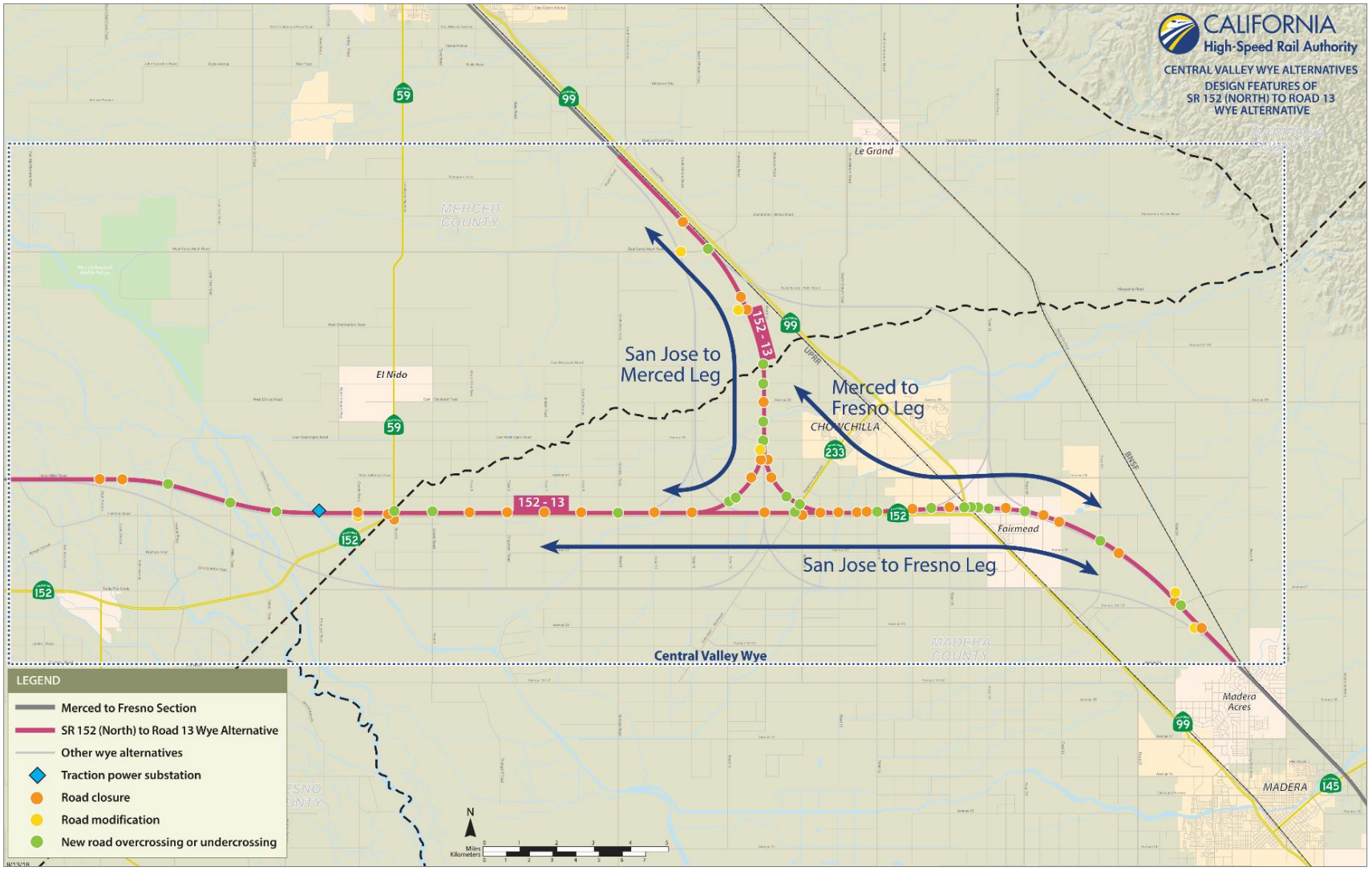
The SR 152 (North) to Road 13 Wye Alternative would extend approximately 52 miles, mostly at-grade on raised embankment, although it would also have aerial structures and a segment of retained cut (depressed alignment). The wye configuration of this alternative would be located southwest of the city of Chowchilla, with the east-west axis along the north side of SR 152 and the north-south axis on the east side of Road 13.

As shown on Figure 2-1, this alternative would begin in Merced County at the intersection of Henry Miller Road and Carlucci Road, and would continue at-grade on embankment due east toward Elgin Avenue, where it would curve southeast toward the San Joaquin River and Eastside Bypass. Approaching Willis Road, the alignment would cross the San Joaquin River on an aerial structure, then would return to embankment. It would then cross the Eastside Bypass on an aerial structure. After crossing the Eastside Bypass, the alignment would continue east and cross SR 59 at-grade just north of the existing SR 152/SR 59 interchange, entering Madera County. The SR 152/SR 59 interchange would be reconstructed a little to the south and SR 59 would be grade-separated to pass above the HSR on an aerial structure. The alignment would continue east at-grade along the north side of SR 152 toward Chowchilla, splitting into two legs (four tracks) near Road 11 to transition to the Merced to Fresno Section: Hybrid Alignment, and would cross Ash Slough on an aerial structure. All but the northbound track of the San Jose to Merced section of the alignment (leg) would then return to at-grade embankment. The northbound track would rise to cross over the tracks of the San Jose to Fresno leg on aerial structure as it curves north toward Merced. The SR 152 (North) to Road 13 Wye Alternative legs would be routed as described below and as shown on Figure 2-1:

- The southbound track of the San Jose to Merced leg[3] would be at-grade. This split (where tracks separate) would be west of Chowchilla, at approximately Road 11. The two San Jose to Merced tracks would continue north on the eastern side of Road 13, crossing Ash Slough and the Chowchilla River, and then would cross over Road 13 to its west side. As the tracks return to grade, they would curve northwest, crossing Dutchman Creek on an aerial structure, and follow the west side of the Union Pacific Railroad (UPRR)/SR 99 corridor. At Sandy Mush Road, the alignment would descend into a shallow cut (depressed) section for approximately 0.5 mile, with a retained cut-and-cover undercrossing[4] at Caltrans' Sandy Mush Road overhead. The alignment would return to grade and continue along the west side of the UPRR/SR 99 corridor, connecting to the Merced to Fresno Section: Hybrid Alignment at Ranch Road.

[3] A track is included within a leg; e.g., southbound track of the San Jose to Merced leg.

[4] An undercrossing is a road or track crossing under an existing road or track.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 2-1 SR 152 (North) to Road 13 Wye Alternative Alignment and Key Design Features

- The San Jose to Fresno leg of this alternative would continue east from the split near Road 11 and along the north side of SR 152 toward Chowchilla. It would be predominantly at-grade, crossing several roads and Berenda Slough on aerial structures. The alignment would pass south of Chowchilla at-grade then would rise to cross over the UPRR/SR 99 corridor and Fairmead Boulevard on an aerial structure. East of the UPRR/SR 99 corridor, the alternative would extend at-grade through Fairmead, north of Avenue 23. At approximately Road 20, the alignment would curve southeast toward the BNSF corridor and cross Dry Creek on a short aerial structure. The San Jose to Fresno leg would align parallel to the west side of the BNSF corridor as it meets the Merced to Fresno Section: Hybrid Alignment at Avenue 19.
- The Merced to Fresno leg of the alternative would split from the San Jose to Fresno leg near Road 14, where the southbound track of the Merced to Fresno leg would ascend on aerial structure, crossing over the tracks of the San Jose to Fresno leg. The northbound track would curve northwest, rise on a high embankment crossing over several roads, and continue on an at-grade embankment until joining the San Jose to Merced leg near Avenue 25.

Wildlife undercrossing structures would be installed in at-grade embankments along this alternative where the alignment intersects wildlife corridors.

2.2.2 State Highway or Local Roadway Modifications

The SR 152 (North) to Road 13 Wye Alternative would require the permanent closure of 38 public roadways at selected locations and the construction of 24 overcrossings[5] or undercrossings in lieu of closure. Figure 2-1 shows the anticipated state highway and local roadway closures and modifications. Fourteen of these permanent road closures would be located at SR 152, where roads currently cross at-grade but need to be closed to convert SR 152 to a fully access-controlled corridor. The 14 proposed closures are Road 5, Road 6, Road 7, Road 8, Road 10, Road 11, Road 13, Road 14, Road 14 1/2, Road 15, Road 15 1/2, Road 15 3/4, Road 17, and Road 18. Planned new grade separations along SR 152 at the SR 59/SR 152 Interchange, Road 4/Lincoln Road, Road 12, and Road 17 1/2 would maintain access to, and across, SR 152. These roadways would be reconfigured to two 12-foot lanes with two 8-foot shoulders. Each of the new interchanges would require realigning SR 152. Three new interchanges are proposed between SR 59 and SR 99 to provide access to SR 152: at Road 9/Hemlock Road, SR 233/Robertson Boulevard, and Road 16.

The distance between over- or undercrossings would vary from less than 2 miles to approximately 5 miles where other roads are perpendicular to the proposed HSR. Between these over- or undercrossings, 24 additional roads would be closed, as shown on Figure 2-1. Local roads paralleling the proposed HSR alignment and used by small communities and farm operations may be shifted and reconstructed to maintain their function. Access easements would be provided to maintain access to properties severed by HSR.

2.2.3 Freight or Passenger Railroad Modifications

The SR 152 (North) to Road 13 Wye Alternative would cross over the UPRR right-of-way south of Chowchilla. This alternative would maintain required vertical (at least 23.3 feet) clearance over UPRR operational right-of-way to avoid or minimize impacts on UPRR rights-of-way, spurs, and facilities (BNSF and UPRR 2007). In areas where the SR 152 (North) to Road 13 Wye Alternative parallels the UPRR right-of-way, the alternative maintains a minimum horizontal clearance of 102 feet from the centerline to the UPRR right-of-way.

2.2.4 Summary

Table 2-1 summarizes the design features for the SR 152 (North) to Road 13 Wye Alternative.

[5] An overcrossing is a road or track crossing over an existing road or track.

Table 2-1 Design Features of the SR 152 (North) to Road 13 Wye Alternative

Feature	SR 152 (North) to Road 13 Wye
Total length (linear miles)[1]	52
At-grade profile (linear miles)[1]	48.5
Elevated profile (linear miles)[1]	3
Below-grade profile (linear miles)[1]	0.5
Number of straddle bents	32
Number of railroad crossings	1
Number of major water crossings	12
Number of road crossings	62
Approximate number of public roadway closures	38
Number of roadway overcrossings and undercrossings	24
Traction power substation sites	1
Switching and paralleling stations	3 switching stations, 8 paralleling stations
Signaling and train-control elements	18
Communication towers	9
Wildlife crossing structures	39

Source: Authority, 2016

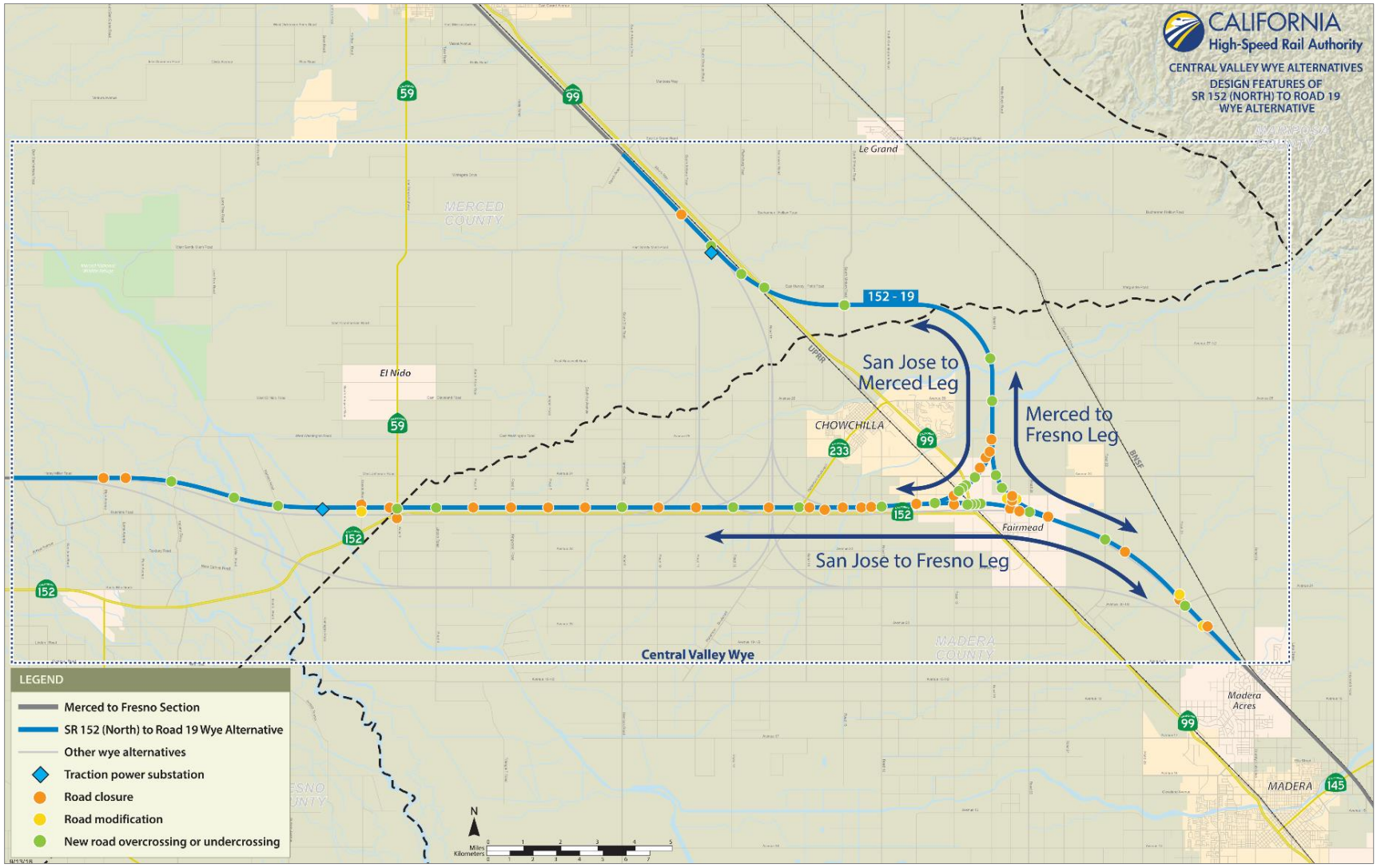
[1] Lengths shown are based on equivalent dual-track alignments and are one-way mileages. For example, the length of single-track elevated structure will be divided by a factor of 2 to convert to dual-track equivalents.

2.3 SR 152 (North) to Road 19 Wye Alternative

The SR 152 (North) to Road 19 Wye Alternative (Figure 2-2) is designed to follow the existing Henry Miller Road and SR 152 rights-of-way as closely as practicable in the east-west direction and Road 19, SR 99, and BNSF rights-of-way in the north-south direction. Deviations from these existing transportation corridors would be necessary to accommodate design requirements; specifically, larger curves would be necessary to accommodate the high speed of the HSR compared to lower-speed roadway alignments. The SR 152 (North) to Road 19 Wye Alternative would not follow existing transportation rights-of-way as it transitions from following one transportation corridor to another.

2.3.1 Alignment and Ancillary Features

The SR 152 (North) to Road 19 Wye Alternative would extend approximately 55 miles, mostly at-grade on embankment, although it would also have aerial structures, retained cut (depressed alignment), and depressed tunnel undercrossings of major railroad and highway corridors. The wye configuration of this alternative would be located southeast of the city of Chowchilla and north of Fairmead, with the east-west axis along the north side of SR 152 and the north-south axis on the east side of Road 19.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 2-2 SR 152 (North) to Road 19 Wye Alternative Alignment and Key Design Features

Beginning at the intersection of Henry Miller Road and Carlucci Road (at the same point in Merced County as the SR 152 [North] to Road 13 Wye Alternative), this alternative would continue east toward Elgin Avenue, where it would curve southeast toward the San Joaquin River. It would cross the river on an aerial structure, returning to an at-grade embankment, then onto another aerial structure to cross the Eastside Bypass. After crossing the Eastside Bypass, the alignment would continue east and cross SR 59 at-grade just north of the existing SR 152/SR 59 interchange, where it would enter Madera County. It would continue east at-grade along the north side of SR 152 toward Chowchilla, crossing Ash Slough and Berenda Slough on aerial structures. As it crosses Road 16, the alignment would split into two legs (four tracks) to transition to the Merced to Fresno Section: Hybrid Alignment. East of Road 17, the San Jose to Merced leg would curve northeast, rising to cross the UPRR/SR 99 corridor on an aerial structure, and then would continue north along the east side of Road 19.

As the alignment approaches Avenue 25, the San Jose to Merced and Merced to Fresno legs would converge, requiring the northbound track of the San Jose to Merced leg to rise on an aerial structure and cross over the tracks of the Merced to Fresno leg.

- The San Jose to Merced leg would continue north to just south of Ash Slough, where it would curve west, cross Ash Slough and the Chowchilla River on aerial structures, and continue west approximately 0.5 mile south of Harvey Pettit Road. West of South Minturn Road, the leg would curve northwest and descend below-grade into a series of three tunnels crossing under the SR 99 and UPRR corridors and the Caltrans Sandy Mush Road overhead. The UPRR tracks would be reconstructed on the roof of the HSR cut-and-cover tunnels, while maintaining the same horizontal and vertical alignment. Construction of this type of below-grade crossing would require temporarily realigning the UPRR tracks. Approximately 0.6 mile north of Sandy Mush Road, the alternative would ascend to grade and continue along the UPRR/SR 99 corridor to connect with the Merced to Fresno Section: Hybrid Alignment at Ranch Road.
- The San Jose to Fresno leg would continue east from Road 16 and, east of Road 18, ascend on an aerial structure to cross SR 99 north of the SR 99/SR 152 interchange. East of the UPRR/SR 99 corridor, the leg would continue north of Avenue 23 through Fairmead, descending to grade east of Road 18 3/4. The alternative would then curve southeast toward the BNSF corridor, crossing Dry Creek on a short aerial structure, and continuing along the west side of the BNSF corridor to join the Merced to Fresno Section: Hybrid Alignment at Avenue 19.
- The Merced to Fresno leg would split from the San Jose to Fresno leg near Road 20 1/2. The southbound track of the Merced to Fresno leg would ascend on an aerial structure and cross over the tracks of the San Jose to Fresno leg. The Merced to Fresno leg would curve northwest, rise on aerial structures over several road crossings, and then continue at-grade to join the San Jose to Merced leg near Avenue 25.

Wildlife undercrossing structures would be provided in at-grade embankments where the alignment intersects wildlife corridors.

2.3.2 State Highway or Local Roadway Modifications

The SR 152 (North) to Road 19 Wye Alternative would require the permanent closure of 36 public roadways at selected locations and the construction of 29 overcrossings or undercrossings. Table 2-2 and Figure 2-2 show the anticipated state highway and local roadway closures and modifications. Fourteen of these permanent road closures would be located at SR 152 where roads currently cross at-grade but must be closed to convert SR 152 to a fully access-controlled corridor. The proposed 14 closures are Road 5, Road 6, Road 7, Road 8, Road 10, Road 11, Road 13, Road 14, Road 14 1/2, Road 15, Road 15 1/2, Road 15 3/4, Road 17, and Road 18. New grade separations are planned along SR 152 at the SR 59/SR 152 interchange, Road 4/Lincoln Road, Road 12, SR and Road 17 1/2. These roadways would be reconfigured to two 12-foot lanes with two 8-foot shoulders, and several of these interchanges would require realigning SR 152. Interchanges between SR 59 and SR 99 that would provide access to SR 152 are Road 9/Hemlock Road, SR 233/Robertson Boulevard, and Road 16.

The distance between over- or undercrossings would vary from less than 2 miles to approximately 5 miles where roads would be perpendicular to the proposed HSR. Between these over- or undercrossings, 22 additional roads would be closed (Figure 2-2). Local roads paralleling the proposed HSR alignment and used by small communities and farm operations may be shifted and reconstructed to maintain their function. Access easements would be provided to maintain access to properties severed by HSR.

The SR 152 (North) to Road 19 Wye Alternative would cross over SR 99 at three locations. South of Chowchilla, both the San Jose to Merced and the San Jose to Fresno legs would rise on aerial structures to cross SR 99. Another crossing of SR 99 would be at the northern end of the alternative, where it descends below-grade into an undercrossing tunnel segment. SR 99 would be temporarily realigned during construction, and would be reconstructed on the roof of the undercrossing tunnel.

2.3.3 Freight or Passenger Railroad Modifications

The SR 152 (North) to Road 19 Wye Alternative would cross over the UPRR corridor at three separate locations. South of Chowchilla, both the San Jose to Merced and the San Jose to Fresno legs would rise on aerial structures to cross the UPRR operational right-of-way. In these instances, the alternative would maintain required vertical (at least 23.3 feet) clearance over UPRR operational right-of-way to avoid or minimize impacts on UPRR rights-of-way, spurs, and facilities (BNSF AND UPRR 2007). The third crossing of the UPRR corridor would be at the northern end of the alternative, where the alignment would descend into an undercrossing tunnel. The UPRR tracks would be reconstructed on the roof of the HSR tunnel, maintaining the same vertical alignment. Construction of this crossing would require the temporary detour (shoofly)[6] of the UPRR tracks. In areas where the SR 152 (North) to Road 19 Wye Alternative parallels the UPRR right-of-way, the alternative maintains a minimum horizontal clearance of 102 feet from the centerline to the UPRR right-of-way.

2.3.4 Summary

Table 2-2 summarizes the design features for the SR 152 (North) to Road 19 Wye Alternative.

Table 2-2 Design Features of the SR 152 (North) to Road 19 Wye Alternative

Feature	SR 152 (North) to Road 19 Wye
Total length (linear miles)[1]	55
At-grade profile (linear miles)[1]	48.5
Elevated profile (linear miles)[1]	3.5
Below-grade profile (linear miles)[1]	3
Number of straddle bents	31
Number of railroad crossings	3
Number of major water crossings	13
Number of road crossings	65
Approximate number of public roadway closures	36
Number of roadway overcrossings and undercrossings	29
Traction power substation sites	2

[6] A shoofly is a temporary track alignment that detours trains around a construction site.

Feature	SR 152 (North) to Road 19 Wye
Switching and paralleling stations	3 switching stations, 7 paralleling stations
Signaling and train-control elements	21
Communication towers	6
Wildlife crossing structures	41

Source: Authority, 2016

[1] Lengths shown are based on equivalent dual-track alignments and are one-way mileages. For example, the length of single-track elevated structure will be divided by a factor of 2 to convert to dual-track equivalents.

