8 Preferred Alternative

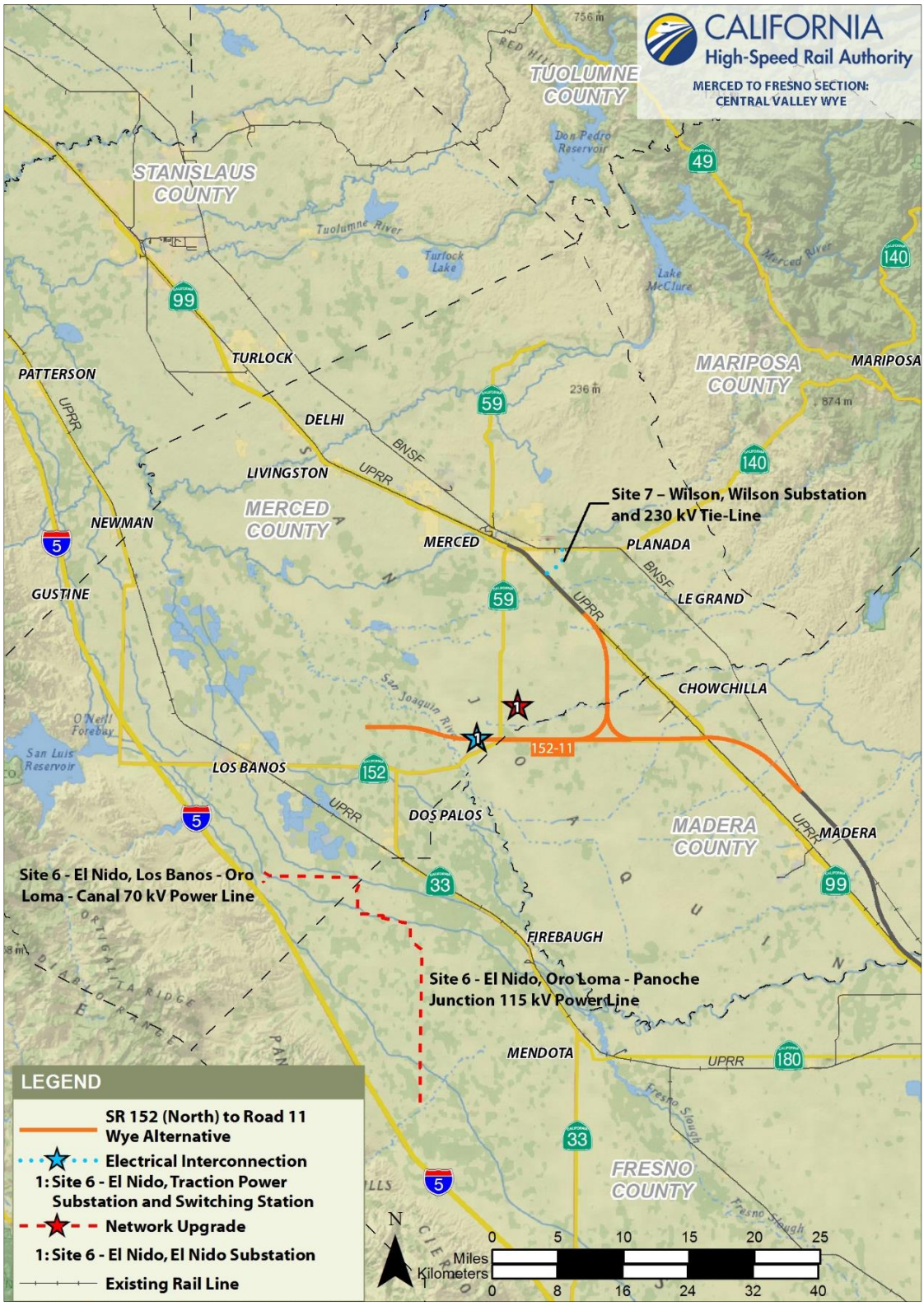
8.1 Introduction

This chapter of the *Merced to Fresno Section: Central Valley Wye Draft Supplemental Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Draft Supplemental EIR/EIS) identifies the California High-Speed Rail Authority's (Authority) and Federal Railroad Administration's (FRA) Preferred Alternative for the Central Valley Wye. As described in Chapter 1, Introduction and Purpose, Need, and Objectives, the *Merced to Fresno Section California High-Speed Train Final Project EIR/EIS* (Merced to Fresno Final EIR/EIS) (Authority and FRA 2012) identified the Merced to Fresno Section: Hybrid Alternative as the preferred alternative, for the north/south alignment of the high-speed rail for the Merced to Fresno Section. When the Authority and FRA approved the Merced to Fresno Section in 2012, they deferred a decision on the area known as the "wye connection", that is, the east-west high-speed rail connection between the San Jose to Merced Section to the west and the portion of the north-south Merced to Fresno Section to the east to allow for additional environmental analysis.

The Authority and FRA have conducted that analysis in this Draft Supplemental EIR/EIS and identified the SR 152 (North) to Road 11 Wye Alternative as the Preferred Alternative. Beginning at the intersection of Henry Miller Road and Carlucci Road, this alternative would extend approximately 51 miles through Merced and Madera Counties. The alignment follows the existing Henry Miller Road and State Route (SR) 152 rights-of-way as closely as practicable in the east-west direction, and the Road 11, SR 99, and BNSF Railway rights-of-way in the north-south direction (Figure 8-1). Electrical interconnection facilities required for implementation would include a 115 kilovolt (kV) traction power substation and switching station located immediately east of the intersection between the SR 152 (North) to Road 13 Wye Alternative and the Eastside Bypass. The electrical interconnection facilities required would also include an approximately 2.3-mile-long, double-circuit 230 kV tie-line to a reconfigured Wilson Substation. Network upgrades would include expanding the existing El Nido Substation and reconductoring (i.e., replacing the existing conductor with a more efficient conductor and replacing or modifying existing poles) 16.9 miles of the single-circuit Panoche-Oro Loma 115 kV power line and 13.3 miles of the single-circuit Los Banos–Oro Loma-Canal 70 kV power line.

Identification of the Preferred Alternative is based on the data presented in this Draft Supplemental EIR/EIS, including supporting technical reports and input provided to date by agencies, local communities, and stakeholders.

In identifying the Preferred Alternative, the Authority and FRA were guided by the project purpose and need and project objectives described in Chapter 1, as well as Section 404(b)(1) Guidelines of the Clean Water Act requirements (40 Code of Federal Regulations § 230-233) (Section 404(b)(1) Guidelines), including avoiding and minimizing impacts on waters of the United States and other sensitive environmental resources. As a result of the analyses in this Draft Supplemental EIR/EIS, the Authority and FRA have concluded the Preferred Alternative is also the preliminary least environmentally damaging practicable alternative under the U.S. Army Corps of Engineers' (USACE) Section 404(b)(1) Guidelines.



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

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Figure 8-1 SR 152 (North) to Road 11 Wye Alternative and Associated Electrical Interconnections and Network Upgrades

8.2 Summary of Stakeholder Meetings

Stakeholder input is a critical component of the Authority's process in identifying the reasonable range of alternatives for further evaluation in the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) environmental processes, and the Authority has been closely coordinating with a variety of individuals, local governments, and organizations to obtain input on which Central Valley Wye alternatives are preferred by local agency and public stakeholders. The lead agencies have conducted extensive agency and public outreach as part of the analysis in this Draft Supplemental EIR/EIS, which is described in detail in Chapter 9, Public and Agency Involvement. Public and agency involvement efforts began with the alternatives analysis and development of the wye connection in 2010 as part of the Merced to Fresno Final EIR/EIS, which is described in Section 2.1.2, The Wye Connection. Chapter 8, Public and Agency Involvement, of the Merced to Fresno Final EIR/EIS includes additional information on public and stakeholder involvement that occurred previously (Authority and FRA 2012: pages 8-1 through 8-49). The alternatives analysis reports listed in Section 8.3, Alternatives Considered, summarize previous stakeholder and public feedback in addition to input from regulatory agencies.

