3 Affected Environment, Environmental Consequences, and Mitigation Measures

3.14 Agricultural Farmland

3.14.1 Introduction

Section 3.14, Agricultural Farmland of this *Merced to Fresno Section: Central Valley Wye Final Supplemental Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Final Supplemental EIR/EIS) (updates the *Merced to Fresno Section California High-Speed Train Final Project EIR/EIS* (Merced to Fresno Final EIR/EIS) (California High-Speed Rail [Authority] and Federal Railroad Administration [FRA] 2012) with new and revised information relevant to agricultural farmland, 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. Where applicable, mitigation measures are proposed to further reduce, compensate for, or offset impacts of the Central Valley Wye alternatives. This section also defines agricultural farmland resources within the San Joaquin Valley and describes the affected environment in the resource study area (RSA).

The analysis in this section focuses on the potential conversion of Important Farmland (see Section 3.14.1.1, Definition of Resources, for a definition of Important Farmland) to nonagricultural use from construction and operations of the Central Valley Wye alternatives. Other agricultural impacts, including noise impacts on livestock and potential displacement of confined animal facilities and Grazing Land, are discussed in Section 3.4, Noise and Vibration, and Section 3.12, Socioeconomics and Communities.

The analysis herein has similarities to and differences from the analysis in the Merced to Fresno Final EIR/EIS. Both analyses use quantitative and qualitative approaches for analyzing impacts, such as calculating conversion of Important Farmland and identifying potential wind-induced effects. Where information has changed or new information has become available since the Merced to Fresno Final EIR/EIS was prepared in 2012, this Final Supplemental EIR/EIS analysis uses the updated versions of these sources or datasets. 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 analyses differ in the following ways:

- The Merced to Fresno Final EIR/EIS evaluated the potential for Important Farmland conversion as a result of parcel severance based primarily on the size of the remnant (remainder) parcels. This Final Supplemental EIR/EIS uses a refined method that considers several factors to evaluate the potential for remnant parcels to be converted to a nonagricultural use. Analysts first identified remnant parcels of Important Farmland created by the Central Valley Wye alternatives that are 20 acres or less in size. Multiple criteria (e.g., access, parcel size and shape, ownership) were then considered in order to determine which of these potential remnant parcels of Important Farmland likely could remain in agricultural use.
- Livestock noise impacts are evaluated in Section 3.4, rather than in the agricultural farmland section.
- Impacts on confined animal agriculture operations, including the loss of structures and facilities as well as the removal of associated land from growing forage crops or receiving waste, are evaluated in Section 3.12.

Agriculture in the San Joaquin Valley is a major economic base of the region, and the area is one of the most important agricultural centers of the United States. The following appendices in Volume II of this Final Supplemental EIR/EIS support the analysis of agricultural farmland and provide additional information:

- Appendix 3.14-A: Land Use and Development Local and Regional Plans and Laws Consistency Analysis, provides a discussion of inconsistencies or conflicts that may exist between the Central Valley Wye alternatives and regional or local plans or laws.

- Appendix 3.14-B: Results and Findings of Land Evaluation and Site Assessment Pursuant to the Farmland Protection Policy Act, summarizes the results of the farmland land evaluation and site assessment.
- Appendix 3.14-C: Remnant Parcel Analysis and Important Farmland Mitigation, provides detailed information on the methods and results of the remnant parcel analysis and proposed mitigation.
- Appendix 3.14-D: Williamson Act and Farmland Security Zone Compliance Data, provides the list of parcels under Williamson Act and Farmland Security Zones (FSZ) contract that could potentially be affected by the Central Valley Wye alternatives.

In addition to the appendices, seven other resource sections in this Final Supplemental EIR/EIS provide additional information related to agricultural farmland:

- **Section 3.2, Transportation**—Impacts of the Central Valley Wye alternatives on roadway operations in agricultural areas.
- **Section 3.4, Noise and Vibration**—Impacts of the Central Valley Wye alternatives on domestic animals (livestock and poultry) from noise, including livestock on Grazing Land and dairies.
- **Section 3.6, Public Utilities and Energy**—Impacts of the Central Valley Wye alternatives on water infrastructure (pipelines, canals, and natural watercourses) and water use.
- **Section 3.8, Hydrology and Water Resources**—Impacts of the Central Valley Wye alternatives on surface water and groundwater.
- **Section 3.12, Socioeconomics and Communities**—Impacts of the Central Valley Wye alternatives on agricultural operations and economics, including conversion of agricultural land and facilities, potential changes in tax status associated with a loss of Williamson Act or FSZ contract, loss of potential employment and revenue associated with agricultural land conversion, and noise and vibration impacts on confined animal agriculture facilities (e.g., dairies).
- **Section 3.13, Land Use and Development**, and **Section 3.18, Regional Growth**—Impacts of the Central Valley Wye alternatives on agricultural land use and compatibility with agricultural zoning.

Since publication of the Draft Supplemental EIR/EIS, in addition to the global issues described at Section S.1.2, Global Changes in the Final Supplemental EIR/EIS, of the Summary, the following substantive change has been made to Section 3.14:

- Text added clarifying groundwater wells as an element of agricultural infrastructure.

3.14.1.1 Definition of Resources

The following are definitions, including descriptions of relevant laws, for agricultural farmland resources analyzed in this Final Supplemental EIR/EIS.

Important Farmland

Categories of Important Farmland identified under the Farmland Mapping and Monitoring Program (FMMP), which is administered by the California Department of Conservation (DOC), are identified and used for purposes of this analysis. Property classified as Important Farmland does not necessarily correspond with parcel boundaries. The following definitions for categories of Important Farmland analyzed in this Final Supplemental EIR/EIS have not changed since adoption of the Merced to Fresno Final EIR/EIS:

- **Prime Farmland**—Prime Farmland is farmland with the best combination of physical and chemical features to be able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Soil must meet the physical and chemical criteria determined by the Natural Resources

Conservation Service (NRCS). Land must have been used for irrigated crop production at some time during the four years prior to the mapping date.

- **Farmland of Statewide Importance**—Farmland of Statewide Importance is farmland similar to Prime Farmland but with minor differences, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated crop production at some time during the four years prior to the mapping date.
- **Unique Farmland—**Unique Farmland is farmland with lesser quality soils but is still useful for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards found in some climatic zones of California. Land must have been used for crops at some time during the four years prior to the mapping date.
- **Farmland of Local Importance**—Farmland of Local Importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

Williamson Act, Farmland Security Zone Contracts, Local Agricultural Zoning and Conservation Easement Lands

The California Land Conservation Act of 1965 (Gov. Code, § 51200 et seq.), commonly referred to as the Williamson Act, provides a reduced tax rate to landowners who establish voluntary enrollment of agricultural and open-space land into contracts with local governments. This program restricts the land under contract to agricultural and open space uses and compatible uses. Williamson Act contracts are for periods of 10 years and longer, renewing automatically each year to maintain a constant, 10-year contract. The participating landowner, and only a landowner, may choose to initiate a nonrenewal of their contract, in which case the contract would terminate nine years after the filing of a notice of nonrenewal. Land under Williamson Act contract does not necessarily correspond with parcel boundaries, and such land can also be classified as Important Farmland or other types of agricultural land. Impacts on lands under these preservation regulations could further contribute to conversion of Important Farmland to nonagricultural uses.

FSZ contracts are another option in the Williamson Act program. FSZ contracts offer landowners greater property tax reductions with a minimum term of 20 years and are renewed annually unless an owner files a notice of nonrenewal.

