

5 Environmental Justice

5.1 Introduction

Chapter 5, Environmental Justice, of this *Merced to Fresno Section: Central Valley Wye Final Supplemental Environmental Impact Report (EIR)/Supplemental Environmental Impact Statement (EIS)* (Final Supplemental EIR/EIS) updates the *Merced to Fresno Section California High-Speed Train Final Project EIR/EIS*¹ (Merced to Fresno Final EIR/EIS) (Authority and FRA 2012) with new and revised information relevant to environmental justice, analyzes the potential impacts of the No Project Alternative and the Central Valley Wye alternatives, and describes impact avoidance and minimization features (IAMF) that would avoid, minimize, or reduce these impacts. Chapter 5 also defines the resource study area (RSA) for environmental justice, identifies whether the Central Valley Wye alternatives would have a disproportionately high and adverse effect on low-income and minority populations, and describes potential cumulative impacts that could occur in combination with past, present, and reasonably foreseeable future actions.

The analysis herein is consistent with the analysis conducted in the Merced to Fresno Final EIR/EIS. Both analyses examine potential effects on low-income and minority populations. They use the same methods and many of the same data sources for evaluating effects within their respective RSAs. Where information has changed or new information has become available since the Merced to Fresno Final EIR/EIS was prepared in 2012, the Central Valley Wye alternatives analysis uses the updated versions of these sources or datasets. However, relevant portions of the Merced to Fresno Final EIR/EIS that remain unchanged are summarized and referenced in this section but are not repeated in their entirety.

The *Merced to Fresno Section: Central Valley Wye Community Impact Assessment Technical Report* (Community Impact Assessment Technical Report) (Authority and FRA 2016a) provides additional technical information supporting this environmental justice analysis. This technical report is available on the California High-Speed Rail Authority's (Authority) website: https://www.hsr.ca.gov/programs/environmental/eis_eir/draft_supplemental_merced_fresno.aspx.

Additional details on environmental justice and environmental justice outreach are provided in the following appendices in Volume II of this Final Supplemental EIR/EIS:

- Appendix 2-C, Applicable Design Standards, provides the list of relevant design standards for the Central Valley Wye alternatives.
- Appendix 5-A, Environmental Justice Outreach Plan, describes outreach methods to identify and reach low-income and minority populations potentially affected by the Central Valley Wye alternatives.

Since publication of the Draft Supplemental EIR/EIS, this chapter has been revised to reflect the global issues described in Section S.1.2, Global Changes in the Final Supplemental EIR/EIS, of the Summary as well as the following:

- As a result of the Authority's ongoing consultation with the Fairmead community and Madera County following the May 2019 publication of the Draft Supplemental EIR/EIS for CEQA purposes, the Authority is revising a mitigation measure (EJ-MM#1) with equally effective terms. In the Draft Supplemental EIR/EIS, EJ-MM#1 had outlined a process by which the Authority would purchase Fairmead Elementary School (assuming the property became available for sale) and convert the school into a community center for Fairmead.

In this Final Supplemental EIR/EIS, EJ-MM#1 has been revised to reflect that the Authority will instead provide funding to Madera County towards the purchase of a site and construction of a community center to serve Fairmead. EJ-MM#1 includes a number of performance standards to avoid/minimize any potential for secondary environmental effects.

¹ Environmental justice was addressed in Section 3.12, Socioeconomics, Communities, and Environmental Justice of the Merced to Fresno Final EIR/EIS.

Environmental justice in terms of transportation projects can be defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, from the early stages of transportation planning and investment decision-making through construction, operations, and maintenance. The process must address, to the extent practicable and permitted by law, the potential disproportionately high adverse human health and environmental impacts of their programs, policies, and activities on low-income and minority populations. Environmental justice is an important consideration for transportation projects because of the potential impacts on the quality of life of individuals and groups living and working within the RSA.

The resource sections presented in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, provide additional information related to assessing beneficial and adverse impacts on resources that could also affect low-income and minority populations.

Regarding electrical interconnections and network upgrades, low-income and minority populations (environmental justice populations) are located within the RSA in the cities of Merced and Waterford. Only the Site 7—Le Grand Junction/Sandy Mush Road, Warnerville–Wilson 230-kilovolt Transmission Line is located near large low-income and minority populations in these cities. Reconductoring work would involve minimal and temporary construction activities as it moves along the length of the existing transmission line, requiring up to one week of activity at each tower location. Because of the minimal amount of construction activity and short construction duration, all impacts, except temporary construction noise, would be avoided, minimized, or reduced with incorporation of IAMFs and no mitigation would be applied, as described in Chapter 3. As a result, these impacts would not have the potential to adversely affect low-income and minority populations and they are not discussed further. Construction noise could temporarily affect sensitive receptors within low-income and minority populations in the cities of Merced and Waterford. The IAMFs incorporated into the Central Valley Wye alternatives, including compliance with Federal Railroad Administration (FRA) guidelines, would minimize construction noise impacts. The Authority would also implement mitigation measure NV-MM#1, Construction Noise Mitigation, to avoid construction-period noise impacts. Given the minor, temporary nature of work, the small number of affected receptors, incorporation of IAMFs and implementation of NV-MM#1, no substantial and disproportionate effects on low-income and/or minority populations would result; therefore, electrical interconnections and network upgrade components are not discussed further.

5.1.1 Definition of Resources

The following are definitions for low-income and minority populations analyzed in this Final Supplemental EIR/EIS. These definitions are consistent with the environmental justice analysis in the Merced to Fresno Final EIR/EIS (Authority and FRA 2012).

- **Minorities**—*Minority* includes persons who are American Indian and Alaskan Native, Asian, Black or African American, Hispanic or Latino, and Native Hawaiian and other Pacific Islander. A minority population means any readily identifiable group or groups of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers, students, or Native Americans) who could be affected by a proposed program, policy, or activity.
- **Low-Income**—*Low-income* means a person whose median household income is at or below the Department of Health and Human Services poverty guidelines. A low-income population means any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically transient persons (such as migrant workers, students, or Native Americans) who could be affected by a proposed program, policy, or activity.

5.2 Laws, Regulations, and Orders

This section identifies laws, regulations, orders, and plans that are relevant to the analysis of environmental justice in this Final Supplemental EIR/EIS. Also provided are summaries of new, additional, or updated laws, regulations, and orders that have occurred since publication of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012).

5.2.1 Federal

The following federal laws, regulations, and orders are the same as those described in Section 3.12.2, Laws, Regulations, and Orders of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: pages 3.12-1 through 3.12-2):

- Title VI of the Civil Rights Act (42 United States Code [U.S.C.] § 2000(d) et seq.)
- Federal Actions to Address Environmental Justice in Minority Populations (U.S. Presidential Executive Order [USEO] 12898)
- Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (US. Department of Transportation [U.S. Department of Transportation] Order 5610.2(a))
- Improving Access to Services for Persons with Limited English Proficiency (USEO 13166)
- Protection of Children from Environmental Health Risks and Safety Risks (USEO 13045)
- Americans with Disabilities Act (42 U.S.C. §§ 12101–12213)
- Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. § 61)

New, additional, or updated federal laws, regulations, and orders are described below.

5.2.1.1 Presidential Memorandum Accompanying USEO 12898

The Presidential Memorandum accompanying USEO 12898 calls for specific actions to be directed in National Environmental Policy Act (NEPA)-related activities. They include:

- Analyzing environmental effects, including human health, economic, and social effects on minority populations and low-income populations when such analysis is required by NEPA.
- Ensuring that mitigation measures outlined or analyzed in environmental assessments, EISs, and Records of Decision, whenever feasible, address disproportionately high and adverse environmental effects or proposed actions on minority populations and low-income populations.
- Providing opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving accessibility to public meetings, official documents, and notices to affected communities.

5.2.2 State

An environmental justice analysis is required by federal law but is not explicitly required by the State of California. The California Environmental Quality Act (CEQA) focuses on whether a project would have a significant impact on the physical environment and whether the environmental impacts of a project would cause substantial adverse impacts on human beings. Although specific provisions of CEQA require consideration of how the environmental and public health burdens of a project would affect certain communities (e.g., through consideration of the environmental setting and the assessment of cumulative impacts of a project), CEQA does not directly address environmental justice or the fair treatment of individuals and communities, and, as a result, CEQA determinations are not included in this chapter. Nevertheless, the well-established CEQA principles and provisions of the California Government Code 11135 (described in Section 5.2.2.1, California Government Code Section 11135(a), 111366)

justice obligations that local governments must consider when approving specific projects and planning for future development.

The following state laws and regulations are the same as those described in Section 3.12.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: page 3.12-2):

- California Government Code Section 65040.12(e)
- California Relocation Assistance Act (Gov. Code, § 7260 et seq.)

New, additional, or updated state laws, regulations, and orders are described in the following sections.

5.2.2.1 California Government Code Section 11135(a), 11136

Section 11135(a) of the California Government Code prohibits discrimination or the denial of full and equal access to benefits of any program or activity operated or funded by the state or a state agency on the basis of race, national origin, ethnic group identification, religion, age, sexual orientation, color, or disability. This provision requires public agencies to consider fairness in the distribution of environmental benefits and burdens and is enforced through Section 11136, which reduces or eliminates state funding of local government agencies determined to be in violation of Section 11135(a).

5.2.2.2 California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund (Senate Bill 535) (De León)

The California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund requires CEQA to identify disadvantaged communities for investment opportunities, as specified. The bill requires the California Department of Finance, when developing a specified 3-year investment plan, to allocate 25 percent of the available moneys in the Greenhouse Gas Reduction Fund to projects that provide benefits to disadvantaged communities, as specified, and to allocate a minimum of 10 percent of the available moneys in the Greenhouse Gas Reduction Fund to projects located within disadvantaged communities. The bill requires the California Department of Finance, when developing funding guidelines, to include guidelines for how administering agencies should maximize benefits for disadvantaged communities. Senate Bill 535 also requires that the administering agencies report to the California Department of Finance, which in turn, provides a description of how these agencies have fulfilled specified requirements relating to projects providing benefits to, or located in, disadvantaged communities to the Legislature in a specified report.

5.2.3 Regional and Local

The city and county general plans presented in Section 3.12.2.3, Regional and Local, of this Final Supplemental EIR/EIS include goals and policies focused on providing fair and equitable housing and public facilities regardless of age, disability, race, culture, or income; preserving community character and minimizing incompatible land use conflicts; encouraging pedestrian and bicycle transportation in community design and improving mobility for urban and rural populations; and protecting agricultural lands and the associated agricultural economy. These plans and policies are applicable to the analysis of environmental justice. Compatibility of the Central Valley Wye alternatives with these and other policies that affect all communities within the local plan areas are addressed in Section 3.12.3, Compatibility with Plans and Laws.

5.3 Methods for Evaluating Effects

The evaluation of effects on low-income and minority populations is a federal requirement of USEO 12898. The following sections summarize the RSA and the methods used to analyze effects on low-income and minority populations. Additional details on these methods are provided in the Community Impact Assessment Technical Report (Authority and FRA 2016a).

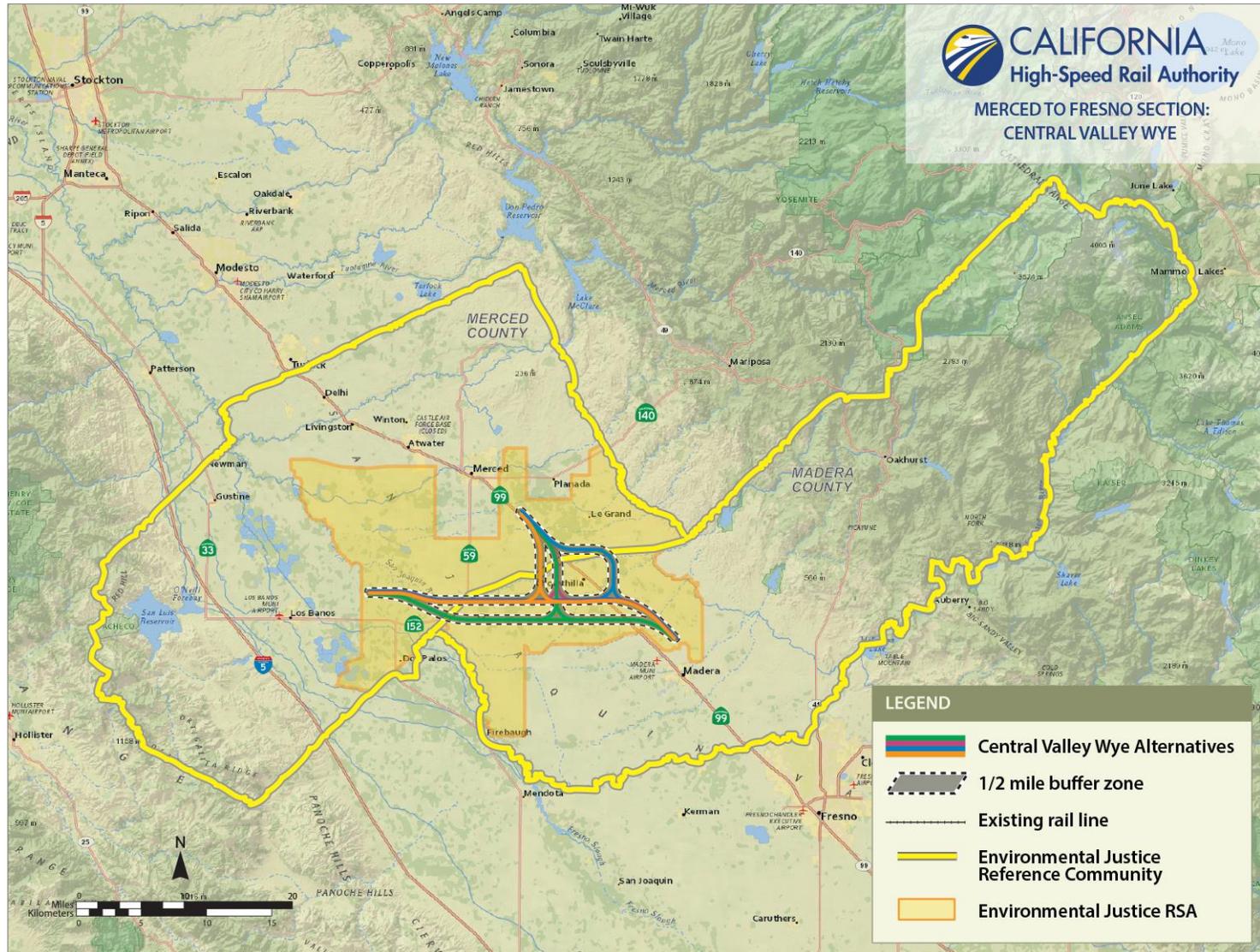
5.3.1 Definition of Reference Community and Resource Study Area

The reference community for this environmental justice analysis is the two-county region of Merced and Madera Counties (Figure 5-1). This area represents the general population that could be affected adversely and beneficially by the Central Valley Wye alternatives. Information for these two counties is presented throughout this analysis to provide context and to allow for comparison and contrast between communities within the RSA and the surrounding areas.

The RSA for direct and indirect effects on low-income and minority populations is defined as census block groups partially or fully within the Central Valley Wye alternatives project footprints and a 0.5-mile buffer zone (Figure 5-2). This includes the project footprint for each of the Central Valley Wye alternatives that might be directly affected and adjoining areas that might be indirectly affected.

Potentially affected communities within the RSA consist of the city of Chowchilla and the unincorporated community of Fairmead and Madera Acres. Because of the rural nature of the Central Valley and the low population density in the RSA, census block groups within the RSA are large and can extend for miles beyond the project footprints of the Central Valley Wye alternatives. As a result, the population within the RSA includes a larger population than would likely be affected by the Central Valley Wye alternatives.

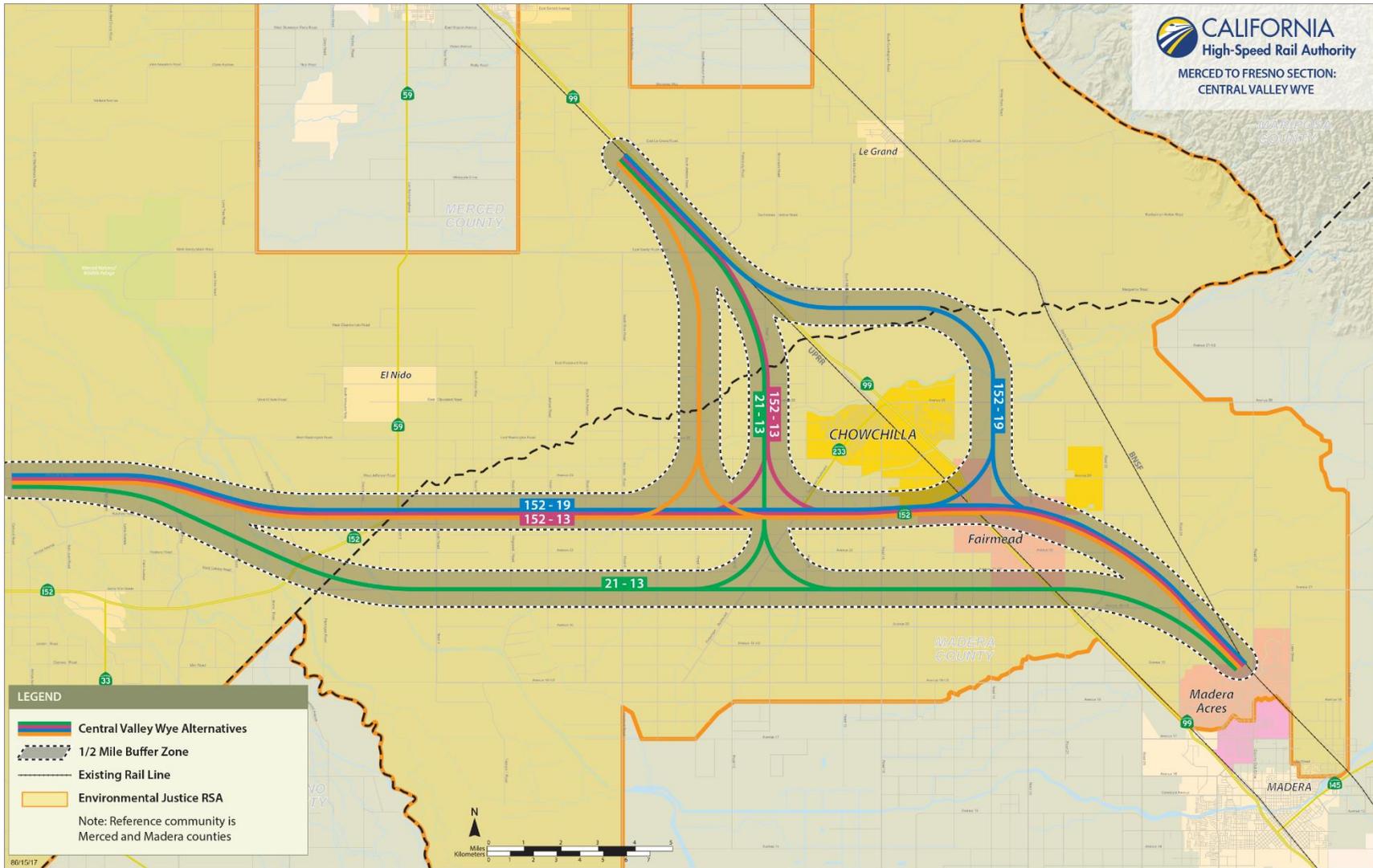
The cumulative RSA for environmental justice is defined as the area encompassing Chowchilla, the community of Fairmead (unincorporated), and Madera Acres (unincorporated), as well as the unincorporated areas of Merced and Madera Counties. The cumulative RSA for environmental justice is larger than the RSAs for direct and indirect effects on low-income and minority populations in order to capture environmental justice impacts associated with the construction and operations of the Central Valley Wye alternatives as well as regional environmental justice impacts associated with anticipated planned development.