Following the approval of the Merced to Fresno Section in 2012, the Authority and FRA held a series of open houses, formal presentations, and question and comment sessions to present information and provide opportunities for input by local agency and public stakeholders regarding the wye connection. In addition to the five public information meetings held in Chowchilla and Fairmead in March 2013, January 2015, and December 2016, 157 meetings (listed below) were held with public stakeholders and agencies between June 2012 and May 2018 (the dates and topics of these meetings are listed in Table 9-1 in Chapter 9):

- California Department of Corrections and Rehabilitation (2 meetings)
- California Department of Transportation (Caltrans) District 10 (2 meetings) and District 6 (3 meetings)
- Central California Irrigation District (1 meeting)
- Central Valley Flood Protection Board (1 meeting)
- Central Valley Rails to Trails (1 meeting)
- Chowchilla School District (6 meetings)
- Chowchilla Water District (2 meetings)
- City of Chowchilla (10 meetings)
- City of Chowchilla and Caltrans District 7 (1 meeting)
- City of Chowchilla, Caltrans District 6, and private developer (1 meeting)
- City of Chowchilla and Friends of Fairmead (1 meeting)
- City of Madera (1 meeting)
- City of Merced (1 meeting)
- Congressman Costa's staff, Merced College President Taylor, Madera County Supervisor Farinelli (1 meeting)
- Fagundes Ranch, Preserve Our Heritage, and Fagundes Brothers (2 meetings)
- Fairmead Community and Friends (13 meetings)
- Fred Fagundes, Judge Brigby, Madera County Planning and Roads Department (1 meeting)
- Fred Fagundes, Preserve Our Heritage, and Merced County Farm Bureau (1 meeting)
- Fresno-Madera Fire and Life Safety (1 meeting)

- Elected officials (4 meetings)
- Greenhills Estates property owners, Chowchilla City Manager Lewis, Chowchilla Mayor Walker, and Madera County Supervisor Rogers (1 meeting)
- Henry Miller Reclamation District (2 meetings)
- Landowners, developers, farmers, and businesses (10 meetings)
- Lower San Joaquin Levee District (2 meetings)
- Madera County (9 meetings)
- Madera County Supervisor and Lazy K Ranch (1 meeting)
- Madera County Farm Bureau, Merced County Farm Bureau, and Kole Upton (1 meeting)
- Madera County Farm Bureau (3 meetings)
- Merced County (6 meetings)
- Merced County Association of Governments (1 meeting)
- Merced County Farm Bureau (3 meetings)
- Merced County Supervisor Pedrozo and Marchini Farms (1 meeting)
- Merced County Supervisor Pedrozo, Minturn Nut Company, and Marchini Farms (1 meeting)
- Pacific Gas & Electric (1 meeting)
- Preserve Our Heritage (2 meetings)
- Preserve Our Heritage, Fagundes Brothers, and Greenhills Homeowners Association (1 meeting)
- San Luis Canal Company (1 meeting)
- Tribal coordination meetings (4 meetings)
- Union Pacific Railroad (2 meetings)
- Technical Working Group meetings included the following:
  - Central Valley Rail Policy Working Group and San Joaquin Regional Conservation Corps (1 meeting)
  - Farm Bureau Working Group
    - Madera County Farm Bureau and Merced County Farm Bureau (14 meetings)
    - Madera County Farm Bureau, Merced County Farm Bureau, Preserve Our Heritage, and Chowchilla Water District (4 meetings)
    - Madera County Farm Bureau, Merced County Farm Bureau, Preserve Our Heritage Members, Chowchilla Water District staff, and Alview Dairyland Union School District staff (1 meeting)
- Resource agency meetings included the following:
  - Coordination meetings with the U.S. Environmental Protection Agency (USEPA) and USACE (3 meetings)
  - Coordination meeting with the USACE, USEPA, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), U.S. Bureau of Reclamation (USBR), California Department of Fish and Wildlife (CDFW), State Water Resources Control Board (SWRCB), and Central Valley Flood Protection Board (1 meeting)

- Environmental Justice outreach meeting with USEPA (1 meeting) [1]
- Permitting meetings with USACE (4 meetings)
- Central Valley regional coordination meetings:
  - USEPA, USACE, USBR, STB (1 meeting)
  - USACE, USEPA, USFWS, NMFS, USBR, CDFW, SWRCB, CVFPB (1 meeting)
  - USACE, USEPA, CDFW, NMFS, and SWRCB (1 meeting)
  - USACE, USEPA, USFWS, USBR, CDFW, SWRCB, and NMFS (1 meeting)
  - USACE, CDFW, USFWS, NMFS, and U.S. Forest Service (1 meeting)
  - Monthly Coordination Meetings with Cooperating Agencies (15 meetings)

All comments received on the public Draft Supplemental EIR/EIS will be reviewed and considered, consistent with the requirements of NEPA and CEQA.

8.3 Alternatives Considered

The Authority and FRA began the alternatives screening process for the Central Valley Wye connection prior to publication of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012). This early alternatives development process is discussed in detail in Section 2.1.2.1, Early Development of the Wye Connection and the Merced to Fresno Final EIR/EIS. The Authority certified the Merced to Fresno Final EIR/EIS under CEQA on May 3, 2012, and filed a Notice of Determination on May 4, 2012. Although the Authority approved the Merced to Fresno Section: Hybrid Alternative for the north/south alignment of the high-speed train and the Downtown Merced and Downtown Fresno Mariposa Street station locations, these approvals deferred a decision on the wye connection to a future environmental analysis. The Authority also adopted CEQA findings of fact and a statement of overriding considerations, and adopted a mitigation monitoring and reporting program. The FRA issued a Record of Decision (ROD) under NEPA on September 18, 2012, and the Surface Transportation Board issued a ROD on June 13, 2013. Through the ROD, the FRA approved the Merced to Fresno Section: Hybrid Alternative and Downtown Merced and Downtown Fresno Mariposa Street station locations, consistent with the Authority's decision in May. Following these 2012 decisions, the Authority and FRA engaged in additional outreach and discussions with stakeholders to identify ways to refine the Central Valley Wye alternatives and minimize potential impacts.

Through a series of documents prepared between 2013 and 2016 (listed below), the Authority and FRA chronicled agency consultation, public outreach, and preliminary alternatives analysis:

- *Merced to Fresno Section: Central Valley Wye Alternatives Supplemental Alternatives Analysis Report* (Authority and FRA 2013a)
- *Supplemental Checkpoint B Summary Report* (Authority and FRA 2013b)
- *Report Addendum for the September 10, 2013, Checkpoint B Summary Report* (Authority and FRA 2014a)
- *Second Report Addendum to the September 10, 2013, Checkpoint B Summary Report* (Authority and FRA 2014b)
- *Third Report Addendum to the September 10, 2013, Checkpoint B Summary Reports* (Authority and FRA 2016a)

The Central Valley Wye alternatives evaluated during this process corresponded with four general corridor combinations: north of SR 152, south of SR 152, east of Chowchilla, and west of Chowchilla. Each of the alternatives was designed to align with existing transportation corridors where feasible. In August and September 2014, respectively, the USEPA and USACE concurred with the Authority and FRA on the alternatives to be evaluated in a supplemental EIR/EIS: the

[1] Held as part of the Central Valley Regional Coordination Meetings.