As part of the administration of the Williamson Act and FSZ at the local level, counties and cities adopt local agricultural zoning consistent with the limitations on nonagricultural use established by the state law. This zoning includes the establishment of agricultural preserves, which encompass the lands under contract. California Government Code, Section 51238, states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Impacts on agricultural zoning and future urban development on farmlands are addressed in Sections 3.13 and 3.18.

Conservation Easement Lands are lands that have been dedicated to agricultural use under the California Farmland Conservation Program Act (Cal. Public Res. Code § 10200 to 10277). This act provides a mechanism to help fund the acquisition of farmland conservation easements from willing sellers. These easements provide for the perpetual dedication of land to agricultural use.

3.14.2 Laws, Regulations, and Orders

This section identifies laws, regulations, and orders that are relevant to the analysis of agricultural farmland 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.

3.14.2.1 Federal

The Farmland Protection Policy Act (FPPA) of 1981 (7 United States Code [U.S.C.] §§ 4201–4209 and 7 Code of Federal Regulations [C.F.R.] Part 658) is the same as described in Section 3.14.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: pages 3.14-1 through 3.14-2).

3.14.2.2 State

The following state laws, regulations, orders, and plans are the same as those described in Section 3.14.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: pages 3.14-2 through 3.14-3):

- California Land Conservation Act of 1965 (Gov. Code, § 51200 et seq.), also known as the Williamson Act
- Farmland Mapping and Monitoring Program
- California Farmland Conservancy Program Act (Cal. Public Res. Code §§ 10200–10277)

One additional law relevant to the analysis of agricultural farmlands and not included in the Merced to Fresno Final EIR/EIS follows.

Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375)

Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2008 (Steinberg, Chapter 728, Statutes of 2008), provides a planning process to coordinate community development and land-use planning with regional transportation plans (RTP) to reduce sprawling land-use patterns and thereby reduce vehicle miles travelled and emissions. SB 375 is a tool being used to meet the goals of Assembly Bill 32, the Global Warming Solutions Acts (Nunez, Chapter 488, Statutes of 2006). Under SB 375, the California Air Resources Board sets greenhouse gas emission reduction targets for 2020 and 2035 for the metropolitan planning organizations in the state. The 2020 reduction target for the San Joaquin Valley is a 5 percent reduction in per capita greenhouse gas emissions; the 2035 target is a 10 percent reduction. Each metropolitan planning organization must then prepare a sustainable communities strategy as part of its RTP that meets the greenhouse gas emission reduction targets. If the RTP cannot meet the targets, then the metropolitan planning organization must adopt an alternative planning strategy instead of the sustainable communities strategy. The alternative planning strategy is adopted separately from the RTP and does not need to reflect the fiscal constraints that otherwise apply to the transportation investments identified in the RTP.

3.14.2.3 Regional and Local

The following county and local plans and policies are the same as those described in Section 3.14.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012: pages 3.14-3 through 3.14-7):

- Merced County Code Title 17
- Merced County Code Title 18
- Madera County General Plan (Madera County 1995)
- Madera County Code Title 6
- Madera County Code Title 18
- Fresno County General Plan (Fresno County 2003)
- City of Chowchilla General Plan (City of Chowchilla 2011)
- City of Merced General Plan (City of Merced 2015)

Table 3.14-1 lists additional or updated county and city general plans, policies, and objectives relevant to the Central Valley Wye alternatives.

Table 3.14-1 Regional and Local Plans and Policies

Policy Title	Summary
Merced County	
2030 Merced County General Plan (2013)	Merced County adopted the *2030 Merced County General Plan* on December 10, 2013, updating the previous version of the general plan that was included in Section 3.14.2 (page 3.14-4) of the Merced to Fresno Final EIR/EIS. The general plan includes the following pertinent agricultural policies: ▪ Policy AG-2.1: Protect agriculturally-designated areas and direct urban growth away from productive agricultural lands into cities, urban communities, and new towns. ▪ Policy AG-2.2: Protect productive agricultural areas from conversion to nonagricultural and urban uses by establishing and implementing an agricultural mitigation program that matches acres converted with farmland acres of similar quality to those converted preserved at a 1:1 ratio. Coordinate with the six cities in Merced County and the Merced Local Agency Formation Commission, consistent with the commission's statutory mission to preserve agricultural land and open space, to establish consistent standards and mitigation for the loss of farmland. In addition, the LESA model may be used to determine whether the conservation land is of equal or greater value than the land being converted. ▪ Policy AG-2.4: Encourage property owner participation in programs that preserve farmland, including the Williamson Act, conservation easements, and USDA-funded conservation practices. ▪ Policy AG-2.8: Support the efforts of public, private, and non-profit organizations to preserve agricultural areas in the County through dedicated conservation easements, and rangeland held as environmental mitigation. ▪ Policy AG-2.16: Coordinate with the California High-Speed Rail Authority to locate the high-speed rail lines along existing major transportation corridors, such as SRs 99 or 152, to minimize the conversion of productive agricultural land to nonagricultural uses.
Merced County Association of Governments	
2014–2040 Regional Transportation Plan and Sustainable Communities Strategy for Merced County (2014)	The Merced County Association of Governments adopted its latest regional transportation plan on September 25, 2014. The plan is based on the San Joaquin Blueprint and fiscally constrained transportation investments. This regional transportation plan does not meet the greenhouse gas emission reduction target established by the California Air Resources Board for the region. The Merced County Association of Governments is preparing an alternative planning strategy to comply with SB 375[1] as Amendment 1 to the *2014–2040 Regional Transportation Plan and Sustainable Communities Strategy for Merced County*, which contains an Air Quality Conformity document. The following objective and policy are part of the draft amendment. ▪ Objective: 9.4 Preserve productive farmland. ▪ Policy 9.4.1 Consider impacts on Prime Farmland.
Madera County Transportation Commission	
Final 2014 Regional Transportation Plan and Sustainable Communities Strategy (2014a)	The Madera County Transportation Commission adopted its latest regional transportation plan on July 11, 2014. This regional transportation plan is based on a moderately low-change scenario for future land use conjoined with fiscally constrained transportation investments. This regional transportation plan does not meet the greenhouse gas emission reduction target established by the California Air Resources Board for the region.

Policy Title	Summary
	The Madera County Transportation Commission is preparing an alternative planning strategy to comply with SB 375.[1] The *Final 2014 Regional Transportation Plan and Sustainable Communities Strategy* contains an Air Quality Conformity document. The following policy is part of that final document. ▪ Objective 32: Protect and conserve existing agricultural land, provide broad community access to healthful foods, and promote the environmental and economic benefits of rural agricultural lands.
City of Waterford	
Waterford Vision 2025 General Plan (2006)	The Waterford City Council adopted the *Waterford Vision 2025 General Plan* on October 26, 2006. The general plan includes the following open space and conservation policy pertinent to agriculture: ▪ Policy OS-B-1: Protect agricultural areas outside the City's urban growth area from urban impacts.
Stanislaus County	
Stanislaus County General Plan (2016)	The Stanislaus County Board of Supervisors adopted the Stanislaus County General Plan on August 23, 2016. The general plan includes the following pertinent agricultural policy: ▪ Policy 2.5: To the greatest extent possible, development shall be directed away from the County's most productive agricultural areas.

Source: Merced County, 2013; Merced County Association of Governments, 2014; Madera County Transportation Commission, 2014a; City of Waterford, 2006; Stanislaus County, 2016a

[1] The Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities Act, SB 375 (Steinberg), Chapter 728, Statutes of 2008) supports the Senate's goal to reduce greenhouse gas emissions by coordinating transportation and land-use planning through sustainable communities (California Air Resources Board, 2015).