Sources: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; U.S. Census 2010, 2015

AUGUST 15, 2017

Figure 5-1 Environmental Justice Reference Community and Resource Study Area



Sources: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; U.S. Census 2010, 2015

AUGUST 15, 2017

Figure 5-2 Environmental Justice Resource Study Area for Direct and Indirect Effects

5.3.2 Impact Avoidance and Minimization Features

As noted in Section 2.2.3.7, Impact Avoidance and Minimization Features, the Central Valley Wye alternatives incorporate standardized IAMFs to avoid and minimize impacts. The Authority would incorporate IAMFs during project design and construction and, as such, the analysis of impacts of the Central Valley Wye alternatives in this chapter factors in all applicable IAMFs. Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features, provides a detailed description of IAMFs that are included as part of the Central Valley Wye alternatives design. IAMFs applicable to environmental or community resources that have the potential to affect low-income and minority populations include:

- NV-IAMF#1, Noise and Vibration
- AVR-IAMF#1, Aesthetic Options
- AVR-IAMF#2, Aesthetic Review Process
- SO-IAMF#1, Construction Management Plan
- SO-IAMF#2, Compliance with Uniform Relocation Assistance and Real Property Acquisition Policies Act
- SO-IAMF#3, Relocation Mitigation Plan
- TR-IAMF#1, Protection of Public Roadways during Construction
- TR-IAMF#2, Construction Transportation Plan
- TR-IAMF#3, Off-Street Parking for Construction-Related Vehicles
- TR-IAMF#4, Maintenance of Pedestrian Access
- TR-IAMF#5, Maintenance of Bicycle Access
- TR-IAMF#6, Restriction on Construction Hours
- TR-IAMF#7, Construction Truck Routes
- TR-IAMF#8, Construction during Special Events
- TR-IAMF#9, Protection of Freight and Passenger Rail during Construction
- TR-IAMF#10, Maintenance of Transit Access
- AQ-IAMF#1, Fugitive Dust Emissions
- AQ-IAMF#2, Selection of Coatings
- HYD-IAMF#1, Stormwater Management
- HYD-IAMF#2, Flood Protection
- HYD-IAMF#3, Prepare and Implement a Construction Stormwater Pollution Prevention Plan
- HYD-IAMF#4, Prepare and Implement an Industrial Stormwater Pollution Prevention Plan
- HMW-IAMF#1, Transport of Materials
- HMW-IAMF#2, Permit Conditions
- HMW-IAMF#3, Environmental Management System
- HMW-IAMF#4, Spill Prevention
- HMW-IAMF#5, Undocumented Contamination
- HMW-IAMF#6, Demolition Plans

- HMW-IAMF#7, Property Acquisition Phase 1 and Phase 2 Environmental Site Assessments
- HMW-IAMF#8, Work Barriers
- HMW-IAMF#9, Landfill
- HMW-IAMF#10, Hazardous Materials Plans
- HMW-IAMF#11, Hazardous Minerals
- HMW-IAMF#12, Gas Monitoring
- GEO-IAMF#1, Geologic Resources, Water and Wind Erosion
- CUL-IAMF#1, Geospatial Data Layer and Archaeological Sensitivity Map
- CUL-IAMF#2, Worker Environmental Awareness Program (WEAP) Training Session
- CUL-IAMF#3, Preconstruction Cultural Resource Surveys
- CUL-IAMF#4, Relocation of Project Features when Possible
- CUL-IAMF#5, Archaeological Monitoring Plan and Implementation
- CUL-IAMF#6, Preconstruction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage
- CUL-IAMF#7, Built Environment Monitoring Plan
- CUL-IAMF#8, Implement Protection and/or Stabilization Measures
- PK-IAMF#1, Parks, Recreation, and Open Space

5.3.3 Methods for Impact Analysis

This section describes the sources and methods the Authority used to analyze potential effects of implementing the Central Valley Wye alternatives on low-income and minority populations. As described in Section 5.1, Introduction, and in the following discussions, the Authority applied the same methods and many of the same data sources from the Merced to Fresno Final EIR/EIS to this Final Supplemental EIR/EIS. Refer to the Community Impact Assessment Technical Report (Authority and FRA 2016a) for more information regarding the methods and data sources used in this analysis. Laws, regulations, and orders (see Section 5.2, Laws Regulations, and Orders) pertaining to environmental justice were also considered in the evaluation of effects on low-income and minority populations.

5.3.3.1 Identification of Low-Income and Minority Populations

Analysts obtained census block group minority data and poverty data from the 2010-2014 American Community Survey (ACS) 5-Year Estimates for the reference community and the environmental justice RSA.² Low-income and minority data were mapped using geographic information systems to determine the location and patterns of low-income and minority populations. To confirm the accuracy of this data for use in this environmental justice analysis, analysts performed additional quantitative validation methods, including the examination of other data sources that would indicate the current locations of low-income and minority populations. The low-income populations in the RSA were validated by ACS data on participation in social service programs, such as the percentage of households receiving coupons through the Supplemental Nutrition Assistance Program (SNAP).

² The 2010-2014 ACS 5-Year Estimates (released in January 2016) were the most recently available data at the time of the analysis.

Minority or low-income populations were identified using the following criteria:

- The census block group contains 50 percent, or more, minority persons and/or the census block group contains 25 percent, or more, low-income persons, or
- The percentage of minority and/or low-income persons in any census block group is more than 10 percent greater than the reference community average.

Analysts also identified the presence of sensitive populations, such as elderly and linguistically isolated populations within the reference community and RSA for Merced and Madera Counties. Elderly populations represent individuals who are over the age of 65. Linguistically isolated populations represent readily identifiable groups of persons over 14 years of age who do not speak English very well or at all. Data on these populations were obtained from 2010-2014 ACS 5-Year Estimates, and the distribution of the population was mapped using geographic information systems.

The identification of low-income and minority populations, as well as sensitive populations, informed the outreach team of the areas in need of special outreach consideration (e.g., populations requiring interpreters or consuming different types of media). The Authority used this information to tailor outreach activities for more effective public participation and distribution of information. The identification of these populations was also used to evaluate construction and operations effects on low-income and minority populations.

5.3.3.2 Methods for Identifying Adverse Effects on Low-income and Minority Populations

USEO 12898, the federal environmental justice policy, requires federal agencies to address the potential for their programs, policies, and activities to have a disproportionately high and adverse human health and environmental effect on low-income and minority populations, also referred to in this analysis as environmental justice populations. U.S. Department of Transportation Order 5610.2(a) on environmental justice defines a “disproportionately high and adverse impact on low-income and minority populations” to mean an adverse effect predominantly borne by a minority population and/or a low-income population, or an effect that could be suffered by the minority population or low-income population and is appreciably more severe or greater in magnitude than the impact that could be suffered by the non-minority population or non-low-income population.

To identify adverse effects on low-income and minority populations, analysts reviewed the resource sections in Chapter 3 and identified impacts on environmental or community resources with the potential to affect low-income and minority populations. Adverse effects on low-income and minority populations included, but were not limited to:

- Bodily impairment, infirmity, illness, or death
- Air, noise, and water pollution and soil contamination
- Destruction or disruption of built or natural resources
- Destruction or diminution of aesthetic values
- Destruction or disruption of community cohesion or a community’s economic vitality
- Destruction or disruption of the availability of public and private facilities and services
- Vibration
- Adverse employment effects
- Displacement of persons, businesses, farms, or nonprofit organizations
- Increased traffic congestion, isolation, exclusion, or separation of minority or low-income individuals within a given community from a broader community
- The denial of, reduction in, or significant delay in the receipt of benefits of programs, policies, or activities

This assessment was accomplished by reviewing the construction and operations impacts identified in each resource section, including details regarding the RSA, the nature of the impact (e.g., impact type, context, intensity, and duration), and the geographic location of the impacts under each Central Valley Wye alternative relative to the identified low-income and minority populations within the RSA.

5.3.3.3 Methods for Determining Disproportionately High and Adverse Effects

Once adverse effects on low-income and minority populations were identified, analysts then evaluated whether effects that would adversely affect low-income and minority populations would have disproportionately high and adverse effects on these populations. A disproportionately high and adverse effect on low-income and minority populations is generally defined as an effect that:

- Would be predominantly borne by low-income or minority populations, or
- Would be suffered by low-income and minority populations and would be appreciably more severe or greater in magnitude than the adverse effect suffered by the non-low-income and non-minority populations in the affected area and the reference community.

However, determinations of disproportionately high and adverse effects also consider mitigation and enhancement measures that would be implemented, as well as all offsetting benefits to the environmental justice populations. Whether adverse effects would be disproportionately high and adverse includes the consideration of the totality of the circumstances, including:

- The location of an adverse effect predominantly in areas with low-income and minority populations or in areas with both low-income and minority and non-low-income and non-minority populations.
- The percentage of the low-income and minority population in the area of effect as compared to the percentage of the low-income and minority population in the reference community, which provides context for the effect.
- The perceptions of the low-income and minority populations regarding the severity of the adverse effect and the success of the proposed mitigation measures in reducing the adverse effect.
- Whether mitigation measures applied to avoid, minimize, repair or restore, reduce over time, or to compensate for adverse effects would do so equally for both low-income and minority populations as well as non-minority and non-low-income populations.
- The project benefits that would be received by low-income and minority populations.
- Any social, religious, or cultural resources and public services such as police, fire, and emergency services particularly important to the low-income and minority populations that would be affected.

5.3.3.4 Environmental Justice Engagement

USEO 12898 requires that federal agencies employ effective public participation and provide access to information. Consequently, a key component of compliance with USEO 12898 is outreach to potentially affected low-income and minority populations. The Authority has conducted, and will continue to conduct, specific outreach efforts to existing environmental justice outreach programs and established minority organizations throughout the Final Supplemental EIR/EIS process. Outreach efforts to date are documented in Appendix 5-A. The environmental justice outreach team has contacted existing environmental justice outreach programs (e.g., the San Joaquin Valley Air Pollution Control District Environmental Justice Committee) and established community groups (e.g., Fairmead Community and Friends).

Special outreach included advertising of meetings in Spanish, making meeting handouts available in Spanish, and providing Spanish-speaking interpreters at public information meetings. The environmental justice outreach team also conferred with local elected officials in each community on needs for interpretation in other languages in addition to Spanish. Where low-income and/or

minority populations could be affected by the Central Valley Wye alternatives, outreach activities were conducted to determine the best ways of communicating with the affected populations. Feedback was sought from environmental justice organizations, community leaders, and low-income and minority community members during community events.

The purpose of these outreach efforts is to provide an opportunity for meaningful participation and input into the project design, identification of disproportionately high and adverse effects, and development of mitigation. This input informs the following:

- **Consideration of Adverse Effects and Mitigation**—Affected low-income and minority populations were included in discussions of potential adverse effects and benefits to obtain input on the community’s perception of these effects and associated mitigation. Community input was obtained on potential design modifications or variations to the project that would avoid or minimize adverse effects.
- **Balancing Adverse and Beneficial Effects**—Low-income and minority populations were engaged to provide insight into their perception of adverse and beneficial effects. This input was critical in the determination of disproportionately high adverse effects, which considers the net results after consideration of the totality of the circumstances.
- **Identifying Disproportionately High Adverse Effects**—Affected low-income and minority populations were engaged in discussions to help identify whether the Central Valley Wye alternatives would result in disproportionately high and adverse effects, identify their priorities and needs, and to obtain insight into the types of mitigation that may reduce the severity of the effect.

A summary of this outreach is provided in Section 5.5, Environmental Justice Engagement and Documentation.

5.4 Affected Environment

This section describes the affected environment related to environmental justice in the reference community and the environmental justice RSA. It also discusses changes to low-income and minority populations in the San Joaquin Valley since publication of the Merced to Fresno Final EIR/EIS.

5.4.1 Overview

5.4.1.1 Reference Community

Table 5-1 presents demographic information for the reference community, consisting of Merced and Madera Counties and covering an area of 4,125 square miles. Merced County is the largest reference community in the RSA, and contains approximately 63 percent of the reference community’s population and households (U.S. Census Bureau ACS 2010-2014a).

Levels of employment and income in Merced and Madera Counties have historically lagged behind those in other parts of the state because of the seasonal nature of the region’s major agricultural employment and slower growth in the nonagricultural sectors. In 2014, the percentage of low-income individuals, defined as individuals with household incomes below the census poverty threshold, was 23 to 26 percent of the reference community’s population; this is substantially more than the 16 percent of the state of California’s population that represents low-income (U.S. Census Bureau ACS 2010-2014b). Similarly, the median household incomes in Merced and Madera Counties were between \$43,100 and \$45,500, approximately 26 to 30 percent less than the median household income for the state of California (U.S. Census Bureau ACS 2010-2014c).

Table 5-1 Reference Community Demographic Characteristics (2014)

Characteristics	Merced County	Madera County	California
Size (square miles)	1,972	2,153	163,696
Total population	261,609	152,452	38,066,920
Total households	76,516	42,723	12,617,280
Percent low-income	26	23	16
Median household income	\$43,100	\$45,500	\$61,500
Percent minority	69	63	61
Percent linguistically isolated households	13	9	10
Percent over 65	10	12	12
Percent unemployed	18	10	11

Source: U.S. Census Bureau ACS 2010-2014a, 2010-2014b, 2010-2014c, 2010-2014d, 2010-2014e, 2010-2014f

The reference community of Merced and Madera Counties is racially and ethnically diverse. In 2014, minority individuals made up 69 and 63 percent of the population in Merced and Madera Counties, respectively. As a whole, 67 percent of the reference community's population consisted of minorities, compared to 61 percent for the state of California (U.S. Census Bureau ACS 2010-2014d).

In addition to low-income and minority populations, this environmental justice analysis examines the distribution of sensitive populations, such as elderly, linguistically isolated, or unemployed persons, who may have special needs. The elderly population (65 years and older) was comparable in both counties and consisted of approximately 11 percent of the reference community in 2014. Approximately 12 percent of households in the reference community were linguistically isolated (U.S. Census Bureau ACS 2010-2014e). In addition, approximately 15 percent of the population was unemployed in the reference community in 2014, with unemployment rates of 10 percent in Madera County and 18 percent in Merced County (U.S. Census Bureau ACS 2010-2014f).

5.4.1.2 Resource Study Area

The environmental justice RSA includes portions of unincorporated Merced and Madera Counties, as well as the city of Chowchilla and the communities of Fairmead and Madera Acres. Table 5-2 provides an overview of demographic characteristics of the environmental justice RSA based on census data collected between 2010 and 2014. The city of Chowchilla, community of Fairmead, and community of Madera Acres are within Madera County but are presented separately in Table 5-2 for illustrative purposes. See Section 3.12, Socioeconomics and Communities, for full demographic data.

Table 5-2 Resource Study Area Demographic Characteristics

Characteristics	Merced County ¹	Madera County ¹	City of Chowchilla	Community of Fairmead	Community of Madera Acres	EJ RSA Total ²
Total population	8,719	35,385	18,411	1,983	9,653	44,104
Total households	2,672	7,975	3,873	401	2,416	10,657
Percent low-income	22	22	30	39	16	22
Median household income	\$44,200	\$47,100	\$36,900	\$31,100	\$60,500	\$46,400
Percent minority	63	63	58	80	70	63
Percent linguistically isolated households	19	8	5	7	5	10
Percent over 65	11	9	10	3	8	9
Percent unemployed	13	9	10	28	6	9

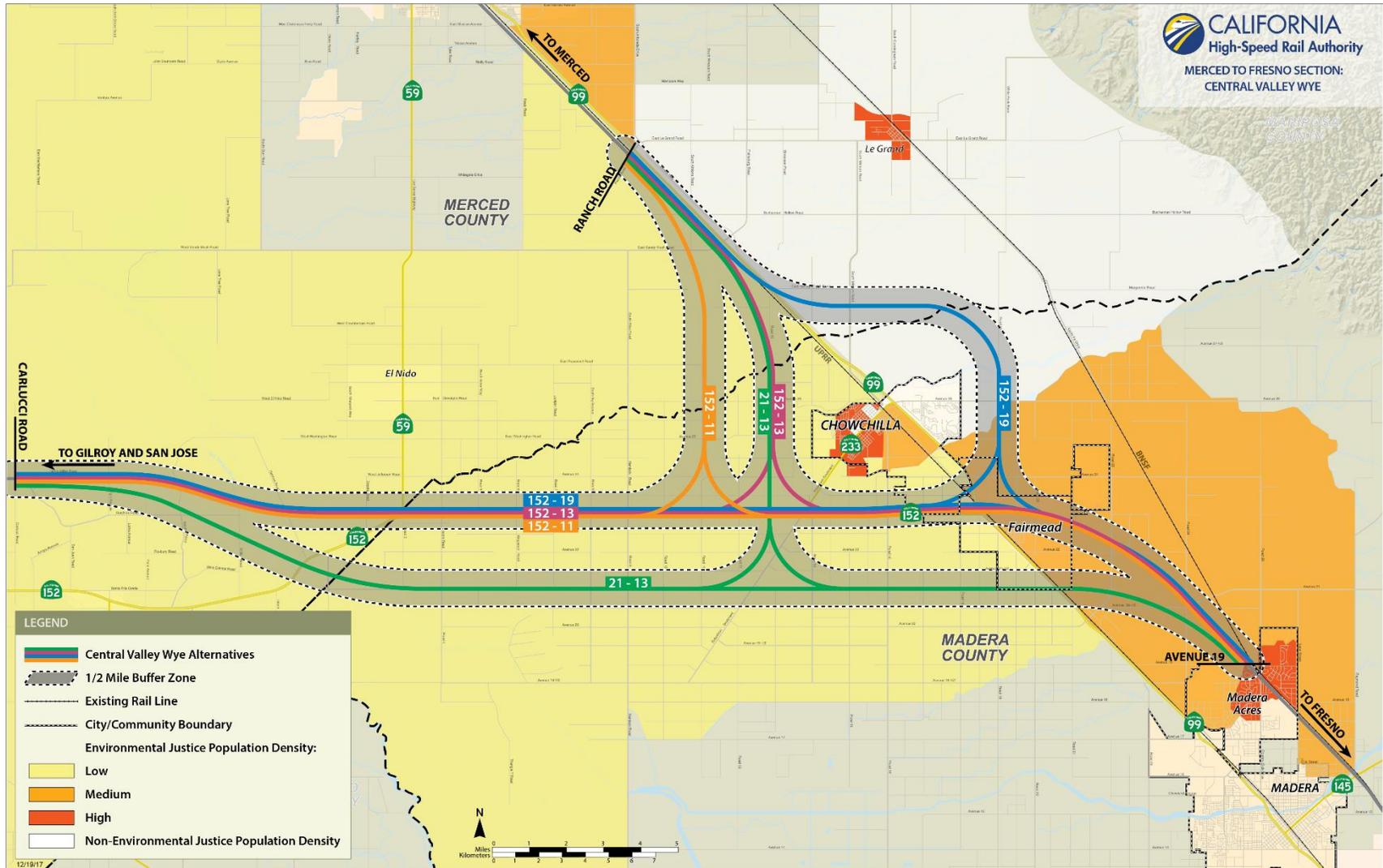
Source: U.S. Census Bureau ACS 2010-2014a, 2010-2014b, 2010-2014c, 2010-2014d, 2010-2014e, 2010-2014f

¹ The Merced County and Madera County estimates provide demographic characteristics for the RSA, defined as census block groups partially or fully within the Central Valley Wye alternatives project footprints and a 0.5-mile buffer zone.