SR 152 (North) to Road 13 Wye Alternative, the SR 152 (North) to Road 19 Wye Alternative, and the Avenue 21 to Road 13 Wye Alternative. In December 2016, the USEPA and the USACE concurred on the decision to carry forward the SR 152 (North) to Road 11 Wye Alternative as well. This Draft Supplemental EIR/EIS evaluates the following four alternatives:

- 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

Refer to Section 2.1.2.2, Consultation after the Merced to Fresno Final EIR/EIS, for more information on the alternatives analysis process, and Section 2.2.3, Description of the Central Valley Wye Alternatives, for more information about the Central Valley Wye alternatives analyzed in this Draft Supplemental EIR/EIS.

8.4 Factors Influencing the Identification of the Preferred Alternative

The Authority and FRA identify SR 152 (North) to Road 11 Wye Alternative as the Preferred Alternative because it would maximize regional transportation investments and minimize impacts on environmental and community resources. Additionally, the SR 152 (North) to Road 11 Wye Alternative would have lower capital costs than the other Central Valley Wye alternatives. A summary of the evaluation of these considerations, including initial stakeholder feedback on inclusion of the SR 152 (North) to Road 11 Wye Alternative in the Draft Supplemental EIR/EIS for analysis, is presented below.

8.4.1 Key Transportation Planning Considerations

One of the Authority's objectives for the high-speed rail (HSR) program is to use existing transportation corridors to reduce environmental effects. All four alternatives achieve this objective by following existing transportation corridors. However, the three alternatives that follow SR 152 would better meet the long-term transportation planning vision for the region and maximize the investment in the regional transportation system by focusing improvements on the SR 152 corridor. SR 152 in this region is a four-lane divided expressway under jurisdiction of Caltrans with a mix of controlled and uncontrolled access. SR 152 serves local traffic and regional travelers between Interstate 5 and SR 99, as well as travelers from the Bay Area, the Central Valley, and destinations beyond, such as the Sierra Nevada and Yosemite National Park. By contrast, Avenue 21 is a rural two-lane local road situated approximately 2 miles south of SR 152 and primarily serves local and agricultural traffic. The differences between the two roadways render SR 152 the better corridor for the HSR to follow because:

- Constructing grade separations along SR 152 would upgrade[2] the transportation facility to a freeway,[3] which would result in improved traffic flow and regional transportation benefits:
  - The SR 152 alternatives would require rebuilding two existing interchanges at SR 59 and SR 233, two new interchanges at Road 9 and Road 16, and three new overcrossings at Road 4, Road 12, and Road 17 1/2. The grade separations would improve the traffic flow for the approximately 17,000 daily motorists that use SR 152 and would benefit local and regional transportation needs (Caltrans 2016).
  - In contrast to the 17,000 daily motorists that travel SR 152 (Caltrans 2016), Avenue 21 carries an average of 328 daily motorists (Parsons 2012). The Avenue 21 to Road 13 Wye Alternative would provide grade separations for local traffic connections across the HSR system parallel to Avenue 21, but would not provide any grade separations along SR 152. However, grade separating SR 152 would provide a greater regional

[2] This would occur from Carlucci Road to SR 99 for the Central Valley Wye alternatives along SR 152. Additional upgrades would occur west of Carlucci Road along SR 152 in the San Jose to Merced Section.

[3] A freeway is a major roadway with controlled access, devoted exclusively to traffic movement, mainly of a through or regional nature.

transportation benefit than the Avenue 21 to Road 13 Wye Alternative roadway improvements because of the greater number of motorists that use the SR 152 corridor.

- Caltrans's long-term plans for SR 152 include conversion of this facility to a four-lane, grade-separated controlled-access expressway to carry east-west traffic in the region (Caltrans 2015, 2016). The grade separations associated with the SR 152 alternatives would assist Caltrans in meeting its goals for a grade-separated facility and would increase the number of grade-separated crossings relative to Caltrans's plans (Caltrans 2015, 2016). In contrast, there are no existing plans to convert Avenue 21 from a local road to a grade-separated facility, and the improvements proposed under the Avenue 21 to Road 13 Wye Alternative would therefore not serve to advance the existing long-term transportation plans for the region. Building grade separations for Avenue 21 as part of the HSR program in addition to Caltrans' plans to grade-separate SR 152, which are located 2 miles apart, would be redundant and costly. In addition, both SR 152 and Avenue 21 pass through agricultural areas, and grade separating both corridors would increase the conversion of farmland to transportation uses associated with the construction of overcrossings.
- Upgrading a portion of SR 152 to a freeway would also generate safety benefits on SR 152 and at intersections of roads crossing SR 152. Currently, rural roads cross SR 152 at grade every mile, creating a safety hazard for motorists. The highway median is too narrow to contain large vehicles crossing SR 152, so slow-moving trucks and agricultural equipment can block both directions of traffic when crossing the highway. In the winter, the Central Valley is subject to dense fog, which reduces visibility and increases the accident risk (refer to Section 3.11.5.2, Community Safety and Security, for a complete description of existing safety issues along SR 152). As a result of constructing the grade separations, the stretch of SR 152 adjacent to the HSR system, including near the city of Chowchilla, would become fully access controlled with interchanges providing full-speed on- and off-ramps. The Avenue 21 to Road 13 Wye Alternative would include grade separations along Avenue 21 but would not include any grade separations along SR 152. As a result, the improvements implemented as part of the Avenue 21 to Road 13 Wye Alternative would not benefit as many users and would not address the safety issues along the portion of the SR 152 adjacent to the Central Valley Wye alternatives.

8.4.2 Key Environmental Considerations

The Authority and FRA considered the whole of the environmental and other factors presented in this Draft Supplemental EIR/EIS when identifying which alternative would best balance the various natural resource and community impacts. Many impacts on the natural environment and community resources would be the same, or very similar, across all four Central Valley Wye alternatives. This is particularly the case for the three SR 152 alternatives. The identification of the Preferred Alternative is based on the environmental factors evaluated in the environmental analysis for this Draft Supplemental EIR/EIS that vary between Central Valley Wye alternatives. These factors are referred to in this chapter as key natural environment and community resource factors. Overall, the SR 152 (North) to Road 11 Wye Alternative would result in fewer and less severe impacts than any of the three other Central Valley Wye alternatives, although it would have greater impacts on some resources.

The following resources were not included in this discussion because the potential for impacts was common among the Central Valley Wye alternatives or did not vary widely: air quality; transportation; electromagnetic fields and interference; public utilities and energy; hydrology; geology, soils, seismicity, and paleontological resources; hazardous materials; and safety and security. Key natural environment and community resource factors influencing the identification of the Preferred Alternative include biological and aquatic resources, including wetlands; noise; socioeconomics and communities; land use and development; agricultural farmland; parks, recreation, and open space; aesthetics and visual resources; cultural resources; and environmental justice. These are discussed, respectively, in Section 8.4.2.1, Natural Environment Factors Influencing Identification of a Preferred Alternative, and Section 8.4.2.2, Community Resource Factors Influencing Identification of a Preferred Alternative.

The analysis of impacts on natural environment and community factors from construction and operations of the Central Valley Wye alternatives is based on the best information available during the development of this Draft Supplemental EIR/EIS. The majority of the baseline information presented in the resource sections in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures; Chapter 4, Section 4(f) and 6(f) Evaluations; and Chapter 5, Environmental Justice, was collected from existing publicly available data, public and agency outreach, on-site reconnaissance surveys, and windshield surveys using public roads and rights-of-way. On-site field surveys for biological resources, wetlands and aquatic habitat, and cultural resources were conducted where permission to enter was granted. Where access to properties was not granted, survey data were supplemented with reconnaissance-level surveys and desktop analysis, including review of existing literature, natural resource databases, and aerial photographs. For cultural resources, pedestrian surveys were conducted in tandem with archival research and outreach and consultation efforts with federal, state, and local agencies; tribal governments; and other interested parties. The data collected using these methods provided sufficient information to differentiate between the potential for adverse and beneficial impacts among the Central Valley Wye alternatives.