LESA = Land Evaluation and Site Assessment

USDA = U.S. Department of Agriculture

SR = State Route

3.14.3 Compatibility with Plans and Laws

As indicated in Section 3.1.5.3, Compatibility with Plans and Laws, the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) regulations[1] require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. As such, this Final Supplemental EIR/EIS describes the inconsistency of the Central Valley Wye alternatives with federal, state, regional, and local plans and laws to provide planning context.

A number of federal and state laws and implementing regulations, listed in Section 3.14.2.1, Federal, and Section 3.14.2.2, State, direct the identification and preservation of land particularly suitable for agricultural use. In addition, several adopted federal and state management plans and programs pertain to agricultural resources and are applicable to this Final Supplemental EIR/EIS. A summary of the federal and state requirements considered in this analysis follows:

- Federal and state acts and laws that promote identification and preservation of land that is particularly well suited for agricultural use, including the federal FPPA and the state FMMP. The federal FPPA uses the NRCS Land Evaluation and Site Assessment procedure to determine a Farmland Conversion Impact Rating for a proposed project. The state FMMP maps and classifies agricultural land according to its characteristics under the FPPA, including land identified as Important Farmland under the FMMP.

[1] NEPA regulations refer to the regulations issued by the Council for Environmental Quality located at 40 C.F.R. Part 1500-1508.

- State acts and laws that protect agricultural land through landowner contract, such as the California Land Conservation Act of 1965 (Williamson Act) and the California Farmland Conservancy Program Act.
- The state Sustainable Communities and Climate Protection Act of 2008, which provides a planning process to coordinate community development and land-use planning with RTPs to reduce vehicle miles traveled and emissions by reducing sprawling land-use patterns. One effect of this act is to minimize conversion of agricultural land to nonagricultural uses.

The Authority, as the NEPA and CEQA lead agency proposing to construct and operate the HSR system, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected alternative. Therefore, there would be no inconsistencies between the Central Valley Wye alternatives and these federal and state laws and regulations.

The Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is compatible with land use and zoning regulations. For example, the Central Valley Wye alternatives incorporate IAMFs to minimize the amount of agricultural land that would be converted from agricultural use to nonagricultural use (see Section 3.14.4.2, Impact Avoidance and Minimization Features). A total of 22 local and regional policies and ordinances were reviewed. The Central Valley Wye alternatives would be consistent with 10 policies and ordinances and inconsistent with 12 policies and ordinances within the following regional and local plans and laws:

- ***2030 Merced County General Plan***—Policy AG-2.1, AG-2.4, AG-2.8: The Central Valley Wye alternatives would be inconsistent with these policies because they would result in permanent conversion of Important Farmland and would permanently remove land that is currently in protected agricultural status, with the result that some parcels may become too small to remain protected.
- ***2014–2040 Regional Transportation Plan and Sustainable Communities Strategy for Merced County***—Objective 9.4: The Central Valley Wye alternatives would be inconsistent with this objective because they would temporarily remove agricultural land during the construction period and permanently remove agriculturally designated lands from productive agricultural use.
- **Merced County Code**—Title 18: The Central Valley Wye alternatives, with the exception of network upgrades, would be inconsistent with this policy because they would temporarily remove agricultural land during the construction period and permanently remove agricultural land from land zoned A-1, A-1-40, and A-2.
- ***Madera County General Plan***—Policy 5.A.1, 5.A.6, 5.A.13: The Central Valley Wye alternatives would be inconsistent with these policies because they would temporarily remove agricultural land during the construction period and permanently remove agriculturally designated lands from productive agricultural use.
- ***Final 2014 Regional Transportation Plan and Sustainable Communities Strategy***—Objective 32: The Central Valley Wye alternatives would be inconsistent with this objective because they would temporarily remove agricultural land during the construction period and permanently remove agriculturally designated lands from productive agricultural use.
- **Madera County Code—**Title 18: The Central Valley Wye alternatives, with the exception of network upgrades, would be inconsistent with this policy because they would permanently remove agriculturally designated lands from agricultural use.
- ***City of Chowchilla 2040 General Plan***—Policy OS 1.3, OS 1.4: The Central Valley Wye alternatives would be inconsistent with this policy because they would temporarily remove agricultural land during the construction period and would permanently remove agriculturally designated lands from productive agricultural use.

As a state agency, the Authority is not required to adhere to local and regional policies that protect agricultural land from conversion to agricultural uses, and the Central Valley Wye alternatives would involve conversion of agricultural land to nonagricultural use. Therefore, the inconsistency would not be reconciled. Although the Central Valley Wye alternatives would be inconsistent with these specific provisions, they would be consistent with the larger policy objectives to support an agricultural economy and to minimize disruption of agricultural activity before and after construction. Through IAMFs, the Authority would restore agricultural land used during construction; minimize conversion of parcel remnants through establishing and administering a farmland consolidation program; minimize impacts on agricultural infrastructure during construction through relocating irrigation facilities if necessary, developing and communicating a plan for coordinating construction activities with service providers, and notifying landowners of planned utility disruption; and minimize traffic impacts by developing a construction transportation plan. Through mitigation, the Authority would promote conservation of agricultural land through funding the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and through funding the purchase of agricultural conservation easements from willing sellers. Further details and reconciliations are discussed in Appendix 3.14-A.

3.14.4 Methods for Evaluating Impacts

The evaluation of impacts on Important Farmland is a requirement of the FPPA and California Land Conservation Act, as well as NEPA and CEQA. The following sections summarize the RSAs and the methods used to analyze impacts on Important Farmland.

3.14.4.1 Definition of Resource Study Areas

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted. The RSA for impacts on agricultural farmland encompasses the areas where direct and indirect impacts could result in conversion of Important Farmland to a nonagricultural use. Direct impacts include temporary use and permanent conversion of Important Farmland and would be confined to the project footprints of the Central Valley Wye alternatives, including associated EINU, where construction and operations of the Central Valley Wye alternatives would occur. Indirect impacts could increase the amount of Important Farmland conversion beyond that needed for use within the project footprints, such as severance of Important Farmland parcels and effects HSR-generated wind on insect pollination or aerial pesticide applications. Therefore, the RSA comprises the project footprint of each of the Central Valley Wye alternatives and additional areas beyond the project footprints where potential conversion of Important Farmland could occur.

Figure 3.1-1 in Section 3.1.5.4, Methods for Evaluating Impacts, illustrates a typical RSA boundary, including the temporary and permanent areas of impact and rights-of-way, which is applicable to the RSA for agricultural lands. Refer to Appendix 3.1-B, Parcels within the Central Valley Wye Alternatives Footprints, for additional figures showing project footprints, including rights-of-way, temporary construction easements, permanent access easements, permanent utility easements, and remnant parcels for the Central Valley Wye alternatives.

3.14.4.2 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 section 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 agricultural farmland resources include:

- AQ-IAMF#1, Fugitive Dust Emissions
- AG-IAMF#1, Restoration of Important Farmland Used for Temporary Staging Areas
- AG-IAMF#2, Permit Assistance
- AG-IAMF#3, Farmland Consolidation Program

- PUE-IAMF#2, Irrigation Facility Relocation
- PUE-IAMF#3, Public Notifications
- PUE-IAMF#4, Utilities and Energy
- TR-IAMF#2, Construction Transportation Plan

3.14.4.3 Methods for NEPA and CEQA Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts from implementing the Central Valley Wye alternatives on agricultural farmlands. These methods apply to both NEPA and CEQA unless otherwise indicated. Refer to Section 3.1.5.4 for a description of the general framework for evaluating impacts under NEPA and CEQA. As described in Section 3.14.1, Introduction, and in the following discussions, the Authority applied many of the same methods and data sources from the Merced to Fresno Final EIR/EIS to this Final Supplemental EIR/EIS, with a few differences, including a modified approach for analyzing indirect conversion of Important Farmland associated with remnant parcels. Laws, regulations, and orders (see Section 3.14.2, Laws, Regulations, and Orders) that regulate agricultural farmlands were also considered in the evaluation of impacts on Important Farmland.