2.4 Avenue 21 to Road 13 Wye Alternative

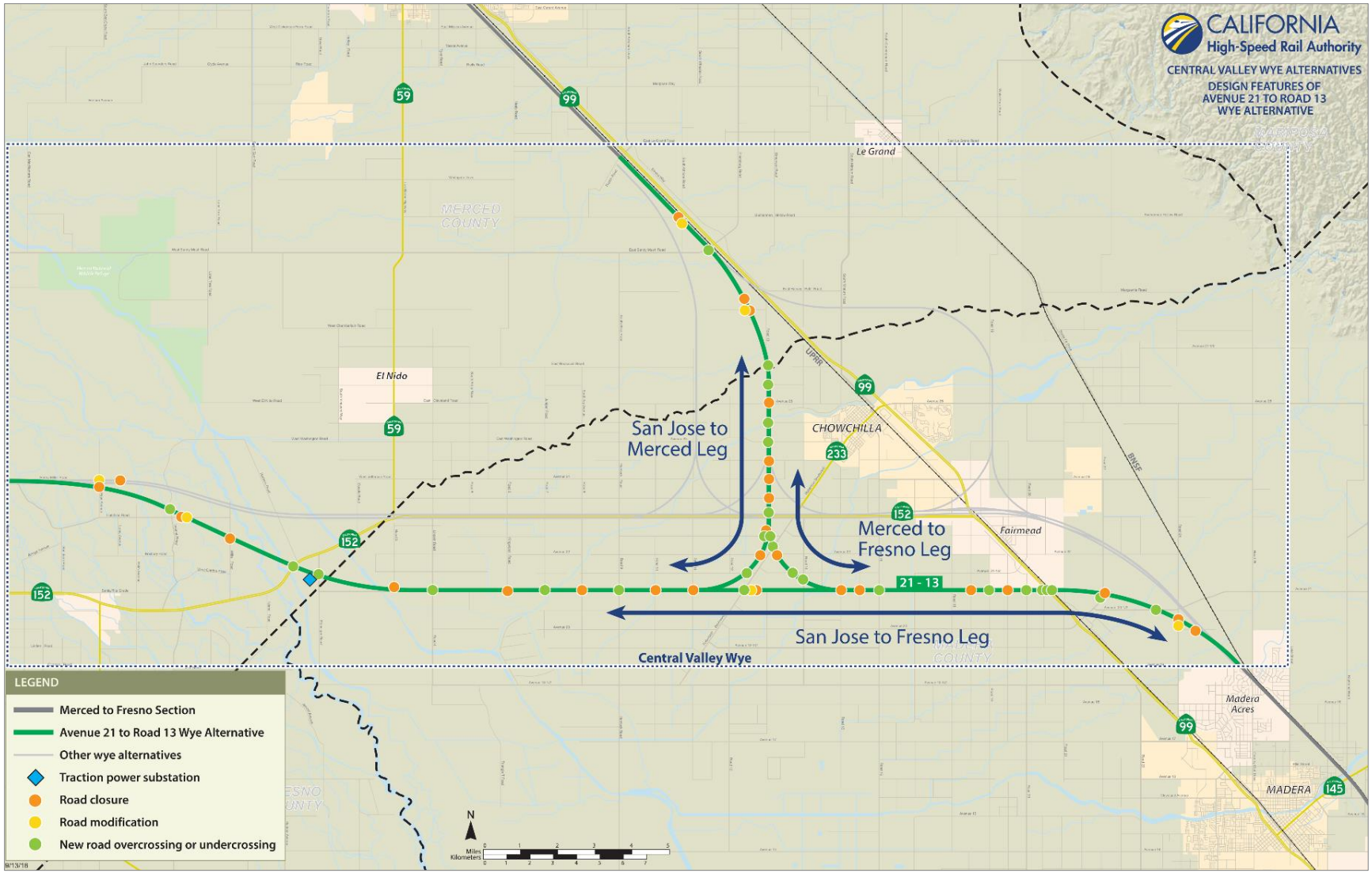
The Avenue 21 to Road 13 Wye Alternative (Figure 2-3) is designed to follow the existing Henry Miller Road and Avenue 21 rights-of-way as closely as practicable in the east-west direction and the Road 13, SR 99, and BNSF rights-of-way in the north-south direction. Deviations from these existing transportation corridors would be necessary to accommodate design requirements; specifically, larger curves would be necessary to accommodate the high speeds of the HSR compared to lower-speed roadway alignments. The Avenue 21 to Road 13 Wye Alternative would not follow existing transportation rights-of-way as it transitions from following one transportation corridor to another.

2.4.1 Alignment and Ancillary Features

The Avenue 21 to Road 13 Wye Alternative would extend approximately 53 miles, mostly at-grade on embankment, although it would also have aerial structures and a short segment of retained cut (depressed alignment). The wye configuration of this alternative would be located approximately 4 miles southwest of the city of Chowchilla, with the east-west axis along the north side of Avenue 21 and the north-south axis on the east side of Road 13.

Beginning at the intersection of Henry Miller Road and Carlucci Road (at the same point in Merced County as the SR 152 [North] to Road 13 Wye Alternative), west of Elgin Avenue this alternative would curve southeast toward the San Joaquin River and Eastside Bypass. East of Willis Road, the alignment would rise to an aerial structure to cross the river, SR 152, and the Eastside Bypass. The alignment would continue east along the north side of Avenue 21, crossing Ash Slough on an aerial structure. Southwest of Chowchilla, near Road 11, the alignment would split into two legs (four tracks) for transition to the Merced to Fresno Section: Hybrid Alignment. The San Jose to Merced leg would curve northeast, cross Road 13, and continue north along the east side of Road 13. At the beginning of the San Jose to Merced leg, the northbound track alternative would rise onto an aerial structure to cross over the tracks of the San Jose to Fresno leg. The Avenue 21 to Road 13 Wye Alternative legs would be routed as described below and shown on Figure 2-3:

- As the San Jose to Merced leg approaches SR 152, it would converge with the Merced to Fresno leg, requiring the northbound track of the San Jose to Merced leg to rise on an aerial structure and cross over the tracks of the Merced to Fresno leg. The San Jose to Merced leg would continue north on an elevated alignment crossing Ash Slough, the Chowchilla River, and Road 13 on aerial structures. As the leg returns to grade, it would curve northwest, cross Dutchman Creek on an aerial structure, and follow along the west side of the UPRR/SR 99 corridor. At Sandy Mush Road, the alternative would descend into a shallow cut (depressed) section for approximately 0.5 mile, with a retained cut-and-cover undercrossing tunnel segment at the Caltrans Sandy Mush Road Overhead. The alternative would return to grade and continue along the UPRR/SR 99 corridor, connecting to the Merced to Fresno Section: Hybrid Alignment at Ranch Road.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 2-3 Avenue 21 to Road 13 Wye Alternative Alignment and Key Design Features

- The San Jose to Fresno leg would continue east from the split near Road 11 along the north side of Avenue 21 toward Chowchilla. It would be predominantly at-grade on embankment, ascending to cross Berenda Slough on an aerial structure. East of the wye configuration, the alignment would extend south of Chowchilla, ascend on an aerial structure east of Road 19 1/2, and cross the UPRR/SR 99 corridor. The alternative would extend south of Fairmead and curve southeast toward the BNSF corridor, cross Dry Creek on an aerial structure, and run adjacent to the west side of the BNSF corridor to its meeting with the Merced to Fresno Section: Hybrid Alignment at Avenue 19.
- The Merced to Fresno leg would split from the San Jose to Fresno leg near Road 15. The southbound track of the Merced to Fresno leg would ascend on an aerial structure and cross over the tracks of the San Jose to Fresno leg. The Merced to Fresno leg would curve northwest, rise on aerial structures over several road crossings, and then continue on an at-grade embankment to join the San Jose to Merced leg near SR 152.

Wildlife undercrossing structures would be provided along this alternative in at-grade embankment portions of the HSR corridor where the alignment intersects wildlife corridors.

2.4.2 State Highway or Local Roadway Modifications

The Avenue 21 to Road 13 Wye Alternative would require the permanent closure of 30 public roadways at selected locations and the construction of 28 overcrossings or undercrossings. Table 2-3 and Figure 2-3 show the anticipated state highway and local roadway closures. This alternative would require the fewest roadway and state highway modifications.

The Avenue 21 to Road 13 Wye Alternative would rise on aerial structures and cross over state highway facilities in three locations: SR 59 at Harmon Road, SR 152 at Road 13, and SR 99 at Avenue 21. Where other roads would be perpendicular to the proposed HSR, over- or undercrossings are planned at distances from less than 2 miles to 5 miles. Between these over- and undercrossings, some roads may be closed. Local roads paralleling the HSR alignment and used by small communities and farm operations may be shifted and reconstructed to maintain their function. Access easements would be provided to maintain access to properties severed by HSR.

2.4.3 Freight or Passenger Railroad Modifications

The Avenue 21 to Road 13 Wye Alternative would cross the UPRR operational right-of-way on an aerial structure south of Fairmead and maintain a vertical (at least 23.3 feet) clearance over UPRR operational right-of-way to avoid or minimize impacts on other UPRR rights-of-way, spurs, and facilities. In areas where the Avenue 21 to Road 13 Wye Alternative parallels the UPRR right-of-way, the alternative maintains a minimum horizontal clearance of 102 feet from the centerline to the UPRR right-of-way.

2.4.4 Summary

Table 2-3 summarizes the design features for the Avenue 21 to Road 13 Wye Alternative.

Table 2-3 Design Features of the Avenue 21 to Road 13 Wye Alternative

Feature	Avenue 21 to Road 13 Wye
Total length (linear miles)[1]	53
At-grade profile (linear miles)[1]	48.5
Elevated profile (linear miles)[1]	4
Below-grade profile (linear miles)[1]	0.5
Number of straddle bents	32
Number of railroad crossings	1

Feature	Avenue 21 to Road 13 Wye
Number of major water crossings	11
Number of road crossings	58
Approximate number of public roadway closures	30
Number of roadway overcrossings and undercrossings	28
Traction power substation sites	1
Switching and paralleling stations	3 switching stations, 7 paralleling stations
Signaling and train-control elements	15
Communication towers	6
Wildlife crossing structures	44

Source: Authority, 2016
[1] Lengths shown are based on equivalent dual-track alignments and are one-way mileages. For example, the length of single-track elevated structure will be divided by a factor of 2 to convert to dual-track equivalents.

2.5 SR 152 (North) to Road 11 Wye Alternative

The SR 152 (North) to Road 11 Wye Alternative (Figure 2-4) follows the existing Henry Miller Road and SR 152 rights-of-way as closely as practicable in the east-west direction, and the Road 11, SR 99, and BNSF rights-of-way in the north-south direction. Deviations from these existing transportation corridors are necessary to accommodate design requirements; specifically, wider curves are necessary to accommodate the speed of the HSR compared to lower-speed roadway alignments. The SR 152 (North) to Road 11 Wye Alternative would not follow existing transportation rights-of-way where it transitions from following one transportation corridor to another.

2.5.1 Alignment and Ancillary Features

The SR 152 (North) to Road 11 Wye Alternative would extend approximately 51 miles, mostly at-grade on raised embankment, although it would also have aerial structures. The wye configuration of this alternative would be located west-southwest of the city of Chowchilla, with the east-west axis along the north side of SR 152 and the north-south axis on the east side of Road 11.

Like the other three alternatives, this alternative would begin in Merced County at the intersection of Henry Miller Road and Carlucci Road, and would continue at-grade on embankment east toward Elgin Avenue, where it would curve southeast toward the San Joaquin River and Eastside Bypass. Approaching Willis Road, the alignment would rise to cross the San Joaquin River on an aerial structure, return to embankment, then cross the Eastside Bypass on an aerial structure. After crossing the Eastside Bypass, this alternative would continue east, crossing SR 59 at-grade just north of the existing SR 152/SR 59 interchange, entering Madera County. To accommodate the SR 152 (North) to Road 11 Wye Alternative, the SR 152/SR 59 interchange would be reconstructed slightly to the south, and SR 59 would be grade-separated to pass above the HSR on an aerial structure. The alignment would continue east at-grade along the north side of SR 152 toward Chowchilla, splitting into two legs (four tracks) near Road 10 to transition to the Merced to Fresno Section: Hybrid Alignment, and would cross Ash Slough on an aerial structure. All but the northbound track of the San Jose to Merced leg of the alternative would then return to at-grade embankment; the northbound track would rise to cross over the tracks of the San Jose to Fresno leg on an aerial structure as it curves north toward Merced. The SR 152 (North) to Road 11 Wye Alternative legs would be routed as described below and shown on Figure 2-4:

Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 2-4 SR 152 (North) to Road 11 Wye Alternative Alignment and Key Design Features

- The southbound track of the San Jose to Merced leg would turn north at-grade. This split would be west of Chowchilla, at approximately Road 10. The two San Jose to Merced tracks would continue north on the eastern side of Road 11, crossing the Chowchilla River, and then would cross over Road 11 to follow its west side. As the tracks return to grade, they would curve northwest, crossing Dutchman Creek on an aerial structure, following the west side of the UPRR)/SR 99 corridor. The alignment would continue north, crossing over Sandy Mush Road on an aerial structure. The alignment would return to grade and continue along the west side of the UPRR/SR 99 corridor, connecting to the Merced to Fresno Section: Hybrid Alignment at Ranch Road.
- The San Jose to Fresno leg would continue east from the wye split near Road 10, along the north side of SR 152 toward Chowchilla. It would be predominantly at-grade, ascending on aerial structures at several road crossings and Berenda Slough. The leg would pass south of Chowchilla at-grade then rise to cross over the UPRR/SR 99 corridor and Fairmead Boulevard on an aerial structure. East of the UPRR/SR 99 corridor, the alignment would extend at-grade through Fairmead, north of Avenue 23. At approximately Road 20, the leg would curve southeast toward the BNSF corridor and cross Dry Creek on a short aerial structure. The SR 152 (North) to Road 11 Wye Alternative would align parallel to the west side of the BNSF corridor as it meets the Merced to Fresno Section: Hybrid Alignment at Avenue 19.
- The Merced to Fresno leg would split from the San Jose to Fresno leg near Road 13. The southbound track of the Merced to Fresno leg would ascend on an aerial structure and cross over the tracks of the San Jose to Fresno leg. The Merced to Fresno leg would curve northwest, rise on a high embankment crossing over several roads, and continue at-grade on embankment to join the San Jose to Merced leg near Avenue 25.

Wildlife undercrossing structures would be installed in at-grade embankments along this alternative where the alignment intersects wildlife corridors.

2.5.2 State Highway or Local Roadway Modifications

The SR 152 (North) to Road 11 Wye Alternative would require the permanent closure of 33 public roadways at selected locations and the construction of 24 overcrossings or undercrossings in lieu of closure. Table 2-4 and Figure 2-4 show the anticipated state highway and local roadway closures and modifications. Fourteen of these permanent road closures would be located at SR 152 where roads currently cross at-grade but need to be closed in order to convert SR 152 to a fully access-controlled corridor. The 14 proposed closures are Road 5, Road 6, Road 7, Road 8, Road 10, Road 11, Road 13, Road 14, Road 14 1/2, Road 15, Road 15 1/2, Road 15 3/4, Road 17, and Road 18. Planned new grade separations along SR 152 at the SR 59/SR 152 Interchange, Road 4/Lincoln Road, Road 12, and Road 17 1/2 would maintain access to SR 152. These roadways would be reconfigured to two 12-foot lanes with two 8-foot shoulders. Several of these new interchanges would require realigning SR 152. Three new interchanges are proposed between SR 59 and SR 99 to provide access to SR 152: at Road 9/Hemlock Road, SR 233/Robertson Boulevard, and Road 16.

The distance between over- or undercrossings would vary from less than 2 miles to approximately 5 miles where other roads are perpendicular to the proposed HSR Between these over- or undercrossings, 19 additional roads would be closed. Local roads paralleling the proposed HSR alignment and used by small communities and farm operations may be shifted and reconstructed to maintain their function. Access easements would be provided to maintain access to properties severed by HSR.

2.5.3 Freight or Passenger Railroad Modifications

The SR 152 (North) to Road 11 Wye Alter native would cross over the UPRR right-of-way as it passes south of Chowchilla. This alternative would maintain required vertical (at least 23.3 feet) clearance over UPRR operational right-of-way to avoid or minimize impacts on UPRR rights-of-way, spurs, and facilities (BNSF AND UPRR 2007). In areas where the SR 152 (North) to Road

11 Wye Alternative parallels the UPRR right-of-way, the alternative maintains a minimum horizontal clearance of 102 feet from the centerline to the UPRR right-of-way.

2.5.4 Summary

Table 2-4 summarizes the design features for the SR 152 (North) to Road 11 Wye Alternative.

Table 2-4 Design Features of the SR 152 (North) to Road 11 Wye Alternative

Feature	SR 152 (North) to Road 11 Wye
Total length (linear miles)[1]	51
At-grade profile (linear miles)[1]	46.5
Elevated profile (linear miles)[1]	4.5
Below-grade profile (linear miles)[1]	0
Number of straddle bents	27
Number of railroad crossings	1
Number of major water crossings	13
Number of road crossings	57
Approximate number of public roadway closures	33
Number of roadway overcrossings and undercrossings	24
Traction power substation sites	1
Switching and paralleling stations	3 switching stations, 7 paralleling stations
Signaling and train-control elements	19
Communication towers	9
Wildlife crossing structures	37

Source: Authority, 2016

[1] Lengths shown are based on equivalent dual-track alignments and are one-way mileages. For example, the length of single-track elevated structure will be divided by a factor of 2 to convert to dual-track equivalents.

2.6 Central Valley Wye Impact Avoidance and Minimization Features

The Authority has developed IAMFs that would avoid or minimize potential effects and mitigation measures that would avoid or reduce significant impacts that exist after the application of all appropriate IAMFs. IAMFs are standard practices, actions, and design features that are incorporated into the Central Valley Wye description. Mitigation measures consist of practices, actions, and design features that are applied to the Central Valley Wye after an impact is identified. Volume 2 of the Supplemental EIR/EIS, Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features, presents complete descriptions of all IAMFs for the Central Valley Wye.

The Authority and FRA will implement the following IAMFs to address potential Central Valley Wye effects on aesthetics and visual resources. These IAMFs include measures that are specific to aesthetics and visual resources:

- AVR-IAMF#1: Design Standards
- AVR-IAMF#2: Context Sensitive Solutions
- AVR-IAMF#3: Design Review Process

3 LAWS, REGULATIONS, AND ORDERS

The following federal, state, and local laws, regulations, and agency jurisdiction and management guidance apply to aesthetics and visual resources. Consideration of potential effects on the existing visual environment is informed by federal, state, and local rules and policies. These rules and policies focus on preserving visual quality, minimizing conflicts, improving aesthetic character, and mitigating adverse effects. The federal, state, and local regulations and policies related to the Central Valley Wye are listed in the following subsections, with a brief explanation. For complete descriptions, refer to Section 3.16.2, Laws, Regulations, and Orders, of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a). Where applicable, the summaries that follow identify updates or amendments that have been made since the Merced to Fresno Final EIR/EIS was adopted.

3.1 Federal

3.1.1 Department of Transportation Act, Section 4(f) (49 U.S.C. § 303)

Compliance with Section 4(f) is required for transportation projects undertaken by an operating administration of the U.S. Department of Transportation or that may receive federal funding or discretionary approvals. Section 4(f) protects the natural beauty of publicly owned land of parks, recreational areas, wildlife refuges, as well as historic sites of national, state, or local significance located on public or private land. The FRA may not approve the use of a Section 4(f) property, as defined in 49 United States Code (U.S.C.) section 303(c), unless it determines that there is no feasible and prudent alternative to avoid the use of the property and the action includes all possible planning to minimize harm resulting from such use, or the project has a *de minimis* impact on the 4(f) property consistent with the requirements of 49 U.S.C. section 303(d).

3.1.2 Federal Railroad Administration (64 Fed. Reg. 28545) (Updated since the Merced to Fresno Final EIR/EIS)

The FRA *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 U.S. Department of Transportation Order 5610.4."

3.1.3 National Historic Preservation Act (54 U.S.C. 306108) (Re-codified since the Merced to Fresno Final EIR/EIS, previously 16 U.S.C. § 470f)

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

3.2 State

3.2.1 State Scenic Highways (Streets and Highway Code, §§ 260–263)

The State Scenic Highways Program 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 as scenic on the basis of the amount of natural landscape that 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). The Streets and Highways Code establishes state responsibility for protecting, preserving, and enhancing California's natural scenic beauty of scenic routes and areas that require special scenic conservation and treatment.

3.3 Regional and Local

Several city and county plans, including general plans, downtown master plans, community plans, and specific plans address aesthetics and visual resources. Types of policies and regulations include design guidelines, designated scenic corridors/routes, and identified areas of particular scenic value. Local community design guidelines would 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 regarding the appropriate mitigation measures and local design guidelines that are most context-appropriate for the locale's built and natural environment. Since the Merced to Fresno Final EIR/EIS, Merced County has updated its general plan with the release of the 2030 Merced County General Plan.

Table 3-1 outlines the policies related to aesthetics and visual resources from local plans that were considered in the preparation of this analysis.

Table 3-1 Local Plans and Policies

Plan Title	Policy/Summary
Merced County	
2030 Merced County General Plan (2013) (Updated since Merced to Fresno Final EIR/EIS)	▪ Policy NR-4.1: Promote the preservation of agricultural land, ranch land, and other open space areas as a means of protecting the County's scenic resources. ▪ Policy NR-4.2: Coordinate with Caltrans, during the review of proposed structures and activities located adjacent to State-designated scenic highways, to ensure that scenic vistas and local scenic values are not significantly degraded. ▪ Policy NR-4.4: Consider the surrounding landscape, topography, and existing scenic values when determining the location and construction of new roads. ▪ Policy NR-4.5: Develop and implement a lighting ordinance to require good lighting practices, such as the use of specific light fixtures that reduce light pollution, minimize light impacts, and preserve views of the night sky. The ordinance shall contain standards to avoid light trespass, particularly from developed uses, to sensitive wildlife corridors and refuges. ▪ Policy P FS-5.7: Coordinate with local gas and electric utility companies in the design and location, and appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on residents.
Madera County	
Madera County General Plan (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.I.3: Scenic corridors shall be protected and enhanced by means including design review and tree removal standards.

Plan Title	Policy/Summary
City of Chowchilla	
City of Chowchilla 2040 General Plan (2011)	▪ Land Use, Circulation, and Open Space and Conservation Elements: Includes objectives, policies, and implementation measures that would apply to the proposed project's potential impacts on aesthetic and visual resources. ▪ Land Use Element: Promotes an aesthetically pleasing, pedestrian-friendly, and diverse downtown. ▪ Circulation Element: Designates W Robertson Boulevard (SR 233) from SR 99 to SR 152 as a Scenic Corridor.

Sources: Merced County, 2013; Madera County, 1995; City of Chowchilla, 2011
SR = State Route

4 METHODS FOR EVALUATING EFFECTS

4.1 Definition of Resource Study Area

The resource study area (RSA) for effects on aesthetic and visual quality is the Central Valley Wye viewshed (i.e., the area that potentially could have views of Central Valley Wye features, and the area potentially viewed from the Central Valley Wye). The Central Valley Wye alternatives are on mostly flat terrain predominantly made up of agricultural and rural residential areas. Viewing distances toward the corridor vary throughout the RSA. In areas of open space, grazing lands, waterways, and agricultural areas planted with low-lying crops, the corridor is visible over wide areas due to the general scarcity of buildings and tall vegetation that could block views. In the largely agricultural landscape, crop changes can limit views, especially when landowners replace low-lying field crops with orchards, as has been observed while the Central Valley Wye alternatives have been under study. Seasonal variation in vegetation will also alter the viewshed when tall-growing field crops are harvested, or trees lose their leaves. For the at-grade portions of the alternative alignments with no buildings, landscape, or vegetation that limit a view, the potential visibility of the Central Valley Wye would be limited because features would have a low level of prominence (railbed, contact poles and wires, trains). Beyond foreground viewing distances of 0.25 mile, or even less, the at-grade portions of the Central Valley Wye would have a limited visual presence. In segments where the Central Valley Wye would be elevated on berms greater than 10 feet or on aerial structures, the potential visibility of project features would increase correspondingly. Accounting for the anticipated scale of the features in different segments of the aesthetics and visual RSA, the zone of potential effects is not expected to extend beyond a foreground distance of 0.5 mile from the Central Valley Wye alternatives or features. For analysis, the RSA has been divided into landscape units that capture areas of similar visual resources and viewer groups. Landscape units are described in detail in Section 5, Affected Environment.

4.2 Methodology for Effects Analysis

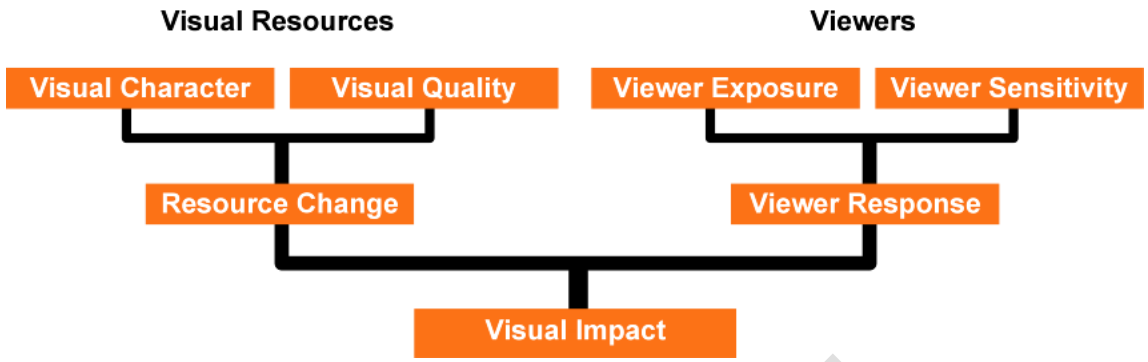
This section describes the sources and methods used to analyze potential effects from the Central Valley Wye alternatives on aesthetics and visual resources. The assessment was performed in accordance with the Authority's adopted methodology for aesthetics and visual quality as detailed in the *California High-Speed Rail Project EIR/EIS Environmental Methodology Guidelines*, *Version 5 June 2014* (Environmental Methodology).