The identification of the Preferred Alternative was also informed by FRA's evaluation under Section 4(f) of the Department of Transportation Act (49 United States Code [U.S.C.] § 303) (Section 4(f)) which provides special protection to publicly owned public parks; recreational areas of national, state, or local significance; wildlife or waterfowl refuges; and lands of an historic site of national, state, or local significance. As described in Chapter 4, Section 4(f) properties can only be used by federally funded transportation projects if there is no feasible and prudent alternative and all possible planning has been taken to minimize harm to any Section 4(f) property. Although the SR 152 (North) to Road 11 Wye Alternative would result in the use of a Section 4(f) property, there are no feasible and prudent alternatives avoiding the use. For more information on FRA's evaluation under Section 4(f), refer to Chapter 4.

8.4.2.1 Natural Environment Factors Influencing Identification of a Preferred Alternative

The following natural environment factors, summarized in Table 8-1, were considered by the Authority and FRA in identifying the Preferred Alternative:

- Biological Resources and Wetlands (Section 3.7, Biological Resources and Wetlands)
  - Temporary direct impacts on wetlands and other waters[4]
  - Permanent direct impacts on wetlands and other waters (excluding vernal pools)
  - Permanent direct and indirect impacts on vernal pools
  - Temporary direct impacts on riparian and stream habitats[5]
  - Permanent direct impacts on riparian and stream habitats
  - Temporary and Permanent Direct Impacts on Special-Status Plant Species
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Invertebrates
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Fish
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Amphibians
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Reptiles
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Birds
  - Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Mammals
  - Special-status plant communities impacts
  - Designated critical habitat
  - Wildlife movement corridors

[4] As used in this section, wetlands and other waters refers to jurisdictional waters regulated by the federal government (U.S. Army Corps of Engineers) under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

[5] As used in this section, riparian and stream habitats refer to jurisdictional aquatic resources regulated under Section 1600 et seq. of the California Fish and Game Code.

- New permanent waterbody crossings
- New area of permanent disturbance

Construction of all the Central Valley Wye alternatives would result in both temporary and permanent adverse impacts on natural resources, including wetlands and other waters, special-status plant and wildlife habitat, designated critical habitat, and wildlife movement corridors. While the magnitude of impacts among the Central Valley Wye alternatives is similar (Table 8-1), certain alternatives better minimize the impacts on these natural resources.

Of the four Central Valley Wye alternatives, the SR 152 (North) to Road 19 Wye Alternative would be the longest alternative (55 miles) with the largest area of permanent disturbance (2,804 acres), and would result in the most direct impacts in ten of the sixteen natural environment impacts listed in Table 8-1. The SR 152 (North) to Road 13 Wye Alternative would have the next largest area of permanent disturbance (2,615 acres) and would result in more impacts than the SR 152 (North) to Road 11 Wye Alternative on all the key natural environment factors listed in Table 8-1, with the exception of impacts on vernal pools, designated critical habitat impacts, and new waterbody crossings.

Table 8-1 Comparison of Central Valley Wye Alternatives Key Natural Environment and Community Resource Factors

Parameter	Alternatives			
	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
Natural Environment Impacts				
Temporary Impacts on Wetlands and Other Waters (acres)	9.95	10.17	9.73	7.26
Permanent Direct Impacts on Wetlands and Other Waters (excluding vernal pools) (acres)	29.03	27.17	35.21	22.49
Permanent Direct and Indirect Impacts on Vernal Pools (acres)	0.23	0.23	0.75	0.23
Temporary Direct Impacts on Riparian and Stream Habitats (acres)	4.15	4.64	5.81	3.40
Permanent Direct Impacts on Riparian and Stream Habitats (acres)	7.83	9.05	7.12	5.88
Temporary and Permanent Direct Impacts on Special-Status Plant Species	Fewest impacts to 2 special-status plant species	Greatest impacts to 3 special-status plant species Fewest impacts to 3 special-status plant species	Greatest impacts to 2 special-status plant species Fewest impacts to 4 special-status plant species	Fewest impacts to 3 special-status plant species
Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Invertebrates	Fewer impacts to special-status invertebrate species than the Avenue 21 to Road 13 Wye Alternative	Fewer impacts to special-status invertebrate species than the Avenue 21 to Road 13 Wye Alternative	Greatest impacts to special-status invertebrate species	Least impacts to special-status invertebrate species
Direct Impacts on Special-Status Wildlife Species – Fish	Greatest impacts to special-status fish species along with the SR 152 (North) to Road 19 Wye Alternative	Greatest impacts to special-status fish species along with the SR 152 (North) to Road 13 Wye Alternative	Least impacts to special-status fish species	Fewer impacts to special-status fish species than the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 19 Wye alternatives

Parameter	Alternatives			
	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
Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Amphibians	Second greatest impacts to special-status amphibian species	Greatest impacts to special-status amphibian species	Least impacts to special-status amphibian species	Second least impacts to special-status amphibian species
Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Reptiles	Second greatest impacts to most special-status reptile species	Greatest impacts to most special-status reptile species	Least impacts to most special-status reptile species	Second least impacts to most special-status reptile species
Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Birds	Second greatest impacts to most special-status bird species	Greatest impacts to most special-status bird species	Least impacts to most special-status bird species	Second least impacts to most special-status bird species
Temporary and Permanent Direct Impacts on Special-Status Wildlife Species – Mammals	Second greatest impacts to most special-status mammal species	Greatest impacts to most special-status mammal species	Least impacts to most special-status mammal species	Second least impacts to most special-status mammal species
Special Status Plant Communities Impacts[1] (acres)	7.19	8.07	9.45	6.52
Designated Critical Habitat Impacts (acres)[2]	No	367.46/4.72 (mapped CH versus aquatic habitat)	No	2.94/0.21 (mapped CH versus aquatic habitat)
Wildlife Movement Corridor Impacts (miles)	11.0	17.5	11.8	10.4
Total New Permanent Waterbody Crossings	29	30	35	30
Total Area of Permanent Disturbance (acres)	2,615	2,804	2,414	2,565
Community Resource Impacts				
Exposure of Sensitive Receptors to Severe Noise from Operations (number of single-family residences severely affected)	27	23	39	35
Exposure of Sensitive Receptors to Moderate Noise from Operations (number of single-family residences severely affected)	65	58	40	61
Estimated Number of Residences Displaced	96	119	65	62
Estimated Number of Residents Relocated	315	391	213	224

Parameter	Alternatives			
	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
Estimated Number of Businesses Displaced	8	8	1	7
Estimated Number of Agricultural Facilities Displaced	21	17	29	16
Conversion of Existing Land Uses in Community of Fairmead (Yes/No)	Yes	Yes	No	Yes
Direct Conversion of Important Farmland (acres permanently converted to nonagricultural use)[3]	2,182	2,305	2,263	2,144
Number of Crossings of Ash and Berenda Sloughs Open-Space Corridors	2	3	1	2
Permanent Changes to Aesthetic and Visual Quality in Community of Fairmead (Yes/No)	Yes	Yes	No	Yes
Robertson Boulevard Tree Row (linear feet of disturbance)	4,516	4,428	5,590	4,088
Impacts on Community Cohesion in Community of Fairmead (Yes/No)	Yes	Yes	No	Yes

Source: Authority and FRA, 2018
[1] Includes a range of special-status plant communities, including vernal pools, Great Valley mixed riparian, other riparian, seasonal wetlands, palustrine forested wetlands, and valley sink scrub.
[2] Federally designed critical habitat for one plant species (San Joaquin Orcutt grass) and two invertebrate species (vernal pool fairy shrimp and vernal pool tadpole shrimp) associated with vernal pools.
[3] Important Farmland includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.
CH = critical habitat