FMMP spatial data provided by the DOC for Merced, Madera, Fresno, and Stanislaus Counties identify subcategories of Important Farmland (see Section 3.14.1.1). Spatial data for agricultural lands protected under Williamson Act and FSZ contracts was obtained from Merced, Madera, Fresno, and Stanislaus Counties. Several conservation organizations (e.g., land trusts) provided information about the size and location of agricultural conservation easements. Together, this information provided the basis for calculating acreages associated with direct and indirect impacts (i.e., temporary use of Important Farmland, permanent conversion of Important Farmland) using geographic information system (GIS) software. Spatial data were used as the basis for mitigation acreage calculations (areas of direct impact as well as areas of indirect impact).

Direct Impacts on Important Farmland

There are two types of direct impacts on Important Farmland: temporary use and permanent conversion of Important Farmland. Temporary use of Important Farmland would occur as a result of temporary construction activities. Permanent conversion of Important Farmland would occur from construction of permanent features of the Central Valley Wye alternatives and impacts would continue after temporary construction activities have ceased.

Temporary Use of Important Farmland

Construction of the HSR system would require temporary construction staging areas located within the project footprints of the Central Valley Wye alternatives. Construction of the network upgrades would require temporary work areas, pull and tension sites, staging areas, and helicopter landing zones. Temporary construction staging areas and other construction-related activities may be located in areas designated as Important Farmland. This temporary use would result in a direct impact that could persist for the duration of construction activities. To calculate the direct temporary use of Important Farmland, analysts used GIS software to measure the amount of Important Farmland within the temporary construction impact area of the project footprint for each alternative.

Permanent Conversion of Important Farmland to a Nonagricultural Use

Construction of the HSR system within the project footprints would result in direct permanent impacts where Important Farmland would be converted to a nonagricultural use. This analysis assumed that all Important Farmland located within the permanent impact area of the project footprint of each of the Central Valley Wye alternatives would be permanently converted to a nonagricultural use. GIS software was used to calculate the direct permanent conversion of Important Farmland to nonagricultural use for each alternative by overlaying the most recent spatial data available from the DOC's FMMP with the permanent impact area of the project footprint for each alternative to determine the acreage of conversion.

In addition to the direct impact analysis, the NRCS staff helped determine the farmland conversion impact rating of each alternative using Form NRCS-CPA-106 in accordance with the

FPPA (Appendix 3.14-B). The NRCS-CPA-106 forms measure farmland conversion according to criteria such as area of nonurban use, percentage of the transportation corridor being farmed, protected farmland, size of farm, and creation of non-farmable land, among other criteria. The maximum possible score on the Land Evaluation and Site Assessment is 260 points. If the score is less than 160 points, the Farmland Protection Policy Act requires no further evaluation. If the score is greater than 160, the act requires consideration of alternatives that avoid or minimize farmland impacts. The act does not mandate the adoption of such alternatives.

Indirect Impacts on Important Farmland

Indirect impacts may increase the amount of Important Farmland conversion beyond that needed for use within the project footprint for each alternative, resulting in additional losses. These indirect impacts may occur as a result of the following:

- Creation of noneconomic remnant parcels of Important Farmland as a result of severance
- Disruption to agricultural infrastructure (irrigation canals)
- Interference with aerial spraying activities
- Impacts on land under Williamson Act or FSZ contracts
- Wind-induced effects

AQ-IAMF#1 would address fugitive dust emissions from construction, so construction-related fugitive dust would not result in the temporary or permanent conversion of Important Farmland to nonagricultural use.

Remnant Parcel Analysis

GIS software was used to identify parcels of Important Farmland that would be 20 acres or less following severance as a result of construction of the HSR system. Analysts licensed by the California Department of Consumer Affairs Bureau of Real Estate Appraisers then evaluated the viability of continued agricultural use of remnant[2] parcels or likely conversion to a nonagricultural use on the basis of the following considerations.

- Access: Would the HSR system restrict or eliminate access to the remnant parcel such that it can no longer continue in agricultural use (e.g., proposed roadway closure or severance, or permanent HSR fencing around tracks, electrical stations, or maintenance roads)?
- Size and Shape: Would the HSR project create a parcel too small or oddly shaped to be viable for agriculture, even if combined with adjacent agricultural parcels?
- Location: Would the HSR system create a parcel that could not be consolidated with adjacent agricultural parcels because of location?
- Hardship: Would the HSR system create a severance that causes an overall hardship in maintaining economic activity on what might otherwise appear to be an economically viable remnant parcel?

Additional detail on the remnant parcel analysis is provided in Appendix 3.14-C.

Disruption to Agricultural Infrastructure Serving Important Farmland

Disruption to agricultural infrastructure through interruptions of utility service and road closures could result in the conversion of Important Farmland if agricultural profitability is affected. Analysts used GIS software to identify the number of crossings of major utilities, such as electric power lines and irrigation canals, to assess the potential for construction of the Central Valley

[2] Many severed parcels contain small or irregularly shaped remnants. Some of these parcels would not be added to the acquisition area because analysts have determined that some agricultural use would continue to be viable. For example, some small parcels could be consolidated with adjacent landowners and larger, irregularly shaped parcels could still be farmed (although with some loss of efficiency). The purpose of this analysis is to determine whether HSR impacts have the potential to convert farmland to nonagricultural use. Impacts associated with farm efficiency or property transactions are social and economic effects that do not mean farmland would be lost and would therefore not be evaluated as part of the Agricultural Lands analysis.

Wye alternatives to result in utility interruptions that could lead to conversion of Important Farmland. Analysts also evaluated road closures resulting from construction of the Central Valley Wye alternatives and compared to existing access patterns to assess whether such road closures could increase response times such that they could result in impacts on Important Farmland.

Interference with Aerial Spraying Activities

The height and location of aerial structures (elevated guideways), communication towers, telecommunication microwave towers, and power/transmission structures associated with the Central Valley Wye alternatives was compared to existing structures in the RSA to determine whether the construction of these new structures could obstruct aircraft movement to the extent that they would interfere with aerial spraying activities.

Williamson Act and Farmland Security Zone Contracts

To assess impacts on parcels containing Important Farmland under Williamson Act and FSZ contracts, analysts obtained parcel data from Merced and Madera County Assessor's offices and used GIS software to map the parcels that are intersected by the project footprint for each Central Valley Wye alternative. Only upgrades to existing power and transmission lines within existing utility easements would occur in Fresno and Stanislaus Counties, and no changes to land use would occur. Therefore, Williamson Act and FSZ contract data was not analyzed for those counties. Some parcels under Williamson Act or FSZ contract that are intersected by the project footprints would no longer qualify for Williamson Act or FSZ contract because the remaining portion of the parcel after construction of the Central Valley Wye alternatives would be less than the minimum acreage threshold within each corresponding county. Analysts evaluated the potential for indirect conversion of Important Farmland to a nonagricultural use as a result of remnant parcels no longer meeting the minimum acreage threshold to maintain the Williamson Act or FSZ contract status. Direct impacts on Important Farmland that are under Williamson Act or FSZ contract are already accounted for in the analysis of direct impacts on Important Farmland, and therefore these direct impacts are not repeated in this analysis.