Field Study

Analysts familiar with the Federal Highway Administration (FHWA) *Visual Impact Assessment Methodology* (FHWA 1988) and the footprint of the Central Valley Wye alternatives visited the Central Valley Wye study area on several occasions, during different seasons, over a period of 5 years, to tour and photograph the aesthetic and visual quality RSA. The field study of existing visual resources included landforms, vegetation, land uses, buildings, transportation facilities, overhead utility structures and lighting, open space, viewpoints and views to visual resources, waterbodies, historic structures, developed areas, and apparent upkeep and maintenance of property. The analyst also reviewed engineering drawings of Central Valley Wye alternatives infrastructure components and aerial images of the RSA.

Assessment

The effects assessment incorporates the FHWA *Visual Impact Assessment Methodology* (FHWA 1988), particularly as applied under guidelines of the Caltrans *Standard Environmental Reference*, Chapter 27, Visual and Aesthetics Review (Caltrans 2009). In Section 5.2, Existing Visual Resources, the visual setting of the Central Valley Wye alternatives is described, in accordance with the FHWA/Caltrans *Visual Impact Assessment Methodology*, in terms of the method's two primary measures: viewer response and resource change. As presented in the *Visual Impact Assessment Methodology*, Figure 4-1 shows the conceptual model for this method.



Source: FHWA, 1988

Figure 4-1 Federal Highway Administration Visual Assessment Model

The *Environmental Methodology* for visual effects assessment includes the following components:

- Define the RSA (viewshed)
- Identify widely recognized visual resources within the RSA (visual character)
- Describe the existing visual environment (visual quality)
- Determine who has views of the project (viewer groups) and their sensitivity to views
- Identify landscape units (areas with similar visual characteristics)
- Identify key viewpoints (KVP) within landscape units for visual assessment
- Depict the visual appearance with the project
- Analyze changes in visual quality and viewer responses
- Assess the project's direct and indirect visual effects

The following sections describe each component of this assessment. The first component, defining the RSA, is addressed in Section 4.1, Definition of Resource Study Area.

4.2.1 Visual Resources

For this discussion, visual resources include locally designated scenic routes, views toward or within natural areas, typical views from residential areas, and long views across the landscape that are evocative of the natural environment of the greater San Joaquin Valley. These visual resources have been identified in planning and policy documents, in cultural resource reports, or in evaluations of scenic quality and apparent public popularity during field work conducted related to aesthetics and visual resources. The selection of representative KVPs for this analysis was based on the visual resources as seen by identified sensitive viewer groups, residents, and potential future recreationists.

4.2.2 Viewer Groups, Viewer Sensitivity, and Viewer Response

Viewer groups within the RSA consist of roadway/highway/future HSR passengers (travelers), agricultural workers, park and trail users (recreationists), and residents. The FHWA method recognizes viewer activity and awareness, local values, and cultural significance as key factors in predicting viewer sensitivity. Sensitivity to visual change varies among viewer groups.

Project features that are not visible or that are highly screened will not be as noticeable to viewers. In addition, project effects within the visual foreground (0.25–0.5 mile or foreground distance zone) are more likely to be noticeable than those farther from the viewer.

Viewer exposure considers the number of people affected and the duration of their views. Exposure, combined with sensitivity, produces the likely viewer response. *Viewer response* is the anticipated reaction from viewers based on their perception of the change. The response viewer groups may have to a project's change to the visual setting is based on two factors: (1) viewer sensitivity to visual change, and (2) viewer exposure to those visual changes.

Viewer response ratings reflect the professional judgment of the analyst based on the levels of viewer sensitivity and exposure for the viewer groups that prevail in a particular location. A five-point scale—low, moderately low, moderate, moderately high, and high—is used to rate viewer response and its components, which are sensitivity and exposure. For example:

- Low viewer response may occur when there are few viewers who experience a defined view or when potential views of the project are screened or filtered by intervening terrain, structures, or landscaping (low viewer exposure). Low viewer response may also occur where viewers are not particularly concerned about the quality of views due to their activity type (low viewer sensitivity), such as a commuter on the freeway.
- Moderate viewer response may occur where views of a project are distant enough that the project does not dominate the view (moderate viewer exposure), or where viewer activity is not focused on visual quality and expectations are moderate, such as office workers or shoppers (moderate viewer sensitivity).
- High viewer response may occur where a project is highly prominent, open to view, and seen by relatively high numbers of viewers (high viewer exposure), and where viewer concern and expectations of visual quality are also high, as in a rural park where scenery is a primary focus, or in a residential neighborhood (high viewer sensitivity).

4.2.3 Landscape Units and Key Viewpoints for Visual Assessment

Landscape units are used to divide long linear projects into logical geographic entities for which effects from a proposed project can be assessed. These units have broadly similar visual characteristics (or character), although the visual characteristics of specific locations within each landscape unit may differ from the unit's generalized, overall character. To assist in characterizing the existing visual conditions of the landscape units and in determining effects on them, KVPs are used to provide representative examples of existing views of the landscape as seen by viewer groups 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 to viewer groups. These locations are selected to represent either: (1) typical views from common types of viewing areas, such as certain highways or residential areas with exposure to the project, or (2) specific high-sensitivity areas such as parks, scenic viewpoints, and historic districts that may be affected by a proposed project. KVPs are useful for depicting the range of visual character and visual quality found within a landscape unit. KVPs selected for analysis serve as representative examples of existing visual conditions, so analysts can evaluate the view with the proposed project simulated in place to assess effects. The effect determination for an individual KVP may not be the same as the effect determination for the entire landscape unit in which the KVP is located.

4.2.4 Existing Visual Character and Quality

Visual character is an impartial description of the defining features, landscape pattern, and distinctive qualities of the landscape and is defined by the relationships between the existing visible natural and built landscape features and the overall pattern (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, waterbodies, historic structures, and skylines. Examples of types of visual character found and photographed by the analyst during field study trips along the Central Valley Wye alternatives include farms, grazing land, irrigated row crop agriculture, orchards, industrial, single-family residential, undeveloped vacant lots, and parks.

Visual quality represents a qualitative assessment of the composition of the landscape character–defining features. Visual quality is evaluated in terms of three factors—vividness, intactness, and unity—defined as follows:

- **Vividness** is the degree of memorability or distinctiveness of landscape components as they combine in distinctive visual patterns.

- **Intactness** is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive and out-of-place features and of elements that might 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 visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components (including human-built components) and their relationship in the landscape or to an undisturbed natural landscape (FHWA 1988).

In this study, visual quality is rated on a five-point scale—low, moderately low, moderate, moderately high, and high—and the overall rating is derived from the average rating of the three visual quality factors (i.e., vividness, intactness, and unity) taken in combination.

In addition to the data sources described in the Merced to Fresno Final EIR/EIS, analysts reviewed updated laws and planning documents, and participated in community outreach events.

4.2.5 Visual Appearance with Central Valley Wye

Changes to the visual quality of each KVP was determined by applying the Environmental Methodology (Authority 2014) and using the visual quality analyst's professional judgment and familiarity with the Central Valley Wye alternatives. The analyst also reviewed engineering drawings of Central Valley Wye components and aerial images, visited the Central Valley Wye vicinity on several occasions, and then produced and examined visual simulations of the KVPs. These visual simulations are included in Appendix A. The photosimulations were then rated for their visual quality using the same methodology as was applied to the images of existing conditions. The determination of the effects on the entire landscape unit was based in large part on the effects on the KVPs within the landscape units. The determination also included the analyst's on-the-ground familiarity with the landscape units within the footprint of the Central Valley Wye alternatives. As indicated in Section 4.2.2, Viewer Groups, Viewer Sensitivity, and Viewer Response, a five-point scale of low, moderately low, moderate, moderately high, and high was used to rate visual quality and its components (vividness, intactness, and unity).

4.2.6 Visual Effects Assessment

Visual effects are determined by combining the level of change to the visual resource with the viewer sensitivity to determine the visual effect. Together, these two ratings are predictive of anticipated viewer response to the Central Valley Wye alternatives. Aerial maps of each KVP are included in Appendix A. Table 6-1 summarizes ratings for the Central Valley Wye alternatives.

The methodology in this section describes the assessment of direct visual effects. Indirect visual effects typically involve a chain of cause-and-effect relationships that can take time to develop and can occur at a distance from the project. An indirect effect on aesthetics and visual resources could result from residential or commercial developments that arise from a location's enhanced accessibility due to a transportation station. Because the Central Valley Wye would have no station, no indirect effects are expected on aesthetics and visual resources.

5 AFFECTED ENVIRONMENT

This section describes the affected environment for aesthetics and visual resources in the Central Valley Wye study area, including KVPs.

5.1 Central Valley Wye Viewshed

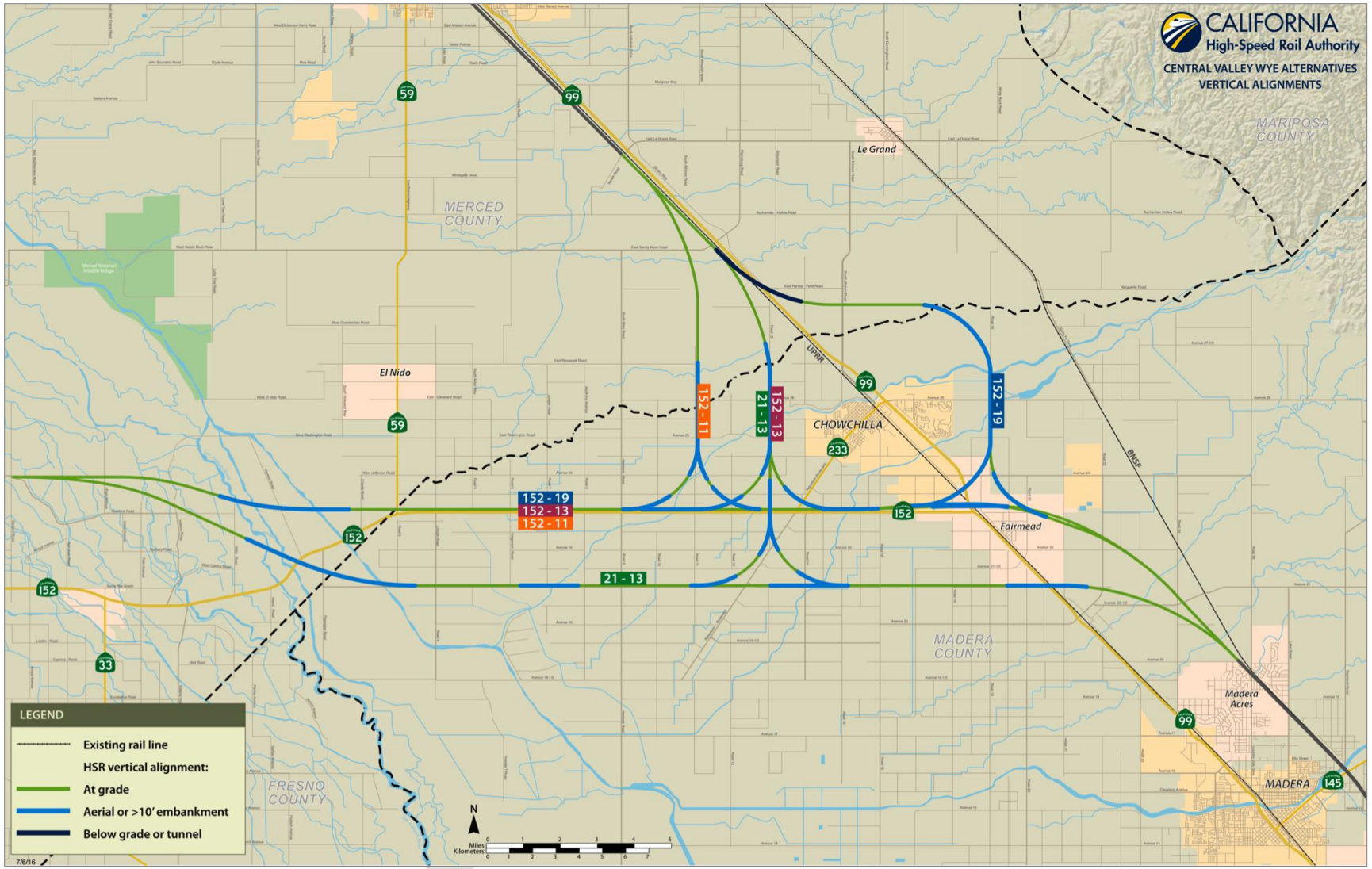
The Central Valley Wye viewshed is the area that could potentially have views of Central Valley Wye features, and the area potentially viewed from the Central Valley Wye. Due to the flat topography, the Central Valley Wye viewshed is highly dependent on the Central Valley Wye features themselves. For the at-grade portions of the alternative alignments with no buildings, landscape, or vegetation that limit a view, the potential visibility of the Central Valley Wye would be limited by the low level of prominence of the features (railbed, contact poles and wires, the trains themselves). Beyond foreground viewing distances of 0.25 mile or even less, these portions of the Central Valley Wye would have a limited visual presence. In segments where the Central Valley Wye would be elevated on berms higher than 10 feet or on aerial structures, the area of visual effect would increase correspondingly. Figure 5-1 shows the approximate extent of at-grade, on embankment, aerial, and below-grade track in the Central Valley Wye alternatives. Accounting for the anticipated scale of the features in different segments of the aesthetics and visual RSA, the zone of potential substantial effects is not expected to extend beyond a foreground distance of 0.5 mile from the Central Valley Wye alternatives or features.

5.1.1 Regional Landscape

In the broadest physiographic terms, all Central Valley Wye alternatives are within a single landscape unit, the Central Valley: the vast level plain between the Sierra Nevada and Coast Ranges. The Central Valley extends more than 400 miles from north-central California to the Tehachapi Mountains and encompasses more than half of California. The San Joaquin Valley is the southern portion of the Central Valley, extending south from the California Delta to the Tehachapi Mountains.

The San Joaquin Valley landscape is defined by vast reaches of agricultural land organized in a rigid north-south, east-west grid, punctuated by large cities such as Merced and Fresno and numerous small, predominantly agricultural towns like Chowchilla that retain historic downtowns. Unlike portions of the northern Central Valley in the vicinity of Sacramento, these towns have not yet cohered into large corridors of continuous suburban sprawl but remain distinct settlements, surrounded by open agricultural land. Unless blocked by orchards, other tall crops, or towns, views tend to extend great distances over the open agricultural fields. In addition to the pattern of agricultural fields and towns, the riparian corridors of the Chowchilla and Fresno Rivers and Ash and Berenda Sloughs feeding the San Joaquin River constitute another distinctive component of the valley landscape.

The riparian woodlands of these waterways have been confined to very narrow corridors but remain a defining feature of the Central Valley landscape. Other distinctive landscape features include the contrasting vertical forms of agribusiness facilities; the extensive but usually inconspicuous network of canals and ditches; and the typical configuration of tall, isolated tree groves surrounding older rural residences. The Sierra Nevada and Coast Ranges stand generally between 30 and 60 miles from the Central Valley Wye corridor at their nearest points and can be a defining and vivid landscape feature. However, valley haze frequently obscures these scenic views.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 5-1 High-Speed Rail Vertical Alignment

5.2 Existing Visual Resources

For this discussion, visual resources include locally designated scenic routes, views toward or within natural areas, typical views from residential areas, and long views across the landscape that are evocative of the natural environment of the greater San Joaquin Valley. These visual resources have been identified in planning and policy documents, in cultural resource reports, or in evaluations of scenic quality and apparent public popularity during field work related to aesthetics and visual resources. As described in Section 4.2.3, Landscape Units and Key Viewpoints for Visual Assessment, the RSA is divided into landscape units, and KVPs have been identified to capture specific examples of visual resources for analysis. In general, the following visual resources are common to each of the Central Valley Wye alternatives:

- **Rural San Joaquin Valley**—Panoramic views toward the Sierra Nevada are among the aesthetic and visual resources present throughout the Central Valley, when not obscured by valley haze. Other natural aesthetic amenities in the area include rivers and vast areas comprising a mix of orchards and open field crops. These characteristics predominate in the San Joaquin River and Rural Agricultural landscape units, but are found throughout the RSA. KVPs 1, 2, 3, 4, 7, 8, and 14 provide representative views of this landscape.
- **San Joaquin River, Chowchilla River, Ash Slough, and Berenda Slough**—The Central Valley Wye would cross rivers, sloughs, and varied streams. The riparian forest canopy of these waterways is a highly distinctive natural element of the San Joaquin Valley landscape. Waterway crossings occur in the San Joaquin River, Freeway and Expressway, and Rural Agricultural landscape units. KVPs 3 and 8 feature waterway crossings.
- **Robertson Boulevard (SR 233)**—Robertson Boulevard is the main street of Chowchilla. Palm trees planted in the early 20th century extend along the boulevard, from the east edge of downtown to well south of Avenue 21. The palm-lined roadway is a gateway to the city and one of the major symbols of Chowchilla. Chowchilla has designated West Robertson Boulevard from SR 99 to SR 152 as a scenic corridor. The State Historical Resources Commission designated West Robertson Boulevard as a Point of Historical Reference (City of Chowchilla 2011). The discussions of the Robertson Boulevard Landscape Unit in Section 5.4, Existing Visual Character and Quality, provide greater detail of the corridor. KVP 13 presents a view along Robertson Boulevard towards the SR 152 interchange.

The landscape unit discussions are organized geographically, beginning in the west at Carlucci Road and proceeding east through the Central Valley Wye, then from near the SR 99/Ranch Road interchange south to the Central Valley Wye.

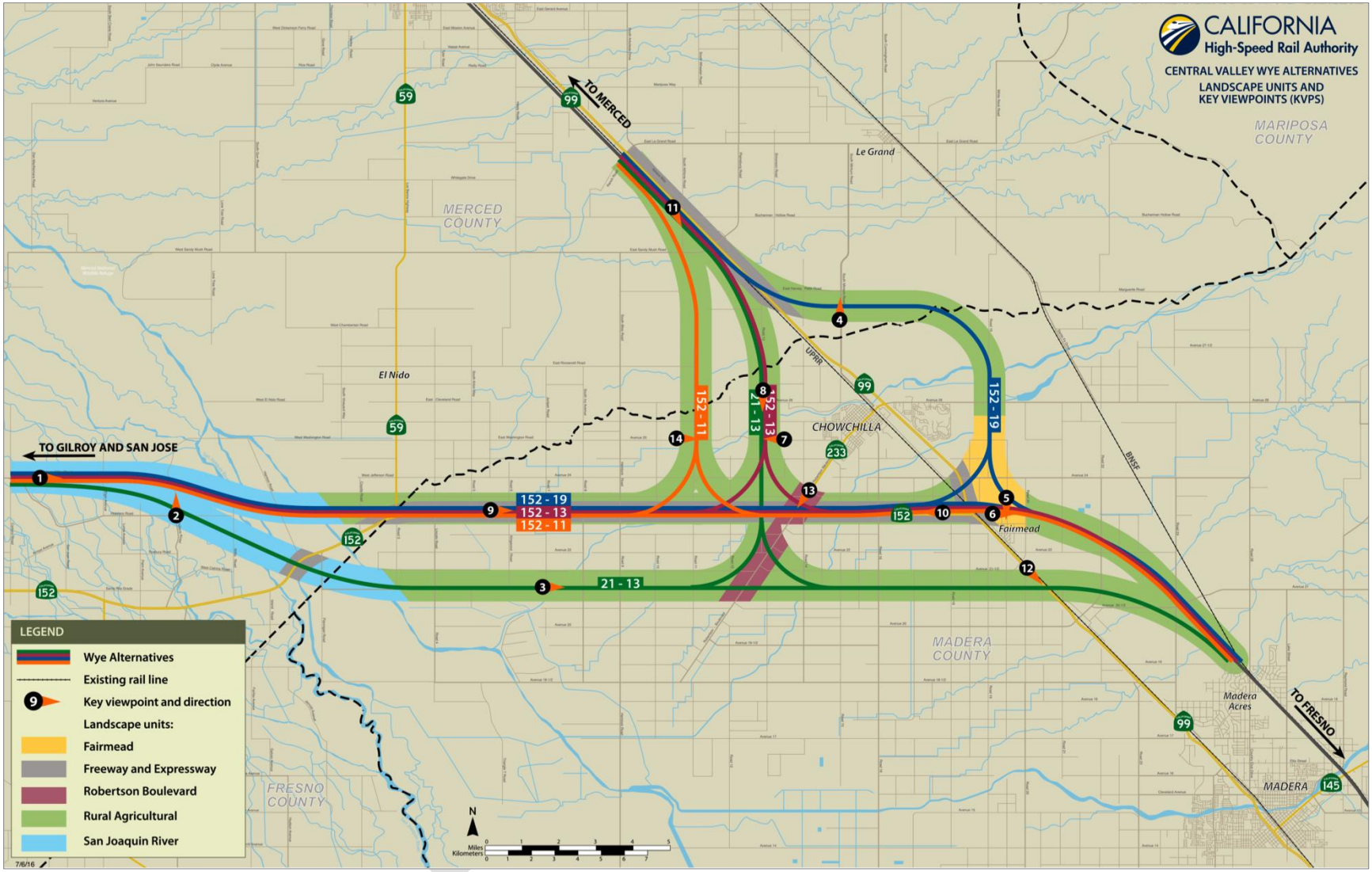
The RSA is divided into five landscape units, each containing a specific visual character. KVPs capture specific views that provide examples of visual character. None of the Central Valley Wye alternatives pass through all KVPs, and KVPs are discussed by landscape unit, resulting in KVPs not being presented in numerical order. Table 5.1 provides an overview of the landscape units and KVPs that make up each Central Valley Wye alternative. An X indicates that a landscape unit or KVP is encountered by the corresponding Central Valley Wye alternative. Figure 5-2 presents a geographic overview of each landscape unit and KVP.

Table 5-1 Landscape Units and Key Viewpoints for each Central Valley Wye Alternative

Landscape Unit/Key Viewpoints	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
San Joaquin River Landscape Unit	X	X	X	X
KVP-1 Henry Miller Road	X	X	X	X
KVP-2 Indiana Road			X	
Rural Agricultural Landscape Unit	X	X	X	X

Landscape Unit/Key Viewpoints	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
KVP-3 Avenue 21 near Road 7			X	
KVP-4 Minturn Road		X		
KVP-7 Avenue 25 near Road 13	X		X	
KVP-8 Road 13 near Ash Slough	X		X	
KVP-14 Avenue 25 near Road 11				X
Freeway and Expressway Landscape Unit	X	X	X	X
KVP-9 SR 152 near Kingwood Road / Road 6	X	X		X
KVP-10 SR 152 near Road 17-1/2	X	X		X
KVP-11 SR 99 south of Ranch Road	X	X	X	X
KVP-12 SR 99 near Avenue 21			X	
Robertson Boulevard Landscape Unit	X	X	X	X
KVP-13 SR 233 / Robertson Boulevard	X	X		X
Fairmead Landscape Unit	X	X		X
KVP-5 Road 19 1/2 near Avenue 24	X	X		X
KVP-6 Avenue 23 Near Road 19-1/2	X	X		X

Source: (author's compilation), 2016
X indicates alternative passes through noted landscape unit or KVP
KVP = key viewpoint
SR = State Route



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 5-2 Central Valley Wye – Landscape Units and Key Viewpoints

5.3 Viewer Groups and Viewer Sensitivity

In the RSA, the majority of viewers are travelers on either SR 99 or SR 152. While their numbers are great, their sensitivity is generally low to moderate. Most travelers are visually engaged in operating their vehicles at high speeds along highways, concentrating on traffic and road conditions. Passengers in vehicles may be observing the passing scenery or engaged in activities, like reading, that limit their sensitivity to the surrounding environment. Where enhanced scenery captures travelers' attention, their sensitivity increases to moderate or higher. Their exposure to views is primarily determined by the speeds at which they are traveling. Exposure to any one view is low when passing at high speeds. Exposure is also limited by the time drivers have to experience views beyond those required for safe operation of their vehicle.