The SR 152 (North) to Road 11 Wye Alternative and the Avenue 21 to Road 13 Wye Alternative would have the two smallest areas of permanent disturbance (2,565 acres and 2,414 acres, respectively) of the Central Valley Wye alternatives. In general, the potential impacts on natural environmental factors would be similar between these two alternatives, although there are differences in the amount of habitat and wetlands and other waters within the project footprint of each alternative. The Avenue 21 to Road 13 Wye Alternative would result in the least impacts on habitat for multiple special-status wildlife species and a smaller area of permanent disturbance relative to the other alternatives. The SR 152 (North) to Road 11 Wye Alternative would result in fewer impacts on wetlands and other waters, vernal pools, riparian and stream habitats, special-status wildlife invertebrate species, special status plant communities, wildlife movement corridors, and fewer permanent waterbody crossings. Overall, the SR 152 (North) to Road 11 Wye Alternative would have the least impact on aquatic habitats and associated aquatic organisms as compared to the other alternatives. For terrestrial wildlife habitats and organisms, all alternatives are generally comparable; however, the Avenue 21 to Road 13 Wye Alternative would have the least impact, followed by the SR 152 (North) to Road 11 Wye Alternative.

In the Central Valley, wetlands and other waters are important, in part because they provide habitat for a greater range of plants and animals compared with agricultural lands. These wetlands and other waters provide aquatic habitats of relatively high value for a diverse population of biological species that depend on them, but these habitats have been reduced to a small fraction of their original extent as a result of historic and continuing development pressures and agricultural activities. The importance of these wetlands and other waters as aquatic habitat and their reduced availability because of development and agriculture increases the importance to minimize potential impacts to the maximum extent feasible. The SR 152 (North) to Road 11 Wye Alternative would result in fewer overall impacts on these aquatic resources and fewer impacts on special-status plant communities, designated critical habitat, and wildlife movement corridors.

8.4.2.2 Community Resource Factors Influencing Identification of a Preferred Alternative

The following key community resource factors, summarized in Table 8-1, were considered by the Authority and FRA in identifying the Preferred Alternative:

- Noise (Section 3.4, Noise and Vibration)
  - Exposure of sensitive receptors to severe noise from operations
  - Exposure of sensitive receptors to moderate noise from operations
- Socioeconomics and Community (Section 3.12, Socioeconomics and Communities)
  - Number of residences displaced
  - Number of residences relocated
  - Number of businesses displaced
  - Number of agricultural facilities displaced
- Land Use and Development (Section 3.13, Land Use and Development)
  - Conversion of existing land uses in community of Fairmead
- Agricultural Farmland (Section 3.14, Agricultural Farmland)
  - Direct conversion of Important Farmland[6]
- Parks, Recreation, and Open Space (Section 3.15, Parks, Recreation, and Open Space)
  - Number of crossings of Ash and Berenda Sloughs open-space corridors

[6] Important Farmland includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance as defined under the Farmland Mapping and Monitoring Program, which is administered by the California Department of Conservation.

- Aesthetics and Visual Quality (Section 3.16, Aesthetics and Visual Resources)
  - Permanent changes to aesthetic and visual quality in community of Fairmead
- Cultural Resources (Section 3.17, Cultural Resources)
  - Robertson Boulevard Tree Row
- Environmental Justice (Chapter 5, Environmental Justice)
  - Impacts on community cohesion in community of Fairmead

Noise

Operations of all four Central Valley Wye alternatives would increase noise levels above the ambient noise environment and would have moderate to severe noise impacts on residences. None of the alternatives would affect other types of sensitive receptors (e.g., schools, churches, cemeteries). The SR 152 alternatives would pass by more residences along SR 152 and east of SR 99 through Fairmead, and would therefore expose a greater numbers of sensitive receptors to moderate operations noise impacts than the Avenue 21 to Road 13 Wye Alternative. However, the Avenue 21 to Road 13 Wye Alternative would expose the most sensitive receptors (39 severely affected receptors) to severe operations noise impacts compared to the SR 152 alternatives. The SR 152 (North) to Road 11 Wye Alternative would have severe operations noise impacts on more sensitive receptors (35 severely affected receptors) relative to the other SR 152 alternatives but fewer than those that would be affected by the Avenue 21 to Road 13 Wye Alternative (Table 8-1). The reason that more residences would be subject to severe noise impacts under the Avenue 21 to Road 13 Wye Alternative and the SR 152 (North) to Road 11 Wye Alternative than the other two SR 152 alternatives is largely correlated to the number of residential displacements. As described below under Socioeconomics and Communities, the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 19 Wye Alternative would result in the displacement of more residences than the SR 152 (North) to Road 11 Wye Alternative and the Avenue 21 to Road 13 Wye Alternative. These displacements would relocate homes away from the HSR alignment, which would subject fewer sensitive receptors to severe noise impacts during operations. Therefore, while the Avenue 21 to Road 13 Wye Alternative and SR 152 (North) to Road 11 Wye Alternative would have operational noise impacts on most single-family residences, they would also displace fewer residences than the SR 152 to Road 19 Wye Alternative and SR 152 to Road 13 Wye Alternative.

Socioeconomics and Communities

All of the Central Valley Wye alternatives would displace residences, businesses, and agricultural facilities along the alignments and require relocation of residents. The majority of displaced residential units would occur in unincorporated Madera County, while the greatest variation among alternatives in the number of displacements would occur in Fairmead. Because the Avenue 21 to Road 13 Wye Alternative would pass farther south of Chowchilla and Fairmead than the three SR 152 alternatives, and therefore would cross generally less densely populated areas, it would require the displacement and relocation of the fewest businesses and residents, displace the second fewest residential units, and displace the most agricultural facilities (65 residential units displaced; 213 residents relocated; 1 business displaced; 29 agricultural facilities displaced) (Table 8-1). Of the three SR 152 alternatives, the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 19 Wye Alternative would result in the displacement of more residences, businesses, and agricultural facilities than the SR 152 (North) to Road 11 Wye Alternative. The SR 152 (North) to Road 11 Wye Alternative would displace the fewest residential units, displace and relocate the second fewest businesses and residents, and displace the fewest agricultural facilities (62 residential units displaced; 224 residents relocated; 7 business displaced; 16 agricultural facilities displaced) (Table 8-1).

Land Use and Development

Construction activities associated with all four Central Valley Wye alternatives would permanently convert existing land uses to transportation uses. The primary impact on existing land use

patterns would occur within the community of Fairmead, which would be bisected by 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. These alternatives would result in the physical conversion of portions of the community of Fairmead to transportation-related uses, potentially resulting in reductions or restrictions in access between the northern and southern portions of the Fairmead community. The alternatives would also convert land identified for future development in the draft *Fairmead Colony Area Plan* (Madera County Planning Department 2012), which could alter current and planned land use changes occurring within the community. The Avenue 21 to Road 13 Wye Alternative would not result in restriction in access, land conversion, or changes in land use patterns in the community of Fairmead.

Agricultural Farmland

Agricultural activities support the livelihoods of many families in the Central Valley and form the foundation of the economy in this area. As shown in Table 8-1, the permanent conversion of Important Farmland to a nonagricultural use would be greatest under the SR 152 (North) to Road 19 Wye Alternative (2,305 acres) and least under the SR 152 (North) to Road 11 Wye Alternative (2,144 acres). The SR 152 (North) to Road 11 Wye Alternative would result in the least impact on Important Farmland in comparison to the other alternatives.