The Authority has followed required procedures, including notification of the impact on the parcels under Williamson Act and FSZ contract to the DOC and the respective counties in which the property is located (Gov. Code, § 51291 and 51292). Appendix 3.14-D, lists the parcels under Williamson Act and FSZ contracts, including those currently under contract nonrenewal,[3] potentially affected by each Central Valley Wye alternative. Merced County does not participate in the FSZ program.

Wind-Induced Effects

Wind-induced effects were evaluated by comparing the potential wind speeds generated at the HSR right-of-way (which is the nearest proximity to Important Farmland that could be affected by HSR-induced wind) to wind speeds that could affect common agricultural activities, such as insect pollination or aerial pesticide applications. Potential wind speeds that would be generated by the HSR were estimated and summarized in the Technical Memorandum, *Potential Impact from Induced Winds for High-Speed Trains*, on the basis of modeling (Authority 2010). In the white paper, *Induced Wind Impacts, Effects on Pollination; Blooms and Dust*, the modeled wind speeds were quantitatively compared to wind speeds known to affect insect pollination and were also used to qualitatively describe potential effects on the application of aerial pesticides (Authority 2012b).

3.14.4.4 Determining Significance under CEQA

CEQA requires that an EIR identify the significant environmental impacts of a project (CEQA Guidelines § 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a significance determination for each impact using a threshold-based analysis (see Section 3.1.5.4 for further information). By contrast, under NEPA, significance is used to determine whether an EIS will

[3] "Nonrenewal" refers to the method of terminating a Williamson Act or FSZ contract by filing a notice of nonrenewal. The contract is terminated 10 years from the time of notice of nonrenewal. Nonrenewal can be initiated by the landowner or the local government.

be required; NEPA requires that an EIS is prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." Accordingly, Section 3.14.9, CEQA Significance Conclusions, summarizes the significance of the environmental impacts on agricultural lands for each Central Valley Wye alternative. The Authority is using the following thresholds to determine if a significant impact on agricultural lands would occur as a result of the Central Valley Wye alternatives. A significant impact is one that would:

- Convert Important Farmland (i.e., Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance) to nonagricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract in a manner that would result in conversion of Important Farmland to nonagricultural use.
- Involve other changes in the existing environment that would result in conversion of Important Farmland to nonagricultural use because of its location or nature.

3.14.5 Affected Environment

This section describes the affected environment for agricultural lands in Merced, Madera, Fresno, and Stanislaus Counties, including regional agriculture, Important Farmland, and lands under Williamson Act and FSZ contracts. It also discusses changes to agricultural lands in the San Joaquin Valley since publication of the Merced to Fresno Final EIR/EIS. This information provides the context for the environmental analysis and evaluation of impacts.

3.14.5.1 Regional Agriculture

According to a report from the American Farmland Trust, more than 161,000 acres of land were converted to urban uses in the San Joaquin Valley between 1990 and 2008 as a result of population and development pressures (American Farmland Trust 2013). Of this land, 78 percent was agricultural land and 61 percent was high-quality farmland (defined in the report as Farmland Mapping and Monitoring Program Prime Farmland, Unique Farmland, and Farmland of Statewide Importance). Table 3.14-2 shows the proportion of land in agricultural use in Merced, Madera, Fresno, and Stanislaus Counties in 2014. Figure 3.14-1 shows the proportion of Important Farmland, other agricultural land, urban land, and other land uses in Merced, Madera, Stanislaus, and Fresno Counties in 2014.

Table 3.14-2 Total Acreage and Agricultural Land Acreage in Merced, Madera, Fresno, and Stanislaus Counties, 2014

Type of Land	Merced County	Madera County	Fresno County	Stanislaus County
County Acreage	1,238,400	1,367,680	3,847,040	969,600
Agricultural Land Acreage[1]	1,157,867	759,322	2,192,456	832,668
Percentage of Overall Acreage in Agricultural Use	93%	56% [2]	57%[3]	86%

Source: DOC, 2014; DOC, 2016a; DOC, 2016b

[1] The sum of Farmland Mapping and Monitoring Program Important Farmland and Farmland Mapping and Monitoring Program Grazing Land acreages was used as a rough indicator of total agricultural land acreage.

[2] The relatively low percentage of agricultural land reflects the fact that the Farmland Mapping and Monitoring Program survey covers only approximately 861,000 acres in Madera County rather than the entire county, the northeastern portion of which extends into the Sierra Nevada mountain range.

[3] The northeast portion of Fresno County also extends into the Sierra Nevada mountain range.

3.14.5.2 Important Farmland

Table 3.14-3 identifies acreages of Important Farmland in Merced, Madera, Fresno, and Stanislaus Counties in 2008 and 2014. This table shows that despite a gain in some Important Farmland categories between 2008 and 2014, Merced County experienced a net loss of more than 1,500 acres of agricultural land; Madera County lost more than 2,800 acres; Fresno County lost more than 9,099 acres; and Stanislaus County gained more than 18,500 acres because of the conversion of Grazing Land to irrigated orchards, vineyards, and other crops along the eastern foothills of the county (DOC 2008, 2014). During the same period, Merced, Madera, Fresno, and Stanislaus Counties lost nearly 12,900, 9,600, 1,700, and 20,100 acres of Grazing Land, respectively. Although Grazing Land is not classified as Important Farmland, changes in the amount of Grazing Land can be indicative of the development pressure that exists in the area. Changes in Grazing Land are not fully indicative because, in some cases, with the planting of crops or irrigation of the site, Grazing Land is converted to Important Farmland.