² The city of Chowchilla, the community of Fairmead, and community of Madera Acres are within the Madera County portion of the RSA; therefore, the EJ RSA totals are calculated only from Merced County and Madera County estimates.

EJ = environmental justice
RSA = resource study area

The environmental justice RSA has a total population of approximately 44,000 people. This population presents an estimate of potentially affected individuals. The actual number of individuals affected may be much less than these baseline totals, as the environmental justice RSA likely would not be affected across its entire area. Approximately 80 percent of the environmental justice RSA's population is in Madera County. The city and communities of the RSA—Chowchilla, Fairmead, and Madera Acres—account for 68 percent of the total individuals in the environmental justice RSA; the remaining 32 percent of the population reside in unincorporated rural portions of Merced and Madera Counties (U.S. Census Bureau ACS 2010-2014a). Figure 5-3 identifies the low-income and minority populations, non-low-income and non-minority populations, and the population density of the low-income and minority populations within the RSA by census block group. As described in Section 5.3.3.1, Identification of Low-Income and Minority Populations, low-income and minority populations are defined as census block groups that contain greater than 50 percent minority persons, greater than 25 percent low-income persons, or where the percentage of minority or low-income persons is more than 10 percent greater than the reference community average. Overall, the majority of the RSA is characterized by low-income and/or minority populations, with non-low-income and non-minority populations located east of State Route (SR) 99 near Chowchilla.



Sources: U.S. Census 2010; U.S. Census Bureau ACS 2010-2014b, 2010-2014d

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Figure 5-3 Low-Income and Minority Populations in the Resource Study Area

The percentage of low-income and minority populations within the environmental justice RSA is comparable to that of the reference community. The minority population is approximately 63 percent for the RSA and 67 percent for the reference community. The low-income population is approximately 22 percent for the RSA and 25 percent for the reference community. This indicates that the population directly or indirectly affected by the Central Valley Wye alternatives is similar to the surrounding reference community. The exceptions are the community of Fairmead, where the percentage of low-income individuals is almost twice that of the environmental justice RSA, and Chowchilla, where the percentage of low-income individuals is 8 percentage points greater than that of the environmental justice RSA (U.S. Census Bureau ACS 2010-2014f).

The social and economic conditions, including community facilities, community cohesion, and the housing and economic setting of the communities in the RSA are described in Section 3.12. Of the three communities in the RSA, Fairmead has the smallest population but the largest percentage of low-income and minority individuals. Fairmead qualifies as a low-income and minority population because the percent of the population that is low-income and minority is more than 10 percent greater than the reference community average. It also has the greatest potential to be affected by the Central Valley Wye alternatives as it would be directly bisected by the SR 152 alternatives.

Community of Fairmead

Fairmead was founded in 1912 by the Cooperative Land Trust Company of Palo Alto as an agricultural “colony.” It flourished in its early years, buoyed by booming agricultural markets, and soon boasted several schools, boulevards, parks, and businesses. Beginning in the 1920s, the community began a period of economic decline that was exacerbated by the rerouting of SR 99 to the west side of the railroad in 1930. The relocation of the highway away from the core of the community contributed to loss of population, as businesses and visitors bypassed the town for the growing communities of Chowchilla and Madera. Since that time, the population has continued to decline and there have been few infrastructure improvements (Local Government Commission 2011; Madera County 2011).

Today, Fairmead retains a strong rural character. There are no commercial services and few amenities in the community. It lacks physical infrastructure improvements common in other nearby cities and towns, including curbs, gutters, sidewalks, crosswalks, street lighting, and drainage facilities, and many roads in and around the community are unpaved (Local Government Commission 2011). The community is not connected to a municipal water supply or wastewater treatment system, and residents rely on an aging water-well system for drinking water and individual septic systems for waste treatment (Collins 2010). Two wells provide supply for the community water system, but the system is aging and is susceptible to drought, often shutting down for days at a time or generating very low water pressure (Romero 2015; Madera County 2011). For example, the Fairmead Elementary School does not have adequate pressure and flow for the required levels necessary to irrigate school grounds (Madera County 2011). Some residents rely on private water wells, but many of the wells have dried up because of recent drought and groundwater withdrawal from well pumping associated primarily with nearby agricultural activities (Romero 2015). The exclusive use of septic systems for water treatment poses groundwater contamination issues because the lot sizes in Fairmead are often too small to leach effluent sufficiently (Madera County 2011). The lack of a community sewer system and adequate water supply system places a hindrance on future growth opportunities for businesses, industry, or higher-density residential development that require these systems.

The Fairmead Elementary School, Fairmead Head Start childcare center, and several churches in town serve as the community’s only gathering places. The school is an important meeting place for community members after school hours and hosts meetings of Fairmead Community and Friends, a citizen-organized group that advocates for community improvements (Howell 2012). Despite the lack of facilities and businesses, the community maintains a strong sense of place, and community members are highly vested in seeking improvements. The community has advocated for connecting Fairmead to centralized water supply and sewage treatment systems, but to date, lack of funding and other challenges have put these improvements out of reach (Madera County 2011). As described in Section 3.12.5.4, Communities and Neighborhoods, revitalization of Fairmead is a high priority for Madera County planners, as demonstrated in the *Fairmead Neighborhood Mobility and Revitalization Strategy* (Local Government Commission 2011) and the draft *Fairmead Colony Area Plan* (Madera

County 2011). The purposes of these plans are to improve safety and mobility choices for residents of all ages and abilities, encourage and guide new investment in properties and infrastructure within the community, and provide overall visioning for the future of Fairmead.

5.4.2 Low-Income Populations

5.4.2.1 Reference Community

Table 5-3 presents the percent of individuals living below the poverty level and the percent of households below the poverty level in the reference community. Overall, in 2014, 25 percent of individuals within the reference community were low-income. This percentage is higher compared with California, where low-income individuals made up 16 percent of the total population (U.S. Census Bureau ACS 2010-2014b).

Table 5-3 Low-Income Populations within the Reference Community

Geographic Area	Population (2014)	Percent Individuals Below Poverty Level (2014)	Percent Households Below Poverty Level (2014)
Merced County	261,609	26	22
Madera County	152,452	23	22
Totals	414,061	25	22

Source: U.S. Census Bureau ACS 2010-2014b, 2010-2014f

The U.S. Census Bureau reports poverty and income for the previous 12 months. Low-income populations include all people except those who are institutionalized, those living in military group quarters or college dormitories, and unrelated individuals under 15 years old.

5.4.2.2 Resource Study Area

As shown in Table 5-4, approximately 20 percent of individuals and households within the environmental justice RSA are low-income. Of the communities within the RSA, the community of Fairmead and the city of Chowchilla—with 39 and 30 percent of individuals living below the poverty level, respectively—would be considered low-income populations. Fairmead exceeds both criteria for low-income populations, as it contains more than 25 percent low-income persons and has a percentage of low-income persons more than 10 percent greater than the reference community average of 24 percent (U.S. Census Bureau ACS 2010-2014b). This determination is supported by Figure 5-4, which maps the percentage of low-income individuals within the environmental justice RSA by census block group.

Table 5-4 Low-Income Populations within the Resource Study Area

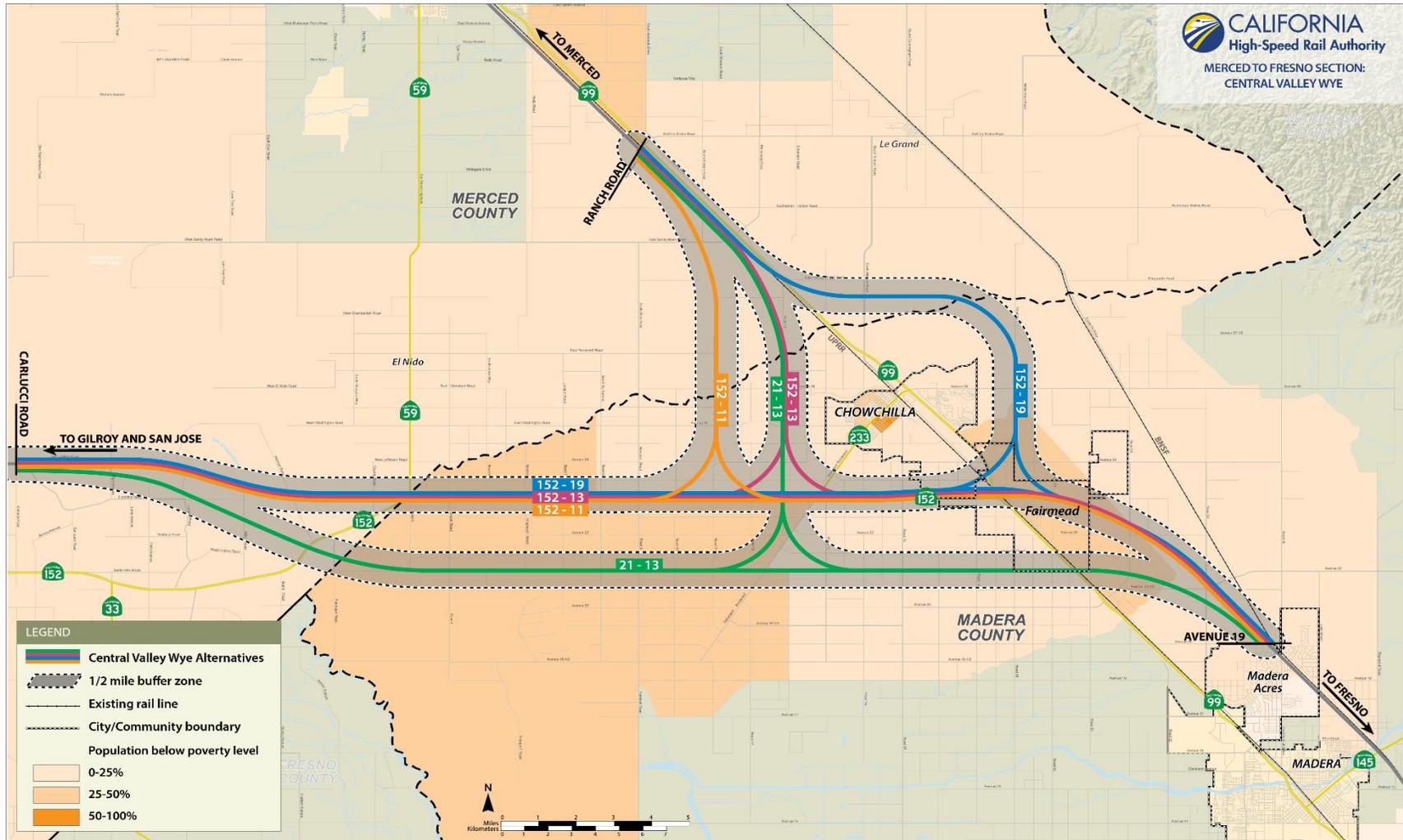
Geographic Area	Population (2014)	Percent Individuals Below Poverty Level (2014)	Percent Households Below Poverty Level (2014)
Within Merced County	8,719	22	22
Within Madera County	35,385	22	20
City of Chowchilla	18,411	30	23
Community of Fairmead	1,983	39	44
Community of Madera Acres	9,653	16	14
EJ RSA Total	44,104	22	19

Source: U.S. Census Bureau ACS 2010-2014b, ACS 2010-2014f

EJ = environmental justice

RSA = resource study area

The U.S. Census Bureau reports poverty and income for the previous 12 months. Low-income populations include all people except those who are institutionalized, living in military group quarters or college dormitories, and unrelated individuals under 15 years old.



Sources: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; U.S. Census 2010; U.S. Census Bureau ACS 2010-2014b.

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Figure 5-4 Low-Income Population in the Resource Study Area

Table 5-5 presents 2010-2014 ACS 5-Year Estimates for households that received SNAP assistance during the previous 12 months. SNAP is the major national income support program for which all low-income and low-resource households, regardless of household characteristics, are eligible. Within the environmental justice RSA, approximately 19 percent of households received SNAP in 2014, compared to 9 percent of households for the state of California during the same year. Fairmead had the highest percentage of SNAP-receiving households (44 percent), while Madera Acres had the lowest percentage of households receiving SNAP (18 percent) (U.S. Census Bureau ACS 2010-2014f). These data reiterate the same trends as the low-income data for the city and communities within the environmental justice RSA.

Table 5-5 Estimated Percent of Households Participating in the Supplemental Nutrition Assistance Program within the Resource Study Area (2014)

Geographic Area	Estimated Percent Households Receiving SNAP (%)
Merced County	11
Madera County	22
City of Chowchilla	23
Community of Fairmead	44
Community of Madera Acres	18
EJ RSA Total	19

Source: U.S. Census Bureau ACS 2010-2014f

EJ = environmental justice

RSA – resource study area

5.4.3 Minority Populations

5.4.3.1 Reference Community

As shown in Table 5-6, the reference community has a large minority population, where 67 percent of the total population identifies as minority. Hispanics are the predominant minority within the reference community, with approximately 56 percent of the population identifying as Hispanic or Latino.

Table 5-6 Minority Group Representation in the Reference Community

Geographic Area	Percentage of Population					Total
	Hispanic of All Races	Non-Hispanic				
		Native American	Asian	African American	Other	
County						
Merced	56	<1	7	3	2	69
Madera	55	1	2	3	2	63
Two-County Region	56	1	5	3	2	67

Source: U.S. Census Bureau ACS 2010-2014d

5.4.3.2 Resource Study Area

Table 5-7 presents information about the minority population within the RSA. Figure 5-5 presents the minority population by census block group within the environmental justice RSA.

Approximately 60 percent of the environmental justice RSA's population is composed of minority individuals, which is comparable to that of the reference community (67 percent) (Table 5-6).

Throughout most of the RSA, the Hispanic or Latino population alone accounts for over half the total population (51 percent). The communities of Fairmead and Madera Acres have the highest percentages of minority group representation, with 80 percent and 70 percent of their population self-identifying as minority, respectively. Chowchilla notably has the largest African-American population in the RSA, comprising 12 percent of the population (U.S. Census Bureau ACS 2010-2014d).

Table 5-7 Minority Group Representation in the Resource Study Area

Location	Percent of Population					Total Minority
	Hispanic of All Races	Non-Hispanic				
		Native American	Asian	African American	Other	
Within Merced County	56	0	3	3	1	61
Within Madera County	50	1	2	8	3	63
City of Chowchilla	39	1	2	12	3	58
Community of Fairmead	60	<1	1	4	15	80
Community of Madera Acres	66	0	2	2	0	70
EJ RSA Totals	51	1	2	7	3	63

Source: U.S. Census Bureau ACS 2010-2014d

EJ = environmental justice

RSA = resource study area

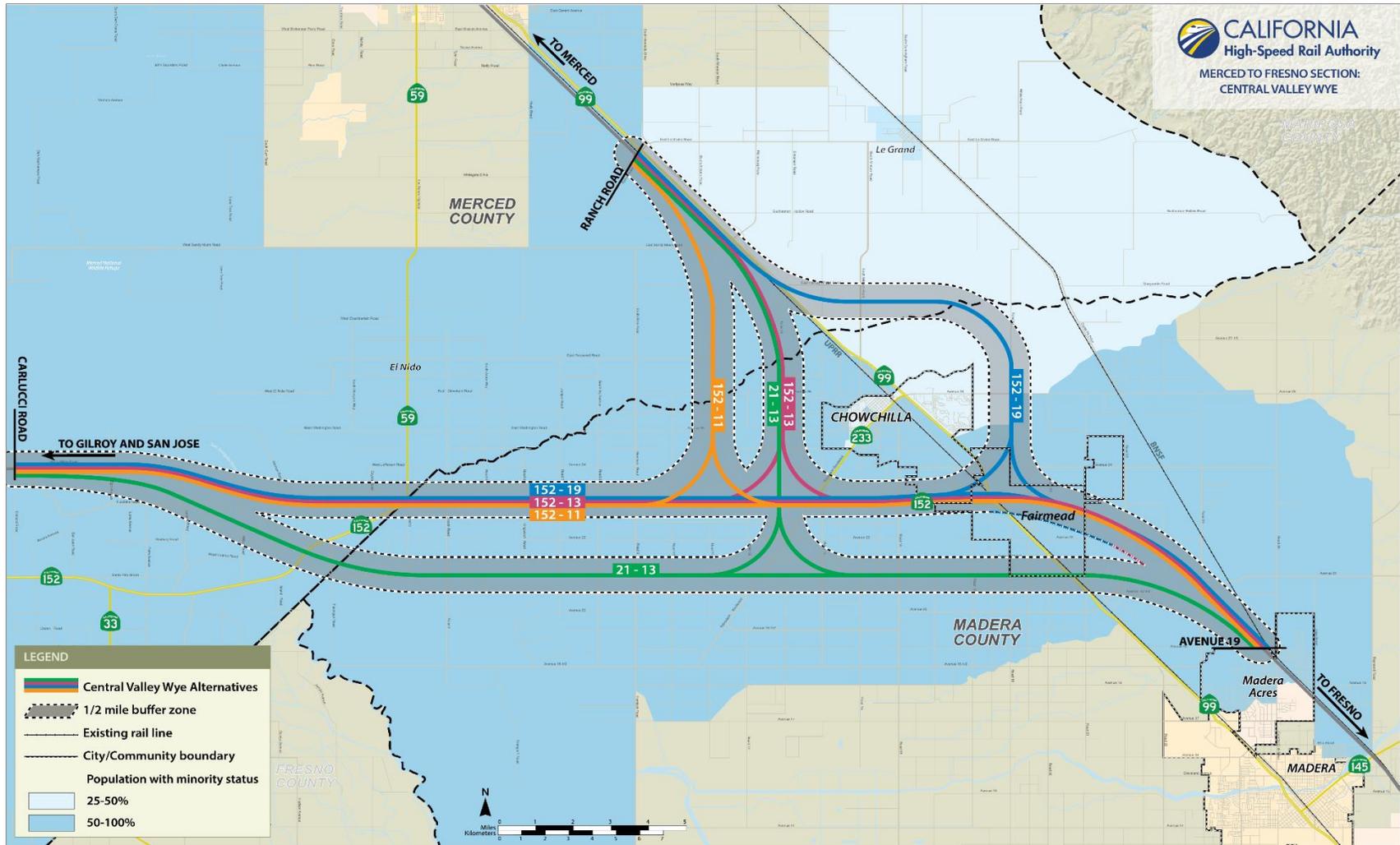


Figure 5-5 Minority Population in the Resource Study Area

5.4.4 Other Sensitive Populations

5.4.4.1 Reference Community

Linguistically isolated households, elderly populations, and the unemployed may require special relocation needs. As shown in Table 5-1, approximately 10 percent of households in the reference community were linguistically isolated, 11 percent of the reference community were elderly, and 12 percent of the reference community population was unemployed as of the last census (U.S. Census Bureau ACS 2010-2014a, 2010-2014e, 2010-2014f). These rates of sensitive populations within the reference community were comparable to those of California.