Parks, Recreation, and Open Space

All four Central Valley Wye alternatives would cross two currently undeveloped open-space corridors, Berenda and Ash Sloughs. Planned trail corridors have been proposed for both sloughs in the *City of Chowchilla 2040 General Plan* (City of Chowchilla 2011), the development and use of which could be hindered by the construction of the Central Valley Wye alternatives across the sloughs. These effects would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would cross Berenda Slough twice and Ash Slough once, followed by the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 11 Wye Alternative, which would cross each slough once, and Avenue 21 to Road 13 Wye Alternative, which would cross Ash Slough once and would not cross Berenda Slough (Table 8-1).

Aesthetics and Visual Quality

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 all pass within 0.25 mile of concentrations of residences in the community of Fairmead. HSR infrastructure associated with these alternatives would introduce permanent changes to the aesthetic and visual quality of existing residential views that would contrast with the rural and agricultural setting (the Fairmead Landscape Unit). Fenced HSR tracks, overhead catenary systems, berms, and embankments rising from the flat landscape, and overcrossings and viaducts for HSR and roadways would block scenic views and degrade visual quality for residential viewers. The Avenue 21 to Road 13 Wye Alternative would cross the southern end of the community of Fairmead and would therefore not affect aesthetics and visual quality in the Fairmead Landscape Unit.

Cultural Resources

All of the Central Valley Wye alternatives would cross Robertson Boulevard and require the permanent alteration of the Robertson Boulevard Tree Row. The removal of palm trees along the tree row would result in an adverse effect under Section 106 of the National Historic Preservation Act and a use under Section 4(f) of the Department of Transportation Act. The greatest impacts would occur under the Avenue 21 to Road 13 Wye Alternative which would disturb approximately 5,590 linear feet of the tree row. In contrast to the Avenue 21 to Road 13 Wye Alternative, which would cross Robertson Boulevard where the tree row is relatively intact, the SR 152 alternatives would cross Robertson Boulevard approximately 1 mile to the north in an area where trees have been removed by previous development projects. As a result, the SR 152 alternatives would result in the disturbance of approximately 1,000 fewer linear feet than the Avenue 21 to Road 13 Wye Alternative. All three of the SR 152 alternatives would cross Robertson Boulevard in approximately the same location but with different configurations. As shown in Table 8-1, the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 19 Wye Alternative would

disturb approximately 4,516 and 4,428 linear feet of the tree row, respectively. The alignment of the SR 152 (North) to Road 11 Wye Alternative would require the fewest linear feet of disturbance along Robertson Boulevard, approximately 4,088 linear feet. While all alternatives would result in unavoidable adverse effects on the Robertson Boulevard Tree Row, the SR 152 (North) to Road 11 Wye Alternative would result in the least impacts.

Environmental Justice

One of the major distinguishing factors among the Central Valley Wye alternatives is the alignment routing relative to Fairmead, a small community in unincorporated Madera County with a high proportion of low-income and minority residents. The Avenue 21 to Road 13 Wye Alternative would pass along the southern edge of Fairmead and would not result in direct or indirect impacts to that community. However, the three SR 152 alternatives would curve through Fairmead, resulting in impacts on community cohesion.

The three SR 152 alternatives would travel through Fairmead on an embankment, introducing a new linear feature that curves through the community. The SR 152 (North) to Road 19 Wye Alternative would result in the greatest impact as its wye legs would extend through Fairmead in the directions of San Jose, Fresno, and Merced. Fairmead would experience impacts, including noise, visual impacts, community cohesion, and residential displacements, which would be mitigated, as they would in other areas along the alignment. The SR 152 alternatives would affect community cohesion because, while some roads would be grade separated and remain open to travel across the HSR system, others would be closed and would therefore impede travel (by car, bike, or on foot) between residences in the northern part of the community and the residences and community facilities (e.g., Fairmead Elementary School) to the south. The introduction of the permanent transportation feature of the HSR system into the rural low-income and minority populations within the community of Fairmead, along with associated noise and visual impacts, impediments to travel between parts of the community, and the number of residential displacements in the community could adversely affect perceptions of quality of life, social relationships, and community character and cohesion within Fairmead.

As described in Chapter 5, the Authority has been conducting extensive outreach with the community of Fairmead to discuss measures that could mitigate impacts beyond the resource-specific mitigation measures that, for example, would reduce noise, visual impacts, and community division stemming from construction and operations of the Central Valley Wye alternatives. This mitigation was developed with the goal of offsetting the HSR contribution to stressors on the community. For example, the Chowchilla Elementary School District's long-range master plan involves the closure of the community's only public school and facility—Fairmead Elementary School. As part of mitigation measure EJ-MM#1, Provide a Community Center for the Community of Fairmead, the Authority would pursue purchase of this facility, leasing it back to the school district until the planned closure, and then retrofitting it as a community center to maintain a permanent meeting place for community gatherings and events. Through mitigation measure EJ-MM#2, Provide Water and Sewer Service for the Community of Fairmead, the Authority would address the community's lack of sewer and water service, which constrains future development, by providing funding to connect Fairmead to the Chowchilla Waste Water Treatment Plant and water system.

In addition to other mitigation proposed to address the impacts of the SR 152 (North) to Road 11 Wye Alternative, the mitigation measures proposed to address environmental justice impacts to the community of Fairmead would reduce the negative effect of existing stressors in the community, improve the quality of life of Fairmead residents, and remove a constraint to development in Fairmead. These improvements would only be applied with construction and operations of the SR 152 (North) to Road 11 Wye Alternative or the other two SR 152 alternatives. These mitigation measures are not proposed as part of the Avenue 21 to Road 13 Wye Alternative because that alternative would not result in direct or indirect impacts on the community, and therefore the long-term benefit to Fairmead from the ability of these measures to remove obstacles to future growth and fostering community cohesion would also not be realized. With the beneficial effect of the mitigation proposed for the SR 152 (North) to Road 11 Wye

Alternative and the other two SR 152 alternatives, there would be no disproportionately high and adverse effects on the community of Fairmead from construction and operations of any of the Central Valley Wye alternatives.

8.4.3 Stakeholder Feedback

The Authority and FRA have engaged extensively with stakeholders on the Central Valley Wye alternatives beginning with scoping in 2009 for the Merced to Fresno Section EIR/EIS and continuing through preparation of this Draft Supplemental EIR/EIS. During that time, the Authority and FRA have received hundreds of comments indicating a preference for one or more alternatives. These preferences have included requests as varied as locating the alignment closer to existing transportation corridors, locating the alignment farther from the City of Chowchilla, locating it farther from the community of Fairmead, or aligning it to avoid open agricultural land. Some of these preferences conflict with each other and it is not feasible to create an alignment that incorporates all preferences. The Authority and FRA have received the following general feedback:

- Agricultural Stakeholders: Prefer alternatives with least impact on agricultural farmland and associated facilities and utilities. Some favor SR 152 (North) to Road 11 Wye Alternative over SR 152 (North) to Road 13 Wye Alternative because of the configuration of current agricultural operations and potential impacts on utilities owned by the Chowchilla Water District along Road 13.
- City of Chowchilla: Generally prefers alternatives that are farther from the city limits.
- Fairmead Community and Friends (a local advocacy group): Avenue 21 to Road 13 Wye Alternative is the route preferred by the majority of the Fairmead community because it would have the least impact on Fairmead. Fairmead provided input for mitigation measures that would reduce impacts on cohesion of this low-income and minority community.
- School districts:
  - Chowchilla High School District: Prefer SR 152 alternatives because of the elimination of grade crossing along SR 152 and less disruption to school bus route zones.
  - Chowchilla Elementary School District: Prefer Avenue 21 to Road 13 Wye Alternative because of the proximity of the SR 152 alternatives to Fairmead elementary school.
  - Alview-Dairyland Union School District: Against Avenue 21 to Road 13 Wye Alternative because it bisects the school district.