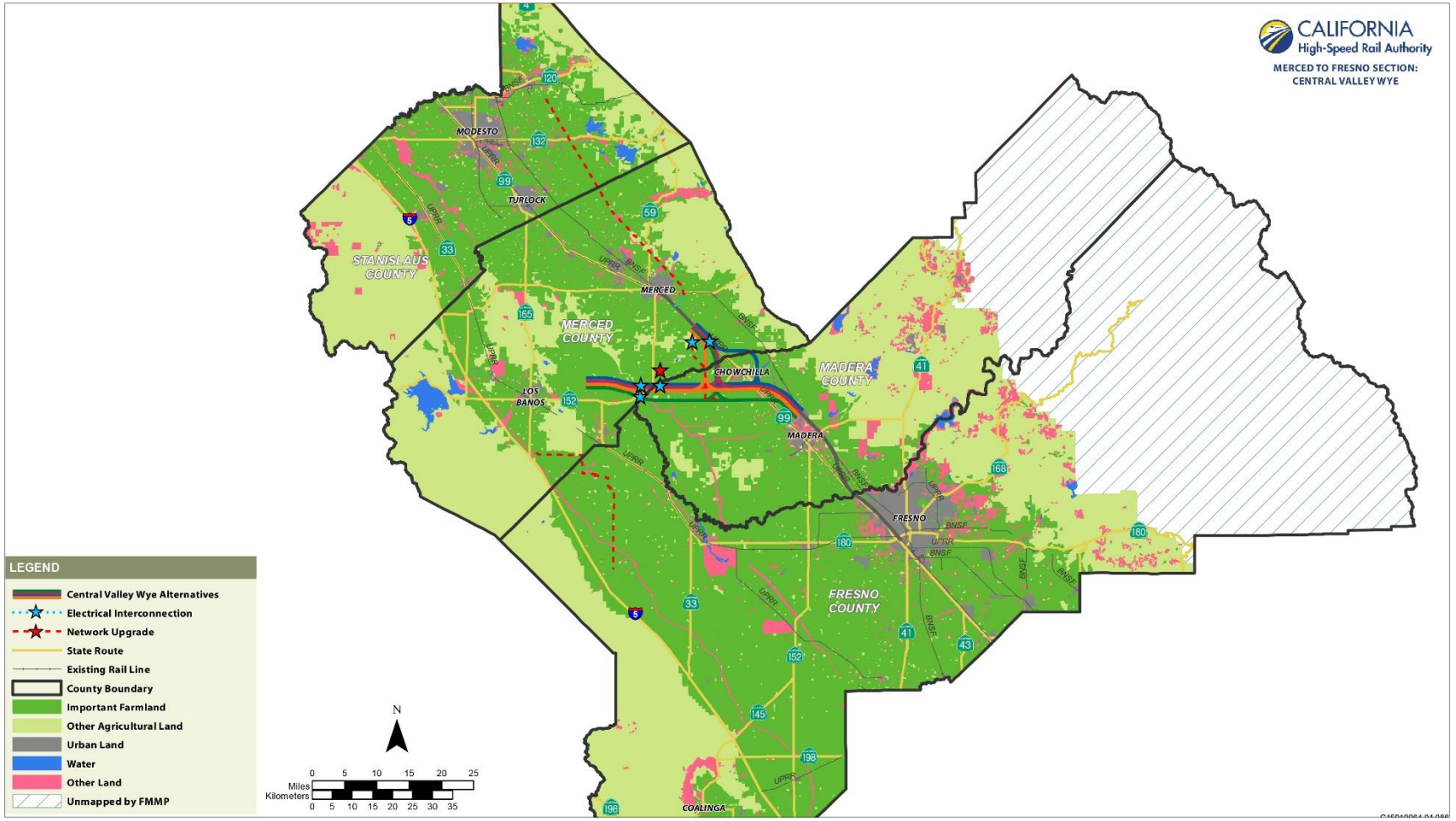
Table 3.14-3 Important Farmland in Merced, Madera, Fresno, and Stanislaus Counties (acres) in 2008 and 2014[1, 2]

Type of Agricultural Land	Merced County		Madera County		Fresno County		Stanislaus County	
	2008	2014	2008	2014	2008	2014	2008	2014
Prime Farmland	272,100	271,901	97,500	97,965	693,174	678,103	256,166	252,700
Farmland of Statewide Importance	153,200	154,492	85,100	85,061	439,020	404,083	31,448	32,182
Unique Farmland	104,400	112,293	164,000	176,050	94,177	93,653	81,367	105,630
Farmland of Local Importance	59,900	62,222	16,100	10,314	149,907	191,341	31,160	28,144
Total Important Farmland	**589,600**	**600,908**	**362,700**	**369,390**	**1,376,278**	**1,367,180**	**400,141**	**418,656**
Agricultural Land Change, 2008–2014, including Grazing Land	-1,533		-2,878		-9,098		18,515	
Urban and Built-Up Land	37,417	39,183	27,011	28,730	117,567	124,025	63,971	65,017
Urban and Built-Up Land Change, 2008–2014	1,766		1,719		6,458		1,046	

Source: DOC, 2008, 2014

[1] Rounded to nearest 100 acres.

[2] The year 2008 is used in this table as a reference because it was used in the 2012 Merced to Fresno Final EIR/EIS.



Source: DOC, 2014

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Figure 3.14-1 Important Farmland, Other Agricultural Land, Urban Land, and Other Land Uses in Merced, Madera, Stanislaus, and Fresno Counties in 2014

All types of Important Farmland occur along the Central Valley Wye alternatives. Table 3.14-4 shows Important Farmland within the project footprint of each Central Valley Wye alternative.

Table 3.14-4 Important Farmland within the Project Footprints by Alternative (acres)[1]

Alternative	Important Farmland				Total
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	
SR 152 (North) to Road 13 Wye	1,012	727	825	120	2,684
SR 152 (North) to Road 19 Wye	1,125	665	1,167	145	3,102
Avenue 21 to Road 13 Wye	891	830	832	130	2,683
SR 152 (North) to Road 11 Wye	974[2]	721[2]	736[2]	98	2,529[2]

Source: DOC, 2014
[1] Acreages are rounded to the nearest whole number.
[2] This value has been updated to reflect refinements to the Site 6 electrical interconnection. Refer to Section 2.2.3, Description of the Central Valley Wye Alternatives.
SR = State Route

3.14.5.3 Lands under Williamson Act and Farmland Security Zone Contracts, Local Agricultural Zoning and Conservation Easements

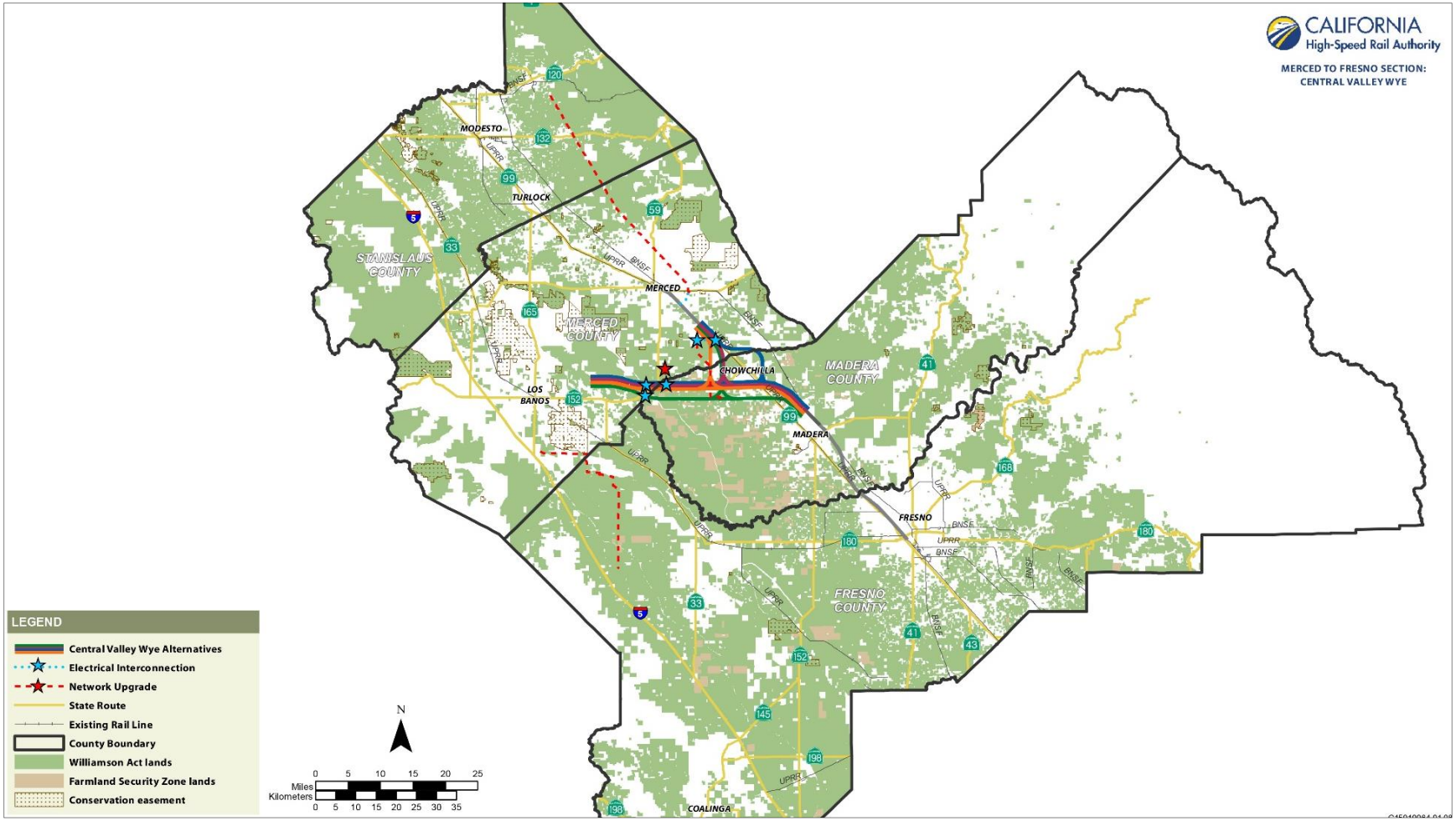
Table 3.14-5 presents the acreage of farmland protected under Williamson Act and FSZ[4] contracts in each county for 2010, as shown in the Merced to Fresno Final EIR/EIS, as well as for 2014 for Merced and Madera Counties and 2013 for Fresno and Stanislaus Counties. In Merced County, the amount of agricultural land under contract increased by approximately 10,000 acres between 2010 and 2014, and in Madera County the amount of contracted agricultural land decreased by approximately 2,000 acres in the same time period (DOC 2010, 2014). In Fresno County, agricultural land under contract decreased by approximately 30 acres between 2010 and 2013, and in Stanislaus County by approximately 6,500 acres over the same time period (DOC 2013, 2015f). Figure 3.14-2 shows the distribution of protected farmlands in Merced, Madera, Fresno, and Stanislaus Counties.