Demographic data for the reference community likely undercount migrant agricultural workers because some of these workers are undocumented. This is a consideration when identifying low-income and minority populations. Migrant workers are predominantly low-income and minority populations and are defined as farm workers whose employment requires travel, preventing them from returning to a permanent residence every day. According to the most recent National Agricultural Workers Survey, from 2007 to 2009, nationwide, 72 percent of farm workers were foreign-born, and 23 percent of all farm workers had family incomes below federal poverty guidelines (Carroll et al. 2011). In addition, the proportion of unauthorized farm workers in the United States increased, from 7 percent in 1989 to 37 percent in 1994–1995, peaking at 55 percent in 1999–2000 (Congressional Research Service 2009). The National Center for Farmworker Health estimated that in 2012 Merced County had 20,398 crop production workers and Madera County had 24,175 crop production workers (National Center for Farmworker Health 2015).³

5.4.4.2 Resource Study Area

The linguistically isolated households, elderly populations, and the unemployed populations within the RSA (shown in Table 5-2) are generally comparable to the reference community. Within Chowchilla and Fairmead, the percent of households that are linguistically isolated and the elderly population are similar to or less than the environmental justice RSA. However, Fairmead has a substantial percentage of unemployed individuals (28 percent), which would require special consideration during the relocation process (U.S. Census Bureau ACS 2010-2014a, 2010-2014e, 2010-2014f).

Outside of the city and communities in the RSA, the Central Valley Wye alternatives extend through rural agricultural areas and could affect agricultural workers, including migrant workers and other transient communities that are not likely to be included in census data or other information, as described in Sections 5.4.1.1 through 5.4.4.2. No migrant farmworker housing (e.g., temporary structures or makeshift housing) or transient camps were observed during visits by analysts to various portions of the RSA conducted between 2011 and 2016.

5.5 Environmental Justice Engagement and Documentation

5.5.1 Affected Populations and Communities

The demographic information presented in Section 5.4, Affected Environment, identified most of the populations with the RSA as minority or low-income, which is comparable to the demographics of the broader reference community. Low-income and minority populations include the rural portions of Merced and Madera Counties, the city of Chowchilla, and the communities of Fairmead and Madera Acres. Input on the locations of low-income and minority populations was solicited from local stakeholders and community groups, elected officials, and staff members, including the following individuals and groups:

- Local experts and consultants
- City staff and elected officials familiar with low-income and minority populations in the RSA

³ Crop production workers include both migrant workers and seasonal farm workers.

- Local neighborhood/homeowner associations, special interest groups, community centers, and faith-based organizations, including Chowchilla Community Center, Preserve our Heritage, Galilee Missionary Baptist Church in Fairmead, Fairmead Community and Friends, and local chambers of commerce and other business stakeholders

Analysts reviewed community newspapers, websites, and blogs, and conducted additional online research of organizations that serve low-income and minority populations. Previous work experience in the corridor was relied upon for the identification of additional stakeholders and organizations.

5.5.1.1 Engagement Methods

Targeted outreach to the low-income and minority populations in the environmental justice RSA is a crucial component in developing an all-inclusive participation and information program, and would continue throughout the project design and construction phases. These outreach efforts consider all recommendations and factors for outreach included in the Authority’s Title VI and environmental justice guidance, including:

- Consideration of the time, location, and accessibility of all meetings. This effort also includes using other means for engagement such as interviews, briefings, and the use of audio devices to record comments. In addition, all meetings include multiple notification methods, provision of interpreters, venue locations that are accessible and formats that provide for different ways to learn about the Central Valley Wye alternatives and share feedback.
- Reaching people within their own communities and during existing meetings schedules. This effort includes utilizing existing community groups and their knowledge of the community to reach low-income and minority populations more effectively. This also includes selection of meeting locations that are culturally sensitive.
- Provision of Spanish-speaking interpreters and translated meeting materials at all public information meetings hosted by the Authority.
- Presentations focused to specific interest groups.
- Placement of meeting announcements and flyers through different types of media and advertisement of meeting notices in Spanish.
- Cultural sensitivity to minority groups.
- Identification of barriers to public participation and ways to overcome those barriers.

These engagement methods were applied to the public outreach activities conducted for the 2012 Merced to Fresno Final EIR/EIS and this Final Supplemental EIR/EIS. These activities are summarized in the following section.

5.5.1.2 Public Outreach Activities

Extensive public and agency outreach programs were conducted for the 2012 Merced to Fresno Final EIR/EIS and this Final Supplemental EIR/EIS. These outreach efforts are documented in Chapter 8, Public and Agency Involvement, of the 2012 Merced to Fresno Final EIR/EIS (Authority and FRA 2012), and Chapter 9, Public and Agency Involvement, of this Final Supplemental EIR/EIS. This process would continue through the design and construction phases of the selected Central Valley Wye alternative.

Table 5-8 summarizes the outreach to low-income and minority populations at key project milestones. Additionally, between June 2012 and May 2018, 157 public and agency outreach meetings were held within cities and communities in the RSA (see Chapter 9 for the full list of meetings). Meeting attendees included local officials; business owners; school districts; public, local, and regional organization representatives; and government agency staff. Meetings have been held with representatives of affected communities along the Central Valley Wye alternatives, which contain predominantly low-income and minority populations. Public information meetings have been held in Chowchilla and Fairmead, and numerous meetings have

taken place with Fairmead Community and Friends, an organization of community leaders in Fairmead that advocates for the community of predominantly low-income and minority persons.

Table 5-8 Public Involvement Activities and Outreach to Low-Income and Minority Populations at Key Project Milestones

Project Milestone	General Timeframe	Outreach Activity	Description
Merced to Fresno Section Alternatives Analysis	September–November 2009	Direct contact	Contacted low-income and minority interest groups to offer project updates, ask about how to reach these populations, and gather suggestions for other groups to contact.
Results of Merced to Fresno Section Alternatives Analysis	November 2009	Public meeting to discuss alternatives to be evaluated in the Merced to Fresno Section Draft EIR/EIS and next steps	<p>Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language interpreters at the public meetings.</p> <p>Summarized the analysis in Spanish at the meeting and online.</p>
Merced to Fresno Section EIR/EIS Public Hearings and Comment Period	Summer 2011	Public hearings	<p>Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language (and Lao or Hmong, if required) interpreters at the public meetings.</p> <p>The Merced to Fresno Section Draft EIR/EIS was distributed to various facilities that serve low-income and minority populations. These facilities include the Galilee Missionary Baptist Church, El Centro Center (the executive summary was provided in Spanish), and Lao Family Community, Inc.</p> <p>Outreach Team attended the Merced and Madera Flea Markets to provide general information and information on the environmental review process to those communities. Information was available in Spanish and English. Team members also met with the Lao Family Community Inc., and Latinas Unidas, and the local NAACP chapters to give a</p>

Project Milestone	General Timeframe	Outreach Activity	Description
			<p>presentation on the Merced to Fresno Section and provide basic information.</p> <p>Established a telephone hotline with interpreter services to receive EIR/EIS comments and provide information on the hotline regarding all Spanish-language materials.</p>
Preferred Alternative	Summer/Fall 2011	Public meeting to discuss the preferred alternative and next steps	<p>Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language (and Lao or Hmong, if required) interpreters at the public meetings.</p> <p>Summarized the Merced to Fresno Section Draft EIR/EIS in Spanish at the meeting and online.</p>
Merced to Fresno: Central Valley Wye Supplemental Alternatives Analysis	April 2013	Direct contact	Contacted low-income and minority interest groups to offer Merced to Fresno Section updates, ask about the best ways to reach these populations, and gather suggestions for other groups to contact.
Merced to Fresno: Central Valley Wye: Supplemental Alternatives Analysis Results	Spring 2013	Public meeting to discuss alternatives to be evaluated in the Draft Supplemental EIR/EIS for the Merced to Fresno: Central Valley Wye and next steps	Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language interpreters at the public meetings.
Merced to Fresno: Central Valley Wye Environmental Analysis	Summer 2013 through winter 2016	Continued stakeholder outreach and environmental analysis	Public meetings were held during preparation of the Draft Supplemental EIR/EIS to inform the public about the environmental analysis, alternative refinements, recommendations for the preferred alternative, and the status of the Draft Supplemental EIR/EIS. A list of these meetings is available in Table 9-1 of Chapter 9, Public and Agency Involvement.

Project Milestone	General Timeframe	Outreach Activity	Description
Preliminary Results of the Merced to Fresno: Central Valley Wye: Draft Supplemental EIR/EIS environmental analysis	December 2016	Public meeting to discuss the preliminary results of the environmental evaluation and next steps	Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language interpreters at the meetings. Provided interpreters of other languages by request.
Draft Supplemental EIR/EIS Public Hearings and Comment Period	May 3–June 20, 2019 (CEQA); September 13–October 28, 2019 (NEPA)	Public hearings held on June 5, 2019 (CEQA) and October 1, 2019 (NEPA)	<p>Provided meeting notices to low-income and minority interest groups, advertisements in Spanish-language newspapers, meeting notices at community facilities serving low-income and minority populations, additional information in Spanish, and Spanish-language interpreters at the meetings. Provided interpreters of other languages by request.</p> <p>Made executive summary of the Draft Supplemental EIR/EIS available in Spanish (and other languages as requested) at the public meetings and online.</p>

Source: Authority, 2019

EIR = Environmental Impact Report

EIS = Environmental Impact Statement

NAACP = National Association for the Advancement of Colored People

CEQA = California Environmental Quality Act

NEPA = National Environmental Policy Act

5.5.2 Results of Public Outreach

Throughout the alternatives development process to determine the range of Central Valley Wye alternatives, public information meetings, briefings, presentations, and workshops were held in Chowchilla, Merced, Le Grand, Fairmead, Madera, Los Banos, and Dos Palos. At these gatherings, a variety of stakeholders—landowners, farmers, residents, organizations, public agencies, and elected officials—commented both orally and on comment cards on a wide range of issues and expressed opinions regarding the selection of Central Valley Wye alternatives. Because the RSA is composed largely of minority or low-income communities, these comments from the public reflect environmental justice concerns, as well. Several key themes emerged:

- Noise and vibration impacts from the trains.
- Noise-sensitivity of students at Fairmead Elementary School and Fairmead Head Start childcare center and the potential for disrupted learning.
- Air quality and congestion impacts from the trains.
- Visual impacts of high-speed rail (HSR) infrastructure on residential views.
- Potential impacts on local employment opportunities because of the Central Valley Wye alternatives' impacts on agriculture and agricultural manufacturing jobs.

- Concerns that the HSR route could divide or further divide communities, particularly the community of Fairmead, as a result of road closures and the presence of HSR infrastructure.
- Access to local employment opportunities related to the HSR project and concerns that low-income and minority populations could not have access to the appropriate training for jobs with the HSR system.
- Acquisition of property and displacement of people for construction of the Central Valley Wye alternatives, as well as the ability of low-income or unemployed community members who rent their housing to relocate if affected by HSR.
- Concerns about the potential for the HSR alignment to directly affect the Fairmead Elementary School property and result in its relocation.
- Concerns about the impact of road closures on the movement of agricultural goods and access to agricultural properties.
- Loss of useable farmland, parcel severance, and impacts on farm operations and infrastructure (e.g., wells and irrigation systems).
- Potential devaluation of property near the alignment.
- Safety concerns resulting from the proximity of the alignment to homes and Fairmead Elementary School and Fairmead Head Start childcare center.
- Safety benefits of grade separations and an access-controlled freeway with implementation of a Central Valley Wye alternative along SR 152.
- Transit benefits of an HSR connection and transfer point at the existing Amtrak station in Madera.

As part of the public outreach process, the Authority engaged with community leaders and members to identify solutions and alternatives to address the concerns about potential effects on communities and environmental justice populations.

For example, based on the concerns about direct impacts on Fairmead Elementary School, the Authority redesigned the alignments of the SR 152 alternatives so that they would no longer bisect the school and result in its acquisition and relocation. The redesigned alignments were also shifted farther north—where, as originally designed, the alignments were 500 feet or less from the Fairmead Elementary School, the current track alignments of the SR 152 alternatives are in excess of 1,000 feet from the nearest school buildings—thereby lessening the noise and visual impacts on the school and reducing potential roadway and access issues at the SR 99/SR 152 interchange. The Authority also made refinements to planned road closures to address concerns about access, including creating a grade-separated crossing at Road 20 to allow north-south access on the east side of Fairmead. These and other refinements to the design of the Central Valley Wye alternatives as a result of community input are described in the *Report Addendum for the September 10, 2013 Checkpoint B Summary Report in Support of the San Jose to Merced Section and Merced to Fresno Section: Wye Alternatives Section 404(b)(1) Analysis and Draft Subsequent Environmental Impact Report/Supplemental Environmental Impact Statement* (Authority and FRA 2014a), along with the second and third report addenda (Authority and FRA 2014b; Authority and FRA 2016b). The Authority also worked with community leaders to identify mitigation measures to reduce the potential adverse effects on communities and environmental justice populations as a result of construction of the Central Valley Wye alternatives. Section 5.6.3, Central Valley Wye Alternatives, describes these mitigation measures.

5.6 Analysis of Adverse and Disproportionate Effects

5.6.1 Overview

This section evaluates how the No Project Alternative and the Central Valley Wye alternatives could affect low-income and minority populations during construction and operations, as well as the potential for cumulative impacts. The impacts of the Central Valley Wye alternatives are described and organized in Section 5.6.3 as follows:

- Construction Impacts and Mitigation
 - Noise and Vibration
 - Aesthetics and Visual Quality
 - Transportation
 - Socioeconomic Impacts
 - Community Cohesion
 - Displacements and Relocations
 - Employment
 - Air Quality
 - Water Quality
 - Hazardous Materials and Wastes
 - Disturbance or Destruction of Cultural Resources
 - Parks, Recreation, and Open Space
 - Mitigation for Construction Impacts
 - EJ-MM#1: Provide a Community Center for the Community of Fairmead
 - EJ-MM#2: Provide Water and Sewer Service for the Community of Fairmead
- Operations Impacts and Mitigation
 - Noise and Vibration
 - Aesthetics and Visual Quality
 - Transportation
 - Employment
 - Air Quality
 - Parks, Recreation, and Open Space
- Cumulative Impacts

5.6.2 No Project Alternative

The population in the San Joaquin Valley is expected to grow through 2040 (see Section 2.2.2.2, Planned Land Use). Development in the San Joaquin Valley to accommodate the population increase would continue under the No Project Alternative and result in associated direct and indirect effects on environmental justice populations. Such planned projects anticipated to be constructed by 2040 include residential, commercial, industrial, recreational, transportation, and agricultural projects. These projects would occur throughout Merced and Madera Counties, which have 26 and 23 percent low-income populations⁴ and 69 and 63 percent minority populations, respectively. As a result, these projects would predominantly affect low-income and minority populations.

Foreseeable future development projects in Merced and Madera Counties include dairy farm expansions, implementation of airport development and land use plans, and implementation of general and specific plans throughout both counties. Planned projects under the No Project Alternative would also include transportation projects such as the expansion of SR 99, reconstruction of interchanges, and overcrossing construction, or development projects such as residential, commercial, and industrial developments. One such project, the George Simmons Minor

⁴ Defined as the percentage of individuals below the poverty level.

Subdivision & Don Chapin Company Concrete Batch Plant Project, would create additional, permanent jobs in the area and sets aside 26.9 acres of land for future industrial and commercial development.

In the community of Fairmead, several improvements are planned as part of long-term improvement efforts to revitalize the community. Two recent community plans, the *Fairmead Neighborhood Mobility and Revitalization Strategy* (Local Government Commission 2011) and the draft *Fairmead Colony Area Plan* (Madera County 2011) identify several projects to improve public infrastructure including street improvements, such as lighting and sidewalks, drainage system enhancements, an upgraded and expanded water supply system, centralized sewer system and interim strategies to address groundwater quality concerns, expanded transit service, and a new community center and playfields. However, there are no specific funding sources for the majority of these projects and the community currently lacks many critical infrastructure improvements, most notably a centralized wastewater collection network and treatment facility and a reliable water supply system. Without these improvements, the existing community cohesion suffers because residences cannot rely on public infrastructure to meet their needs and future growth opportunities are constrained.

Another planned project could affect Fairmead Elementary School and result in further effects on low-income and minority populations by removing an important local educational resource to the community of Fairmead. The Chowchilla Elementary School District's long-range master plan would involve migrating students from Fairmead Elementary School, which currently only serves 5th and 6th grades, to Chowchilla and closing the Fairmead Elementary School (Chowchilla Elementary School District 2016). The Fairmead Elementary School is Fairmead's only public meeting place and provides public playfields for children after school hours. The school is vital for facilitating civic engagement among residents and maintaining a close-knit community, and loss of the school would act as a further detriment to the community's cohesiveness and sense of pride.

A full list of anticipated future development projects is provided in Appendix 3.19-A, Cumulative Plans and Non-Transportation Projects List, and Appendix 3.19-B, Cumulative Transportation Projects Lists. The residential and commercial growth expected in and around the city of Chowchilla, as described in the Introduction and Land Use sections of the *City of Chowchilla 2040 General Plan* (City of Chowchilla 2011: pages I-1 through L-69), is anticipated to affect low-income and minority populations.

Under the No Project Alternative, recent development trends are anticipated to continue, leading to temporary and permanent adverse effects on environmental justice populations. Existing land would be converted for residential, commercial, and industrial development, as well as for transportation infrastructure, to accommodate future growth. Population growth and associated development pressures could result in disturbances to low-income and minority populations during temporary construction activities. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include the implementation of various forms of mitigation to avoid or minimize potential effects on environmental justice populations and resources.

5.6.3 Central Valley Wye Alternatives

Construction and operations of the Central Valley Wye alternatives could result in temporary and permanent adverse effects as well as beneficial effects on low-income and minority populations. This environmental justice analysis focuses on the potential for adverse effects on health and the environment that could adversely affect low-income and minority populations. Section 5.6.3.1, Construction Impacts and Mitigation, through 5.6.3.3, Cumulative Impacts, evaluate the potential adverse effects on low-income and minority populations associated with noise and vibration; aesthetics and visual quality; transportation; socioeconomics (including community cohesion, displacements, and employment); air quality; water quality; hazardous materials and wastes; cultural resources; and parks, recreation and open space.

The design of the Central Valley Wye alternatives would minimize or avoid impacts related to health risks associated with electromagnetic fields and electromagnetic interference; geology,

soils, seismicity, and paleontology; safety and security; the disruption of public utilities and services; biological resources and wetlands; agricultural farmland; and land use and development. The following discussion provides a brief summary of why these impacts would not result in adverse effects on low-income and minority populations from construction or operations.

Health and safety risks associated with increased exposure to electromagnetic fields and electromagnetic interference during construction of the Central Valley Wye alternatives would be temporary, and neither construction nor operations would present a public health risk. Health and safety risks related to geology, soils, and seismicity would be avoided through the implementation of guidance set by professional standards during the design, construction, and operations. Safety and security risks to human populations would be avoided or minimized through the implementation of safety system program plans designed to protect construction workers and users of the HSR, and construction safety and health plans (e.g., fire/life safety programs and evacuation routes) that establish minimum safety and health guidelines for construction projects. Accordingly, risks associated with electromagnetic fields and electromagnetic interference; geologic resources, soils, and seismicity; and safety and security hazards would be avoided or minimized. These impacts would not adversely affect low-income and minority populations.

Construction and operations of the Central Valley Wye alternatives have the potential to affect utility infrastructure, water usage, waste generation, and energy consumption. None of these effects would result in impacts on human health and safety or disrupt the availability of public and private facilities and services relied upon by low-income and minority populations.