On December 8, 2016, the Authority held a public meeting in Chowchilla and presented the information on all four Central Valley Wye alternatives under consideration, as shown in Table 8-1. According to the sign-in sheet, approximately 100 members of the public participated in the open house. Individuals represented businesses, including agricultural enterprises, and entities such as the City of Chowchilla, County of Madera, County of Merced, Madera County Farm Bureau, and Chowchilla Water District. The Authority invited meeting attendees to provide written comments. Of the 13 written comments received from private individuals and 1 dairy farm during this meeting, some expressed support for or opposition to alternatives, as shown in Table 8-2. Chapter 9 provides more details of the meetings held with stakeholders throughout the environmental process, beginning with the development of alternatives and continuing after identification of the Preferred Alternative.

Table 8-2 Feedback on Alternatives Received during Public Meeting on December 8, 2016

	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
Support	None received	2	None received	3
Oppose	1	None received	2	1

Source: Authority and FRA, 2018

8.4.4 Preliminary Cost Estimate

Table 8-3 presents the capital cost estimates for each of the Central Valley Wye alternatives. Conceptual cost estimates prepared for the alternatives were developed by using recent bid data from large transportation projects in the western United States and developing specific, bottom-up unit pricing to reflect common HSR elements and construction methods with an adjustment for Central Valley labor and material costs. All material quantities for the Central Valley Wye alternatives are based on a preliminary design. Additional information on the methods for developing these cost estimates and a breakdown by cost category (e.g., track, right-of-way acquisition, professional services) is provided in Chapter 6.

Table 8-3 Capital Costs of Central Valley Wye Alternatives (2015 U.S. Dollars)

	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
Capital Costs	$3,834,181,000	$4,208,116,000	$3,764,704,000	$3,613,068,000

Source: Authority and FRA 2016b

Capital costs for the alternatives would generally vary based on length of the alignments, number of grade separations, and aerial portions. The alignments are between 51 miles and 55 miles long. All would have grade separations approximately every 2 miles and aerial portions where tracks cross over each other for directional changes associated with a wye. The SR 152 (North) to Road 11 Wye Alternative is estimated to cost approximately $3.61 billion (in 2015 dollars), which is approximately $150 million less than capital costs for the other three alternatives, which would range in cost from approximately $3.76 to $4.21 billion.

8.5 Preferred Alternative

The SR 152 (North) to Road 11 Wye Alternative has been identified as the Preferred Alternative. It presents the best balance of natural environment and community resource impacts in comparison to the other Central Valley Wye alternatives in light of the purpose and need, as described in Section 8.4, Factors Influencing the Identification of the Preferred Alternative. The key considerations in making this determination are:

- The three SR 152 Central Valley Wye alternatives, including the Preferred Alternative, would result in local and regional transportation benefits from improvements to SR 152 that would not occur with the Avenue 21 to Road 13 Wye Alternative. Grade-separating SR 152 would improve traffic flow and reduce the potential for accidents. The proposed roadway improvements are consistent with existing Caltrans plans for SR 152.
- Overall, the Preferred Alternative would result in fewer impacts on key natural environmental factors than the other alternatives. Wetlands and other aquatic habitats provide a relatively high value for a diverse population of biological species and continue to be subject to severe development pressures. The Preferred Alternative would have the least impact on high-value aquatic habitats compared to the other Central Valley Wye alternatives.
- Overall, the Preferred Alternative would result in fewer impacts on community-based resources than the other Central Valley Wye alternatives. Compared to the other two SR 152 alternatives, the Preferred Alternative would result in substantially fewer business and residential displacements and it would convert less Important Farmland than all other Central Valley Wye alternatives.
- One of the primary factors under consideration is the location of the SR 152 alternatives through the community of Fairmead. In coordination with the local community, the Authority identified and developed mitigation aimed at offsetting impacts associated with the Preferred Alternative. This mitigation would provide an opportunity to maintain the quality of life in Fairmead and create local improvements that would not be realized without the HSR project.

- Extensive stakeholder outreach has not resulted in a clear community preference for a single alternative. Slightly more letters of support were received for the Preferred Alternative.
- The Preferred Alternative is estimated to cost the least to construct, based on preliminary engineering estimates, approximately $150 million less than the estimated costs to construct the other three Central Valley Wye alternatives.

Of the three SR 152 alternatives, the SR 152 (North) to Road 19 Wye Alternative is the longest alternative (55 miles) with the largest area of permanent disturbance and would result in the greatest impacts on the natural environment and community resources. As described in Section 8.4, the SR 152 (North) to Road 19 Wye Alternative would result in greater temporary and permanent adverse impacts on wetlands and other waters, special-status plant habitat, and wildlife movement corridors than the other alternatives. It would also result in greater impacts on community resources, including displacement of larger numbers of residential units and businesses and relocation of more residents than any of the other Central Valley Wye alternatives.

Because of its greater area of permanent disturbance within agricultural areas, the SR 152 (North) to Road 19 Wye Alternative would convert more acreage of Important Farmland to a nonagricultural use, resulting in greater impacts on the agricultural economy of the region. It would cross the Ash and Berenda Slough open-space corridors three times, the most of any of the Central Valley Wye alternatives, potentially limiting the development and use of future recreational trails along the sloughs. The SR 152 (North) to Road 19 Wye Alternative would also disturb approximately 4,428 linear feet of the historic Robertson Boulevard Tree Row, which is 340 more linear feet than would be disturbed under the Preferred Alternative.

The SR 152 (North) to Road 19 Wye Alternative would result in fewer noise impacts on sensitive noise receptors from operation of HSR trains than for the SR 152 (North) to Road 13 Wye Alternative and the Preferred Alternative. This outcome devolves from the fact that the SR 152 (North) to Road 19 Wye Alternative would displace more residential units along its alignment, thereby reducing the number of sensitive receptors (single-family residences) that could be affected by train noise. As with the other SR 152 alternatives, the SR 152 (North) to Road 19 Wye Alternative would bisect Fairmead, resulting in impacts on community cohesion.

The SR 152 (North) to Road 13 Wye Alternative would be marginally longer than the Preferred Alternative (52 miles versus 51 miles) with a slightly larger area of permanent disturbance (2,615 acres versus 2,565 acres). Although the types of impacts are similar, the Preferred Alternative would perform better in almost all the key environmental factors identified in this Draft Supplemental EIR/EIS. Because of its larger footprint, the SR 152 (North) to Road 13 Wye Alternative would result in greater temporary and permanent impacts on wetlands and other waters, would disturb more acres of special-status plant habitat, and would affect more wildlife movement corridors than the Preferred Alternative. Similar to the SR 152 (North) to Road 19 Wye Alternative, the SR 152 (North) to Road 13 Wye Alternative would also result in greater impacts on community resources than the Preferred Alternative. The SR 152 (North) to Road 13 Wye Alternative would displace 34 more residential units and 1 more business and relocate 91 more residents. The SR 152 (North) to Road 13 Wye Alternative would convert more acreage of Important Farmland to a nonagricultural use, displace more agricultural facilities, and would disturb approximately 428 more linear feet of the historic Robertson Boulevard Tree Row than the Preferred Alternative. It would cross Ash and Berenda Sloughs, the site of future recreational corridors, twice, the same number as the Preferred Alternative.

Of the key community resource factors compared in Table 8-1, the only factors for which the SR 152 (North) to Road 13 Wye Alternative would result in fewer impacts than the Preferred Alternative is the exposure of sensitive receptors to severe noise from operations. As was described for the SR 152 (North) to Road 19 Wye Alternative, this is because the SR 152 (North) to Road 13 Wye Alternative would displace more homes (i.e., sensitive receptors) along the HSR alignment, which would therefore not be exposed to severe noise impacts from train operation. As with the other SR 152 alternatives, the SR 152 (North) to Road 19 Wye Alternative would bisect Fairmead, resulting in impacts on community cohesion.