Away from the major highways, the viewers are primarily agricultural workers. Agricultural workers include people engaged in all aspects of agricultural production. As a group, they are found everywhere across the RSA, but due to the seasonal cycles of agriculture, their activities take place in different locations at different times, giving them low exposure to any one location. Workers who tend to canals and irrigation systems move throughout the RSA. Others work transporting materials, harvests, or crews throughout the RSA. Workers tending to orchards or fields shift their locations with the seasons and cycles of the crops. Managers and inspectors likewise can be found moving across the RSA. Agricultural workers generally have a moderate visual sensitivity.

Recreationists, such as hikers, sightseers, or picnickers are often considered to be highly sensitive viewers because the visual quality of the surrounding scenery is a primary concern associated with the activity type. Their exposure tends to be moderate, as their recreational activities bring them to single locations or though landscapes at a slow pace, with time to experience surrounding views. The rural nature of the potential recreational locations in the RSA points toward recreationists using the facilities on an irregular basis—making a special trip to visit the locations—in contrast with recreationists visiting a local park close to their residence or work on a daily or weekly basis, which would lead to a higher exposure. Active recreationists (such as people engaged in sports) often have a lower viewer sensitivity than other recreationists, because the primary focus of the activity is on the sport, not the scenery.

The viewers with the greatest sensitivity are residents observing changes in the visual environment around their homes. Residential viewers have a high familiarity with their visual surroundings and often have a sense of ownership of their views because of this familiarity and the investment they have made in their residence. These viewers have the highest viewer response to changes in the visual and aesthetic environment. Their exposure is also the greatest, as residents spend so much of their lives in and around their homes.

5.4 Existing Visual Character and Quality

5.4.1 SR 152 (North) to Road 13 Wye Alternative

5.4.1.1 San Joaquin River Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 13 Wye Alternative begins west of the San Joaquin River, near the intersection of Henry Miller Road and Carlucci Road. The San Joaquin River Landscape Unit is very sparsely developed, except for agricultural uses. The few homes and agricultural buildings stand out from the landscape, as blocks, due to the sparse development pattern. An occasional silo, large barn, or hedgerow is visible for a great distance across the plain. Crops tend to be low to the ground, especially west of the San Joaquin River. Where there are orchards, they enclose the landscape, but reinforce the Cartesian grid with their regular rows. The lack of variation in elevation or views to distant landmarks leads to a low vividness. Intactness is high because little beyond agriculture is present in the area. Where there is a power pole, barn, or other built feature, it reads as part of the agricultural view. Unity is moderate, with slight variations due to seasonal changes in crop cover and maintenance of fields. For example, a freshly ploughed field with orderly furrows is neater than the same field after cotton harvesting, with loose bolls lining the roads and fields left with browned stalks. Overall, visual quality is moderate. Due to the limited

number of structures in the area, and even fewer residential buildings and after-hours human activity, nighttime lighting is very limited.

The primary viewer group here is agricultural workers, either working in the fields and orchards or driving throughout the area. Focused on work but familiar with the landscape, their sensitivity is moderate. Their exposure is low, as most workers do not remain in one location on a consistent basis and their activities are spread thinly throughout the landscape unit.

The land use patterns west of the San Joaquin River follow a more organic pattern rather than a grid. This differentiates the area from the vast majority of similar agricultural areas in the San Joaquin Valley. The San Joaquin River and other smaller waterways snake through the landscape, while the Eastside Bypass channel cuts in a straight line, but at an angle to the Cartesian grid. Almost all land use is agricultural. There is a potential for increasing recreational uses along the San Joaquin River as its restoration proceeds, but currently there are no recreational facilities planned in the RSA. There are no existing or eligible Section 106 and Section 4(f) properties in this landscape unit.

At KVP-1 Henry Miller Road stretches to the horizon (Figure 5-3). Cotton fields line the road. Little distinguishes this view from anywhere else in the area; therefore, vividness is moderately low. Intactness is high because nothing besides the few trees in the distance encroaches on this agricultural view. Unity is high because the fields are well tended and the roadway runs straight with uniform pavement. Overall visual quality is moderately high.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-3 KVP-1: Henry Miller Road between Carlucci and Elgin Roads (view to east)

Most viewers are agricultural workers, either in the fields or driving to or from work. Lighting is confined to traffic on the road, which is minimal.

The viewer sensitivity, exposure, and visual quality ratings for the San Joaquin River Landscape Unit and KVPs are presented in Table 5-2 and Table 5-3.

Table 5-2 Viewer Sensitivity and Exposure for the San Joaquin River Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
San Joaquin River	M	L
KVP-1 Henry Miller Road	M	L

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-3 Visual Quality for the San Joaquin River Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
San Joaquin River	L	H	M	M
KVP-1 Henry Miller Road	ML	H	H	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.1.2 Rural Agricultural Landscape Unit and Key Viewpoints

The Rural Agricultural Landscape Unit is primarily agricultural with scattered individual residences and agricultural buildings. While agricultural uses vary from low-lying row crops to view-confining orchards, the mix of agricultural development is characterized as a single landscape unit. It comprises agricultural fields, orchards, pastures, and related rural land uses, with considerable continuity of visual character. Figure 5-2 shows the occurrences and limits of this landscape unit.

The Rural Agricultural Landscape Unit makes up most of the Central Valley Wye alignment in the aesthetics and visual RSA. This landscape is characterized by uninterrupted views of the nearly level San Joaquin Valley, often extending to the horizon when air quality permits, and a diversity of agriculture-related activities and production facilities. The most apparent expression of the agricultural landscape is a coarse pattern of vineyards, orchards, cultivated fields, and grazing lands, separated by roads, highways, power lines, irrigation canals, and ditches organized in a highly regular, north–south/east–west grid pattern. Within this expansive, open setting of fields are areas containing agro-industrial uses such as feed lots, storage silos, large processing and warehouse facilities, equipment storage areas, and associated infrastructure of wells, pumping facilities, fuel storage, fencing, power transmission lines, towers, and poles. Lighting is absent in the fields and orchards, occurring only at homes and farm buildings and from vehicles traveling the roads.

Typically, there are few indications of viewer sensitivity in agricultural areas. The primary viewer group here is agricultural workers, either working in the fields and orchards or driving through the area. Focused on work but familiar with the landscape, their sensitivity is moderate. Their exposure is low, as most workers do not remain in one location on a consistent basis and their activities are spread thinly across the landscape unit. Figure 5-4 provides representative views of the Rural Agricultural Landscape Unit.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-4 Typical Rural Agricultural Views

Differences among field, orchard, vineyard, and crop types offer some seasonal interest and visual variety. However, the level topography, vast scale, and repetitiousness of agricultural uses tend to contribute to a lack of variety, resulting in moderately low vividness. Views of vivid features, such as mountains or natural riparian corridors, are few and of limited prominence. In areas where orchards are the predominant use, views are limited by the dense, geometric

plantings of the trees, blocking long views. Visual unity and intactness are moderately high, presenting a continuity of pattern and character, topography and land use; but views are also regularly interrupted by the vertical and visually utilitarian features of modern industrial agricultural production. The contrasting form and character of these utilitarian features usually detract from the prevailing landscape unity. Overall, the visual quality of the landscape unit is moderate. There are no existing or eligible Section 106 or Section 4(f) properties in this landscape unit.

KVP-7 shows a typical view, west of Chowchilla, along Avenue 25 (Figure 5-5). The majority of the Rural Agricultural Landscape Unit's components are present. To the right is a mature orchard. Avenue 25 bisects the view, with orderly utility poles lining each side of the roadway, progressing toward the horizon. Low crops grow to the left side of the road. In the distance, a home and large barns are visible. Despite all these components, the view's vividness is low because there is nothing to serve as a landmark to distinguish this view. Intactness is high, with little interrupting the scene. With neat fields and orchards lining a roadway in good condition and power poles that are orderly, evenly spaced, and of equal height, unity is high, resulting in moderately high visual quality. Viewer sensitivity is moderate because most viewers are agricultural workers or travelers passing through the area. Viewer exposure is low because of the small number of vehicles observed using the road during field work.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-5 KVP-7: Avenue 25 near Road 13 (view to the west)

KVP-8 looks south along Road 13 as it approaches Ash Slough (Figure 5-6). Like many other locations in the rural agricultural landscape, the roadway and utility poles converge to a single point on the horizon. The paired row of cypresses and the rise in the roadway to cross Ash Slough provide landmarks discernible to regular travelers on the road, but overall the vividness is moderately low. Intactness is moderately high, with the single tree to the left of the roadway intruding on the otherwise orderly geometric forms of the vanishing roadway and utility poles, low-block forms of the orchards, and the regular march of the cypresses out of the view to the left. These well-tended forms result in a high unity. Overall visual quality is moderately high. Because the road is very lightly traveled, viewer exposure is low. The primary viewers are travelers and agricultural workers, with moderate viewer sensitivity.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-6 KVP-8: Road 13 near Ash Slough (view to the south)

The viewer sensitivity, exposure, and visual quality ratings for the Rural Agricultural Landscape Unit and KVPs are presented in Table 5-4 and Table 5-5.

Table 5-4 Viewer Sensitivity and Exposure for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Rural Agricultural	M	L
KVP-7 Avenue 25 near Road 13	M	L
KVP-8 Road 13 near Ash Slough	M	L

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-5 Visual Quality for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Rural Agricultural	ML	MH	MH	M
KVP-7 Avenue 25 near Road 13	L	H	H	MH
KVP-8 Road 13 near Ash Slough	ML	MH	H	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.1.3 Freeway and Expressway Landscape Unit and Key Viewpoints

While the primary highways in the RSA, SR 99 and SR 152, pass through the San Joaquin River and Rural Agricultural Landscape Units, the number of travelers on the highways and resulting Central Valley Wye viewers warrant a separate landscape unit. Average daily traffic on SR 152—16,000 average daily traffic west of SR 233—is comparable to the City of Chowchilla's population of 18,720 people (U.S. Census Bureau 2010). SR 99 approaches 50,000 average daily traffic south of SR 152 (Authority and FRA 2016).

Viewers in the Freeway and Expressway Landscape Unit are travelers on highways, either drivers or passengers. Their visual sensitivity is low to moderately low. The drivers are focused on the highway, with few distractions from the passing agricultural views. Neither SR 99 nor SR 152 is designated as a scenic highway. Exposure to views is also low, as traffic generally moves fast through the area.

Vividness in the landscape unit tends to be moderately low, due to the absence of significant geographical features and the straight alignments of the highways. Places are marked by signs and interchanges and few other visual cues. Where there are orchards adjacent to the highway, they limit long views along the highway, emphasizing the lineal view down the highway. Lower crops open views from the highway, but the level topography, vast scale, and repetitiousness of agricultural uses tend to contribute to a lack of variety. Deviations to the agricultural landscape occur at the riparian crossings, which are usually identified by the trees lining the banks. Visual unity and intactness are moderately high, presenting a continuity of pattern and character, topography and land use, resulting in a moderately high landscape unity. Visual quality is moderately high, though it varies depending on specific local circumstances. The primary source of light is the traffic on the roadway.

The Chowchilla Canal is an eligible Section 106 and Section 4(f) property in this landscape unit. It was built in 1872 and is located in western Madera County. The canal carries water north from the San Joaquin River at Mendota to its terminus near the Chowchilla River. Originally constructed as an earthen canal, large segments of the Chowchilla Canal were later lined with concrete. Nevertheless, it largely maintains its historic alignment and continues to convey its significance as one of the first large-scale canals constructed in the region. The canal is crossed many times by roadways, including SR 152 west of Road 5.

KVP-9 shows a typical view along SR 152 (Figure 5-7). SR 152 is the primary west–east highway across the middle San Joaquin Valley. The roadway is a four-lane expressway with constant traffic. The landscape along SR 152 is similar to that along the many rural roads that traverse the RSA, with the addition of some roadway commercial uses at intersections. The heavier traffic and longer-distance travelers on SR 152 are less sensitive to the aesthetic and visual environment than the primarily local travelers on other roads in the area. This is because many are passing through the area (not residents), are traveling at high speed (which focuses a driver's viewpoint), are commercial drivers (working), or are commuters. Vividness is low because SR 152 runs for miles in a straight line in this area; nothing visually distinguishes this location from any of the other intersections along the expressway. The view is highly intact. Adjoining agricultural crops outline the view. The highway view is long and clear to the vanishing point. Unity is moderately high, with mixed pavements causing some visual discordance. Overall visual quality is moderately high.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-7 KVP-9: SR 152 near Kingwood Road/Road 6 (view to the east)

KVP-10 shows the intersection of SR 152 and Road 17 1/2 (Figure 5-8) south of Chowchilla. Here, open fields present an expansive view to the north side of the highway with orchards limiting the view to the south. As with KVP-9, vividness is low due to a lack of landmark features. Intactness is moderately high, with only the power poles diverting around the intersection breaking the parallel lines of the view down the highway. Unity is high and is only compromised by the two pavement types. The overall visual quality is moderately high.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-8 KVP-10: SR 152 near Road 17 1/2 (view to the west)

SR 99 is the primary north–south corridor in the eastern San Joaquin Valley. In views from SR 99, when skies are clear, the Sierra Nevada range is often visible to the east. The existing UPRR tracks and SR 99 are part of an existing, wider transportation corridor through the San Joaquin Valley. The UPRR alignment is immediately adjacent to it for much of its length, except in urban areas, where SR 99 has been relocated to bypass the centers of valley cities over the past 60 years. Traffic is heavier than on SR 152. This leads viewers on SR 99 to be more immersed in viewing traffic than surrounding landscapes.

KVP-11 looks west from SR 99 south of Ranch Road (Figure 5-9). Viewers see the adjacent frontage road and UPRR before views of open agricultural fields. This is typical of the landscape unit, and the presence of views toward these features results in a moderately low degree of vividness. Intactness is moderately high, with the road and railway in the mid-ground and the long views to the horizon in the background. Unity is moderately high, with the agriculture appearing neat and orderly. Overall, visual quality is moderate. There is a relatively large number of viewers from this viewpoint, but viewer sensitivity and exposure are low because views are from vehicles traveling at highway speeds.

Source: @ @37.2136554,-120.3640188. ***Google Streetview****, June 2015. February 29, 2016.* *FINAL – OCTOBER 12, 2016*

Figure 5-9 KVP-11: SR 99 south of Ranch Road (view to the south)

The viewer sensitivity, exposure, and visual quality ratings for the Freeway and Expressway Landscape Unit and KVPs are presented in Table 5-6 and Table 5-7.

Table 5-6 Viewer Sensitivity and Exposure for the Freeway and Expressway Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Freeway and Expressway	ML	L
KVP-9 SR 152 near Kingwood Road / Road 6	ML	L
KVP-10 SR 152 near Road 17 1/2	L	L
KVP-11 SR 99 south of Ranch Road	L	L

Source: Architecture 21 (author's compilation), 2016
Viewer Sensitivity, Exposure, and Response: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

Table 5-7 Visual Quality for the Freeway and Expressway Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Freeway and Expressway	ML	MH	MH	MH
KVP-9 SR 152 near Kingwood Road / Road 6	L	H	MH	MH
KVP-10 SR 152 near Road 17 1/2	L	MH	H	MH
KVP-11 SR 99 south of Ranch Road	ML	MH	MH	M

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

5.4.1.4 Robertson Boulevard Landscape Unit and Key Viewpoints

The Robertson Boulevard Landscape Unit encompasses Robertson Boulevard and its flanking historic landscape of ornamental palm trees. From SR 152 north, it is SR 233 and serves as the primary western entrance to the city of Chowchilla. South of SR 152, Robertson Boulevard is a county road, but it is lined with the same procession of palms. There are residences along both sides of the roadway, with density increasing from south to north approaching the center of Chowchilla. Travelers along the road are the main viewer group, with a moderately high sensitivity because of the prominence of the palms lining the straight roadway. Residents constitute a secondary viewer group—more so north of SR 152 where homes are closer together, forming a linear neighborhood. They have a moderate visual exposure to the neighborhood along the roadway and high sensitivity to views around their homes.

The palm-lined roadway is highly vivid. The trees are mature and stretch mostly uninterrupted for the length of Robertson Boulevard, becoming sparse near its southern end, making overall intactness moderately high. The regular pattern of shorter palms interspersed with taller ones leads to a high degree of visual unity, resulting in an overall high visual quality for the landscape unit.

South of SR 152, Robertson Boulevard is a county road lined with the continued procession of palms, but the flanking land uses transition rapidly from residential north of the expressway to agricultural as the roadway proceeds away from Chowchilla. The observed traffic volumes are much lower than north of SR 152, reducing viewer exposure to moderately low. The density of buildings lining the road is lower as well, more characteristic of the Rural Agricultural Landscape Unit, with most viewers being moderately sensitive agricultural workers.

The palm-lined roadway remains highly vivid in this location. The trees are mature and stretch mostly uninterrupted. Intactness is moderately high. The regular pattern of shorter palms interspersed with taller ones lead to a high degree of visual unity, resulting in an overall high visual quality for the landscape unit. Lighting in this landscape unit is limited to a few streetlights at the SR 152 interchange and sources emanating from the scattered homes and buildings.

One site eligible for listing in the National Register of Historic Places appears in the Robertson Boulevard Landscape Unit—the Robertson Boulevard Tree Row. The Robertson Boulevard Tree Row appears to be eligible for the National Register of Historic Places under Criterion A for its association with the initial establishment of Chowchilla (the trees were planted to beautify Chowchilla's main street and draw settlers into the community), and under Criterion C as an exceptional example of an early 20th century designed landscape along a roadway. The Robertson Boulevard Tree Row is significant at the local level, with a period of significance of 1912–1913.

In KVP-13 the palms are clearly visible near the SR 152 interchange (Figure 5-10). The palms stop well short of the interchange, but continue to line Robertson Boulevard south of the interchange. The view is vivid, with the historic palms clearly identifying the roadway as Robertson Boulevard and the rise of the roadway for the SR 152 overcrossing pinpointing the location. Intactness is moderately high. The different species of trees and the streetlight at the interchange clash with the repeated form and spacing of the palm trees. Unity is high, with the palms in good health and the roadway running between neat orchards. These factors combine into a high visual quality at this KVP. This is a gateway for the city of Chowchilla. Travelers experience the scenic roadway with a moderately high visual sensitivity. Exposure is moderately high, as travelers pass the repeated procession of palms for a number of minutes as they drive on the boulevard.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-10 KVP-13: Robertson Boulevard near SR 152 (view to the south)

The viewer sensitivity, exposure, and visual quality ratings for the Robertson Boulevard Landscape Unit and KVPs are presented in Table 5-8 and Table 5-9.

Table 5-8 Viewer Sensitivity and Exposure for the Robertson Boulevard Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Robertson Boulevard	MH	MH
KVP-13 SR 233 / Robertson Boulevard	MH	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

Table 5-9 Visual Quality Response for the Robertson Boulevard Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Robertson Boulevard	H	MH	H	H
KVP-13 SR 233 / Robertson Boulevard	H	MH	H	H

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

5.4.1.5 Fairmead Landscape Unit and Key Viewpoints

Lying east of SR 99, Fairmead consists of homes, a school, and a church. Two state correctional facilities are located northeast of Fairmead. The lights of the prisons provide a high level of illumination in their immediate vicinity. Figure 5-11 shows the typical density of the residential areas in Fairmead.

The residential areas are primarily small aggregations of homes lining the north–south/east–west road grid. Between homes, the remaining acreage is generally open, used for livestock or agricultural purposes, and is part of the pervasive valley agricultural image. Residences are considered to have high viewer sensitivity because views are of extended duration, and residents have a high level of concern for the quality of their day-to-day living environment. Viewer exposure varies primarily by distance, though visual filtering by vegetation and structures affects

some views. Exposure to views from residences in the Fairmead area is high due to the limited landscaping in most areas. Throughout the community, exposure is moderate because the low density of homes yields few concentrations of viewers. However, exposure is considered high for viewers within the foreground distance zone (less than 0.25 mile), because there is generally little to screen or filter views.

These near-foreground viewpoints comprise the set of locations of this type with high viewer sensitivity and high viewer exposure.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-11 Typical Fairmead Residential Views

Visual quality varies from one home site or settlement to another. The visual quality of some settlements may be rated high due to the presence of trees, architectural style, or site landscaping, which contribute to vividness through attractive tree canopies or distinctive architectural forms (weathered barns, water towers, period architecture); or generally high visual unity or intactness (for example, the classic old farms with tightly organized, tall tree canopies that appear as highly unified vertical islands). Other sites or congregations of homes may rate low because of structure deterioration, presence of abandoned farm equipment, landform disturbances, or visual clutter and other expressions of low visual unity and intactness. The visual quality of this landscape is strongly influenced by the surrounding agricultural landscape, and is considered moderate overall. There are no existing or eligible Section 106 and Section 4(f) properties in this landscape unit.

KVP-5 provides a view of a residential area in northern Fairmead (Figure 5-12). Vividness is moderately low because no buildings or landscape provide a landmark. Intactness is moderate. Fences line the roadway, some set back out of view from the road, some in poor repair, and utility poles and mailboxes appear at regular intervals. Unity is moderate, as well, with consistent built components. Therefore, visual quality is moderate. Because this is a residential area, viewer sensitivity and exposure are both high. Few light sources in this landscape unit exist, with the exception of fixtures mounted on area buildings.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-12 KVP-5: Fairmead, Road 19 1/2 near Avenue 24 (view to the south)

KVP-6 is located just south and west of KVP-5 (Figure 5-13). The low-density development typical of the community of Fairmead is evident. Homes are spread apart, separated by grazing lands and agriculture. Vividness is moderately low because no buildings or landscape provide a landmark. Intactness is moderate. Fences and informal landscaping line the roadway. Homes are set back out of view from Avenue 23, or are visible across fields. Unity is moderate, with consistent built components, but some of those components, such as landscaping, are inconsistently maintained. Because this is a residential area, viewer sensitivity and exposure are both high. Overall, visual quality is moderate. Few light sources are present in this landscape unit, with the exception of fixtures mounted on area buildings.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-13 KVP-6: Fairmead, Avenue 23 near Road 19 1/2 (view to the east)

The viewer sensitivity, exposure, and visual quality ratings for the Fairmead Landscape Unit and KVPs are presented in Table 5-10 and Table 5-11.

Table 5-10 Viewer Sensitivity and Exposure for the Fairmead Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Fairmead	H	H
KVP-5 Road 19-1/2 near Avenue 24	H	H
KVP-6 Avenue 23 Near Road 19-1/2	H	H

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-11 Visual Quality for the Fairmead Landscape Unit and Key Viewpoints, SR 152 (North) to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Fairmead	ML	M	M	M
KVP-5 Road 19-1/2 near Avenue 24	ML	M	M	M
KVP-6 Avenue 23 Near Road 19-1/2	ML	M	M	M

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.2 SR 152 (North) to Road 19 Wye Alternative

5.4.2.1 San Joaquin River Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 19 Wye Alternative would pass through the same area of the San Joaquin River Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative.

5.4.2.2 Rural Agricultural Landscape Unit and Key Viewpoints

The Rural Agricultural Landscape Unit is primarily agricultural with scattered individual residences and agricultural buildings. While agricultural uses vary from low-lying row crops to view-confining orchards, the mix of agricultural development is characterized as a single landscape unit. It comprises agricultural fields, orchards, pastures, and related rural land uses, with considerable continuity of visual character. There appear to be no existing or eligible Section 106 and Section 4(f) properties in this landscape unit.