Construction and operations of all of the Central Valley Wye alternatives would result in temporary and permanent impacts on biological resources, including wetlands and other waterbodies, special-status plant and wildlife habitat, and wildlife movement corridors. These impacts would not affect human populations, including low-income and minority populations. Similarly, the effects on some community resources would not be anticipated to adversely affect low-income and minority populations. The conversion of agricultural farmland and the alteration of land use patterns as a result of land use conversion to transportation uses would not directly affect low-income and minority populations; however, associated impacts on the agricultural economy and the disruption or division of communities would affect low-income and minority populations and are evaluated in Section 3.12.

A full discussion of these resource topics is available in the following resource sections: Section 3.5, Electromagnetic Fields and Electromagnetic Interference; Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources; Section 3.11, Safety and Security; Section 3.6, Public Utilities and Energy; Section 3.7, Biological Resources and Wetlands; Section 3.14, Agricultural Farmland; and Section 3.13, Land Use and Development. Because these topics would not have the potential to adversely affect low-income and minority populations, they are not discussed further in this chapter.

5.6.3.1 Construction Impacts and Mitigation

Construction of the Central Valley Wye alternatives would involve, for example, demolition of existing structures, clearing and grubbing; handling, storing, hauling, excavating, and placing fill; possible pile driving; and construction of aerial structures, bridges, road modifications, utility upgrades and relocations, HSR electrical systems, and railbeds. Construction activities are further described in Chapter 2, Alternatives.

Noise and Vibration

Construction of the Central Valley Wye alternatives would require the use of mechanical equipment that would generate temporary increases in noise and groundborne vibration within the noise and vibration RSAs, and could result in human annoyance. The Central Valley Wye alternatives would incorporate NV-IAMF#1, which would require compliance with FRA guidelines for minimizing noise and vibration impacts on sensitive receptors during construction, including strategic siting of equipment, phasing of construction operations, and using alternative construction methods or equipment to minimize construction noise and vibration. Although construction-related vibration would not result in human annoyance outside of the project footprint

for any of the Central Valley Wye alternatives, construction-related noise would exceed noise levels that the FRA determines cause annoyance during the day and at night for all Central Valley Wye alternatives.

Construction of the Central Valley Wye alternatives would temporarily affect from 46 to 60 residential sensitive receptors as a result of daytime construction and from 55 to 98 residential sensitive receptors as a result of nighttime construction.⁵ The SR 152 (North) to Road 19 Wye Alternative would result in the most nighttime impacts (98 residential sensitive receptors), while the Avenue 21 to Road 13 Wye Alternative would result in the most daytime impacts (60 residential sensitive receptors). The SR 152 (North) to Road 11 Wye Alternative would have the fewest daytime impacts (46 residential sensitive receptors), while the Avenue 21 to Road 13 Wye Alternative would have the fewest nighttime impacts (55 residential sensitive receptors). These impacts would be distributed along the entire length of the alignments and would predominantly affect low-income and minority individuals, which are the majority of the population within the RSA. Under the SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye Alternatives, the community of Fairmead would experience the greatest concentration of impacts because of its proximity and the greater density of sensitive receptors along Avenue 23 (which is just north of the residential core of Fairmead). The Avenue 21 to Road 13 Wye Alternative would result in fewer construction-related noise impacts within Fairmead because of its alignment along Avenue 21 (the community's southern boundary), where adjacent land uses are largely agricultural.

The Authority would implement NV-MM#1 to mitigate construction-related noise impacts. This measure includes preparation of a noise-monitoring program that would minimize impacts on adjacent populations, including low-income and minority populations, by following FRA guidelines for daytime and nighttime noise level limits. This measure would apply equally to low-income and minority populations and the reference community as a whole. This measure would address the concerns raised by low-income and minority populations during the environmental justice engagement process about construction-related noise impacts on residents by implementing specific requirements (e.g., prohibiting certain noise-generating activities during nighttime hours or installing temporary construction site sound barriers) to limit the exposure of sensitive receptors to excessive noise during construction. With mitigation, temporary construction-related noise effects on low-income and minority populations from the Central Valley Wye alternatives would be reduced below the level anticipated to cause human annoyance.

Aesthetics and Visual Quality

Construction of the Central Valley Wye alternatives would introduce features, such as operation of large construction equipment, that would contrast with the established character of a view and that would alter the existing visual character of a residential area. This would result in temporary impacts for residential viewers within 0.25 mile of construction activities. The SR 152 (North) to Road 13 Wye Alternative would pass the most residences because it crosses Robertson Boulevard twice north of SR 152 and passes near Fairmead. The SR 152 (North) to Road 19 Wye and SR 152 (North) to Road 11 Wye Alternatives would pass concentrations of residences as they cross Robertson Boulevard and near Fairmead. The Avenue 21 to Road 13 Wye Alternative would avoid concentrations of residential views, resulting in the least impact on residential viewers. Implementation of AVR-MM#1, Minimize Visual Disruption from Construction Activities, and AVR-MM#2, Minimize Light Disturbance during Construction, would reduce these impacts.

The three Central Valley Wye alternatives situated along SR 152 would have permanent changes to the aesthetic and visual quality in the Fairmead Landscape Unit. The SR 152 (North) to Road 13 Wye Alternative would pass through the community of Fairmead on an embankment. While design standards for the HSR infrastructure include approaches to integrate structures within a community

⁵ This estimate excludes construction noise impacts associated with electrical interconnections and network upgrades (EINUs). Refer to Table 3.4-12 in Section 3.4, Noise and Vibration, for construction noise impacts by time period and with EINU-related work presented separately.

and to reduce the intrusiveness of large, elevated structures and berms (AVR-IAMF#1), the alternative would introduce permanent changes to the aesthetics and visual quality of existing residential views that would contrast with the rural and agricultural setting. Sensitive viewers such as nearby residents would be permanently affected by high berms altering the character of their surroundings by introducing a long and solid form that would block views from their homes, such as distant views to the Sierra Nevada range. The mitigation measures identified previously, as well as AVR-MM#4, Provide Vegetation Screening along At-Grade and Elevated Guideways Adjacent to Residential Areas, would soften and obscure the conflicting aesthetic of the HSR infrastructure but would not return views blocked by the Central Valley Wye alternatives.

The SR 152 (North) to Road 19 Wye Alternative would have similar impacts on visual resources as the SR 152 (North) to Road 13 Wye Alternative, but as the wye for the alternative is in the Fairmead Landscape Unit, the alternative would traverse a greater distance through the landscape unit, with more subsequent impacts on visual resources, including a greater extent of berms blocking distant views and more elevated structures contrasting with the rural and residential setting. Therefore, the SR 152 (North) to Road 19 Wye Alternative would have the greatest impact of the Central Valley Wye alternatives. The SR 152 (North) to Road 11 Wye Alternative would follow the same alignment as the SR 152 (North) to Road 13 Wye Alternative through the Fairmead Landscape Unit, resulting in the same impacts on visual resources. The Avenue 21 to Road 13 Wye Alternative would not pass through this landscape unit and would have no impact on the visual quality within Fairmead.

All Central Valley Wye alternatives would introduce permanent changes to the aesthetic and visual quality in the Robertson Boulevard Landscape Unit and would permanently alter the Historic Robertson Boulevard Tree Row. Robertson Boulevard is designated as a scenic corridor between SR 99 and SR 152 and is perceived as the gateway to the city of Chowchilla. Each Central Valley Wye alternative would cross Robertson Boulevard, removing palm trees, blocking views of the roadway and tree row, and degrading the visual quality. The impact would be greatest under the SR 152 (North) to Road 13 Wye Alternative, which would cross Robertson Boulevard in two locations on a viaduct structure in an area with high viewer sensitivity for travelers and moderately high viewer sensitivity for residents.

The impact on visual quality would be least under the Avenue 21 to Road 13 Wye Alternative, which would cross Robertson Boulevard in an area not designated as a scenic route and where viewer sensitivity is lower because of lower traffic volumes and fewer residences south of SR 152. Mitigation measures (AVR-MM#3, Incorporate Design Criteria for Elevated Guideways and Station Elements That Can Adapt to Local Context; AVR-MM#5, Replant Unused Portions of Lands Acquired for the HSR; and AVR-MM#6, Landscape Treatments along the HSR Overcrossings and Retained Fill Elements) would reduce the intrusiveness of structures and the visual contrast between existing views and views of HSR infrastructure but would not avoid disruption of the historic tree row or blocked views associated with the Central Valley Wye alternatives. Although the degradation of visual quality would affect the perceived gateway to the city of Chowchilla—which has clusters of low-income populations—travelers along Robertson Boulevard would predominantly experience the adverse impact. The effect on low-income and minority populations in Chowchilla would be limited.

Transportation

Construction of any of the Central Valley Wye alternatives would affect major roadways through temporary and permanent road closures and relocations that would result in diversion of traffic onto other roadways. Design features (TR-IAMF#1 through TR-IAMF#10) would limit temporary traffic interruptions from road closures by providing temporary signage, advanced detour notification, provisions for safe pedestrian and bicycle passage, and other standard measures to minimize temporary traffic increases in traffic volumes. Permanent road closures would predominantly affect local roads and would result in changes to vehicle movements. Of the Central Valley Wye alternatives, the most permanent road closures would occur under the SR 152 (North) to Road 13 Wye Alternative (38), followed by SR 152 (North) to Road 19 Wye Alternative (36) and SR 152 (North) to Road 11 Wye Alternative (33). The fewest permanent road

closures would occur under the Avenue 21 to Road 13 Wye Alternative (30). Most of these road closures would occur within unincorporated rural areas, with the exception of those within the community of Fairmead. Construction of the three alternatives aligned along SR 152 would require permanent closure of two roadways within the residential core of Fairmead: Road 19 1/2 and Road 20 1/2. The Avenue 21 to Road 13 Wye Alternative would require permanent closure of Road 19 1/2 within southern Fairmead.

Grade-separated interchanges proposed as part of the Central Valley Wye alternatives would provide a benefit by reducing traffic delays at current at-grade intersections and improving the safety of intersections for motorists, bicyclists, and pedestrians compared to existing conditions. Roadway overcrossings or undercrossings would total 24 for the SR 152 (North) to Road 13 Wye Alternative, 29 for the SR 152 (North) to Road 19 Wye Alternative, 28 for the Avenue 21 to Road 13 Wye Alternative, and 24 for the SR 152 to Road 11 Wye Alternative. These roadway crossings are distributed along the length of the Central Valley Wye alternatives. The greatest safety benefits would occur with implementation of the SR 152 (North) to Road 13, SR 152 (North) to Road 19 Wye, or SR 152 (North) to Road 11 Wye alternatives, which would convert portions of SR 152 into a fully access-controlled freeway. These grade separations would be improvements consistent with the California Department of Transportation's (Caltrans) long-term plans for SR 152 but would accelerate the timeframe in which the upgrades would be constructed and would also increase the number of grade-separated crossings relative to Caltrans plans (Caltrans 2015, 2016). These safety benefits would be experienced by the predominantly low-income and minority populations within the RSA under the SR 152 alternatives but would not be experienced under the Avenue 21 to Road 13 Wye Alternative.

Socioeconomic Impacts

Community Cohesion

Construction of the Central Valley Wye alternatives would result in temporary and permanent adverse impacts on the community cohesion⁶ of Fairmead, a predominantly low-income and minority population, under the SR 152 (North) to Road 13 Wye Alternative, the SR 152 (North) to Road 19 Wye Alternative, and the SR 152 (North) to Road 11 Wye Alternative. The Avenue 21 to Road 13 Wye Alternative would have the least impact on Fairmead's community cohesion.

The SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye alternatives would extend east from Chowchilla, cross the Union Pacific Railroad (UPRR)/SR 99 corridor on an aerial structure and continue through the community of Fairmead on an embankment north of Avenue 23. Although the residential core of Fairmead is located south of Avenue 23, there are a number of rural residences north of Avenue 23 and along Road 19 1/2 that would be close to the three SR 152 alternatives. The most nearby sensitive receptors would occur with the SR 152 (North) to Road 19 Wye Alternative, which has the longest alignment extending through Fairmead. Construction of any of the SR 152 alternatives would have localized temporary impacts on noise, visual quality, and transportation, which could, in turn, have implications on community cohesion and social engagement in Fairmead. Construction equipment and activities would generate increases in noise and vibration that would result in human annoyance, visual changes that would degrade visual quality, and temporary road closures that could disrupt pedestrian, bicycle, and transit circulation patterns and inconvenience residents and businesses. Construction activities, which would occur over a 1- to 3-year period at any given location, would introduce a visible and functional barrier that could deter neighbors from interacting, participating in community activities, and supporting each other, and could result in a perception by area residents that they have been separated from their community. These temporary construction-related noise, visual quality, and transportation impacts would be greatest under the SR 152 (North) to Road 19 Wye Alternative, followed by the SR 152 (North) to Road 13 Wye Alternative and the SR 152 (North) to Road 11 Wye Alternative. The Avenue 21 to Road 13

⁶ Defined as the degree to which residents have a sense of belonging to their neighborhood, a level of commitment to the community, or an association with neighbors, groups, and institutions, usually as a result of continued association over time.

Wye Alternative, because of its alignment along the southern edge of Fairmead in a predominantly rural area, would have the least impact on Fairmead residents and community character and cohesion.

The SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye alternatives would construct a new linear transportation right-of-way through Fairmead, introducing a new linear feature extending in the east-west direction that would divide the northern and southern portions of the community. The residential northern part of the community would be separated from the residents and community facilities (such as churches, Fairmead Elementary School, and Fairmead Head Start) south of Avenue 23, dividing and disrupting the cohesiveness of the community. The division of Fairmead would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would divide the community in both the east-west direction and the southwest-northeast direction as the wye legs would extend through Fairmead in the directions of San Jose, Fresno, and Merced and would displace an estimated 53 residential units. No division of Fairmead would occur under the Avenue 21 to Road 13 Wye Alternative, although four residences would be displaced. Access between the northern and southern half of Fairmead would be permanently reduced under each of the SR 152 alternatives, with road closures at Road 19 1/2 and Road 20 1/2. Grade-separated crossings at Fairmead Boulevard, Road 18 3/4, and Road 20 would provide north-south access on the west and east side of the community. One permanent road closure (Road 19 1/2) would occur in southern Fairmead under the Avenue 21 to Road 13 Wye Alternative, but this would occur in a less populated area of the community and would have a lesser effect on circulation within Fairmead.

As described in the Aesthetics and Visual Quality section of this chapter, visual impacts associated with the permanent presence of HSR infrastructure on an embankment and structure within the community under the SR 152 alternatives would introduce permanent changes to the aesthetics and visual quality of existing residential views in Fairmead that would contrast with the rural and agricultural setting and would block residential views, including distant views to the Sierra Nevada range. These changes would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would affect the most residential viewers. The Avenue 21 to Road 13 Wye Alternative would not result in permanent visual quality impacts within the Fairmead Landscape Unit.

The three SR 152 Central Valley Wye alternatives would result in the introduction of a new permanent transportation feature into the rural-residential community of Fairmead, associated residential displacements, reductions and restrictions in access between portions of the community, and visual quality impacts. Noise and visual impacts under the SR 152 alternatives would adversely affect quality of life, social relationships, and community character and cohesion within Fairmead. Therefore, the three SR 152 wye alternatives would result in adverse impacts on community cohesion in Fairmead. These alternatives could incentivize residents to move away from a community already distressed by its lack of sewer and water systems, which inhibit potential residential and business development. The Avenue 21 to Road 13 Wye Alternative would not result in community cohesion impacts on Fairmead and would not require mitigation.

The Authority has identified mitigation measures to reduce the adverse impact of community cohesion of the three SR 152 alternatives on Fairmead. As part of mitigation measure SO-MM#1, Implement Measures to Reduce Impacts Associated with the Division of Residential Neighborhoods, the Authority would conduct outreach to affected owners and residents within the community of Fairmead to determine in more detail their specific relocation needs. For those residents that wish to remain in the immediate vicinity, this measure also stipulates that the Authority would assist these displaced residents with finding new suitable housing within the communities in which they currently reside, and would work with them through community workshops to support long-term neighborhood cohesion. The provision of suitable replacement housing within these communities would require purchase of vacant land or buildings, and consultation with local authorities over matters such as zoning, permits, and moving of homes and replacement of services and utilities, as appropriate.

The Authority also would implement specific mitigation to address community cohesion within Fairmead. As part of SO-MM#2, Implement Measures to Reduce Impacts Associated with the

Division of Communities, the Authority conducted extensive coordination with the Fairmead Community and Friends stakeholder group, the Chowchilla Elementary School District, and the County of Madera to identify the following features (depicted on Figure 5-6) that would be incorporated into the final design of any of the SR 152 alternatives (including the Preferred Alternative) to maintain a robust sense of community cohesion in Fairmead:

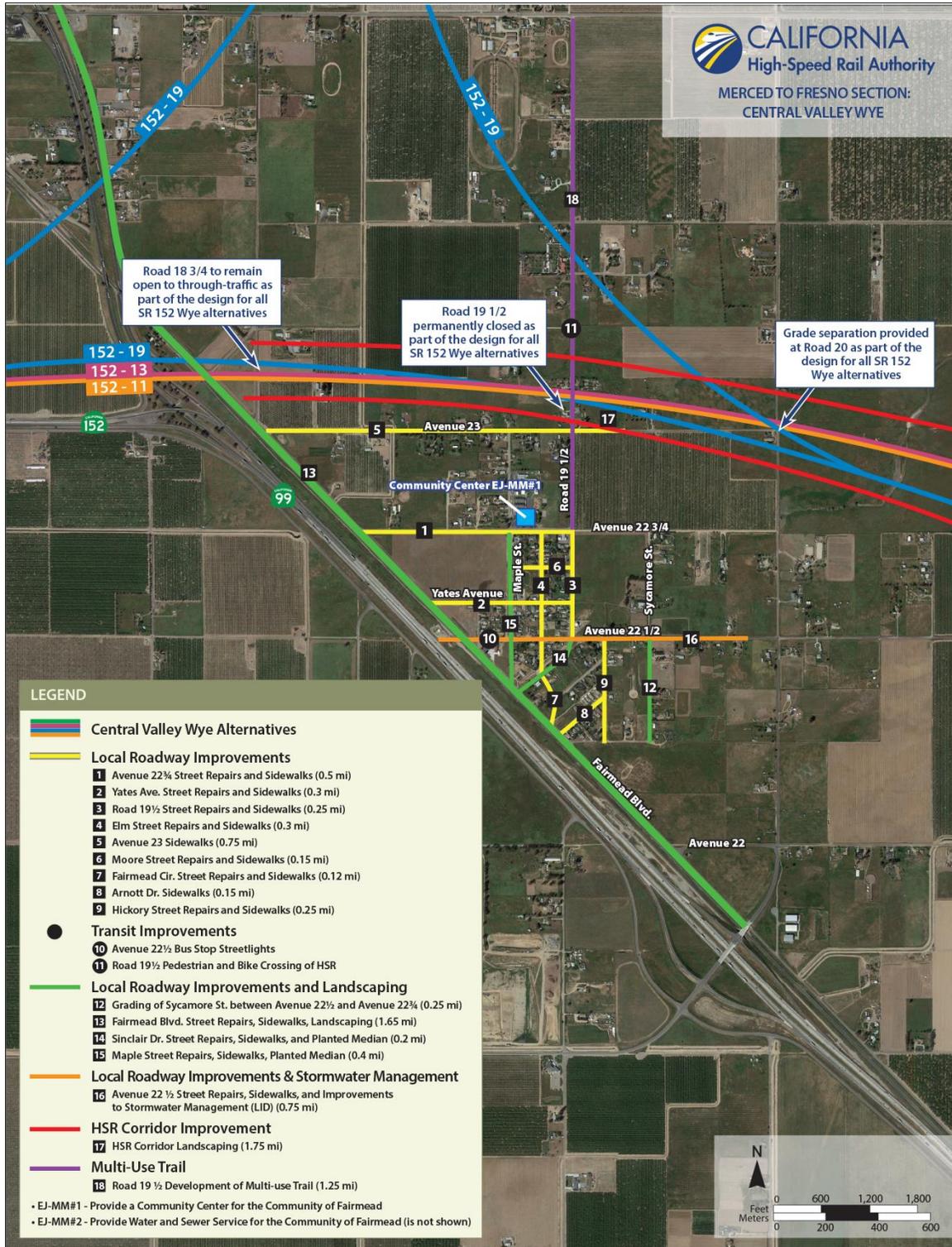
- Two vehicular crossings, one each at Road 18 3/4 and Road 20
- A multiuse trail along Road 19 1/2 between Avenue 24 and Avenue 22 3/4 to maintain pedestrian and bicycle access between the northern and southern portions of Fairmead (1.25 miles)
- Sidewalk installation at Avenue 23 (0.75 mile) and Arnott Drive (0.15 mile), and roadway repairs and sidewalk installations at Avenue 22 3/4 (0.5 mile), Moore Street (0.15 mile), Yates Avenue (0.3 mile), Road 19 1/2 (0.25 mile), Elm Street (0.3 mile), Fairmead Circle (0.12 mile), and Hickory Street (0.25 mile)
- Grading of Sycamore Street between Avenue 22 1/2 and Avenue 22 3/4 (0.25 mile)
- Roadway improvements, sidewalk installations, and landscaping at Fairmead Boulevard (1.65 miles), Sinclair Drive (0.2 mile), and Maple Street (0.4 mile)
- Street repair, sidewalk installation, and stormwater management at Avenue 22 1/2 (0.75 mile)
- Installation of streetlights at the Avenue 22 1/2 bus stop
- Landscaping along the HSR corridor (1.75 miles)

These mitigation measures would be applied consistent with SO-MM#5, Continue Outreach to Disproportionately and Negatively Affected Environmental Justice Communities of Concern, from the Merced to Fresno Final EIR/EIS, which entails continued outreach to low-income and minority populations identified in that document as being subject to disproportionately high and adverse effects. The intent of this measure is to solicit input on potential refinements of project features during the design phase (Authority and FRA 2012: page 3.12-68). These mitigation measures would extend the ongoing process of community engagement initiated during the development of this Final Supplemental EIR/EIS and would enhance local roadway connectivity within the community through the provision of roadway improvements and a multiuse trail that would ensure access is maintained within the community, improve pedestrian and bicycle safety, and revitalize the community aesthetically through landscaping and streetscaping.