Table 3.14-5 Farmland Protected under Williamson Act and Farmland Security Zone Contracts in Merced,[1] Madera, Fresno, and Stanislaus Counties (acres)

Type of Contract	Merced County		Madera County		Fresno County		Stanislaus County	
	2010	2014	2010	2014	2010	2013	2010	2013
Williamson Act	455,650	465,242	476,143	478,277	1,465,727	1,458,754	689,954	683,463
Farmland Security Zone	N/A	N/A	62,798	59,217	29,281	29,281	N/A	N/A
County Acreage	1,238,400		1,367,680		3,847,040		969,600	
Percentage of County in Protected Status	36.79%	37.57%	39.41%	38.67% 39.30%	38.86%	38.67%	71.15%	70.49%
Total	**455,650**	**465,242**	**538,941**	**537,494**	**1,495,008**	**1,488,035**	**689,954**	**683,463**

Source: Merced County, 2015; Madera County, 2015; DOC, 2013, 2015f
[1] Merced and Stanislaus Counties do not participate in the Farmland Security Zone program.

[4] Merced and Stanislaus Counties do not participate in the FSZ program.



Source: Fresno County, 2016; GreenInfo Network, 2015; Madera County, 2015; Merced County, 2015; Stanislaus County, 2016b

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Figure 3.14-2 Protected Farmland

Some properties under Williamson Act and FSZ contracts are located within the permanent impact area of the project footprints of the Central Valley Wye alternatives. Table 3.14-6 shows the areas of the Williamson Act and FSZ contracts land located within the permanent impact area of the project footprint of each Central Valley Wye alternative. There is no farmland under conservation easements in the RSA. Detailed information on land under Williamson Act and FSZ contracts is included in Appendix 3.14-D.

Table 3.14-6 Williamson Act and Farmland Security Zone Lands within the Permanent Impact Area of the Project Footprints

Alternative	Williamson Act (acres) [1,2]	Williamson Act (parcels)	FSZ Land (acres) [1,3]	FSZ Land (parcels) [2]
SR 152 (North) to Road 13 Wye	797	108	93	8
SR 152 (North) to Road 19 Wye	934	108	90	8
Avenue 21 to Road 13 Wye	977	137	167	14
SR 152 (North) to Road 11 Wye	768[4]	93[4]	101	10

Source: Merced County, 2015; Madera County, 2015
[1] Acreages are rounded to the nearest whole number.
[2] Acreages include parcels in nonrenewable status.
[3] Merced County does not participate in an FSZ program.
[4] This value has been updated to reflect refinements to the Site 6 electrical interconnection. Refer to Section 2.2.3, Description of the Central Valley Wye Alternatives.
FSZ = Farmland Security Zone
SR = State Route

3.14.6 Environmental Consequences

3.14.6.1 Overview

This section evaluates how the No Project Alternative and the Central Valley Wye alternatives could result in the conversion of Important Farmland to a nonagricultural use. The impacts of the Central Valley Wye alternatives are described and organized in Section 3.14.6.3, Central Valley Wye Alternatives, as follows:

Construction Impacts

- Impact AG#1: Temporary Use of Important Farmland
- Impact AG#2: Permanent Conversion of Important Farmland to Nonagricultural Use
- Impact AG#3: Creation of Remnant Parcels of Important Farmland
- Impact AG#4: Disruption of Agricultural Infrastructure
- Impact AG#5: Interference with Aerial Spraying Activities
- Impact AG#6: Impacts on Land under Williamson Act or FSZ Contracts

Operations Impacts

- Impact AG#7: Wind-Induced Effects

3.14.6.2 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 impacts on agricultural farmland. Such planned projects that are anticipated to be constructed by 2040 include residential, commercial, industrial, recreational, transportation, and agricultural projects. It is expected that more than 300,000 acres of Important Farmland within the San Joaquin Valley would be converted to nonagricultural uses through 2050 as a result of these types of development activities (American Farmland Trust 2013). These future development activities would continue an historical trend of agricultural conversion in the region.

As described in Section 3.14.5.1, Regional Agriculture, past development activities have resulted in extensive conversion of agricultural farmland to nonagricultural uses. Between 1990 and 2008 alone, more than 161,000 acres of agricultural land were converted to urban uses in the San Joaquin Valley (American Farmland Trust 2013). Within Merced and Madera Counties, over 4,300 acres of agricultural land were converted to nonagricultural uses between 2008 and 2014; within the same period, the amount of land converted to urban land use increased by approximately 3,500 acres (DOC 2008, 2014). By projecting the rate of conversion to 2040, nearly 18,000 acres of agricultural land could be converted to a nonagricultural use in Merced and Madera Counties.

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 reconstruction of interchanges, overcrossing construction, road widenings and lane additions, road realignment and extensions, airport pavement improvements, and recreational bike/pedestrian trail construction. 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 anticipated in and around the City of Chowchilla, 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 some agricultural land and result in the conversion of that land to a nonagricultural use. Madera County Transportation Commission's *Final 2014 Regional Transportation Plan and Sustainable Communities Strategy* identifies transportation projects that would convert approximately 1,876 acres of Important Farmland to transportation uses between 2014 and 2040 (Madera County Transportation Commission 2014b).

In addition to the direct conversion of Important Farmland, growth and development under the No Project Alternative would result in Important Farmland severance, severance of protected farmland resulting in parcels smaller than county thresholds for protected farmland contracts, easement encroachments, and infrastructure disruption that could lead to indirect conversions when these changes leave farmland without convenient access to roads, water, and other necessities to support agricultural use.

Under the No Project Alternative, recent development trends are anticipated to continue, leading to a permanent conversion of Important Farmland to nonagricultural use. Population growth and associated development pressures would result in the removal of agricultural land from productive agricultural use at a rate similar to recent agricultural development trends in Merced and Madera Counties (see Section 3.14.5.2, Important Farmland). Planned development and transportation projects that would occur as part of the No Project Alternative would likely include various forms of mitigation to address Important Farmland conversion. However, no mitigation could create new agricultural land to replace that which was converted.