KVP-4 (Figure 5-14) shows Minturn Road as it passes the Minturn Nut Company, northeast of Chowchilla. Viewers at this location are travelers on Minturn Road and workers at the industrial plant. Visual exposure is low for travelers as they pass quickly through the view. Their sensitivity is moderately low on the busy road. Workers at the plant, a smaller group of viewers, have moderate exposure, experiencing the view as part of their daily drive to work activities at the plant. Their sensitivity is moderate. Vividness is moderately high, because the facility is a landmark along the road connecting SR 99 to the town of Le Grand. Intactness is moderate, with the parking area and security fencing out of place in an otherwise agricultural setting. The redwood trees that screen the factory from the highway are of a large and nonnative species in the San Joaquin Valley. Unity is high, because all prominent features in the view—the roadway, utility poles, agriculture, and factory—are all well maintained and orderly. These factors combine for a moderately high visual quality.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-14 KVP-4: Minturn Road near Porters Road (view to the north)

The viewer sensitivity, exposure, and visual quality ratings for the Rural Agricultural Landscape Unit and KVPs are presented in Table 5-12 and Table 5-13.

Table 5-12 Viewer Sensitivity and Exposure for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 19 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Rural Agricultural	M	L
KVP-4 Minturn Road	ML	ML

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-13 Visual Quality for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 19 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Rural Agricultural	ML	MH	MH	M
KVP-4 Minturn Road	MH	M	H	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.2.3 Freeway and Expressway Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 19 Wye Alternative would pass through the same areas of the Freeway and Expressway Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative along SR 152, and for a similar but greater distance, following SR 99 for about 1 mile more north of Chowchilla.

5.4.2.4 Robertson Boulevard Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 19 Wye Alternative would pass through the same area of the Robertson Boulevard Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative.

5.4.2.5 Fairmead Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 19 Wye Alternative would pass through the same area of the Fairmead Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative.

5.4.3 Avenue 21 to Road 13 Wye Alternative

5.4.3.1 San Joaquin River Landscape Unit and Key Viewpoints

The Avenue 21 to Road 13 Wye Alternative begins west of the San Joaquin River near the intersection of Henry Miller Road and Carlucci Road. The San Joaquin River Landscape Unit is very sparsely developed, except for agricultural uses.

The primary viewer group here is agricultural workers, either working in the fields or driving through the area. Focused on work but familiar with the landscape, their sensitivity is moderate. Their exposure is low, as most workers do not remain in one location on a consistent basis and their activities are spread thinly throughout the landscape unit. There are no existing or eligible Section 106 and Section 4(f) properties in this landscape unit.

At KVP-1 Henry Miller Road stretches to the horizon (Figure 5-15). Cotton fields line the road. Little distinguishes this view from anywhere else in the area; hence, vividness is moderately low. Intactness is high, as nothing besides the few trees in the distance encroaches on this agricultural view. Unity is high, as the fields are well tended and the roadway runs straight with a uniform pavement. Overall visual quality is moderately high.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-15 KVP-1: Henry Miller Road between Carlucci and Elgin Roads (view to east)

Most viewers would be agricultural workers, either in the fields or driving to or from work, with a moderate visual sensitivity, but low exposure. Lighting is confined to traffic on the road, which is minimal.

At KVP-2, Indiana Road runs along a canal in the lowlands west of the San Joaquin River (Figure 5-16). Vividness is moderate, with the route following the curving canal distinguishing this road from the majority of other roads in the area that run straight along grid lines. Intactness and unity are high, with neat fields and a water-filled canal presenting a scene of productive agriculture. Overall visual quality is high. To the east, the San Joaquin River and smaller waterways snake through the landscape, while the Eastside Bypass channel cuts in a straight line but at an angle to the Cartesian grid. Almost all land use is agricultural. There is a potential for future recreational uses along the San Joaquin River as its restoration proceeds, but currently there is no recreational use, limiting the few potential viewers in this area to agricultural workers, with moderate visual sensitivity but low exposure. Because there are very few structures in this landscape, nighttime light sources are almost nonexistent.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-16 KVP-2: Indiana Road, north of Hutchins Road (view to north)

The viewer sensitivity, exposure, and visual quality ratings for the San Joaquin River Landscape Unit and KVPs are presented in Table 5-14 and Table 5-15.

Table 5-14 Viewer Sensitivity and Exposure for the San Joaquin River Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
San Joaquin River	M	L
KVP-1 Henry Miller Road	M	L
KVP-2 Indiana Road	M	L

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-15 Visual Quality for the San Joaquin River Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
San Joaquin River	L	H	M	M
KVP-1 Henry Miller Road	ML	H	H	MH
KVP-2 Indiana Road	M	H	H	H

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.3.2 Rural Agricultural Landscape Unit and Key Viewpoints

The Rural Agricultural Landscape Unit is primarily agricultural with scattered individual residences and agricultural buildings. While agricultural uses vary from low-lying row crops to view-confining orchards, the mix of agricultural development is characterized as a single landscape unit. It comprises agricultural fields, orchards, pastures, and related rural land uses, with considerable continuity of visual character.

The Chowchilla Canal is an eligible Section 106 and Section 4(f) property in this landscape unit. It was built in 1872 and is located in western Madera County. The canal carries water north from the San Joaquin River at Mendota to its terminus near the Chowchilla River. Originally constructed as an earthen canal, large segments of the Chowchilla Canal were later lined with

concrete. Nevertheless, it largely maintains its historic alignment and continues to convey its significance as one of the first large-scale canals constructed in the region. Roadways cross the canal many times. All four Central Valley Wye alternatives would cross the canal adjacent to an existing roadway crossing on a structure, bridge, or culvert, avoiding the need to realign the canal.

Avenue 21 is typical of roadways in the Rural Agricultural Landscape Unit. KVP-3 shows the components of a view repeated throughout the area (Figure 5-17). Vividness is moderate, with the waterway crossing and tall trees in the distance providing landmarks distinguishing this location from others along Avenue 21. Intactness is moderately high; the utility poles and bridge crossing the waterway intrude on the straight lines of the remaining infrastructure. Unity is moderate because the road surface is in poor condition and the weeds are intruding onto the roadway. These factors combine for a moderate visual quality. As with other locations in the Rural Agricultural Landscape Unit, viewers are mostly agricultural workers, with moderate viewer sensitivity and low exposure.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-17 KVP-3: Avenue 21 near Road 7 (view to the east)

The Avenue 21 to Road 13 Wye Alternative also runs adjacent to Road 13 through the Rural Agricultural Landscape Unit previous described for KVP-7 and KVP-8.

The viewer sensitivity, exposure, and visual quality ratings for the Rural Agricultural Landscape Unit and KVPs are presented in Table 5-16 and Table 5-17.

Table 5-16 Viewer Sensitivity and Exposure for the Rural Agricultural Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Rural Agricultural	M	L
KVP-3 Avenue 21 near Road 7	M	L
KVP-7 Avenue 25 near Road 13	M	L
KVP-8 Road 13 near Ash Slough	M	L

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-17 Visual Quality for the Rural Agricultural Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Rural Agricultural	ML	MH	MH	M
KVP-3 Avenue 21 near Road 7	M	MH	M	M
KVP-7 Avenue 25 near Road 13	L	H	H	MH
KVP-8 Road 13 near Ash Slough	ML	MH	H	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.3.3 Freeway and Expressway Landscape Unit and Key Viewpoints

SR 99 is the primary north–south corridor in the eastern San Joaquin Valley. In views from SR 99 when skies are clear, the Sierra Nevada range is often visible to the east. The existing UPRR tracks and SR 99 are part of an existing, wider transportation corridor through the San Joaquin Valley. The UPRR is immediately adjacent to SR 99 for much of its length except in urban areas, where SR 99 has been relocated to bypass the centers of valley cities over the past 60 years. Traffic is heavier than on SR 152, leading viewers on SR 99 to be more immersed in viewing traffic than surrounding landscapes. There are no existing or eligible Section 106 and Section 4(f) properties in this landscape unit for the Avenue 21 to Road 13 Wye Alternative.

Figure 5-18 shows KVP-12, looking south along SR 99, near Avenue 21. The UPRR runs on the east side of the freeway. Near Avenue 21, the view is expansive and open, but vividness is low. Nothing on the wide horizon offers a visual cue to the viewer's location along the highway. Intactness and unity are high, with the neat parallel lanes of the freeway amplified by the median guardrail and flanking outer embankments. Overall visual quality is moderately high. There is a relatively large number of viewers from this viewpoint, but viewer sensitivity and exposure are low because views are from vehicles traveling at freeway speeds.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 5-18 KVP-12: SR 99 near Avenue 21 (view from Frontage Road to the south)

The viewer sensitivity, exposure, and visual quality ratings for the Freeway and Expressway Landscape Unit and KVPs are presented in Table 5-18 and Table 5-19.

Table 5-18 Viewer Sensitivity and Exposure for the Freeway and Expressway Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Freeway and Expressway	ML	L
KVP-11 SR 99 south of Ranch Road	L	L
KVP-12 SR 99 near Avenue 21	L	L

Source: Architecture 21 (author's compilation), 2016
Viewer Sensitivity, Exposure, and Response: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

Table 5-19 Visual Quality for the Freeway and Expressway Landscape Unit and Key Viewpoints, Avenue 21 to Road 13 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Freeway and Expressway	ML	MH	MH	MH
KVP-11 SR 99 south of Ranch Road	ML	MH	MH	M
KVP-12 SR 99 near Avenue 21	L	H	H	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High
SR = State Route

5.4.3.4 Robertson Boulevard Landscape Unit and Key Viewpoints

The Robertson Boulevard Landscape Unit encompasses Robertson Boulevard and its historic landscape of ornamental palm trees. From SR 152 north, it is SR 233 and serves as the primary western entrance to the city of Chowchilla. South of SR 152, Robertson Boulevard is a county road, but it is lined with the same procession of palms. There are residences along both sides of the roadway, with density increasing from south to north approaching the center of Chowchilla. Travelers along the road make up the main viewer group, many of them from the local area. Residents constitute a secondary viewer group, more so north of SR 152 where homes are closer together, forming a linear neighborhood. Residents have a moderate visual exposure to the neighborhood along the roadway and high sensitivity to views around their homes.

The palm-lined roadway is highly vivid. The trees are mature and stretch mostly uninterrupted for the length of Robertson Boulevard, becoming sparse near its southern end. Intactness is moderately high. The regular pattern of shorter palms interspersed with taller ones lead to a high degree of visual unity, resulting in an overall high visual quality for the landscape unit.

South of SR 152, Robertson Boulevard is a county road lined with the continued procession of palms, but the flanking land uses transition rapidly from residential north of the expressway to agricultural as it proceeds away from Chowchilla. The observed traffic volumes are much lower than north of SR 152, reducing viewer exposure to moderately low. The density of buildings lining the road is lower as well, more characteristic of the Rural Agricultural Landscape Unit, with most viewers being moderately sensitive agricultural workers.

The palm-lined roadway remains highly vivid in this location. The trees are mature and stretch mostly uninterrupted. Intactness is moderately high. The regular pattern of shorter palms interspersed with taller ones lead to a high degree of visual unity, resulting in an overall high visual quality for the landscape unit. Lighting in this landscape unit is limited to a few streetlights at the SR 152 interchange and sources emanating from the scattered homes and buildings.

One site eligible for listing in the National Register of Historic Places appears in the Robertson Boulevard Landscape Unit—the Robertson Boulevard Tree Row. The Robertson Boulevard Tree Row is eligible for the National Register of Historic Places under Criterion A for its association with the initial establishment of Chowchilla (the trees were planted to beautify Chowchilla's main street and draw settlers into the community), and under Criterion C as an exceptional example of an early 20th century designed landscape along a roadway. The tree row is significant at the local level, with a period of significance of 1912–1913.

The viewer sensitivity, exposure, and visual quality ratings for the Robertson Boulevard Landscape Unit are presented in Table 5-20 and Table 5-21.

Table 5-20 Viewer Sensitivity and Exposure for the Robertson Boulevard Landscape Unit, Avenue 21 to Road 13 Wye Alternative

Landscape Unit	Viewer Sensitivity	Viewer Exposure
Robertson Boulevard	MH	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-21 Visual Quality for the Robertson Boulevard Landscape Unit, Avenue 21 to Road 13 Wye Alternative

Landscape Unit	Vividness	Intactness	Unity	Overall Visual Quality
Robertson Boulevard	H	MH	H	H

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.3.5 Fairmead Landscape Unit and Key Viewpoints

The Avenue 21 to Road 13 Wye Alternative would not pass through the Fairmead Landscape Unit.

5.4.4 SR 152 (North) to Road 11 Wye Alternative

5.4.4.1 San Joaquin River Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 11 Wye Alternative would pass through the same area of the San Joaquin River Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative.

5.4.4.2 Rural Agricultural Landscape Unit and Key Viewpoints

The San Jose to Fresno leg of the SR 152 (North) to Road 11 Wye Alternative would pass through the same area of the Rural Agricultural Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative. The San Jose to Merced leg and the Merced to Fresno leg would run along Road 11 from SR 152 to SR 99.

KVP-14 looks east along Avenue 25 as it approaches Road 11 (Figure 5-19). The view down Avenue 25 runs to the horizon. A mature orchard borders the south side of the road as far as can be seen from the viewpoint. Well-tended fields of low grasses and row crops provide an open view on the north side of Avenue 25. The outline of the Sierra Nevada is faintly visible in the far distance above a long row of green trees at the far side of the lower crops. Utility poles run parallel and perpendicular to the view, the intersecting poles indicating an intersecting road, but there are no other landmarks visible, resulting in a moderately low vividness. Intactness is high. There are no forms or features visible to detract from or intrude upon the rural agricultural view. The jumble of utility poles at the intersection disturbs an otherwise orderly composition of roadway, orchards, and fields, so unity is moderately high. Overall visual quality is moderately

high. Because the road is lightly traveled, viewer exposure is low. The primary viewers are travelers and agricultural workers, with moderate viewer sensitivity.

Source: @37.1126873,-120.3492013. ***Google Streetview****, June 2013. July 7, 2016.* *FINAL – OCTOBER 12, 2016*

Figure 5-19 KVP-14: Avenue 25 near Road 11 (view to the east)

The viewer sensitivity, exposure, and visual quality ratings for the Rural Agricultural Landscape Unit and KVPs are presented in Table 5-22 and Table 5-23.

Table 5-22 Viewer Sensitivity and Exposure for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 11 Wye Alternative

Landscape Unit / Key Viewpoint	Viewer Sensitivity	Viewer Exposure
Rural Agricultural	M	L
KVP-14 Avenue 25 near Road 11	M	L

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

Table 5-23 Visual Quality for the Rural Agricultural Landscape Unit and Key Viewpoints, SR 152 (North) to Road 11 Wye Alternative

Landscape Unit / Key Viewpoint	Vividness	Intactness	Unity	Overall Visual Quality
Rural Agricultural	ML	MH	MH	M
KVP-14 Avenue 25 near Road 11	ML	H	MH	MH

Source: Architecture 21 (author's compilation), 2016
Key: L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High

5.4.4.3 Freeway and Expressway Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 11 Wye Alternative would pass through the same areas of the Freeway and Expressway Landscape Unit as described for the SR 152 (North) to Road 13 Wye

Alternative along SR 152 and for a similar but shorter distance (3 fewer miles) following SR 99 north of Chowchilla.

5.4.4.4 Robertson Boulevard Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 11 Wye Alternative would pass through the same area of the Robertson Boulevard Landscape Unit as described for the SR 152 (North) to Road 19 Wye Alternative.

5.4.4.5 Fairmead Landscape Unit and Key Viewpoints

The SR 152 (North) to Road 19 Wye Alternative would pass through the same area of the Fairmead Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative.

6 EFFECTS ANALYSIS

This section describes potential effects on aesthetics and visual resources using the criteria discussed in Section 4, Methods for Evaluating Effects. Effects are identified based on Central Valley Wye visibility, HSR-related changes to the visual quality of the existing landscape setting, and the anticipated viewer response to these changes. The Central Valley Wye alternatives would be consistent with applicable general plans and policies regarding aesthetics and visual treatment of the proposed infrastructure. These policies would be fulfilled by the specific design guidelines of the final design phases.

6.1 Analysis of Landscape Units and Key Viewpoints

In the rural San Joaquin Valley portions of the Central Valley Wye alternatives, the construction of the Central Valley Wye and HSR operations would result in permanent changes to areas adjacent to or within view of the Central Valley Wye. These visual changes would occur through new features introduced in the environment, including guideways (both elevated and non-elevated portions), guideway support columns, contact power system, bridges and roadway grade separations, and other HSR infrastructure (such as traction power substations, HSR alignment fencing, and the HSR trains itself). These features would be incompatible and out of scale with the existing visual character in many locations where viewer sensitivity and exposure are high.

The following discussion explains the changes (or lack of change) to the overall visual quality rating of the Central Valley Wye alternatives for each landscape unit in the RSA. The landscape unit determination was based on the KVPs as important viewing locations and representative samples of visual quality with and without the Central Valley Wye. Aerial maps of each KVP are included in Appendix A. Table 6-1 presents a summary of the existing visual quality for each alternative's landscape units and KVPs.

Table 6-1 Existing Visual Quality for Central Valley Wye Alternatives

Landscape Unit / Key Viewpoint	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
San Joaquin River Landscape Unit	M	M	M	M
KVP-1 Henry Miller Road	MH	MH	MH	MH
KVP-2 Indiana Road	-	-	H	-
Rural Agricultural Landscape Unit	M	M	M	M
KVP-3 Avenue 21 near Road 7	-	-	M	-
KVP-4 Minturn Road	-	MH	-	-
KVP-7 Avenue 25 near Road 13	MH	-	MH	-
KVP-8 Road 13 near Ash Slough	MH	-	MH	-
KVP-14 Avenue 25 near Road 11	-	-	-	MH
Freeway and Expressway Landscape Unit	MH	MH	MH	MH
KVP-9 SR 152 near Kingwood Road / Road 6	MH	MH	-	MH
KVP-10 SR 152 near Road 17-1/2	MH	MH	-	MH
KVP-11 SR 99 south of Ranch Road	M	M	M	M
KVP-12 SR 99 near Avenue 21	-	-	MH	-

Landscape Unit / Key Viewpoint	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Robertson Boulevard Landscape Unit	H	H	H	H
KVP-13 SR 233 / Robertson Boulevard	H	H	-	H
Fairmead Landscape Unit	M	M	-	M
KVP-5 Road 19 1/2 near Avenue 24	M	M	-	M
KVP-6 Avenue 23 Near Road 19 1/2	M	M	-	M

Source: Architecture 21 (author's compilation), 2016
M = Moderate, MH = Moderately High, H = High
- = Not Applicable
SR = State Route

6.1.1 SR 152 (North) to Road 13 Wye Alternative

The SR 152 (North) to Road 13 Wye Alternative passes through all five landscape units and nine KVPs as shown on Figure 6-1.

Temporary Construction Effects

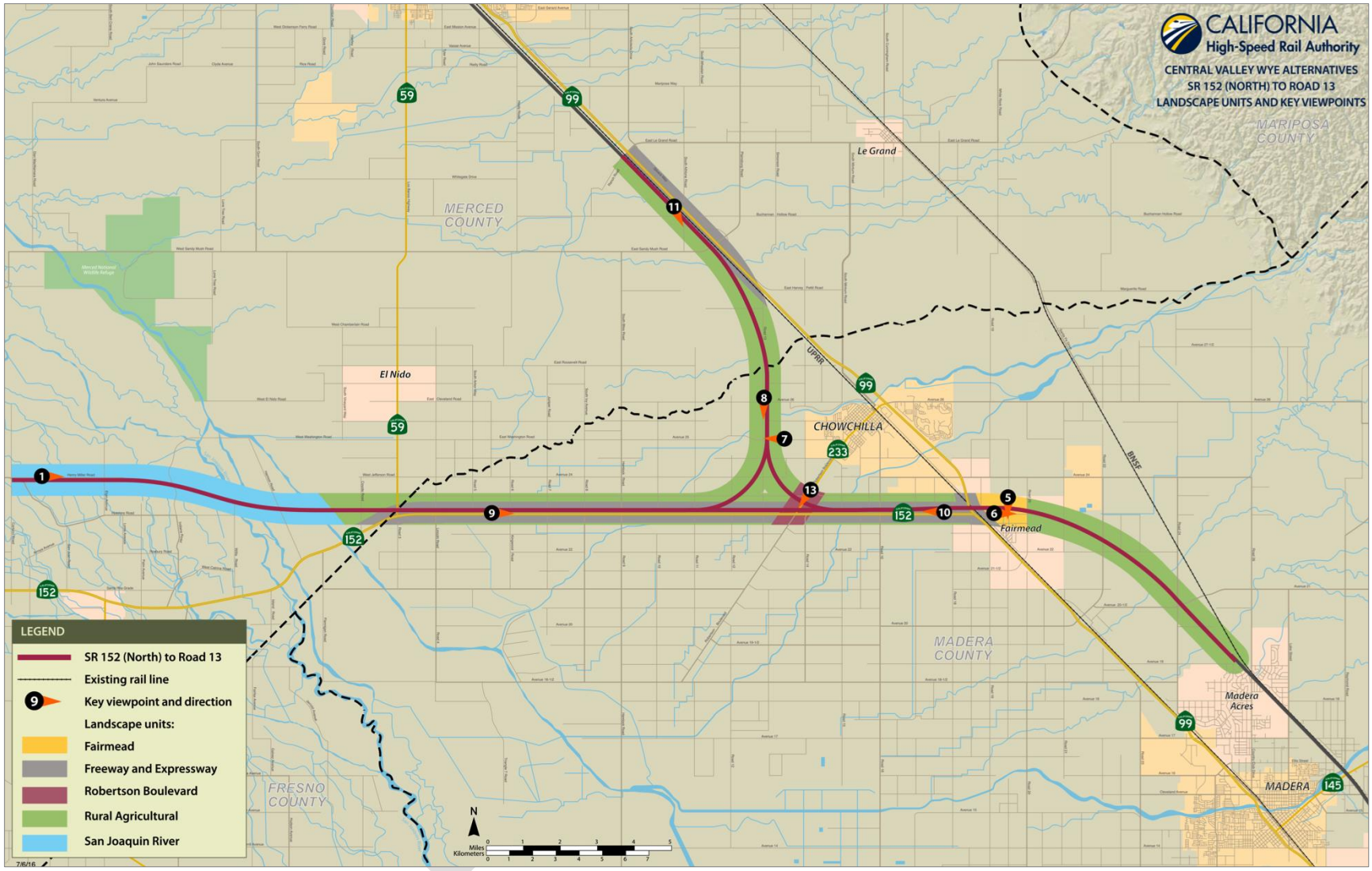
During construction, the following activities could be expected to occur along the length of the SR 152 (North) to Road 13 Alternative in all landscape units. Not all activities would occur at all locations, but each would occur at one or more locations along the alternative. The intensity of the effects on aesthetics and visual resources varies with context. Where the construction activity is visible to viewers such as residents of homes near the Central Valley Wye or travelers on Robertson Boulevard, viewers would have a greater sensitivity than in other areas.