Furthermore, the Authority has identified additional mitigation measures, developed in collaboration with Fairmead and Madera County community leaders, to address the potential community cohesion impacts on the community of Fairmead under the three SR 152 alternatives. Under EJ-MM#1, Provide a Community Center for the Community of Fairmead, and EJ-MM#2, Provide Water and Sewer Service for the Community of Fairmead, which are described under Mitigation for Construction Impacts later in this section, the Authority would provide funding and technical assistance for:

- Providing a Community Center for the Community of Fairmead
- Connecting Fairmead to the nearest municipal water system
- Connecting Fairmead to the Chowchilla Wastewater Treatment Plant and developing sewer distribution and collection systems

Implementation of these mitigation measures would require cooperation of Madera County and the City of Chowchilla. If implemented, these mitigation measures would offset the adverse effects of construction of the SR 152 alternatives on Fairmead by reducing existing stressors (e.g., lack of a reliable water supply and centralized sewer system) that adversely affect community cohesion and inhibit growth. Mitigation aimed at offsetting the HSR contribution to stressors on the community would provide an opportunity to maintain the quality of life in Fairmead under the SR 152 alternatives.



Source: Authority, 2018

MAY 23, 2018

Note: Per EJ-MM#1, the Authority would provide Madera County with funding to construct a new community center. Notwithstanding the above map, no precise location of a community center has been identified as of the date of this Final Supplemental EIR/EIS.

Figure 5-6 Community Cohesion Mitigation, Fairmead

Displacements and Relocations

Construction of the Central Valley Wye alternatives would require the acquisition of right-of-way and would result in the displacement of residents, commercial and industrial businesses, and agricultural operations. The estimated residential units displaced would be 96 units under the SR 152 (North) to Road 13 Wye Alternative, 119 units under the SR 152 (North) to Road 19 Wye Alternative, 65 units under the Avenue 21 to Road 13 Wye Alternative, and 62 units under the SR 152 (North) to Road 11 Wye Alternative. These displaced units consist of single-family residences and scattered mobile/manufactured homes. Under each of the Central Valley Wye alternatives, displacements would occur in the unincorporated areas of Merced and Madera Counties and the community of Fairmead. Displacements would not occur in the community of Madera Acres.

Residential displacements within the community of Fairmead would vary greatly by alternative. The SR 152 (North) to Road 19 Wye Alternative would displace 53 Fairmead residences, while the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 11 Wye Alternative would displace 18 and 15 residences, respectively. Because the Avenue 21 to Road 13 Wye Alternative would pass farther south of Fairmead than the three SR 152 alternatives, and therefore generally would cross less densely populated areas, it would require the displacement and relocation of the fewest residences within Fairmead (4 residences).

High numbers of residential displacements in Fairmead associated with construction of the SR 152 alternatives could result in the relocation of sensitive populations, including the linguistically isolated, elderly, and unemployed. Residential displacements in Fairmead are not expected to displace sensitive populations disproportionately. It is expected, however, that sensitive populations would be among those relocated by the HSR project.

Displacements of commercial and industrial businesses, and agricultural operations under the Central Valley Wye alternatives would be distributed along the alignments. Commercial and industrial business displacements would be greatest under the SR 152 (North) to Road 13 Wye Alternative and SR 152 (North) to Road 19 Wye Alternative (8 business displacements each), and the SR 152 (North) to Road 11 Wye Alternative (7 business displacements), and would affect businesses along SR 152. The Avenue 21 to Road 13 Wye Alternative would have the fewest business displacements (1 business displacement). None of the displaced businesses would be located within low-income or minority communities; rather, they are distributed in unincorporated rural areas throughout the length of the alignment. No migrant farmworker housing or transient camps would be displaced by the Central Valley Wye alternatives. Similarly, no community and public facilities would be displaced.

An analysis of available replacement properties indicates that there would likely be a sufficient number of comparable replacement properties available in the relocation RSA as a whole. However, as noted in Section 3.12, at the time of the analysis, there were insufficient residential properties within the community of Fairmead to accommodate all the residents displaced under the SR 152 alternatives within the same community. This gap between the displaced residences and the available relocation properties would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would displace 53 Fairmead residences. Because of the lower number of residential displacements under the Avenue 21 to Road 13 Wye Alternative, displaced Fairmead residents under this alternative would likely be able to relocate within the same community.

The design of the Central Valley Wye alternatives would include measures to provide displaced persons or owners of acquired property with relocation assistance and counseling and permit assistance for agricultural operations. In addition, the California High Speed Rail Authority Title VI Program includes a commitment to include public involvement of all persons affected by the HSR project (Authority 2012a). The Authority is committed to ensuring that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services based on race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and Related Statutes. USEO 13166 (Improving Access to Services for Persons with Limited English Proficiency) also underscores the Authority's commitment to minimizing community impacts by not disproportionately favoring, or discriminating against, any populations in the process of providing support to residences and businesses.

As described previously, the Authority would conduct outreach to residents, including to low-income, minority, and sensitive populations within the community of Fairmead, to fully understand their special relocation needs, per the requirements set forth in SO-MM#1. The Authority would assist displaced residents with finding new suitable housing within the communities they currently reside in, if desired, and would work with residents of affected communities through community workshops to support long-term neighborhood cohesion. With implementation of this measure, effects of the displacements of residents, businesses, and agricultural operations on low-income, minority populations, and other sensitive populations would be reduced, but would remain adverse.

Employment

Construction of the Central Valley Wye alternatives would require the acquisition and permanent conversion of agricultural lands and confined animal agricultural facilities and could affect agricultural operations. The loss of agricultural land could reduce employment opportunities for farm workers who could be negatively affected if the acquisition results in permanent job losses or if the workers are unable to find work on another farm or industry in the region. The estimated job loss associated with the amount and type of agricultural lands conversion for construction of the Central Valley Wye alternatives is from 74 jobs under the SR 152 (North) to Road 13 Wye Alternative to 85 jobs under the SR 152 (North) to Road 11 Wye Alternative. The Authority would mitigate the loss of important farmland through the implementation of AG-MM#1, Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland), which would preserve important farmland in an amount commensurate with the quantity and quality of converted farmlands. Consistent with SO-MM#8, Provide Access Modifications to Affected Farmland from the Merced to Fresno Final EIR/EIS, the Authority would also provide access modifications to affected farmlands in coordination with property owners to allow for continued use of the maximum amount of agricultural lands and facilities (Authority and FRA 2012: page 12-69). Although the specific locations of the preserved important farmland are unknown, these measures would minimize impacts on the agricultural economy and agricultural employment for the region as a whole.

Overall, potential employment growth from Central Valley Wye alternative construction is expected to be a benefit for the region during the 4-year construction period. The Central Valley Wye alternatives would create an additional direct or indirect 8,120 to 9,450 jobs within Madera, Merced, and Fresno Counties. Construction of the SR 152 (North) to Road 19 Wye Alternative would generate the most jobs (9,450), while construction of the SR 152 (North) to Road 11 Wye Alternative would generate the fewest jobs (8,120). The Authority is committed to ensuring that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and Related Statutes. As described in detail in Section 3.18, Regional Growth, the Authority and others have been implementing a variety of programs to increase the ability of local workers and construction firms to compete for and obtain construction jobs associated with the HSR system. To increase the ability of local workers to compete for available project jobs, the Authority has made a commitment through a cooperative partnership with skilled craft, unions, and contractors to promote and help implement education, apprenticeship training, advanced communication about hiring opportunities, and contractor networking opportunities for local workers. The program, referred to as the Community Benefits Agreement, is intended to help disadvantaged workers, such as those who are lower-income, veterans, single parents, have no high school or General Education Development diploma, and/or suffer from chronic unemployment. The commitment includes setting a hiring goal that 30 percent of all work hours be filled by disadvantaged workers. The Authority also has committed to a 30 percent small business participation goal for all of the Authority's construction.⁷ For communities such as Fairmead, which has a high unemployment rate, the employment opportunities created by construction of the Central Valley Wye alternatives in combination with

⁷ Additional information about these programs is available at http://hsr.ca.gov/Programs/Small_Business/index.html and <http://www.hsr.ca.gov/Programs/Construction/index.html>.

the Authority's employment commitments and training programs designed to increase the ability of local workers to compete for these jobs, could result in economic benefits for the community.

Air Quality

Construction of the Central Valley Wye alternatives would require the use of heavy construction equipment and trucks that could generate fugitive dust emissions (particulate matter [PM₁₀ and PM_{2.5}]) from disturbed ground surfaces, and combustion pollutants, particularly ozone (O₃) precursors (nitrogen oxides [NO_x] and volatile organic compounds [VOC]). The Central Valley Wye alternatives would incorporate measures to minimize impacts on air quality and global climate change, including the incorporation of the dust control plan (AQ-IAMF#1) and requiring the use of low-VOC paint (AQ-IAMF#2). However, construction of the Central Valley Wye alternatives could still cause temporary localized air quality impacts. All of the Central Valley Wye alternatives would exceed general conformity *de minimis* thresholds for NO_x and the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds for NO_x and PM₁₀. On-site mitigation (i.e., AQ-MM#1, Reduce Criteria Exhaust Emissions from Construction Equipment; AQ-MM#2, Reduce Criteria Exhaust Emissions from On-Road Construction Equipment; and AQ-MM#3, Reduce the Potential Impact of Concrete Batch Plants) would reduce NO_x and PM₁₀ impacts along the entire length of the alignment by implementing emissions standards for construction vehicles and establishing buffers between concrete batch plants and sensitive receptors. The purchase of emission offsets for these pollutants through a Voluntary Emission Reduction Agreement with the SJVAPCD (AQ-MM#4, Offset Project Construction Emissions through an SJVAPCD Voluntary Emission Reduction Agreement) would reduce the impacts at a regional scale by offsetting the emissions of VOC, NO_x, PM₁₀, and PM_{2.5} to net zero. The Central Valley Wye alternatives would also result in exceedances of the Bay Area Air Quality Management District's NO_x threshold outside of the San Joaquin Valley Air Basin because of the hauling of ballast and subballast material. The SR 152 (North) to Road 19 Wye Alternative would require the maximum amount of ballast and subballast to be hauled (1,730,425 tons), while the SR 152 (North) to Road 11 Wye Alternative would result in the least amount of ballast and subballast to be hauled (1,378,947 tons). Emissions offsets (AQ-MM#5, Purchase Offsets and Off-Site Emission Mitigation for Emissions Associated with Hauling Ballast Material in Certain Air Districts) would offset emissions to below the Bay Area Air Quality Management District threshold within the air basin.

Construction of the Central Valley Wye alternatives could result in the release of asbestos and lead-based paint that could present a health hazard for workers, residences, and other sensitive receptors. The SR 152 (North) to Road 13 Wye Alternative would result in the maximum amount of demolition quantity (1,765,727 cubic yards), while the Avenue 21 to Road 13 Wye Alternative would result in the minimum amount of demolition quantity (787,083 cubic yards). However, the Central Valley Wye alternatives design and compliance with existing asbestos and lead-based paint handling and disposal standards would prevent exposure of sensitive receptors to asbestos and lead-based paint.

All of the Central Valley Wye alternatives would avoid localized health effects on low-income and minority populations and the general population as a whole. As described in detail in Section 3.3, Air Quality, detailed modeling of exhaust emissions and fugitive dust indicated that no gaseous air pollutant emitted from construction activities would exceed the National Ambient Air Quality Standards or California Ambient Air Quality Standards, and that particulate emissions would not exceed the SJVAPCD's significant impact level. Neither acute nor chronic noncancer health impacts from these pollutants are anticipated to be significant from these activities during the construction period, and incremental cancer risks are lower than the SJVAPCD's threshold of significance.

Water Quality

Construction of the Central Valley Wye alternatives could result in temporary impacts on surface water and groundwater quality because of ground disturbance and the installation of culverts and tunnels within waterways. Ground disturbance would result in the removal of vegetation and exposure of soil to erosion, which would accelerate erosion rates and increase the runoff of

sediment and pollutants into surface waters. The SR 152 (North) to Road 19 Wye Alternative would require the most ground disturbance (4,031 acres), while the Avenue 21 to Road 13 Wye Alternative would require the least ground disturbance (2,900 acres). Sediment release into surface waters could also occur because of the installation of culverts and construction of tunnels, which would require temporary excavation within channels. The Avenue 21 to Road 13 Wye Alternative would require the installation of the most culverts (22), while the SR 152 (North) to Road 11 Wye Alternative would require the fewest culverts (16). Temporary groundwater quality impacts could result from construction of a tunnel section of the SR 152 (North) to Road 19 Wye Alternative. Features incorporated into the Central Valley Wye alternatives would include effective measures to reduce erosion (GEO-IAMF#1, HYD-IAMF#1) and prevent the introduction of pollutants to surface waters and groundwaters (HYD-IAMF#3, HYD-IAMF#4, HMW-IAMF#1, HMW-IAMF#4), minimizing impacts on water quality. None of the Central Valley Wye alternatives would result in a violation of water quality standards with the potential to affect human health as a result of temporary construction activities. Additionally, there would be no permanent surface water or groundwater quality degradation from construction of any Central Valley Wye alternative.

Hazardous Materials and Wastes

Construction of the Central Valley Wye alternatives could present health and safety risks to the public associated with hazardous materials and wastes. Risks associated with the improper use or inadvertent spillage of hazardous materials transported, stored, and used during construction and the disturbance or disruption of undocumented hazardous materials and wastes during ground-disturbing activities would be greater under the SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye Alternatives than the Avenue 21 to Road 13 Wye Alternative because of the higher traffic volumes and population along SR 152. The risks associated with exposure to asbestos are discussed under air quality and would be greatest under the SR 152 (North) to Road 13 Wye Alternative. The Central Valley Wye alternatives would incorporate IAMFs that would avoid creation of a significant hazard to the public or the environment through implementation of Property Acquisition Phase 1 Assessments and appropriate remediation; use of work barriers; creation and utilization of an Environmental Management System; and preparation and implementation of plans for construction management, demolition, spill prevention, hazardous materials and wastes, undocumented contamination, and hazardous materials transportation (HMW-IAMF#1 through HMW#11).

The health and safety risks associated with construction near potential environmental concern sites would be greatest under the SR 152 (North) to Road 19 Wye Alternative (9 nearby PEC sites), followed by Avenue 21 to Road 13 Wye, SR 152 (North) to Road 13 Wye, and SR 152 (North) to Road 11 Wye Alternatives (with 7, 6, and 5 nearby such sites, respectively). These sites are predominantly associated with agricultural uses, electrical substations, or landfills, and are located in unincorporated rural portions of Merced and Madera Counties. Two potential environmental concern sites are located within communities: the CertainTeed Chowchilla Plant located in southeast Chowchilla (close to the SR 152 (North) to Road 19 Wye Alternative) and the Kinder Morgan High-Pressure Petroleum Pipeline within the UPRR/SR 99 corridor between Chowchilla and Fairmead (crossed by all four Central Valley Wye alternatives).

The risk of accidents as a result of encountering gasses associated with landfills would be relevant only to the Avenue 21 to Road 13 Wye Alternative, which would be located within 0.1 mile of the Fairmead Solid Waste Disposal Site. This risk would be low because of the incorporation of methane protection measures and gas monitoring at landfills during construction (HMW-IAMF#9, HMW-IAMF#12). The potential for construction to encounter oil and gas wells would occur in unincorporated rural lands with low population densities and would not affect communities within the RSA.

Construction-related activities for all Central Valley Wye alternatives could result in the potential for an accident or collision and the inadvertent release or spill of hazardous materials and wastes near schools. This impact has the potential to occur at Fairmead Elementary School and Fairmead Head Start Childcare Center under the SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye alternatives, and at the Alview

Elementary School and Chowchilla Adventist School under the Avenue 21 to Road 13 Wye Alternative. These schools are located within areas of low-income and minority populations and predominantly serve these populations. The Authority would implement HMW-MM#1, Limit Use of Extremely Hazardous Materials near Schools during Construction, to reduce the potential for a leak or spill of hazardous materials and wastes as a result of an accident or collision. This measure would be effective in reducing impacts from hazardous materials because it would preclude the contractor from handling extremely hazardous materials within 0.25 mile of a school. This measure would also avoid the potential for the inadvertent release or spill of hazardous materials near schools that are located within, and serve, low-income and minority populations. With implementation of this measure, construction-related impacts from hazardous materials and wastes in proximity to schools would be reduced but would remain an adverse effect on low-income and minority populations that gather at these schools.