For the reasons described previously, the SR 152 is the preferred east-west corridor for the Central Valley Wye connection, although the Avenue 21 to Road 13 Wye Alternative would present some advantages with respect to environmental resource impacts. The Avenue 21 to Road 13 Wye Alternative would have the smallest area of permanent disturbance of any of the four Central Valley Wye alternatives (2,414 acres) and would result in the fewest impacts on most special-status wildlife species. However, it would also cross more waterbodies than all of the other Central Valley Wye alternatives and result in greater permanent impacts on wetlands and other waters. Along the Avenue 21 corridor more sensitive aquatic habitat could be disturbed by construction of the HSR alignment than along the SR 152 corridor. As described in Section 8.4.2, Key Environmental Considerations, because of the relatively high value of aquatic habitats compared to other terrestrial habitat and the severe ongoing development pressures on these habitats, minimizing the impacts on wetlands and other aquatic habitat is of greater importance.

In regard to key community resource impacts, one of the primary distinctions between the Avenue 21 to Road 13 Wye Alternative and the Preferred Alternative (as well as the other SR 152 alternatives) is the location of the alternatives with respect to the city of Chowchilla and the community of Fairmead. While the Preferred Alternative would pass just to the south of Chowchilla and bisect Fairmead, the Avenue 21 to Road 13 Wye Alternative would traverse a more southerly route that avoids most of the impacts on these communities. While the Avenue 21 to Road 13 Wye Alternative would result in slightly more displacements of residential units than the Preferred Alternative, it would also result in fewer relocations of residents and fewer displaced businesses. The Avenue 21 to Road 13 Wye Alternative would only cross Ash and Berenda Sloughs, the site of future recreational trails, once—one less crossing than the Preferred Alternative.

Conversely, because it would pass through a less-developed area, it would convert more acres of Important Farmland to a nonagricultural use and displace more agricultural facilities than the Preferred Alternative. It would also disturb approximately 1,502 more linear feet of the Historic Robertson Boulevard Tree Row than the Preferred Alternative because it would cross the boulevard in a location where few trees have been removed by previous development projects. The Avenue 21 to Road 13 Wye Alternative is the only alternative that would not traverse through Fairmead, a community with a relatively high percentage of low-income and minority individuals. By avoiding Fairmead, it would avoid impacts on community cohesion that could result under the Preferred Alternative.

The Preferred Alternative would pass through the rural low-income and minority populations within the community of Fairmead, introducing a large transportation feature that would displace residents, impede travel between parts of the community, and generate noise and visual effects. These impacts on community cohesion would add to longstanding challenges faced by the community, including the lack of a reliable and centralized water supply system and wastewater treatment system. Under the Preferred Alternative, the Authority has committed to implement mitigation measures (described in Section 5.6.3.1, Construction Impacts and Mitigation) aimed at offsetting the HSR contribution to stressors on the community by providing a community center and making improvements to some of the critical public infrastructure systems needed by the community. These mitigation measures would reduce the impacts of the Preferred Alternative on community cohesion, improve the quality of life of its residents, and remove a constraint to future growth opportunities in Fairmead. The improvements to Fairmead proposed by the Authority as part of these mitigation measures would provide tangible benefits to the community that would not otherwise be realized under the Avenue 21 to Road 13 Wye Alternative.

Based on consideration of the factors discussed in this chapter and this Draft Supplemental EIR/EIS, the Authority has determined the Preferred Alternative to be the best choice for the Central Valley Wye and overall HSR system. Of the four Central Valley Wye alternatives, it represents the best balance of adverse and beneficial impacts on the natural environment and community resources and maximizes the transportation and safety benefits of the HSR system.

8.6 Environmentally Superior Alternative

The CEQA Guidelines [Section 15126.6(e)(2)] state that if the environmentally superior alternative is the No Project Alternative, then the EIR must also identify an environmentally

superior alternative among the other alternatives. For the reasons described in this Draft Supplemental EIR/EIS, the environmentally superior alternative is not the No Project Alternative. The HSR alternatives would provide benefits, such as reducing vehicle trips on freeways and reducing regional air pollutants that would not be realized under the No Project Alternative. CEQA does not require a lead agency to select the environmentally superior alternative as its preferred alternative. Nevertheless, the Preferred Alternative is the environmentally superior alternative. Implementing the HSR system would have adverse environmental impacts regardless of which Central Valley Wye alternative is selected, but overall, the Preferred Alternative is identified as the environmentally superior alternative because it best meets environmental regulatory requirements and best minimizes impacts on the natural environment and community resources.

8.7 Environmentally Preferable Alternative

The environmentally preferable alternative is a NEPA term for the alternative that would promote the national environmental policy as expressed in NEPA's Section 101 (42 U.S.C. §4331). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. As required by the regulations implementing NEPA, the FRA will identify the environmentally preferable alternative in its ROD for the Merced to Fresno Section: Central Valley Wye.

8.8 Least Environmentally Damaging Practicable Alternative

The Authority and FRA have worked closely with federal, state, and regional agencies to meet regulatory requirements by refining the Central Valley Wye alternatives to avoid and minimize impacts and, where necessary, to reach agreement on mitigation measures for impacts that cannot be avoided. The Authority and FRA entered into a NEPA/Section 404/408 Integration Process Memorandum of Understanding (MOU) with the USEPA and USACE (FRA et al. 2010). This MOU outlines three major checkpoints in the submittal of technical data and studies by the Authority and FRA to USEPA and USACE for review and consideration before issuing a formal written agency response.

The first of these submittals is Checkpoint A, which involves preparing a project purpose statement pursuant to NEPA. The USEPA concurred on the Merced to Fresno Section purpose and need on January 20, 2011, and the USACE concurred on February 2, 2011, to satisfy Checkpoint A. The second submittal is Checkpoint B, which is required to screen and reduce the potential alternatives to an appropriate range of “reasonable” and potentially “practicable” alternatives using the best available information. On June 14 and June 24, 2011, the USEPA and USACE, respectively, provided letters of concurrence on the range of alternatives that the Authority and FRA proposed to carry through the EIR/EIS. A supplemental Checkpoint B Summary Report in support of the Merced to Fresno Section Central Valley Wye alternatives was submitted in September 2013, and three addenda to this report were submitted in May 2014, August 2014, and October 2016. In August and September 2014, respectively, the USEPA and USACE concurred with the Authority and FRA on the alternatives to be evaluated in a supplemental document: SR 152 (North) to Road 13 Wye Alternative, SR 152 (North) to Road 19 Wye Alternative, and Avenue 21 to Road 13 Wye Alternative. In December 2016, the USEPA and USACE concurred on the decision to carry forward the SR 152 (North) to Road 11 Wye Alternative as well.

Finally, Checkpoint C consists of, among other things, a Section 404(b)(1) alternatives analysis, which provides the basis for determining the preliminary least environmentally damaging practicable alternative. The Authority and FRA submitted the Merced to Fresno Section Revised Checkpoint C Summary Report materials to the USEPA and USACE on February 22, 2012, and received concurrence on March 23 and March 26, 2012, from the USEPA and USACE, respectively. The Authority and FRA submitted the Supplemental Summary Checkpoint C report for the Central Valley Wye alternatives to the USEPA and USACE on May 3, 2018.

All of the checkpoint documents that the USACE and USEPA have concurred with to date are available on the Authority's website at: http://hsr.ca.gov/Programs/Environmental_Planning/supplemental_merced_fresno.html.