The following activities would take place during the Central Valley Wye construction period:

- Right-of-way preparation, including right-of-way fencing, clearing and grubbing of vegetation, structure removal
- Preparation of construction staging sites
- Construction of roadway and pedestrian detours and closures
- Utility relocation
- Material and equipment deliveries, storage, and removals
- Earthwork, including excavation of cuts and fills
- Pile driving and drilling
- Construction of bridges, viaducts, overpasses, underpasses, trenches, tunnels
- Construction of trackway, communications, overhead contact system (OCS), and related infrastructure
- Construction of traction supply systems, including high voltage feeder lines
- Construction of sound walls and other noise mitigation elements
- Restoration of detoured streets and pathways
- Landscaping and staging site restoration

The SR 152 (North) to Road 13 Wye Alternative would create visual nuisances in the context of residential areas. During the construction period—approximately 1–3 years at any given location—construction equipment storage, earthmoving, construction of structures, and concrete

plant operations would degrade the visual aesthetics for adjacent viewers. Construction activities along the HSR alignment would cause dust, and material stockpiles could create an untidy appearance, collectively degrading the visual unity and intactness of the surroundings. Where these temporary construction activities occur in the context of residential areas and along scenic highways, the activities would adversely affect the existing visual quality. This direct effect on visual quality would be adverse as it would introduce features, such as operation of large construction equipment, that would contrast with the established character of a view and because they would substantially alter the existing visual character of a residential area.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

FINAL – OCTOBER 12, 2016

Figure 6-1 Landscape Units and Key Viewpoints for the SR 152 (North) to Road 13 Wye Alternative

Permanent Construction Effects

The Central Valley Wye infrastructure would degrade visual quality for nearby rural residents throughout the segments of the SR 152 (North) to Road 13 Wye Alternative where sensitive viewers are present. In each case, substantial long-term declines in visual quality affecting sensitive viewer groups would be anticipated. For residential viewers, nearby HSR infrastructure would introduce permanent changes to the aesthetic and visual quality of their view that would contrast with their rural and agricultural setting. Neatly fenced HSR tracks, lines of OCS poles and overhead, berms and embankments rising from the flat landscape, and overcrossings and viaducts for HSR and roadways would impart an industrial or urban aesthetic to the landscape. Permanent effects would result from construction activities including the grading and forming of land for berms and embankments to support future HSR tracks or roadways approaching HSR grade separations. As fill material rises above the natural grade of the landscape, it would block views from adjacent viewpoints and constitute a new form on the landscape. Nearby residents (i.e., sensitive viewers) would be permanently and adversely affected by high berms altering the character of their surroundings by the introduction of a long and solid form blocking views from their homes. Efforts to "soften" the appearance of the berm or embankment would involve providing trees and landscaping to screen elevated HSR features from nearby residents (AVR-IAMF#1, Design Standards); however, the landscaping would only screen the HSR embankment from sensitive viewpoints, not restore views that are permanently blocked, such as distant views to the Sierra Nevada range. The loss of distant views would be an adverse change in visual quality.

Operations Effects

With the commencement of Central Valley Wye operations, trains operating at night would contribute a regular and repeating source of light. Nighttime maintenance activities along the alignment would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Both of these HSR light sources would be similar to the lights of passing vehicles on a roadway or lighting emanating from homes and other buildings. There would be no effect on visual quality.

6.1.1.1 San Joaquin River Landscape Unit and Key Viewpoints

Permanent Construction Effects

Beginning at the western limit of the RSA at Carlucci Road and traveling east, the SR 152 (North) to Road 13 Wye Alternative would cross the lowlands near the San Joaquin River. Approaching the river crossing and Eastside Bypass, a high berm and aerial structure would carry the HSR across the landscape. Vividness would remain low and unity would remain moderate. Because of the height and length of the fill, long-distance views would be lost, and a large-scale structure and high fill would be introduced into a flat and agricultural view, decreasing intactness from high to low and dominating views toward the HSR, resulting in a drop in overall visual quality to low. Under current conditions, an HSR crossing of the San Joaquin River in the San Joaquin River Landscape Unit would have a very limited number of viewers, primarily agricultural workers with moderate sensitivity, and moderately low viewer response to visual changes, resulting in no effect on visual resources.

At KVP-1 (Figure 6-2), the SR 152 (North) to Road 13 Wye alternative would be parallel and immediately adjacent to a low-volume rural road, Henry Miller Road. The view to the south (right) side would be obscured by the embankment of the Central Valley Wye. This embankment would introduce a visual enclosure, limiting the view on one side of the road. The security fence and the OCS poles and wires parallel to the road would reinforce the long view toward the horizon along the road by introducing an ensemble of parallel features also vanishing to the horizon. While the visual effect of obscuring one side of the view from travelers along Henry Miller Road would lower the intactness of the view from high to moderately low, the unity would be reduced from high to moderate, with the HSR infrastructure appearing neat and uniform but industrial against the remote and open agricultural land. Vividness would increase, from moderately low to moderate because the HSR would be a prominent landmark along the roadway. The response of the

principal viewer group, agricultural workers, would be moderately low because of their moderate visual sensitivity and low exposure resulting from shifting work locations. Combined with the drop in visual quality from moderately high to moderate, there would be no effect on visual resources.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-2 KVP-1: Photosimulation, Henry Miller Road between Carlucci and Elgin Roads (view to east)

Operations Effects

With the commencement of Central Valley Wye operations, trains passing through the landscape unit at night would introduce a regular and repeating source of light to the almost dark environment. Nighttime maintenance activities along the alignment would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Because there are almost no homes in the area and observed traffic on the roadways is very light, nighttime viewers in this landscape unit are scarce; consequently, the lights would not adversely affect nighttime views in the area.

6.1.1.2 Rural Agricultural Landscape Unit and Key Viewpoints

Permanent Construction Effects

The SR 152 (North) to Road 13 Wye Alternative would pass through the Rural Agricultural Landscape Unit in two locations—east of Fairmead, curving toward the BNSF corridor; and running from the SR 99 corridor to the SR 152 corridor, passing west of Chowchilla. The Central Valley Wye would be a landmark in the area, increasing vividness in the landscape unit from moderately low to moderate. Intactness would drop from moderately high to moderately low, with HSR structures (viaducts, security fencing) viewed as out of place against fields of crops or looming above orchards. Unity would drop from moderately high to moderately low because of the highly engineered look of the HSR infrastructure contrasting against the natural colors and textures of plants, fields, and trees. Combined, this would result in a drop in visual quality from moderate to moderately low. The response of the principal viewer group, agricultural workers, would be moderately low, due to their moderate sensitivity and low exposure. Therefore, there would be no effect on visual resources.

KVP-7 depicts a number of changes to accommodate the north end of the SR 152 (North) to Road 13 Wye Alternative (Figure 6-3). Avenue 25 would descend into a cut to pass under the

HSR tracks and meet Road 13 in a depressed intersection. Two HSR structures would pass over the roadway, blocking long distance views. The two HSR structures, one a lower bridge crossing Avenue 25 and the second a descending aerial structure carrying one track from the wye, would resemble an urban highway interchange. Vividness would increase from low to moderate because the HSR structures would add a landmark to the environment. Intactness would drop from high to low. The HSR structures and road depression would introduce an urban element with a dominant size to the otherwise agricultural landscape. Unity would remain high because the ensemble of new HSR infrastructure would appear orderly and neat as it spans the roadway. Overall visual quality would drop from moderately high to moderate. Viewer sensitivity and exposure would be unchanged at this KVP, resulting in a moderately low viewer response. There would be no adverse direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-3 KVP-7: Photosimulation, Avenue 25 near Road 13 (view to the west)

Looking south along Road 13 as the SR 152 (North) to Road 13 Wye Alternative would approach Ash Slough, the view from KVP-8 would include a four-track HSR alignment on a wide elevated structure parallel to Road 13 (Figure 6-4). The HSR tracks would be more than 50 feet above grade, with about 40 feet of clearance under the structure. In the distance, the eastern track would split from the three remaining tracks to remain elevated, while the other tracks descend. Vividness would remain moderately low because the new views along Road 13 would all include HSR infrastructure parallel on its eastern side. Intactness would drop from moderately high to low. While the regular rows of supporting columns would echo the regular progression of utility poles and trees in the adjacent orchard, reinforcing the single-point view converging on the horizon, the massive scale of the aerial structure would disrupt the agricultural scale of the terrain, set by the form of the orchard. Unity would decline from high to moderate because the land under the aerial structure would likely be left untended, resulting in disorderly growth of underbrush, contrasting with the well-tended orchards and decorative cypress trees . Visual quality would decline from moderately high to moderately low. Because the road is very lightly traveled and the primary viewer groups are travelers and agricultural workers with short duration views and who are not as focused on viewing scenery, the viewer response would be moderately low. There would be no adverse effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-4 KVP-8: Photosimulation, Road 13 near Ash Slough (view to the south)

Operations Effects

With the commencement of Central Valley Wye operations, trains passing through the landscape unit would introduce a regular and repeating source of light to the almost dark environment. Nighttime maintenance activities along the line would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Because viewers in this landscape unit are scarce and their response to the increase in light would be low, there would be no visual effect.

6.1.1.3 Freeway and Expressway Landscape Unit and Key Viewpoints

Permanent Construction Effects

The SR 152 (North) to Road 13 Wye Alternative would parallel SR 152 for almost 16 miles from SR 59 to SR 99 in Merced and Madera Counties. Closing existing intersections and providing new interchanges at major crossroads would increase the overall visual intactness and unity of the freeway corridor from moderately high to high. Removing the intersections would visually reinforce the long views down the corridor by removing visual distractions—the travelers' need to scan the intersecting road for the potential of cross traffic to unsafely interfere with one's path. Additionally, the line of the HSR OCS along the north side of the highway would focus and reinforce the long view down the highway. Overall visual quality would increase from moderately high to high. While viewer sensitivity of the travelers would remain low, the Central Valley Wye running parallel to the freeway for almost 16 miles would result in a high visual exposure to the Central Valley Wye, resulting in a moderate viewer response because of the extended period of time travelers would be driving adjacent to, and viewing, the HSR. This would be a beneficial direct visual effect.

In the north, near Ranch Road, the Central Valley Wye alternative would run along the west side of the UPRR and SR 99. This is described in the discussion of KVP-11.

The introduction of the SR 152 (North) to Road 13 Wye Alternative to the view in KVP-9 (Figure 6-5) would increase the overall unity by closing the existing intersection across SR 152. This action would visually reinforce the long views down the corridor by removing this visual distraction of the intersection, the travelers' need to scan the intersecting road for the potential of cross traffic to unsafely interfere with one's path. Additionally, the line of the HSR OCS along the north side of the expressway would focus and reinforce the long view down the expressway just as the orchards on the south (right) side of the view block long views to the south. The overall result is an increase in visual quality from moderately high to high. While viewer sensitivity of the travelers would remain low, the HSR running parallel to the highway would result in a high visual

exposure to the Central Valley Wye, resulting in a moderate viewer response due to the extended period of time travelers would be driving adjacent to, and viewing, the HSR. This would be a beneficial direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-5 KVP-9: Photosimulation, SR 152 near Kingwood Road/Road 6 (view to the east)

Another example of the addition of the Central Valley Wye to the SR 152 corridor would occur near SR 99. At KVP-10 (Figure 6-6), the SR 152 (North) to Road 13 Wye Alternative would run adjacent to the expressway on the north side, on a rising embankment. A 750-foot-long overcrossing, with 36-foot clearance over the highway (much longer and higher than typical freeway overcrossings) would carry Road 17 1/2 over both SR 152 and the ascending Central Valley Wye alternative. The previous expansive vista of open fields to both sides of SR 152 would be partially constrained by the overcrossing, filled approaches, and HSR guideway on the embankment. Motorists would be the primary affected viewer group. In general, motorists have a low sensitivity to changes in visual quality and a short duration view, which would result in a low viewer response.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-6 KVP-10: Photosimulation, SR 152 near Road 17 1/2 (view to the west)

The overcrossing would be a prominent feature within a roughly 0.25-mile distance zone and would result in a decline in the existing intactness and unity of the setting from moderately high to moderately low by introducing a large structure with a scale that would dominate the view. The HSR embankment would block views to the north of the highway. Overall visual quality would drop from moderately high to moderate. Given the short duration of viewer exposure to the Central Valley Wye alternative, due to high speeds at which travelers will pass this view, overall viewer response would be low. The result would not be an adverse visual effect.

KVP-11 (Figure 6-7) is typical of the view toward the Central Valley Wye from SR 99 south of Ranch Road. The Merced to Fresno leg of the Central Valley Wye would begin near Ranch Road, along the west side of the UPRR and SR 99. There would be a relatively large number of traveler viewers from this viewpoint, but views would be from vehicles traveling at highway speeds, so viewer sensitivity and exposure would be low, resulting in a low viewer response. The linear and horizontal aspects of the at-grade HSR guideway (guideway and OCS) would appear consistent with existing, similar features of the UPRR and adjacent power lines. The visual quality of the view would remain moderate, so there would be no direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-7 KVP-11: Photosimulation, SR 99 south of Ranch Road (view to south)

Operations Effects

As discussed under Permanent Construction Effects, when construction is complete and SR 152 is operational as a freeway between SR 59 and SR 99, the travelers' need to scan the intersecting road for the potential of cross traffic to unsafely interfere with one's path will be eliminated, resulting in a beneficial visual effect.

With the commencement of Central Valley Wye operations, trains passing through the landscape unit at night would contribute a regular and repeating source of light. Nighttime maintenance activities along the alignment would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Both of these HSR light sources would be similar to the lights of passing vehicles on the highway or nighttime maintenance activities on the highway. There would be no effect on visual quality.

6.1.1.4 Robertson Boulevard Landscape Unit and Key Viewpoints

Permanent Construction Effects

The introduction of the Central Valley Wye to the Robertson Boulevard Landscape Unit would require realignment of intersecting streets near the HSR alignment, reconstruction of the interchange at SR 152, and removal of a number of homes.

The Robertson Boulevard Tree Row is eligible for the National Register of Historic Places under Criterion A for its association with the initial establishment of Chowchilla (the trees were planted to beautify Chowchilla's main street and draw settlers into the community), and under Criterion C as an exceptional example of an early 20th century designed landscape along a roadway. The Robertson Boulevard Tree Row is significant at the local level, with a period of significance of 1912–1913. See Section 3.17, Cultural Resources, of the Supplemental EIR/EIS for more detail.

Within the Robertson Boulevard Landscape Unit, the Central Valley Wye would introduce large structures under and across Robertson Boulevard, blocking longer views down the boulevard. It would also remove a number of existing palm trees along Robertson Boulevard, reducing the intactness of views along Robertson Boulevard from moderately high to moderately low. Vividness would remain high, as the remaining palm trees would still frame the view down Robertson Boulevard. Unity would drop from high to moderate. The reconstructed highway interchange at SR 152 and HSR crossings would all be prominent because of their size and identification as transportation infrastructure, intruding on views down the highway. Visual quality would drop from high to moderate.

Motorists would be the primary affected viewer group. Because the Robertson Boulevard Tree Row is a gateway to the City of Chowchilla, motorists' sensitivity would be moderately high. Residents along Robertson Boulevard would also be affected; the structure and HSR embankment would run near homes, dominating the scale of the rural neighborhood by replacing some homes with elevated railway structures and berms. This would be an adverse change in visual quality.

Permanent construction activities would also affect sensitive viewers. Permanent construction activities include the grading and forming of land for berms and embankments to support future HSR tracks or roadways approaching HSR grade separations. The fill material would modify the existing landscape and block views from adjacent viewpoints. Nearby residents (sensitive viewers) would be permanently and adversely affected by high berms altering the visual character of their surroundings by introducing a long and solid form that would block views from their homes.

Design features to soften the appearance of HSR infrastructure (AVR-IAMF#1) will minimize to the extent practicable effects on sensitive viewers, such as residential viewers. These viewers would be substantially affected where construction occurs within 0.25 mile of their viewpoint. This would be an adverse visual effect because it would introduce features that would contrast with the established character of a view and would substantially alter the existing visual character of a residential area. Trees and landscaping to screen elevated HSR tracks from nearby residents, under AVR-IAMF#1, would also introduce a new form to the landscape, enclosing the view that was previously open. The landscaping provided under AVR-IAMF#1 would only screen the HSR embankment from sensitive viewpoints; it would not restore permanently blocked views, such as distant views to the Sierra Nevada range. The loss of distant views would be an adverse visual effect.

For travelers with a moderately high viewer response viewing the historic Robertson Boulevard Tree Row, removing blocks of consecutive trees for construction of HSR grade separations and a new SR 152 interchange would permanently diminish the visual strength of the tree rows lining the roadway. During the design of the HSR project, the utilization of Context Sensitive Solutions would reduce the aesthetic and visual impacts of the HSR by providing urban design guidelines to be evaluated and applied to increase the compatibility of the HSR infrastructure within an existing, specific local design context, such as providing special gateway landscaping and design treatments to the SR 152 interchange, the HSR structures, and Robertson Boulevard (AVR-IAMF#2, Context Sensitive Solution). In addition, a Design Review Process would reduce the aesthetic and visual impacts of the HSR infrastructure by involving local jurisdictions in developing contextually appropriate aesthetic solutions for the area (AVR-IAMF#3, Design Review Process). While IAMFs would reduce impacts, they cannot eliminate the visual impact from the break in the unity of the tree row. The result is a reduction of visual quality from high to moderate, resulting in an adverse impact on aesthetic and visual resources.

Within the Robertson Boulevard Landscape Unit, the Central Valley Wye would result in substantial, permanent declines in visual quality affecting sensitive viewer groups. For residential viewers near Central Valley Wye infrastructure, there would be permanent changes to the visual character and quality of their view that would contrast with the existing rural and agricultural setting. Neatly fenced HSR tracks, lines of OCS poles, berms and embankments rising from the flat landscape, and overcrossings and viaducts for HSR and roadways would result in a visual change to an industrial or urban landscape. This change to the existing visual resources would be an adverse visual effect.

The photosimulation of the view at KVP-13 (Figure 6-8), shows the proposed elevated structure for the east leg of the SR 152 (North) to Road 13 Wye Alternative and the reconstruction of Robertson Boulevard to cross the HSR and SR 152 on a new overcrossing, causing a disruption in the straight, 6-mile procession of the historic palms that line the roadway. For sensitive viewers of the historic Robertson Boulevard Tree Row, removing blocks of consecutive trees for construction of HSR grade separations and a new SR 152 interchange would permanently diminish the intensity of the tree rows lining the roadway. Constructing an HSR viaduct across Robertson Boulevard would further diminish views by blocking the long views of the roadway and parallel tree rows. These all would be permanent direct effects because they would introduce elements that conflict with the visual character of the historic palms and change a regionally important visual resource and view. Vividness would remain high because the new elevated HSR alignment would be a visual gateway to the city of Chowchilla along Robertson Boulevard. Unity would be reduced from high to moderate because the form of the HSR guideway would intrude on the historic roadway and introduce a new, larger-scale infrastructure. The relocation of Robertson Boulevard at the interchange and interruption of the line of historic palms would reduce the intactness of the view from moderately high to moderately low. Overall visual quality would decline from high to moderate. This would result in an adverse visual effect.

Source: Architecture 21 (original photography) *FINAL – OCTOBER 12, 2016*

Figure 6-8 KVP-13: Photosimulation, Robertson Boulevard near SR 152 (view to the south)

Operations Effects

With the commencement of Central Valley Wye operations, trains passing through the landscape unit at night would contribute a regular and repeating source of light. Nighttime maintenance activities along the alignment would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Both of these HSR light sources would be similar to the lights of passing vehicles on the highway or lighting emanating from homes and other buildings. There would be no effect on visual quality.

6.1.1.5 Fairmead Landscape Unit and Key Viewpoints

Permanent Construction Effects

After leaving the SR 152 corridor, the SR 152 (North) to Road 13 Wye Alternative would pass through the community of Fairmead, east of SR 99. It would descend on a constructed berm after crossing over the freeway, UPRR, Fairmead Boulevard and Road 18 3/4 on an elevated structure. The height of the berm would decrease from over 40 feet to approximately 10 feet as it runs east across the area. The elevated berm would block existing views across the flat landscape, including those toward the Sierra Nevada range, reducing visual quality from moderate to moderately low. The primary viewer group is residents, whose viewer response to losing their scenic view of the Sierra Nevada range would be high. This would be an adverse visual effect.

Within the Fairmead Landscape Unit, particularly in instances where the HSR would pass at-grade within 0.25 mile of a residence or within 0.5 mile on an elevated structure, the SR 152 (North) to Road 13 Wye Alternative would introduce features that substantially contrast with the existing landscape and visual character. Design standards for the HSR infrastructure will include approaches to integrate structures within a community and to reduce the intrusiveness of large, elevated structures and berms, reducing impacts on residential views (AVR-IAMF#1). In the context of sensitive residential viewers, the SR 152 (North) to Road 13 Wye Alternative would still block views previously available to sensitive viewers, resulting in long-term direct visual effects. Other viewers passing through the area would not be as sensitive or have the exposure of residential viewers, so they would experience no effects.

KVP-5 is just to the north, on Road 19 1/2. On Figure 6-9, the view is looking south on Road 19 1/2, 0.25 mile north of Avenue 23. The intersecting alignment of the Central Valley Wye would cut across Road 19 1/2, which would increase vividness from moderately low to moderate because the Central Valley Wye would be a new landmark in the area. The fencing and OCS would form a new horizontal element to the view. It would block the view down the road, but would open up the periphery of the view because a number of large trees and a home would be removed. Fences and power poles are already part of the landscape, so the primary alteration would be the termination of the view down Road 19 1/2, lowering intactness and unity from moderate to low. Overall, visual quality would drop from moderate to low.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-9 KVP-5: Photosimulation, Fairmead, Road 19 1/2 near Avenue 24 (view to the south)

In this location a small number of homes (fewer than 10) would be removed by this alternative, and a small number (approximately six) of the remaining residences would lie within 500 feet or less of the right-of-way. Though few in number, these high-sensitivity, high-exposure viewers would be expected to have a high viewer response to the adverse change in visual quality as the HSR passes next to their homes in the foreground of the view

KVP-6 looks east on Avenue 23, 0.25 mile west of Road 19 1/2, on the northern edge of the community of Fairmead (Figure 6-10). The SR 152 (North) to Road 13 Wye Alternative would be on a descending embankment to the north (left) side of the view. It would partially block long views to the horizon, including the Sierra Nevada range. Affected viewers of this alternative would be a small number of residents within 0.25 mile of the alignment and other residents who travel this road. A small number (approximately six) of the residences would lie within 500 feet or less of the right-of-way. The solid embankment would be taller than these homes, blocking views, including distant views to the Sierra Nevada range. Overall visual quality would drop from moderately high to moderately low. Although few in number, high-sensitivity, high-exposure viewers would be expected to have a high viewer response to this change in visual character and quality. This would be an adverse visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-10 KVP-6: Photosimulation, Fairmead, Avenue 23 near Road 19 1/2 (view to the east)

Operations Effects

With the commencement of Central Valley Wye operations, trains passing through the landscape unit at night would contribute a regular and repeating source of light. Nighttime maintenance activities along the alignment would introduce lighting in fixed locations or emanating from slow-moving maintenance vehicles. Both of these HSR light sources would be similar to the lights of passing vehicles on the highway or lighting emanating from homes and other buildings. There would be no effect on visual quality.

6.1.2 SR 152 (North) to Road 19 Wye Alternative

The SR 152 (North) to Road 19 Wye Alternative passes through all five landscape units and eight of the KVPs. The SR 152 (North) to Road 19 Wye Alternative is shown on Figure 6-11.

Temporary and Permanent Construction Effects

Construction effects for the SR 152 (North) to Road 19 Wye Alternative would be similar to the effects described under Section 6.1.1, SR 152 (North) to Road 13 Wye Alternative, for direct effects on residential viewers and the Robertson Boulevard Tree Row because of the great length of shared alignment between the two alternatives. Where the alignment of the SR 152 (North) to Road 19 Wye Alternative would differ, the effects are described in this section.

Operations Effects

Operations activities (scheduled passenger service and maintenance) for the SR 152 (North) to Road 19 Wye Alternative would be similar to those described under Section 6.1.1 for the SR 152 (North) to Road 13 Wye Alternative. Therefore, the same operations aesthetic and visual effects would occur with the SR 152 (North) to Road 19 Wye Alternative.