Disturbance or Destruction of Cultural Resources

The Central Valley Wye alternatives could result in construction-related impacts on cultural resources as a result of temporary and permanent disturbance of land. Unknown archaeological sites could be subject to disturbance-related impacts from construction activities involving soil excavation or compaction resulting from the use of heavy machinery on the construction site itself or in staging areas. The potential to disturb or damage unknown archaeological resources during construction would be the same for all four alternatives because the survey coverage and cultural sensitivity are the same for each Central Valley Wye alternative and the amounts of ground disturbance are comparable. As described in detail in Section 3.17, Cultural Resources, the Authority has incorporated IAMFs as part of the design and construction of the Central Valley Wye alternatives (CUL-IAMF#1 through CUL-IAMF#5) that include surveys, testing, and data collection protocols, as well as monitoring requirements that would minimize, but not avoid, impacts on archaeological resources. The Authority would implement CUL-MM#1, Amend Archaeological and Built Environment Treatment Plans, CUL-MM#2: Mitigate Adverse Effects on Archaeological and Built Environment Resources Identified during Phased Identification. Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the PA and MOA to reduce the potential for ground-disturbing activities to affect archaeological resources. This mitigation would be effective in minimizing impacts on archaeological resources, including those that have cultural importance for a distinct cultural group.

Tribal outreach occurred throughout the project planning process for the HSR program, and input was obtained from the tribal community regarding potential sensitive Native American cultural resources in proximity to the Central Valley Wye alternatives. No traditional cultural properties or sacred tribal sites were identified that could be affected by the Central Valley Wye alternatives. Consequently, there would be no disproportionate effects on low-income and minority populations associated with the disturbance or destruction of cultural resources.

Parks, Recreation, and Open Space

Construction of the Central Valley Wye alternatives has the potential to affect future development opportunities of planned recreational improvements in Chowchilla, including along Berenda and Ash Sloughs. Planned trail corridors have been proposed for both sloughs to connect to the Berenda Reservoir east of the city. All four Central Valley Wye alternatives would cross Berenda and Ash Sloughs, although only the SR 152 (North) to Road 19 Wye Alternative would cross the sloughs to the east of the city where the trail connection to Berenda Reservoir has been proposed. Construction of this alternative would block the development and use of these future multiuse trail corridors, which would provide additional recreational resources to residents of Chowchilla and the nearby community of Fairmead. The Authority has identified mitigation to avoid this impact. PK-MM#1, Design Features to Allow for Future Development of Trails at the Slough Crossings would involve the installation of undercrossings beneath HSR tracks of the SR 152 (North) to Road 19 Wye Alternative at Berenda and Ash Sloughs with a minimum clearance of 14.5 feet and width of 12 feet, which would be sufficient to allow for development of a future recreational trail. No impacts on planned trail corridors would occur under the SR 152 (North) to

Road 13 Wye Alternative, Avenue 21 to Road 13 Wye Alternative, or SR 152 (North) to Road 11 Wye Alternative.

Construction of the Central Valley Wye alternatives also has the potential to affect access and use of existing parks and recreational facilities within the community of Fairmead. Temporary increases in noise and fugitive dust would occur at the Fairmead Elementary School play areas during construction of the three SR 152 alternatives. No impacts would occur under the Avenue 21 to Road 13 Wye Alternative. Although noise and dust could present a nuisance to users of these facilities, noise levels and dust concentrations would be below levels harmful to human health, and the normal use and functions of the facilities would not be diminished under any of the alternatives. Access to these facilities would also be affected by road closures during construction of the three SR 152 alternatives. The potential for disruptions in access would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would result in more temporary closures of direct access routes to the Fairmead Elementary School play areas than the two other SR 152 alternatives. The Authority would provide temporary access and signage for users to maintain access to school play areas and recreation facilities at all times. Although users attempting to access the facilities could be inconvenienced or delayed because of detours, these effects would be temporary and there would be no barriers or other long-term impacts on access under any of the alternatives.

Mitigation for Construction Impacts

The Authority has identified the following mitigation measures to minimize environmental justice impacts associated with construction of 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 on Fairmead. No environmental justice mitigation is proposed for the Avenue 21 to Road 13 Wye Alternative.

EJ-MM#1: Provide a Community Center for the Community of Fairmead

The Authority shall provide Madera County with funding for the County to construct a community center in Fairmead. The Authority shall base its funding estimate on comparable facilities in the region. The County shall be responsible for construction, operation, and maintenance of the facility.

For the purposes of the current environmental review, the Authority assumes that the construction of the community center will adhere to the following performance standards:

1. The project site does not contain any of the following:
 - Important Farmland
 - Any protected biological or wetland resources
 - Any eligible cultural resources (and no such resources on adjacent/nearby sites)
 - Any existing residence or business that would be displaced
 - Incompatible land use on or associated with the proposed community center site
2. Further performance standards related to construction will include at least the following:
 - Construction would be completed before trains are operating on the high-speed railroad. EJ-MM#2 would already have been implemented by the time of community center construction, so that no separate new infrastructure extension would be required.
3. Construction of the community center will adhere to all IAMFs and mitigation measures applied to the preferred alternative.

The Authority, through coordination with community leaders and Madera County, will provide guidance on the long-term sustainability of the center. This coordination will include identification of funding mechanisms for operation, maintenance, and insurance of the community center.

The community center will provide residents a permanent meeting place for community gatherings and events. In concert with EJ-MM#2, this will reduce the adverse impacts on community cohesion from construction of any of the three SR 152 alternatives.

Analysis

In modifying EJ-MM#1, the Authority considered the potential for the modification to result in new or substantially different secondary effects than the previous version of the measure.

Based on a memorandum prepared for the Authority in December 2019 (ICF 2019), the Authority has concluded that EJ-MM#1 as modified, and with adherence to the noted standards, would not result in any new or substantially different secondary effects. Madera County will be responsible for conducting and completing any additional site-specific environmental review that may be required.

EJ-MM#2: Provide Water and Sewer Service for the Community of Fairmead

Water Service

The Authority would provide funding assistance and would work with Madera County to secure grant funds for Fairmead to connect to the nearest safe and reliable municipal water supply system. The implementation of this connection would provide an improved water supply system for Fairmead and Madera County. Ongoing operations and maintenance responsibility for the water supply system would remain with Fairmead and Madera County.

Access to a safe and reliable municipal water supply would improve the community's opportunity for future stability and growth. Providing water service for Fairmead would, in concert with EJ-MM#1, reduce the impacts on community cohesion from construction of any of the three SR 152 alternatives. In addition, it would eliminate inadequate water service, a major stress facing residents, encourage business development (not possible without a reliable water supply), and increase the incentive of residents to remain in the community.

Sewer Service

The City of Chowchilla has agreed to provide capacity for Fairmead at the Chowchilla Wastewater Treatment Plant, but additional funding is needed to connect the community to the treatment plant. The Authority would provide funding assistance and would work with the City of Chowchilla to connect Fairmead to the Chowchilla Wastewater Treatment Plant. In addition, the Authority will continue to work with the City of Chowchilla on grant applications to provide funding for the design and construction of a sewer distribution system from Fairmead to Chowchilla with a sewer collection system located in Fairmead.

A centralized sewer system and access to a municipal wastewater treatment plant would provide a needed improvement to a critical community infrastructure system necessary for future stability and growth. Providing a centralized sewer service for Fairmead would, in concert with EJ-MM#1, reduce impacts on community cohesion from the construction of any of the three SR 152 alternatives. In addition, it would eliminate decentralized sewer treatment and potential for groundwater contamination, major stresses facing residents, encourage business development (not possible without a centralized sewer system and wastewater treatment), and increase the incentive of residents to remain in the community.

5.6.3.2 Operations Impacts and Mitigation

Operations of the Central Valley Wye alternatives would include inspection and maintenance along the track and railroad right-of way, as well as on the structures, fencing, power system, train control, and communications. Operations and maintenance activities are more fully described in Chapter 2.

Noise and Vibration

Operations of the Central Valley Wye alternatives would generate noise levels above existing ambient levels and expose noise-sensitive receptors to moderate and severe noise impacts. The SR 152 (North) to Road 11 Wye Alternative would have severe to moderate noise impacts on the most sensitive receptors (96), followed by the SR 152 (North) to Road 13 Wye Alternative (92), and the SR 152 (North) to Road 19 Wye Alternative (81). Severe and moderate noise impacts would occur on the fewest receptors under the Avenue 21 to Road 13 Wye Alternative (79). Moderate and severe noise impacts would occur at single-family residences along the length of

the entire alignment, but the effects would be borne predominantly by low-income and minority populations.

The largest concentration of impacts would occur in the low-income and minority population of Fairmead. Table 5-9 summarizes the severe and moderate noise impacts under each of the Central Valley Wye alternatives within the community of Fairmead. The SR 152 (North) to Road 19 Wye Alternative would have severe to moderate noise impacts on the most receptors within Fairmead (36, which is approximately 45 percent of the alternative's total noise impacts), while the Avenue 21 to Road 13 Wye Alternative would have such impacts on the fewest receptors within Fairmead (7, which is approximately 9 percent of the alternative's total noise impacts). No moderate or severe noise impacts would occur at Fairmead Elementary School or other community facilities under any of the Central Valley Wye alternatives.

Table 5-9 Operations Noise Impacts for the Central Valley Wye Alternatives within Fairmead

Impacts	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
Severe Impacts	10	9	4	9
Moderate Impacts	23	27	3	23
Total Impacts	33	36	7	32

Source: Authority and FRA 2016c

The Authority would implement NV-MM#2, Additional Noise Analysis during Final Design, which would require the contractor to conduct additional noise analysis during final design to inform potential refinements and the need for additional or modified mitigation measures. Sound barriers are not proposed for any of the Central Valley Wye alternatives because they are not required under the Authority's Noise and Vibration Mitigation Guidelines (Appendix 3.4-A, Noise and Vibration Mitigation Guidelines) because of the low density of affected receptors.⁸ Although sound barriers are not proposed, NV-MM#3, Implement Proposed California High-Speed Rail Project Noise Mitigation Guidelines, provides other noise reduction techniques to reduce sound levels during operations, including the installation of building sound insulation or the establishment of noise easements. Although this mitigation measure may provide some level of noise attenuation for affected residences, it is not anticipated to mitigate all severe operational noise impacts. Operational noise impacts would remain, and these effects would be borne by predominantly low-income and minority populations.

Aesthetics and Visual Quality

Operations of any of the Central Valley Wye alternatives would not have aesthetics impacts within Fairmead. The SR 152 (North) to Road 13 Wye Alternative, the SR 152 (North) to Road 19 Wye Alternative, and the SR 152 (North) to Road 11 Wye Alternative would run adjacent to SR 152 for almost 16 miles, resulting in the closure of existing at-grade intersections and providing new interchanges at major crossroads. For travelers along SR 152, the elimination of distracting at-grade intersections and the addition of the adjacent, parallel HSR infrastructure that would reinforce the long view down the highway would increase visual quality within the Freeway-Expressway Landscape Unit. The beneficial aesthetic impacts would accrue to individual travelers rather than specific communities within the RSA. The Avenue 21 to Road 13 Wye

⁸ This conclusion deviates from the Merced to Fresno Final EIR/EIS finding that sound barriers would be required through Fairmead. The alignment of the Merced to Fresno: Hybrid Alternative through Fairmead was adjacent to SR 99 and in close proximity to the residential core of Fairmead, a higher density clustering of residences and community facilities located north and east of Fairmead Circle. As a result, operations noise impacts under the Merced to Fresno: Hybrid Alternative affected a greater number of sensitive receptors along the length of the alignment, triggering the need for a sound barrier consistent with the Authority's Noise and Vibration Mitigation Guidelines.

Alternative would have no aesthetics and visual quality impacts within the Freeway-Expressway Landscape Unit, as this alternative would not run adjacent to SR 152.

Transportation

Operations of the Central Valley Wye alternatives would not affect transportation resources. Permanent road closures and permanent road relocations that would affect roadway operations would occur because of construction of the Central Valley Wye alternatives and are considered permanent construction impacts, not operations impacts. As a result, no transportation-related effects on low-income or minority populations would occur as a result of operations of the Central Valley Wye alternatives.

Employment

The HSR project would improve connectivity while facilitating new access to employment and educational opportunities and creating job opportunities across many sectors of the economy in the San Joaquin Valley (Kantor 2008). Overall, it is expected that employment growth would be a net benefit for the San Joaquin Valley as a whole. The Authority estimates operations associated with the HSR system would create about 1,200 jobs within the San Joaquin Valley, an estimate that would be the same for any of the Central Valley Wye alternatives. Operations-related employment would be based out of stations, maintenance-of-infrastructure facilities, and the heavy maintenance facility, none of which are included in the Central Valley Wye alternatives but would be located along the Merced to Fresno Section corridor (the location for the heavy maintenance facility has not been determined and could be located south of the Merced to Fresno Section). The Authority is committed to ensuring that no person in the state of California is excluded from participation in, nor denied the benefits of, its programs, activities, and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and Related Statutes. With the Authority's implementation of employment training programs consistent with the Community Benefits Agreement described previously, these jobs would provide opportunities for low-income and minority populations within the region.

Air Quality

Operations of the Central Valley Wye alternatives would not result in localized increases in mobile source air toxics, carbon monoxide, or PM₁₀/PM_{2.5} emissions. In fact, operations of the Central Valley Wye alternatives as part of the statewide HSR system would result in an overall benefit to air quality. This benefit would result from a shift in modes of travel from vehicles and aircrafts to HSR, which has fewer emissions relative to existing modes of transportation. The emissions reductions would be equal for all four Central Valley Wye alternatives. There would be an emissions benefit for greenhouse gas emissions as well, as the Central Valley Wye alternatives would result in a net reduction of greenhouse gas emissions statewide relative to both the 2015 CEQA existing baseline and 2040 NEPA future baseline. These long-term air quality improvements would be experienced equally by low-income and minority populations and the general population.

Parks, Recreation, and Open Space

Operations of the Central Valley Wye alternatives would introduce intermittent visual changes and noise associated with passing trains that would be perceptible to future users of the Ash and Berenda Slough recreational trails. Because these trails would be for active recreation use and transportation, users would not be sensitive to visual or noise changes, and use and enjoyment of these trails would not be diminished under any of the alternatives. Annoyance from operational noise and visual effects could still occur and would be greatest under the SR 152 (North) to Road 19 Wye Alternative (three trail crossings) and would be least under the Avenue 21 to Road 13 Wye Alternative (one trail crossing).

Play areas and other recreational facilities in the RSA would also be subject to operations impacts. Changes in character, noise, and visual impacts would occur at the Fairmead Elementary School play areas during operation of the three SR 152 alternatives. These parks and recreational facilities are for active recreation use, and, as such, users are not sensitive to

changes in setting, noise, or visual effects. Although operations impacts would be perceptible to users of these facilities, the changes would not be such that the regular use or user experience would be altered under any of the alternatives.

5.6.3.3 Cumulative Impacts

NEPA requires examination of a project's cumulative impacts (i.e., a project's impacts considered in conjunction with the impacts of other past, present, and reasonably foreseeable projects causing related impacts). Section 3.19, Cumulative Impacts, discusses the Central Valley Wye alternatives' contribution to any cumulative impact for each resource area discussed in Chapter 3. The following discussion provides additional information on the potential for cumulative impacts that could affect low-income and minority populations.

Under the cumulative condition, ongoing urban development and agricultural practices are expected to continue within the cumulative RSA. Such planned projects that are anticipated to be constructed by 2040 include residential, commercial, industrial, recreational, transportation, and agricultural projects. These projects would occur throughout Merced and Madera Counties, which have 23 and 20 percent low-income populations and 68 and 62 percent minority populations (environmental justice populations), respectively. As discussed in Section 5.4, past development has led to conditions affecting environmental justice populations as shown in levels of employment and income for Merced and Madera Counties that have historically lagged behind those in other parts of the state as a result of the seasonal nature of the region's major agricultural employment and slower growth in the nonagricultural sectors. Past development has also affected the community of Fairmead, which is comprised of the highest percent low-income and minority populations within the cumulative RSA for environmental justice. In the 1930s, SR 99 was rerouted from its alignment through the community to the west side of UPRR, isolating the community and contributing to the slow decline in businesses and residents. More recently, in 2007, Caltrans closed a ramp off SR 99 that led to the community's residential core, and constructed a new interchange 1 mile farther south, further isolating the community. Recent development trends are anticipated to continue in the cumulative RSA. The cumulative condition relevant to environmental justice is comprised of the following:

- The Central Valley Wye alternatives
- Development planned under the general plans of Merced and Madera Counties, the City of Chowchilla, and unincorporated Fairmead and Madera Acres
- Adjacent HSR sections
- Transportation improvement projects
- Relevant additional future projects identified in Appendix 3.19-A and Appendix 3.19-B

Planned projects include dairy farm expansions, the expansion of SR 99, reconstruction of interchanges, overcrossing construction, and development projects such as residential, commercial, and industrial developments (e.g., the George Simmons Minor Subdivision & Don Chapin Company Concrete Batch Plant Project). Construction of these projects could result in temporary and permanent disruptions to minority and low-income populations during temporary construction activities. If the incremental effects of multiple projects were to combine to create disproportionate and adverse effects on low-income and minority populations in specific communities, this would be considered a cumulative impact under NEPA. However, these projects are distributed throughout Merced and Madera Counties, and a number of these projects would create additional, permanent jobs in the area and would set aside land for future industrial and commercial development, which could increase the economic opportunities available to the environmental justice populations. Within the community of Fairmead, planned projects include the closure of Fairmead Elementary School, which serves as Fairmead's only public meeting place and provides playfields for children after school hours. The closure of this school, anticipated to occur by 2022, would affect low-income and minority populations by removing an important local education resource and gathering place for Fairmead residents.

Development of planned projects would likely include the implementation of various forms of mitigation to avoid or minimize the potential for temporary and permanent cumulative impacts on the population as a whole in the cumulative RSA. Remaining effects would be distributed throughout the region and would occur based on the construction timelines of the planned projects under the cumulative condition. Many of the planned projects occur within unincorporated agricultural areas of the cumulative RSA for environmental justice, rather than in specific communities. However, the closure of Fairmead Elementary School, in combination with past development, would result in a disproportionately adverse effect on the community of Fairmead. As a result, there would be a cumulative impact under NEPA.

However, the Central Valley Wye alternatives would result in local and regional benefits to the low-income and minority populations that constitute a large percentage of the region. These benefits would include improvements in mobility within the region, air quality improvements, and new employment opportunities during construction and operations. Because low-income and minority populations comprise the majority of the population within the area, these project benefits are likely to accrue to a greater degree to low-income and minority populations.

Construction of 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 has the potential to adversely affect low-income and minority populations within Fairmead as a result of community cohesion effects, residential displacements, changes in aesthetics and visual quality, and increases in noise. The Avenue 21 to Road 13 Wye Alternative would mostly avoid the community of Fairmead, resulting in few direct or indirect impacts on that community.

The Central Valley Wye alternatives include resource-specific IAMFs that would minimize or avoid contributions of the Central Valley Wye alternatives to cumulative impacts on Fairmead. Furthermore, the mitigation measures described in Section 5.6.3.1 include the provision of funding to Madera County to construct a new community center in Fairmead, and the provision of funding to connect Fairmead to the Chowchilla Wastewater Treatment Plant and the nearest safe and reliable municipal water supply system. These measures, which would only be applied with construction and operations of the SR 152 alternatives, would reduce the negative effect of existing stressors in the community, improve quality of life for Fairmead residents, and remove a constraint to development in Fairmead. As a result, the incremental contribution of the SR 152 alternatives to cumulative impacts on environmental justice populations would be reduced. The Avenue 21 to Road 13 Wye Alternative would not result in direct or indirect impacts on the Fairmead community that could adversely affect low-income and minority populations. Therefore, the Central Valley Wye alternatives would not considerably contribute to this cumulative impact under NEPA.