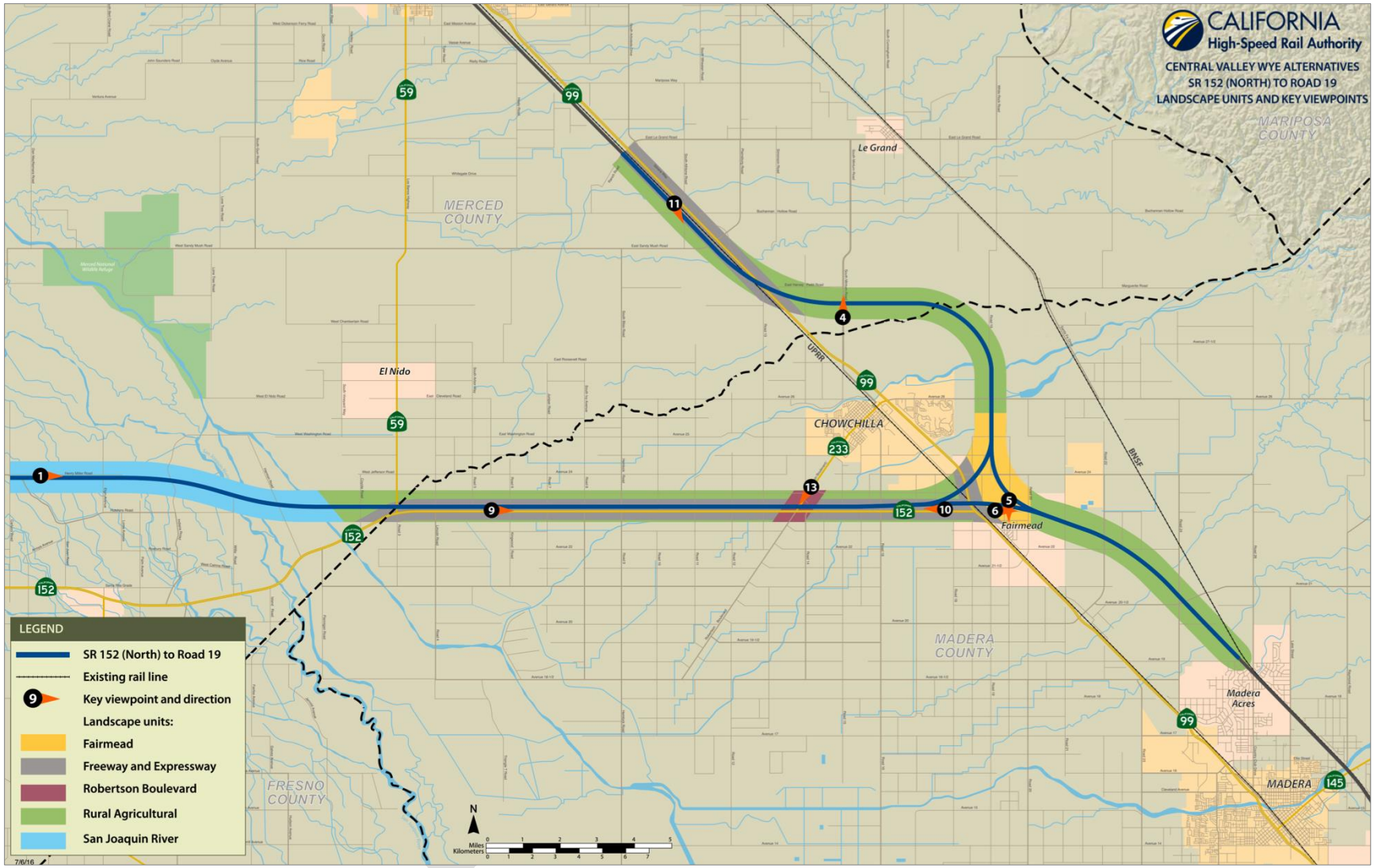
6.1.2.1 San Joaquin River Landscape Unit and Key Viewpoints

Across this landscape unit, the SR 152 (North) to Road 19 Wye Alternative would have the same alignment as the SR 152 (North) to Road 13 Wye Alternative. Therefore, the visual effects would be the same.

6.1.2.2 Rural Agricultural Landscape Unit and Key Viewpoints

Permanent Construction Effects

The SR 152 (North) to Road 19 Wye Alternative would pass through the Rural Agricultural Landscape Unit east of the city of Chowchilla, following Road 19 and Porters Road. Existing agricultural uses vary, including low-lying crops and orchards. There are very few buildings or homes in the area. The Central Valley Wye would be a landmark in the area, increasing vividness in the landscape unit from moderately low to moderate. Intactness would drop from moderately high to moderately low, with HSR structures (viaducts, security fencing) viewed as out of place against the agricultural fields. Unity would drop from moderately high to moderately low because of the highly engineered look of the HSR infrastructure contrasting against the natural colors and textures of plants, fields, and trees. Combined, this would result in a decrease in the overall visual quality from moderate to moderately low. The response of the principal viewer group, agricultural workers, would be moderately low, due to their moderate sensitivity and low exposure. Therefore, there would be no effect on visual resources.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 6-11 Key Viewpoints and Landscape Units for the SR 152 (North) to Road 19 Wye Alternative

The Central Valley Wye alternative would be at-grade in the area visible from KVP-4 (Figure 6-12). Minturn Road would be skewed slightly to the west (left) and on raised fill to cross over the HSR. The elevated berm would block views to the west of the road, reducing the vividness from moderately high to moderate. The power lines and poles on the west (left) side of the road would be relocated to the west, but still running parallel to the view, maintaining the symmetry of the poles and reducing unity from high to moderately high. This would reduce the overall visual quality in this view from moderately high to moderate. Viewers at this location would be travelers on Minturn Road and workers at the industrial plant. Visual exposure would be low for travelers as they pass quickly through the view. Their sensitivity would be moderately low on the busy road. Workers at the plant, a smaller group of viewers, would have moderate exposure, experiencing the view as part of their daily drive to work activities at the plant. Their sensitivity would be moderate. Therefore, the overall visual response of viewers in this area remains moderately low. The visual character of the area would not be degraded, resulting in no direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-12 KVP-4: Photosimulation, Minturn Road near Porters Road (view to the north)

Soon after crossing Minturn Road, the HSR would turn to the south and follow Road 19 toward Fairmead. Near Avenue 25, the Merced to San Jose leg would split to turn west, passing over SR 99 before meeting the San Jose to Fresno leg near Road 17. The Merced to Fresno leg would turn to the east and meet the San Jose to Fresno leg near Road 20.

Operations Effects

Operations effects would be the same as those described for the Rural Agricultural Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.2.3 Freeway and Expressway Landscape Unit and Key Viewpoints

Permanent Construction Effects

The SR 152 (North) to Road 19 Wye Alternative would parallel SR 152 for almost 16 miles from SR 59 to SR 99 in Merced and Madera Counties. Only the western junction of the Central Valley Wye would be adjacent to SR 152. In the north, near Ranch Road, the SR 152 (North) to Road 19 Wye Alternative would run along the west side of the UPRR and SR 99, descending under the UPRR and SR 99 to then pass to the east side of Chowchilla. While the location of the wye varies, and this alternative passes under SR 99 (in a tunnel and out of sight of travelers on the freeway), the overall visual effects on the landscape unit would be the similar as under the SR 152 (North) to Road 13 Wye Alternative, the difference being an additional mile of HSR alignment

parallel to SR 99. Additionally, visual effects for both KVP-9, SR 152 near Kingwood Road/Road 6, and KVP-11, SR 99 near East Le Grand Road, would be the same as the SR 152 (North) to Road 13 Wye Alternative.

The wye for the SR 152 (North) to Road 19 Wye Alternative would begin near Road 15 1/2, where the HSR would transition from two to four tracks. The southernmost track (closest to SR 152) would ascend to an aerial structure to pass over the San Jose to Fresno leg of the wye, while the northernmost track would remain at-grade as it would turn to the north. These two tracks would form the Merced to San Jose leg of the wye.

In the view depicted in KVP-10 (Figure 6-13) the San Jose to Fresno leg of the wye would run adjacent to the expressway, on its north (right) side, on a rising embankment. The San Jose to Merced leg of the wye would be visible rising and crossing the HSR mainline. Road 17 1/2 would pass under SR 152 in a cut. This would preserve the expansive vista of open fields to the south (left) side and down the highway. Views to the north would be blocked by the HSR embankment and viaduct.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-13 KVP-10: Photosimulation, SR 152 near Road 17 1/2 (view to the west)

As shown by the simulated view, the HSR viaduct would be a prominent feature within roughly a 0.25-mile distance zone. It would be similar in appearance but much taller and longer than roadway overcrossing structures commonly encountered by motorists in the Central Valley Wye vicinity, dropping the intactness of the view from moderately high to moderate, and bringing the overall visual quality from moderately high to moderate. Motorists would be the primary affected viewer group. In general, motorists have a low sensitivity to changes in visual quality and a short duration view, which would result in a low viewer response, but given the distance the elevated viaduct would run parallel to the highway, the length of time viewers would see the structure would increase viewer exposure to the Central Valley Wye. Overall viewer response would be moderate. The visual character of the area would not be degraded, resulting in no direct visual effect.

Operations Effects

Operations effects would be the same as those described for the Freeway and Expressway Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.2.4 Robertson Boulevard Landscape Unit and Key Viewpoints

Permanent Construction Effects

Overall visual effects on the Robertson Boulevard Landscape Unit would be experienced primarily by motorists because the HSR would only cross the landscape unit once, adjacent to the SR 152 interchange, which is south of the residential portion of Robertson Boulevard.

The introduction of HSR to the Robertson Boulevard Landscape Unit for the SR 152 (North) to Road 19 Wye Alternative would require reconstruction of the interchange at SR 152. The view at KVP-13 (Figure 6-14) shows the reconstruction of Robertson Boulevard to cross the HSR and SR 152 on a new overcrossing. This change would remove a number of existing palm trees located along over 6 miles of palm-lined roadway stretching south from the center of Chowchilla, reducing the intactness of views along Robertson Boulevard from moderately high to moderate. Vividness would remain high because the remaining palm trees would still frame the view down Robertson Boulevard. Unity would drop from high to moderate because the new interchange would be larger and more prominent, intruding on views down the boulevard. Overall visual quality would decrease from high to moderately high.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-14 KVP-13: Photosimulation, Robertson Boulevard near SR 152 (view to the south)

Travelers would be the primary affected viewer group. Because this is a gateway to the City of Chowchilla, travelers' sensitivity to the proposed visual change would be moderately high, with their exposure also moderately high, resulting in a moderately high viewer response. Removing blocks of consecutive trees for construction of HSR grade separations and a new SR 152 interchange would permanently diminish the visual strength of the tree rows lining the roadway. During the design of the HSR project, the utilization of Context Sensitive Solutions would reduce the aesthetic and visual impacts of the HSR by providing urban design guidelines to be evaluated and applied to increase the compatibility of the HSR infrastructure within an existing, specific local design context, such as providing special gateway landscaping and design treatments to the SR 152 interchange, the HSR structures, and Robertson Boulevard (AVR-IAMF#2). In addition, a Design Review Process would reduce the aesthetic and visual impacts of the HSR infrastructure by involving local jurisdictions in developing contextually appropriate aesthetic solutions for the area (AVR-IAMF#3). While IAMFs would reduce impacts, they cannot eliminate the visual impact from the break in the unity of the tree row. The result is a reduction of visual quality from high to moderate, resulting in an adverse impact on aesthetic and visual resources.

Operations Effects

Operations effects would be the same as those described for the Robertson Boulevard Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.2.5 Fairmead Landscape Unit and Key Viewpoints

Permanent Construction Effects

After leaving the SR 152 corridor, the SR 152 (North) to Road 19 Wye Alternative would pass through the community of Fairmead, east of SR 99. This is the location of the wye for the SR 152 (North) to Road 19 Wye Alternative. All three legs of the wye pass through the Fairmead Landscape Unit. Some residents would view HSR infrastructure in two directions from their homes. Berms and viaducts, up to 60 feet tall, would block existing views across the flat landscape, including those toward the Sierra Nevada range, reducing visual quality from moderate to moderately low. The primary viewer group is residents, whose viewer response to the change in visual character and to blocking scenic views would be high. This would be an adverse direct visual effect.

KVP-6 looks east on Avenue 23, 0.25 mile west of Road 19 1/2, on the northern edge of the community of Fairmead (Figure 6-15). The SR 152 (North) to Road 19 Wye Alternative is evident on a descending embankment to the north (left) of the view. In the distance down Avenue 23, about 0.5 mile away, the viaduct carrying the southbound track of the Merced to Fresno leg of the wye would cross over the San Jose to Merced leg's tracks as it curves to the south. The embankment to the north would partially block long views to the horizon, which includes the Sierra Nevada range, while the viaduct in the distance would be far enough away from the homes to have little effect. Overall visual quality would drop from moderate to moderately low. Affected viewers of this alternative would be a small number of residents within 0.25 mile of the alignment and other residents who travel this road. Although few in number, these high-sensitivity, high-exposure viewers with a high viewer response would experience the degradation and blocking of residential views, which would be adverse direct visual effects.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-15 KVP-6: Photosimulation, Fairmead, Avenue 23 near Road 19 1/2 (view to the east)

A second view, KVP-5, is just to the north, on Road 19 1/2. On Figure 6-16, the view is looking south on Road 19 1/2, 0.25 mile north of Avenue 23. The intersecting alignment of the Central Valley Wye cuts across Road 19 1/2, which would increase vividness from moderately low to moderate because the Central Valley Wye would be a new landmark in the area. The fencing and OCS would form a new horizontal element to the view. It would block the view down the road, but would open up the periphery of the view because a number of large trees and a home would be removed. Fences and power poles are already part of the landscape, so the primary change in the visual character would be the termination of the view down Road 19 1/2, lowering intactness and unity from moderate to low. Overall, visual quality would decrease from moderate to low. Highly affected viewers of this alternative would be limited to a small number of residents within 0.25 mile of the alignment. A small number of homes (fewer than ten) would be removed by this alternative in the area of this viewpoint, and a small number (approximately six) of the remaining residences would be within 500 feet or less of the right-of-way. Although few in number, these high-sensitivity, high-exposure viewers would have a high viewer response to the substantial effects on the visual quality from the foreground of their views as the HSR passes next to their homes. This would be an adverse direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-16 KVP-5: Photosimulation, Fairmead, Road 19 1/2 near Avenue 24 (view to the south)

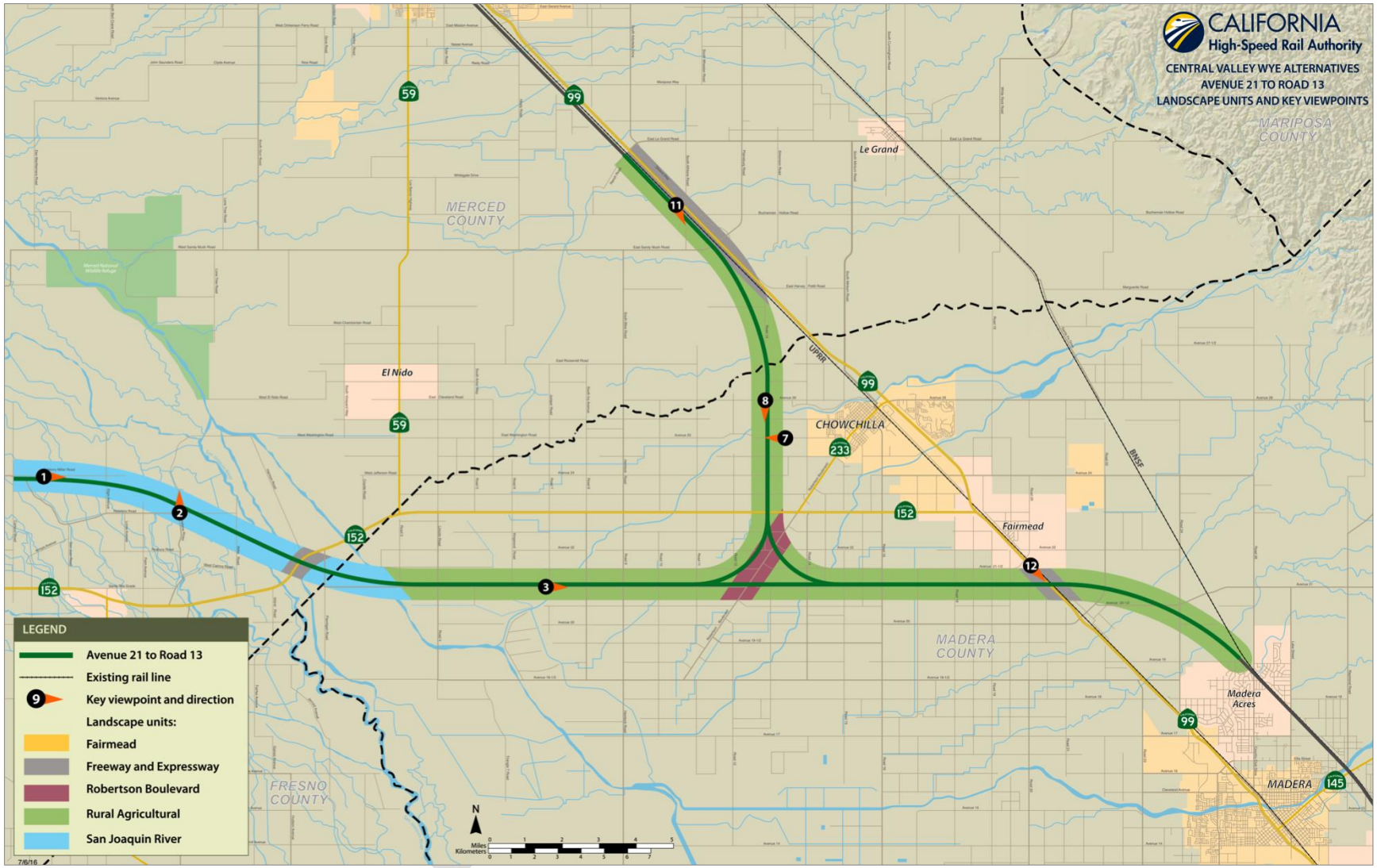
The SR 152 (North) to Road 19 Wye Alternative returns to share the same alignment as the SR 152 (North) to Road 13 Wye Alternative near Avenue 22. From there to the end of the alignment at Avenue 19, the effects are the same as described previously for the SR 152 (North) to Road 13 Wye Alternative.

Operations Effects

Operations effects would be the same as those described for the Fairmead Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.3 Avenue 21 to Road 13 Wye Alternative

The Avenue to Road 13 Wye Alternative passes through four of the five landscape units and seven of the KVPs. The Avenue 21 to Road 13 Wye Alternative is show on Figure 6-17.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

FINAL – OCTOBER 12, 2016

Figure 6-17 Key Viewpoints and Landscape Units for the Avenue 21 to Road 13 Wye Alternative

Temporary and Permanent Construction Effects

Construction effects for the Avenue 21 to Road 13 Wye Alternative would be similar to the effects described under Section 6.1.1 for the SR 152 (North) to Road 13 Wye Alternative because of the similarity of the visual environment shared between the two alternatives. These effects include residential views being degraded and blocked by Central Valley Wye infrastructure. Where the alignment of the Avenue 21 to Road 13 Wye Alternative would differ, the effects are described in this section.

Operations Effects

Operations effects for this alternative would be similar to the effects described under Section 6.1.1 for the SR 152 (North) to Road 13 Wye Alternative because operations (scheduled passenger service and maintenance) would be comparable. Therefore, the same aesthetic and visual effects would occur under this alternative.

6.1.3.1 San Joaquin River Landscape Unit and Key Viewpoints

Permanent Construction Effects

Visual effects across the San Joaquin River Landscape Unit would be consistent with those effects described for the SR 152 (North) to Road 13 Wye Alternative.

The first viewpoint, KVP-1 (Figure 6-18), is typical of locations where the Central Valley Wye alignment would run immediately adjacent to a low-volume rural road, Henry Miller Road. The view shows the HSR gently curving away from the road. The view to the south (right) side would be obscured by the HSR embankment. This would introduce a visual enclosure, limiting the view on one side of the road. The security fence, OCS poles and wires, gently curving away from the road, would reinforce the long view toward the horizon along the road and slightly exaggerate the perspective by slowly spreading away from the vanishing point. The visual effect of obscuring one side of the view from travelers along Henry Miller Road lowers the intactness of the view from high to moderate-low and the unity would be reduced from high to moderate, with the HSR infrastructure appearing neat and uniform but industrial against the remote and wide-open agricultural land. Vividness would increase, from moderately low to moderate, because the Central Valley Wye would be a prominent landmark along the roadway. Overall visual quality would decrease from moderately high to moderate. The response of the principal viewer group, agricultural workers, would be moderately low, due to their moderate visual sensitivity and low exposure because of their shifting work locations. Combined with the drop in visual quality from moderately high to moderate, there would be no effect on visual resources.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-18 KVP-1: Photosimulation, Henry Miller Road between Carlucci and Elgin Roads (view to east)

KVP-2 is an isolated viewpoint (Figure 6-19). It presents the view of the proposed Avenue 21 to Road 13 Wye Alternative as it crosses the lowlands near the San Joaquin River. The Central Valley Wye alternative would run on a low embankment across the view, with the grade separation for Indiana Road rising to the right of the view. An overcrossing structure and high fill would be introduced to a flat and agricultural view. Vividness would increase from moderate to high for drivers crossing the fill and structure, because they would be able to see for a great distance over the flat fields. The structure and berm in a flat agricultural landscape would reduce the intactness of the view from high to moderate. Unity would also decline, from high to moderately high, with the industrial components of the HSR contrasting with the wide-open views across the fields. The primary viewers at this location are agricultural workers, with a moderate viewer sensitivity. Indiana Road is a very low volume road at this KVP, so viewer exposure is limited to the few workers traveling on the road and intermittent cycles of workers tending the fields. This results in a moderately low viewer response, so there would be no direct effect on visual quality.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-19 KVP-2: Photosimulation, Indiana Road, north of Hutchins Road (view to north)

Traveling east, the Avenue 21 to Road 13 Wye Alternative would cross the lowlands near the San Joaquin River. This would have visual effects consistent with those effects described for the SR 152 (North) to Road 13 Wye Alternative.

Operations Effects

Operations effects would be the same as those described for the San Joaquin River Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.3.2 Rural Agricultural Landscape Unit and Key Viewpoints

Permanent Construction Effects

After crossing the San Joaquin River, SR 152, and the Eastside Bypass, the Avenue 21 to Road 13 Wye Alternative would align with Avenue 21, running just to the north of the road. The Central Valley Wye alternative would remain north of Avenue 21 as it passes through the Rural Agricultural Landscape Unit from the Eastside Bypass to SR 99. After passing over SR 99, it would pass south of Fairmead, remaining in the Rural Agricultural Landscape Unit. This would have visual effects consistent with those effects described for the Rural Agricultural Landscape Unit in the SR 152 (North) to Road 13 Wye Alternative.

The Merced to Fresno leg of the Avenue 21 to Road 13 Wye Alternative would pass through the Rural Agricultural Landscape Unit along Road 13, west of the city of Chowchilla, following the

same alignment as the Merced to Fresno leg of the SR 152 (North) to Road 13 Wye Alternative, then extending south over SR 152 toward Avenue 21. The HSR would split to four tracks for the wye with the San Jose to Fresno leg. The Merced to San Jose leg of the wye would curve to the west to meet the San Jose to Fresno leg near Road 11. This, too, has visual effects consistent with those effects described for Rural Agricultural Landscape Unit in the SR 152 (North) to Road 13 Wye Alternative.

KVP-3 shows the Avenue 21 to Road 13 Wye Alternative as it crosses Ash Slough, aligned with the roadway and the Cartesian grid, crossing Ash Slough on a long-span structure, then on to a descending embankment (Figure 6-20). Vividness would increase from moderate to high, because the HSR bridge would be a tall structure visible from a great distance along Avenue 21. Intactness would drop from moderately high to moderately low because of the scale of the HSR bridge and embankment's contrast against the flat agricultural landscape. Unity would remain moderate—the HSR bridge is designed to fully span the slough, staying clear of the waterway, but its scale would dominate the otherwise agricultural environment. Overall, visual quality would remain moderate. While the road is very lightly traveled, viewer exposure increases to moderately low, because of the duration viewers would travel next to the long approach embankments. As with other locations in the Rural Agricultural Landscape Unit, viewers are mostly agricultural workers, with moderate viewer sensitivity. Viewer response increases to moderate. There would be no direct effect on visual quality.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-20 KVP-3: Photosimulation, Avenue 21 near Road 7 (view to the east)

Figure 6-21 shows the view looking south along Road 13 as it approaches Ash Slough. KVP-8 views an HSR alignment on a wide elevated structure, parallel to Road 13. The HSR tracks would be over 50 feet above grade, with about 40 feet of clearance under the structure. In the distance, the tracks descend to grade. Vividness would remain moderately low because the new views along Road 13 would all include HSR infrastructure parallel on its eastern side. Unity would drop from moderately high to low. While the regular rows of supporting columns would echo the regular progression of utility poles and trees in the adjacent orchard, reinforcing the single-point view converging on the horizon, the scale of the aerial structure would disrupt the agricultural scale of the terrain, set by the form of the orchard. Intactness would decline from high to moderately high because the land under the aerial structure is likely to be left untended, resulting in disorderly growth of underbrush. Because the road is very lightly traveled and the primary viewers are travelers and agricultural workers, the viewer response would be moderately low. There would be no substantial degradation of visual character or quality and no direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-21 KVP-8: Photosimulation, Road 13 near Ash Slough (view to the south)

As the Avenue 21 to Road 13 Wye Alternative would continue south along Road 13, it would be on a raised berm just to the east of the roadway. At KVP-7 Avenue 25 would descend into a cut to pass under the HSR tracks and meet Road 13 in a depressed intersection (Figure 6-22). The HSR structure would extend over the roadway, blocking long views. The bridge crossing Avenue 25 would resemble an urban highway. Vividness would increase from low to moderate because the HSR structure would add a landmark to the environment. Intactness would drop from high to low because the HSR structure and road depression would introduce an urban element with a dominant size to the otherwise agricultural landscape. Unity would remain high because the ensemble of new HSR infrastructure would reinforce the intersecting grid of roads and utilities and be set at an elevation where the HSR berm to the left creates a mass that complements the solid visual mass of the orchard on the right of the roadway, with the form and light shade of the bridge over the roadway centered and blending in with the sky at the horizon. Overall visual quality would drop from moderately high to moderate. Viewer sensitivity and exposure would be unchanged at this KVP, resulting in a moderately low viewer response, and no adverse direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-22 KVP-7: Photosimulation, Avenue 25 near Road 13 (view to the west)

Operations Effects

Operations effects would be the same as those described for the Rural Agricultural Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.3.3 Freeway and Expressway Landscape Unit and Key Viewpoints

Permanent Construction Effects

The Avenue 21 to Road 13 Wye Alternative would cross the Freeway and Expressway Landscape Unit in three locations and run parallel to SR 99 from approximately East Le Grand Road to East Sandy Mush Road. This would have visual effects consistent with those effects described for the Freeway and Expressway Landscape Unit in the SR 152 (North) to Road 13 Wye Alternative. In contrast to the SR 152 (North) to Road 13 Wye Alternative, the Avenue 21 to Road 13 Wye Alternative does not run adjacent to SR 152, and therefore SR 152 would remain an expressway with at grade crossings as in its existing condition with no corresponding increase in visual quality.

From the west, the first location where the Central Valley Wye alternative would cross SR 152 is near the Merced–Madera county line. The long form of the HSR viaduct, stretching to the far edges of the view in a straight line, is complementary to the lines and forms of the highway, resulting in a high visual unity. The short duration of viewer exposure to the Central Valley Wye from highway viewers with a moderately low viewer response results in no change in visual quality.

As the HSR travels east, it would cross SR 99 and the UPRR near Avenue 21 on a long elevated structure at KVP-12 (Figure 6-23). As suggested by the photosimulation, the elevated guideway would appear prominent within roughly a 0.25-mile distance zone and would cause a decline in intactness from high to moderate by introducing a large structure and fill across the flat landscape on either side of SR 99. From the standpoint of viewers on SR 99, this large civil work in an otherwise agricultural setting, its scale and long, wide form would increase vividness from low to high. The HSR crossing would be a powerful landmark along the freeway. Unity would remain high because the structure's components, concrete columns, and spans would be similar to the infrastructure encountered by motorists along the freeway. The long form would also be complementary to the lines and forms of the freeway. Overall visual quality would remain moderately high. The scale of the viaduct and approach embankment would be visible from a long distance on the highway, increasing motorists' duration of exposure to the Central Valley Wye from low to high, resulting in a moderate overall viewer response. The structure would not substantially degrade the visual character of the freeway corridor, resulting no direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-23 KVP-12: Photosimulation, SR 99 near Avenue 21 (view from Frontage Road to the south)

After crossing SR 99 and the UPRR, the Avenue 21 to Road 13 Wye Alternative would turn to the south to meet the BNSF and SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 19 Wye Alternative near Avenue 19. From there to the end of the alignment at Avenue 19, the effects would be the same as previously described for the SR 152 (North) to Road 13 Wye Alternative.

The Merced to Fresno leg of the Central Valley Wye alternative would begin near the SR 99/Ranch Road interchange, with the HSR along the west side of the UPRR and SR 99. The HSR alignment would leave the SR 99 corridor and curve to follow Road 13, northwest of Chowchilla. This would have visual effects consistent with those effects described for the Freeway and Expressway Landscape Unit and KVP-11 in the SR 152 (North) to Road 13 Wye Alternative.

As the HSR travels south, paralleling Road 13, it would cross SR 152 at Road 13. Here, the HSR would be on two aerial structures with a total of four tracks at the northern end of the wye. The lower three tracks would be about 30 feet above grade, with the fourth track on a separate structure passing approximately 80 feet above grade. All of this HSR infrastructure would be visible above the surrounding fields and orchards from SR 152. Consistent with those described previously for KVP-12, there would be no direct visual effect.

Operations Effects

Operations effects would be the same as those described for the Freeway and Expressway Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.3.4 Robertson Boulevard Landscape Unit and Key Viewpoints

Permanent Construction Effects

The Avenue 21 to Road 13 Wye Alternative would intersect the Robertson Boulevard Landscape Unit as it travels along Avenue 21. Robertson Boulevard would ascend to cross over both the Central Valley Wye Alternative and Avenue 21 on an overcrossing. This would remove a number of existing palm trees stretching south from the center of Chowchilla. South of SR 152, Robertson Boulevard is a county road lined with the continued procession of palms, but the flanking land uses transition rapidly from residential north of the expressway to agricultural as it proceeds away from Chowchilla. Robertson Boulevard is not a designated scenic highway south of SR 152.The observed traffic volumes are much lower than north of SR 152. This reduces viewer exposure to

moderately low. The density of buildings lining the road is lower as well, more characteristic of the Rural Agricultural Landscape Unit, with most viewers being moderately sensitive agricultural workers. The same design measures described for SR 152 (North) to Road 13 Wye Alternative would apply for the Avenue 21 to Road 13 Wye Alternative, which would reduce but not eliminate the effects from the break in the unity of the tree row.

Vividness would remain high, as would unity. The relocation of the boulevard and interruption of the line of historic palms would reduce the intactness of the view from moderately high to moderately low. In that context, the resulting decline in visual quality from high to moderately high would be an adverse direct effect on visual quality.

As the Merced to Fresno leg of the wye turns to meet the San Jose to Fresno leg, the Avenue 21 to Road 13 Wye Alternative passes through the Robertson Boulevard Landscape Unit. The alternative would pass over Robertson Boulevard near Avenue 22. Effects would be essentially the same as described for the crossing of Avenue 21, resulting in an adverse direct effect on visual quality.

Operations Effects

Operations effects would be the same as those described for the Robertson Boulevard Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.4 SR 152 (North) to Road 11 Wye Alternative

The SR 152 (North) to Road 1 Wye Alternative passes through all five landscape units and eight of the KVPs. The SR 152 (North) to Road 11 Wye Alternative is shown on Figure 6-24.

Temporary and Permanent Construction Effects

Construction effects for the SR 152 (North) to Road 11 Wye Alternative would be similar to the effects described under Section 6.1.1 for direct effects on residential viewers and the Robertson Boulevard Tree Row because of the great length of shared alignment between the two alternatives. Where the alignment of the SR 152 (North) to Road 11 Wye Alternative would differ, the effects are described in this section.

Operations Effects

Operations activities (scheduled passenger service and maintenance) for the SR 152 (North) to Road 11 Wye Alternative would be similar to those described under Section 6.1.1 for the SR 152 (North) to Road 13 Wye Alternative. Therefore, the same operations aesthetic and visual effects would occur with the SR 152 (North) to Road 11 Wye Alternative.

6.1.4.1 San Joaquin River Landscape Unit and Key Viewpoints

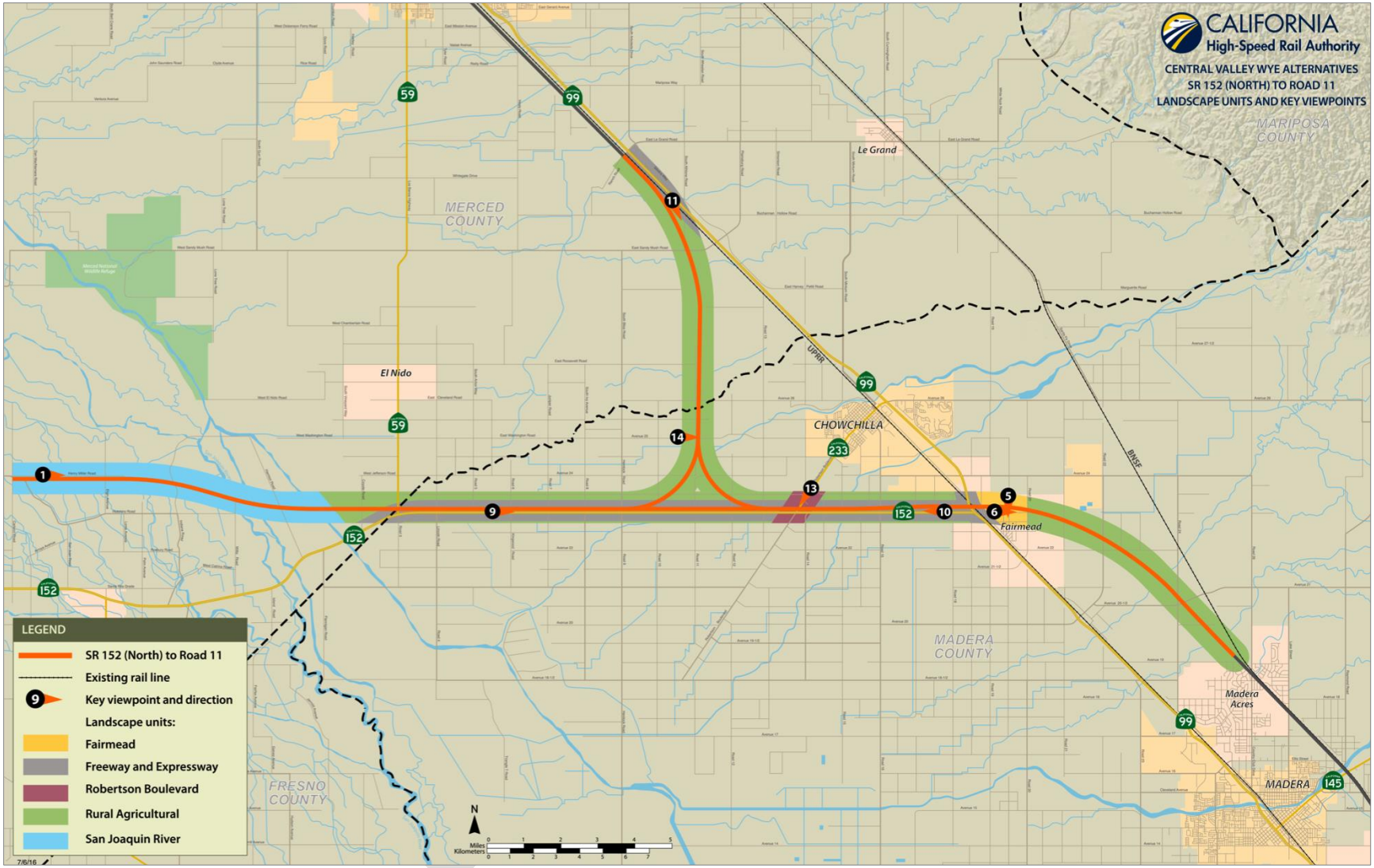
Across this landscape unit, the SR 152 (North) to Road 11 Wye Alternative would have the same alignment as the SR 152 (North) to Road 13 Wye Alternative. Therefore, the visual effects would be the same.

6.1.4.2 Rural Agricultural Landscape Unit and Key Viewpoints

Permanent Construction Effects

The San Jose to Fresno leg SR 152 (North) to Road 11 Wye Alternative would pass through the same area of the Rural Agricultural Landscape Unit as described for the SR 152 (North) to Road 13 Wye Alternative. The San Jose to Merced leg and the Merced to Fresno leg would run along Road 11 from SR 152 to SR 99.

The SR 152 (North) to Road 11 Wye Alternative would pass through the Rural Agricultural Landscape Unit west of Chowchilla, following Road 11. Existing agricultural uses vary, including low-lying crops and orchards. There are very few buildings or homes in the area. The Central Valley Wye would be a landmark in the area, increasing vividness in the landscape unit from moderately low to moderate. Intactness would drop from moderately high to low, with HSR structures (viaducts, security fencing) viewed as out of place against the agricultural fields.



Source: Authority, 2016; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015

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Figure 6-24 Key Viewpoints and Landscape Units for the SR 152 (North) to Road 11 Wye Alternative

Unity would drop from moderately high to moderately low because of the highly engineered look of the HSR infrastructure contrasting against the natural colors and textures of plants, fields, and trees. Combined, this would result in a decrease in the overall visual quality from moderate to moderately low. The response of the principal viewer group, agricultural workers, would be moderately low, due to their moderate sensitivity and low exposure. Therefore, there would be no effect on visual resources.

KVP-14 depicts a number of changes to accommodate the north end of the SR 152 (North) to Road 11 Wye Alternative (Figure 6-25). Three HSR structures would pass over the roadway, which is depressed to pass under the HSR, blocking long distance views. The three HSR structures, two lower bridges crossing Avenue 25 and an ascending aerial structure carrying one track from the wye, would resemble an urban highway interchange. Vividness would increase from moderately low to moderate because the HSR structures would add a landmark to the environment but block distant views to the Sierra Nevada foothills. Intactness would drop from high to low. The HSR structures would introduce an urban element with a dominant size to the otherwise agricultural landscape. Unity would increase from moderate to moderately high because the ensemble of new HSR infrastructure would appear orderly and neat, with the jumble of utility poles relocated away from the area. Overall visual quality would drop from moderately high to moderate. Viewer sensitivity and exposure would be unchanged at this KVP for a moderately low viewer response, resulting in no direct visual effect.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-25 KVP-14: Photosimulation, Avenue 25 near Road 11 (view to the east)

Operations Effects

Operations effects would be the same as those described for the Rural Agricultural Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.4.3 Freeway and Expressway Landscape Unit and Key Viewpoints

Permanent Construction Effects

Across this landscape unit, the SR 152 (North) to Road 11 Wye Alternative would have the same alignment as the SR 152 (North) to Road 13 Wye Alternative, except its wye would be 3 miles to the west of the wye described for the SR 152 (North) to Road 13 Wye Alternative. Where it shares the same alignment, the visual effects would be the same.

The SR 152 (North) to Road 11 Wye Alternative would parallel SR 152 for almost 16 miles from SR 59 to SR 99 in Merced and Madera Counties. In the north, near Ranch Road, the SR 152 (North) to Road 11 Wye Alternative would turn away to the south just south of Ranch Road. The overall visual effects on the landscape unit would be similar to the SR 152 (North) to Road 13 Wye Alternative, with the difference being 3 fewer miles of HSR alignment running parallel to SR 99. Additionally, visual effects for KVP-9, SR 152 near Kingwood Road/Road 6 and KVP-10, SR 152 near Road 17-1/2, and KVP-11, would be the same as the SR 152 (North) to Road 13 Wye Alternative.

The wye for the SR 152 (North) to Road 11 Wye Alternative would begin near Road 8, where the HSR would transition from two to four tracks. The southernmost track (closest to SR 152) would ascend to an aerial structure to pass over the San Jose to Fresno leg of the wye, while the northernmost track would remain at-grade as it would turn to the north. These two tracks would form the Merced to San Jose leg of the wye.

Near Road 13, one track of the Merced to Fresno leg of the wye would cross the San Jose to Merced leg of the wye on an aerial structure, descending to grade west of Robertson Boulevard. The second track of the Merced to Fresno leg would join the San Jose to Fresno leg at grade. The four tracks would combine to two near Robertson Boulevard, passing at-grade under Robertson Boulevard.

The HSR aerial structures at the wye would be a prominent feature within a roughly 0.25-mile distance zone. It would be similar in appearance but taller and longer than roadway overcrossing structures commonly encountered by motorists in the Central Valley Wye vicinity, dropping the intactness of the view from moderately high to moderate, and bringing the overall visual quality from moderately high to moderate. Motorists would be the primary affected viewer group. In general, motorists have a low sensitivity to changes in visual quality and a short duration view, which would result in a low viewer response, but given the distance the elevated viaduct would run parallel to the highway, the length of time viewers would see the structure would increase viewer exposure to the Central Valley Wye. Overall viewer response would be moderate. The decrease in visual quality and the increased viewer response would result in a direct visual effect.

KVP-11 (Figure 6-26) is typical of the view toward the Central Valley Wye from SR 99 south of Ranch Road. The Merced to Fresno leg of the Central Valley Wye would begin near Ranch Road, along the west side of the UPRR and SR 99. There would be a relatively large number of traveler viewers from this viewpoint, but views would be from vehicles traveling at highway speeds, so viewer sensitivity and exposure would be low, resulting in a low viewer response. The linear and horizontal aspects of the at-grade HSR guideway (guideway and OCS) would appear consistent with existing, similar features of the UPRR and adjacent power lines. The visual quality of the view would remain moderate, so there would be no direct visual effect.

Operations Effects

Operations effects would be the same as those described for the Freeway and Expressway Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.1.4.4 Robertson Boulevard Landscape Unit and Key Viewpoints

Permanent Construction Effects

Across this landscape unit, the SR 152 (North) to Road 11 Wye Alternative would have a similar alignment as the SR 152 (North) to Road 19 Wye Alternative. The primary difference is that the SR 152 (North) to Road 11 Wye Alternative would disturb slightly fewer linear feet of tree row compared to the SR 152 (North) to Road 19 Wye Alternative as a result of the grade separation. The overall visual effects would be the same.

Source: Architecture 21 (original photography) FINAL – OCTOBER 12, 2016

Figure 6-26 KVP-11: Photosimulation, SR 99 south of Ranch Road (view to south)

Operations Effects

Operations effects would be the same as those described for the Robertson Boulevard Landscape Unit under the SR 152 (North) to Road 19 Wye Alternative.

6.1.4.5 Fairmead Landscape Unit and Key Viewpoints

Permanent Construction Effects

Across this landscape unit, the SR 152 (North) to Road 11 Wye Alternative would have the same alignment as the SR 152 (North) to Road 13 Wye Alternative. Therefore, the visual effects would be the same.

Operations Effects

Operations effects would be the same as those described for the Fairmead Landscape Unit under the SR 152 (North) to Road 13 Wye Alternative.

6.2 Visual Effects Summary

The direct effects of the Central Valley Wye alternatives on aesthetics and visual resources are similar to those described in the *Merced to Fresno Section: Aesthetics and Visual Resources Technical Report* (Authority and FRA 2012b). These are as follows:

- Construction activities would degrade residential views, especially in locations where the Central Valley Wye is directly adjacent to homes.
- HSR infrastructure would block some views, affecting sensitive residential viewers. Landscaping to obscure direct views of the Central Valley Wye would also block previously open views.
- Where HSR crosses Robertson Boulevard, it would degrade the aesthetics of the Robertson Boulevard Tree Row by removing some existing trees and blocking long views down Robertson Boulevard with HSR and roadway grade separations.
- Closing intersections along SR 152 would improve the visual quality for drivers by eliminating the distraction of cross traffic. Passengers on HSR trains would enjoy long views across the flat landscape of the San Joaquin Valley from elevated portions of the railway.

There would be no indirect visual effects from the Central Valley Wye alternatives.

Table 6-2 summarizes the magnitude and location of the effects analyzed. Colors indicate the magnitude of change, with orange representing a decrease of more than one level, yellow a decrease of one level, blue an increase of one level, and green an increase of more than one level.

Table 6-2 Changes in Overall Visual Quality and Viewer Response for Central Valley Wye Alternatives

Landscape Unit/KVP	Existing		SR 152 (North) to Road 13		SR 152 (North) to Road 19		Avenue 21 to Road 13		SR 152 (North) to Road 11	
	VQ	VR	VQ	VR	VQ	VR	VQ	VR	VQ	VR
San Joaquin River Landscape Unit	M	ML	L	ML	L	ML	L	ML	L	ML
KVP-1 Henry Miller Road	MH	ML	M	ML	M	ML	M	ML	M	ML
KVP-2 Indiana Road	H	ML	-	-	-	-	MH	ML	-	-
Rural Agricultural Landscape Unit	M	ML	ML	ML	ML	ML	ML	ML	ML	ML
KVP-3 Avenue 21 near Road 7	M	ML	-	-	-	-	M	M	-	-
KVP-4 Minturn Road	MH	ML	-	-	M	M	-	-	-	-
KVP-7 Avenue 25 near Road 13	MH	ML	M	ML	-	-	M	ML	-	-
KVP-8 Road 13 near Ash Slough	MH	ML	ML	ML	-	-	ML	ML	-	-
KVP-14 Avenue 25 near Road 11	MH	ML	-	-	-	-	-	-	M	ML
Freeway and Expressway Landscape Unit	MH	L	H	L	H	L	M	L	H	L
KVP-9 SR 152 near Kingwood Road / Road 6	MH	L	H	M	H	M	-	-	H	M
KVP-10 SR 152 near Road 17-1/2	MH	L	M	L	M	M	-	-	M	L
KVP-11 SR 99 south of Ranch Road	M	L	M	L	M	L	M	L	M	L
KVP-12 SR 99 near Avenue 21	MH	L	-	-	-	-	MH	M	-	-
Robertson Boulevard Landscape Unit	H	MH	M	MH	MH	MH	MH	M	M	MH
KVP-13 SR 233 / Robertson Boulevard	H	MH	M	MH	MH	MH	-	-	M	MH
Fairmead Landscape Unit	M	H	M	H	M	H	-	-	M	H
KVP-5 Road 19-1/2 near Avenue 24	M	H	L	H	L	H	-	-	L	H
KVP-6 Avenue 23 Near Road 19-1/2	M	H	ML	H	ML	H	-	-	ML	H

Source: Architecture 21 (author's compilation), 2016
Orange = More than one level decrease in VQ/VR, **Yellow** = One level decrease in VQ/VR, **Blue** = One level increase in VQ/VR, **Green** = More than one level increase in VQ/VR
KVP = key viewpoint, VQ = Visual Quality, VR = Viewer Response
L = Low, ML = Moderately Low, M = Moderate, MH = Moderately High, H = High, - = Not Applicable

Table 6-3 summarizes the magnitude and location of the visual effects. Colors indicate the change, with white indicating no effect/neutral, orange representing an adverse effect, and green a beneficial effect. Gray indicates the alternative does not pass through the location.

Table 6-3 Visual Effects for Central Valley Wye Alternatives

Landscape Unit / Key Viewpoint	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
San Joaquin River Landscape Unit				
KVP-1 Henry Miller Road				
KVP-2 Indiana Road				
Rural Agricultural Landscape Unit				
KVP-3 Avenue 21 near Road 7				
KVP-4 Minturn Road				
KVP-7 Avenue 25 near Road 13				
KVP-8 Road 13 near Ash Slough				
KVP-14 Avenue 25 near Road 11				
Freeway and Expressway Landscape Unit				
KVP-9 SR 152 near Kingwood Road / Road 6				
KVP-10 SR 152 near Road 17-1/2				
KVP-11 SR 99 south of Ranch Road				
KVP-12 SR 99 near Avenue 21				
Robertson Boulevard Landscape Unit				
KVP-13 SR 233 / Robertson Boulevard				
Fairmead Landscape Unit				
KVP-5 Road 19 1/2 near Avenue 24				
KVP-6 Avenue 23 Near Road 19 1/2				

Source: Architecture 21 (author's compilation), 2016
Orange = Adverse effect, **Green** = Beneficial effect, **Gray** = Alternative does not pass through KVP or landscape unit
KVP = key viewpoint

7 REFERENCES

Authority	California High-Speed Rail Authority
BNSF	BNSF Railway
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
ESRI	Environmental Systems Research Institute
Fed. Reg.	*Federal Register*
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
U.S.C.	United States Code

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