5.7 Summary of Disproportionate Effects for NEPA Comparison of Alternatives

This section summarizes the impacts of the Central Valley Wye alternatives and compares them to the anticipated impacts of the No Project Alternative. This section also summarizes the potential for cumulative impacts of the Central Valley Wye alternatives on the community of Fairmead, in combination with past, present, and reasonably foreseeable future actions. Table 5-10 provides a comparison of the potential impacts of each of the Central Valley Wye alternatives, summarizing the more detailed information provided in Section 5.6.3. A comparison of the impacts of the different Central Valley Wye alternatives follows Table 5-10.

As discussed in Section 2.2.2, No Project Alternative, development resulting from an increasing population in Merced and Madera Counties is anticipated to continue and would result in temporary and permanent adverse effects on low-income and minority populations within the RSA. Existing land would be converted for residential, commercial, and industrial development, as well as for transportation infrastructure, to accommodate future growth. Population growth and associated development pressures could result in disturbances to low-income and minority populations during temporary construction activities. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include the

implementation of various forms of mitigation to avoid or minimize potential impacts on low-income and minority populations and the resources that they rely upon.

Table 5-10 Comparison of Central Valley Wye Alternative Impacts

Impacts	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
Construction				
Noise	Greater, because of the concentration of sensitive receptors along SR 152 and within Fairmead	Greatest, because of the concentration of sensitive receptors along SR 152 and within Fairmead	Least, because of the limited number of sensitive receptors along Avenue 21	Greater, because of the concentration of sensitive receptors along SR 152 and within Fairmead
Vibration	No human annoyance anticipated			
Aesthetics and Visual Quality				
Temporary visual disturbance to residential views	Greatest disturbance to residential viewers because of concentration of residences where the alternative crosses Robertson Boulevard twice and passes near Fairmead	Disturbance of residential viewers because of concentration of residences where the alternative crosses Robertson Boulevard once and passes near Fairmead	Least disturbance to residential viewers because of the limited number of residences along Avenue 21	Disturbance of residential viewers because of the concentration of residences where the alternative crosses Robertson Boulevard once and passes near Fairmead
Permanent visual quality changes in Fairmead Landscape Unit	HSR would extend through Fairmead on embankment, blocking residential views and degrading visual quality	Two legs of the wye would extend through Fairmead on embankment and structure, blocking residential views and degrading visual quality	No impact	HSR would extend through Fairmead on embankment, blocking residential views and degrading visual quality
Transportation				
Permanent road closures within Fairmead	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core	1 road closure (Road 19 1/2) within southern Fairmead	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core
Socioeconomic Impacts				
Community Cohesion Effects on Fairmead				
Temporary effects on noise, visual quality, and transportation	Greater, because of the concentration of sensitive receptors along SR 152 and within Fairmead	Greatest, because of the concentration of sensitive receptors along SR 152 and within Fairmead	Least, because of the limited number of sensitive receptors along Avenue 21	Greater, because of the concentration of sensitive receptors along SR 152 and within Fairmead

Impacts	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
Community division	Divided in the east-west direction	Divided in the east-west and southwest-northeast directions, resulting in the greatest community division	No division	Divided in the east-west direction
Permanent road closures within Fairmead	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core	1 road closure (Road 19 1/2) within southern Fairmead	2 road closures (Road 19 1/2 and Road 20 1/2) within Fairmead's residential core
Permanent visual changes	HSR extends through Fairmead on embankment, blocking residential views and degrading visual quality.	Two legs of the wye extend through Fairmead on embankment and structure, blocking residential views and resulting in the greatest degradation of visual quality	No impact	HSR extends through Fairmead on embankment, blocking residential views and degrading visual quality

Displacements and Relocations

Residential unit displacements in Fairmead	18	53	4	15
Sufficient residential relocation potential residential unit displacements in Fairmead (Yes/No)	No; deficit of 6 residential units	No; deficit of 41 residential units	Yes; surplus of 8 residential units	No; deficit of 3 residential units
Business displacements in Fairmead	None of the Central Valley Wye alternatives would displace businesses within Fairmead			

Employment

Temporary construction employment (estimated number of total jobs created)	8,610 jobs	9,450 jobs	8,470 jobs	8,120 jobs
Permanent impacts on agricultural economy (estimated numbers of job losses)	74 jobs	76 jobs	82 jobs	85 jobs

Impacts	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
Air Quality				
Construction emissions within the San Joaquin Valley Air Basin	All Central Valley Wye alternatives would result in exceedances of the annual San Joaquin Valley Air Pollution District Air Quality thresholds for NO _x and PM ₁₀ and the general conformity <i>de minimis</i> NO _x thresholds for multiple years.			
Material hauling emissions outside the San Joaquin Valley Air Basin	All Central Valley Wye alternatives would result in exceedances of the annual Bay Area Air Quality Management District's NO _x threshold as a result of material hauling, as quantified by alternative			
	1,408,143 tons hauled material	1,730,425 tons hauled material	1,449,102 tons hauled material	1,378,947 tons hauled material
Risk of asbestos and lead associated with demolition quantities (cubic yards)	1,765,727	1,594,922	787,083	1,452,016
Localized health Impacts	All of the Central Valley Wye alternatives would avoid localized health impacts			
Water Quality				
Temporary surface water quality effects based on area of construction disturbance (acres)	3,272	4,031	2,900	3,101
Temporary surface water quality effects associated with construction of culverts and tunnels	19	20	22	16
Temporary construction-related groundwater quality impacts	No anticipated groundwater impacts	Effects related to tunnel construction	No anticipated groundwater impacts	No anticipated groundwater impacts
Hazardous Materials and Wastes				
Release of hazardous materials and wastes as a result of transport, use, storage, and disposal; disturbance of undocumented hazardous materials	Greater risk to human health as a result of higher traffic volumes and population along SR 152 and potential for exposure to asbestos	Greater risk to human health as a result of higher traffic volumes and population along SR 152 and potential for exposure to asbestos	Least risk to human health because of the lower traffic volumes and population along Avenue 21 and potential for exposure to asbestos	Greater risk to human health as a result of the higher traffic volumes and population along SR 152 and potential for exposure to asbestos

Impacts	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
pec sites and landfills within/ adjacent to communities	Kinder Morgan High-Pressure Petroleum Pipeline	CertainTeed Chowchilla Plant Kinder Morgan High-Pressure Petroleum Pipeline	Kinder Morgan High-Pressure Petroleum Pipeline Fairmead Solid Waste Disposal Site	Kinder Morgan High-Pressure Petroleum Pipeline
Potential for inadvertent release/spill of hazardous materials at schools	Fairmead Elementary School Fairmead Head Start Childcare Center	Fairmead Elementary School Fairmead Head Start Childcare Center	Alview Elementary School Chowchilla Seventh-day Adventist	Fairmead Elementary School Fairmead Head Start Childcare Center
Parks, Recreation, and Open Space				
Block future development of recreational trail corridors in Chowchilla	No	Berenda Slough Ash Slough	No	No
Temporary noise and dust impacts on Fairmead Elementary School play areas	Noise and dust could be a nuisance to users but would not prevent or diminish use	Noise and dust could be a nuisance to users but would not prevent or diminish use	No impact	Noise and dust could be a nuisance to users but would not prevent or diminish use
Number of road closures temporarily affecting access to Fairmead Elementary School play areas	3	4	0	3
Operations				
Noise impacts	10 Severe, 23 Moderate	9 Severe, 27 Moderate	4 Severe, 3 Moderate	9 Severe, 23 Moderate
Permanent operations-related employment (estimated number of jobs created)	Operation of the HSR system as a whole would generate about 1,200 jobs within the Central Valley			
Parks, Recreation, and Open Space				
Number of future crossings of Ash and Berenda Sloughs open-space corridors	2	3	1	2

Impacts	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
Permanent impacts on character, noise, and visual on Fairmead Elementary School play areas	Changes in character and perceptible changes in noise and visual quality but use or user experience would not be altered	Changes in character and perceptible changes in noise and visual quality but use or user experience would not be altered	No impact	Changes in character and perceptible changes in noise and visual quality but use or user experience would not be altered
Air quality	All Central Valley Wye alternatives would avoid continuous permanent direct impacts on air quality; anticipated net reduction in air quality and greenhouse gas emissions, which would be the same magnitude for all Central Valley Wye alternatives			

Source: Authority, 2018

The Merced to Fresno Final EIR/EIS concluded that the development of the HSR system would result in disproportionately high and adverse effects on Fairmead under the Merced to Fresno: UPRR/SR 99 Alternative and the Merced to Fresno: Hybrid Alternative because of the visual impacts of an elevated guideway along SR 99 through Fairmead as well as property acquisitions and the resultant need to relocate individuals outside of the community. However, the Merced to Fresno Final EIR/EIS also concluded that construction of the HSR system would result in beneficial employment effects for low-income and minority populations. The Authority and FRA concluded in the Merced to Fresno Final EIR/EIS that disproportionately high and adverse effects of the UPRR/SR 99 Alternative and the Merced to Fresno Section: Hybrid Alternative on Fairmead would be reduced with mitigation, which included a commitment to continued environmental justice outreach to obtain resident feedback on potential impacts and mitigation measures and refinement of the project design; development of a training program to benefit low-income and minority populations from jobs created by the project; and consideration of comparable replacement housing within Fairmead (e.g., construction of new housing on vacant lots, relocation of residential structures to a portion of the parcel unaffected by the project or to another nearby vacant parcel).

Implementation of the Central Valley Wye alternatives would also result in adverse effects on the community of Fairmead. The Central Valley Wye alternatives would incorporate IAMFs that would avoid or reduce impacts on environmental or community resources that could affect low-income and minority populations, including the community of Fairmead. These environmental and community resources include noise and vibration; aesthetics and visual resources; transportation; socioeconomics and communities; air quality; water quality; hazardous materials and wastes; cultural resources; and parks, recreation, and open space resources. However, adverse effects would remain and mitigation would be required to further reduce effects associated with construction and operations noise; aesthetics and visual quality; community cohesion; air quality; hazardous materials and wastes; cultural resources; and parks, recreation, and open space resources.

Construction of the Central Valley Wye alternatives would require construction activities and the use of equipment that would result in temporary increases in construction-related noise and dust, visual disruption of residential views, and temporary construction-related traffic and detours that would affect residents and community resources in close proximity to the Central Valley Wye alternatives. These temporary construction-related impacts would last one to three years at any given location and would be experienced by individuals along the entire alignment. These impacts would be greatest under the SR 152 alternatives because of the proximity and greater density of sensitive receptors under these alternatives associated with their alignment through the community of Fairmead and would occur to a lesser degree under the Avenue 21 to Road 13 Wye Alternative.

Construction of the Central Valley Wye alternatives would result in permanent changes to visual quality, roadway access, and community cohesion, which would predominantly affect low-income and minority populations. While these effects would occur along the entire alignment, the greatest impacts would occur within the community of Fairmead under the SR 152 alternatives. The three SR 152 alternatives would travel through Fairmead on an embankment, introducing a new linear feature that extends through the community, degrading visual quality and blocking residential views. 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 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 community of Fairmead, along with 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. The SR 152 (North) to Road 19 Wye Alternative would have the greatest impact on the community character and cohesion of Fairmead because of the greater length of the alignment that bisects the community and displaces a greater number of residences that—given the limited available replacement properties within the community—may be unable to relocate within Fairmead. The SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye Alternatives would have similar types of impacts, but they would be of lesser magnitude than the impacts that would occur under the SR 152 (North) to Road 19 Wye Alternative. The Avenue 21 to Road 13 Wye Alternative would have some effects on individuals within the southern portion of Fairmead, but its alignment south of the population center would avoid these community cohesion impacts.

The community cohesion impacts on Fairmead under the SR 152 alternatives would be reduced by mitigation. As part of SO-MM#1, the Authority would conduct outreach to affected residents to understand their relocation needs and assist with finding suitable housing within the communities they reside in. Consistent with the Merced to Fresno Final EIR/EIS commitment to continued environmental justice outreach to obtain the community's feedback on potential impacts and mitigation, the Authority conducted extensive coordination with the Fairmead Community and Friends, the Chowchilla Elementary School District, and the County of Madera to develop mitigation that would be incorporated into the final design of the Preferred Alternative to maintain a robust sense of community cohesion in Fairmead (SO-MM#2). This measure includes the provision of two vehicular roadway crossings along Road 18 3/4 and Road 20 and a multiuse trail along Road 19 1/2 to maintain pedestrian and bicycle access between the northern and southern portions of Fairmead; street repairs, sidewalk installations, and landscaping; installation of streetlights at the Avenue 22 1/2 bus stop; and landscaping along the HSR corridor. These improvements (depicted in Figure 5-6), would enhance local roadway connectivity within the community through the provision of roadway improvements and a multiuse trail that would ensure access is maintained within the community, improve pedestrian and bicycle safety, and revitalize the community aesthetically through landscaping and streetscaping. This mitigation measure (SO-MM#1) would not be required for the Avenue 21 to Road 13 Wye Alternative, which avoids community cohesion effects on Fairmead.

Construction of the Central Valley Wye alternatives would result in environmental impacts associated with air quality, water quality, or hazardous materials and wastes that have the potential to affect human health and safety. Air quality emissions associated with construction of the Central Valley Wye alternatives would be reduced by mitigation measures during construction and subsequent emissions offsets. As a result, construction of the Central Valley Wye alternatives would not result in localized health impacts associated with air quality. Construction of the Central Valley Wye alternatives would not result in temporary violations of water quality standards with the potential to affect human health or permanent surface water or groundwater quality degradation. With the implementation of mitigation, the potential impacts associated with the inadvertent release or spill of hazardous materials and wastes would be reduced near Fairmead Elementary School under the SR 152 (North) to Road 13 Wye, SR 152 (North) to Road 19 Wye, and SR 152 (North) to Road 11 Wye alternatives, and at the Alview Elementary School and Chowchilla Adventist School under the Avenue 21 to Road 13 Wye Alternative.

Tribal outreach did not result in the identification of traditional cultural properties or sacred tribal sites that could be affected by the Central Valley Wye alternatives. Further, the potential for ground-disturbing activities to affect archaeological resources, including those that have importance for a distinct cultural group, would be reduced through the implementation of mitigation measures.

Construction of the Central Valley Wye alternatives has the potential to affect schools and parks, recreation, and open space resources that serve low-income and minority populations, and cultural resources that may be of importance to low-income and minority populations. With implementation of PK-MM#1, impacts of the SR 152 (North) to Road 19 Wye Alternative on the planned future recreational trail at Berenda Slough and Ash Slough would be eliminated. Construction-related temporary increases in noise and dust and road closures at Fairmead Elementary School play areas under the SR 152 alternatives may inconvenience users, but would not result in the destruction or disruption of the availability of this recreational resource during construction. No traditional cultural properties or sacred tribal sites were identified that could be affected by the Central Valley Wye alternatives. Consequently, there would be no disproportionate effects on low-income and minority populations associated with the disturbance or destruction of cultural resources.

Construction of each Central Valley Wye alternative would result in the permanent conversion of agricultural land, which could reduce employment opportunities for farm workers. Estimated losses of between 74 and 85 jobs would occur, with the greatest losses occurring under the SR 152 (North) to Road 11 Wye Alternative and the fewest losses occurring under the SR 152 (North) to Road 13 Wye Alternative. These job losses would predominantly affect low-income and minority populations and migrant farm workers who are employed by agricultural operations. However, these job losses would be small relative to the overall employment benefits that would accrue as a result of construction of the Central Valley Wye alternatives, which would create an additional direct or indirect 8,120 to 9,450 jobs within Madera, Merced, and Fresno Counties. The Authority's commitment to programs designed to increase the ability of local workers and construction firms to compete for available construction-related jobs would ensure that low-income and minority populations would benefit from these new employment opportunities.

Operations of the Central Valley Wye alternatives would result in adverse noise impacts that would disproportionately affect the community of Fairmead under the SR 152 alternatives. The greatest number of operational noise impacts would occur under the SR 152 (North) to Road 19 Wye Alternative, and the least number of operational noise impacts would occur under the Avenue 21 to Road 13 Wye Alternative. Mitigation would not fully avoid these effects.

Operations of the Central Valley Wye alternatives would also provide long-term benefits associated with improvements in mobility; vehicular, pedestrian, and bicycle safety; and air quality, as well as new employment opportunities consisting of approximately 1,200 jobs within the Central Valley. These regional project benefits would accrue equally to low-income and minority populations within the RSA and to the general population as a whole.

The Central Valley Wye alternatives include resource-specific IAMFs that would minimize or avoid contributions of the Central Valley Wye alternatives to cumulative impacts on Fairmead. Furthermore, the mitigation measures described in Section 5.6.3.1, would reduce the negative effect of existing stressors in the community of Fairmead, improve quality of life for Fairmead residents, and remove a constraint to development in Fairmead. As a result, the incremental contribution of the SR 152 alternatives to cumulative impacts on environmental justice populations would be reduced. The Avenue 21 to Road 13 Wye Alternative would not result in direct or indirect impacts on the Fairmead community that could adversely affect low-income and minority populations. Therefore, the contribution of the Central Valley Wye alternatives to a cumulative impact would not be cumulatively considerable.

5.8 Final Environmental Justice Determination

The Central Valley Wye alternatives would result in adverse effects on low-income and minority populations residing along the project corridor. The greatest effects on low-income and minority populations would occur within the low-income and minority community of Fairmead under the SR 152 (North) to Road 19 Wye Alternative, followed by the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye Alternatives. The Avenue 21 to Road 13 Wye Alternative would mostly avoid the community of Fairmead, resulting in few direct or indirect impacts on that community. The Authority has committed to resource-specific mitigation measures that would eliminate most of the potential adverse impacts on populations adjacent to the Central Valley Wye alternatives. Mitigation associated with the SR 152 alternatives within Fairmead includes outreach to affected owners and residents within Fairmead to determine in more detail their specific relocation needs, and assistance with finding suitable housing within the community. Specific community improvements are proposed as mitigation under the SR 152 alternatives that would reduce community cohesion impacts on Fairmead through the provision of roadway improvements and a multiuse trail that would ensure access is maintained within the community, improve pedestrian and bicycle safety, and revitalize the community aesthetically through landscaping and streetscaping.

The Authority has conducted extensive outreach with the community of Fairmead to identify and evaluate measures that could mitigate impacts beyond the resource-specific measures that, for example, reduce noise, visual impacts, and community division stemming from construction and operations of the Central Valley Wye alternatives. Coordination to develop mitigation aimed at offsetting the HSR contribution to stressors on the community would provide an opportunity to maintain quality of life in Fairmead. As part of EJ-MM#1, the Authority would provide funding to Madera County to construct a community center in Fairmead. Through mitigation measure EJ-MM#2, the Authority proposes to address the community's lack of sewer and water service, which constrains future development, by providing funding to connect Fairmead to the Chowchilla Wastewater Treatment Plant and the nearest safe and reliable municipal water supply system.

In addition to other mitigation proposed to address the impacts of the SR 152 alternatives, the mitigation measures proposed to address environmental justice effects on 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. The improvements described in EJ-MM#1 and EJ-MM#2 would only be applied with construction and operations of the 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. With the beneficial effect of the mitigation proposed for the SR 152 alternatives, which exceeds the mitigation proposed at the time the Merced to Fresno Final EIR/EIR was issued, the Authority herein concludes that 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. This determination assumes that agreement can be reached with the necessary parties to implement the mitigation measures discussed in this chapter.