3.14.6.3 Central Valley Wye Alternatives

Construction and operations of the Central Valley Wye alternatives could result in temporary and permanent impacts on Important Farmland. Impacts could include temporary use of Important Farmland and permanent conversion of Important Farmland as a result of acquisition, parcel severance, and other indirect impacts.

Construction Impacts

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 described in more detail in Chapter 2, Alternatives. Construction of EINU would involve clearing and grubbing, minor excavation and fill, temporary access roads, pole/tower replacement, raise or modification, and reconfiguration/expansion of existing substations, construction of a new

switching station, new tie-lines, and reconductoring of existing power/transmission lines. A detailed description of the construction, operation, and maintenance assumptions associated with EINU, as well as background information, is provided in Appendix 2-D, Electrical Interconnections and Network Upgrades.

Impact AG#1: Temporary Use of Important Farmland

Construction of all four Central Valley Wye alternatives would require the temporary use of Important Farmland for construction staging areas and other construction-related activities. This land would be leased from the landowner and temporarily removed from agricultural use for the duration of construction. Table 3.14-7 lists the acres of Important Farmland that would be temporarily unavailable for agricultural use as a result of construction of the Central Valley Wye alternatives. The State Route (SR) 152 (North) to Road 19 Wye Alternative would temporarily use the largest area of Important Farmland (590 acres) compared to the other alternatives, and the SR 152 (North) to Road 11 Wye Alternative would temporarily use the smallest area of Important Farmland (375 acres).

Table 3.14-7 Important Farmland Temporarily Used for Construction of the Central Valley Wye Alternatives (acres)[1]

Alternative	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Total
SR 152 (North) to Road 13 Wye	225	100	132	36	493
SR 152 (North) to Road 19 Wye	220	68	275	27	590
Avenue 21 to Road 13 Wye	157	102	121	32	412
SR 152 (North) to Road 11 Wye	172[2]	84[2]	92[2]	27	375[2]

Source: DOC, 2014
[1] Acreages are rounded to the nearest whole number.
[2] This value has been updated to reflect refinements to the Site 6 electrical interconnection. Refer to Section 2.2.3, Description of the Central Valley Wye Alternatives.
SR = State Route

Although construction of the Central Valley Wye alternatives would temporarily use Important Farmland, the land would be restored following the cessation of construction activities under all alternatives. As discussed in Section 3.14.4.2, Impact Avoidance and Minimization Features, the Central Valley Wye alternatives would incorporate IAMFs to minimize impacts on Important Farmland. AG-IAMF#1 would require affected Important Farmland to be restored after construction to as close to the pre-construction condition as possible, with the goal that parcels remain available for long-term agricultural use. As a result, Important Farmland temporarily used for construction purposes would be restored to agricultural use and would not be subject to permanent conversion to nonagricultural use under any of the Central Valley Wye alternatives. Disruption of agricultural use would last only from the time land is leased from the landowner until restoration is complete. This reduction would not have regional repercussions because the disruption would be short term and limited in geographic scope.

CEQA Conclusion

The impact under CEQA would be less than significant because the temporary use of Important Farmland during construction would not permanently convert Important Farmland to nonagricultural use. The IAMFs incorporated into the Central Valley Wye alternatives would include effective measures to restore Important Farmland following the cessation of construction activities. Therefore, CEQA does not require any mitigation.

Impact AG#2: Permanent Conversion of Important Farmland to Nonagricultural Use

Direct permanent conversion of Important Farmland to nonagricultural use would occur where the permanent impact area of the project footprint of each Central Valley Wye alternative overlaps

Important Farmland. The Authority would purchase and use the land within the permanent impact area of the Central Valley Wye alternatives' project footprints for the HSR right-of-way and related facilities. Table 3.14-8 lists the acreage that would be directly converted to nonagricultural use by alternative. This acreage reflects the potential permanent conversion of Important Farmland directly associated with the construction of the Central Valley Wye alternatives. Appendix 3.1-B, provides parcel maps showing property-specific direct permanent impacts. Permanent conversion of Important Farmland to nonagricultural use associated with the Central Valley Wye alternatives would be greatest under the SR 152 (North) to Road 19 Wye Alternative (2,305 acres) and least under the SR 152 (North) to Road 11 Wye Alternative (2,145 acres). Once converted, this land would be permanently removed from agricultural use.

Table 3.14-8 Maximum Acreage of Important Farmland Directly Permanently Converted to Nonagricultural Use by Each Alternative Project Footprint (acres)[1]

Alternative	Important Farmland				
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Total
SR 152 (North) to Road 13 Wye	816	572	693	101	2,182
SR 152 (North) to Road 19 Wye	835	489	888	93	2,305
Avenue 21 to Road 13 Wye	763	674	711	115	2,263
SR 152 (North) to Road 11 Wye	831	582[2]	644	88	2,145[2]

Source: DOC, 2014
[1] Acreages are rounded to the nearest whole number.
[2] This value has been updated to reflect refinements to the Site 6 electrical interconnection. Refer to Section 2.2.3, Description of the Central Valley Wye Alternatives.
SR = State Route

Some of the Important Farmland directly converted to a nonagricultural use is also under Williamson Act or FSZ contract. The amount of conversion would be greatest under the Avenue 21 to Road 13 Wye Alternative, which would convert 1,694 acres of Important Farmland under Williamson Act or FSZ contract to a nonagricultural use. This acreage is a subset of the maximum acreage of direct conversion of Important Farmland reported in Table 3.14-8. The SR 152 (North) to Road 19 Wye Alternative would result in the next greatest amount of conversion (1,297 acres), followed by the SR 152 (North) to Road 13 Wye Alternative (1,187 acres). The SR 152 (North) to Road 11 Wye Alternative would convert 1,150 acres of Important Farmland under Williamson Act or FSZ contract, the least of all the alternatives. Appendix 3.14-D provides the total acreage and list of parcels under Williamson Act and FSZ contract, inclusive of land classified as Important Farmland and other agricultural land, that would be affected by the Central Valley Wye alternatives.

The farmland conversion impact ratings provided by NRCS (see Section 3.14.4.3, Methods for NEPA and CEQA Impact Analysis) for each Central Valley Wye alternative in Merced and Madera Counties are provided in Table 3.14-9. The Merced County portion of each alternative has a score below 160, which is below the threshold required for additional evaluation. In Madera County, the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 11 Wye Alternatives have scores below 160 while the SR 152 (North) to Road 19 Wye and Avenue 21 to Road 13 Wye Alternatives have scores above 160. The NRCS recommends that for projects with scores over 160 that receive federal funding and that convert Important Farmland to nonagricultural uses, the alternative with the lowest score should be selected.[5] Appendix 3.14-B provides

[5] Specifically, as described in Appendix 3.14-B, sites receiving scores that exceed 160 points are given increasingly higher levels of consideration for protection, as recommended by the U.S. Department of Agriculture. For corridor-type

additional detail on the treatment of Central Valley Wye alternatives with scores that exceed 160 points.

Table 3.14-9 Farmland Conversion Rating Scores for Alternative by County[1]

Alternative	Merced County	Madera County
SR 152 (North) to Road 13 Wye	142	159
SR 152 (North) to Road 19 Wye	147	161
Avenue 21 to Road 13 Wye	138	162
SR 152 (North) to Road 11 Wye	146	159

Source: NRCS, 2015b
[1] Acreages are rounded to the nearest whole number.
SR = State Route

CEQA Conclusion

The impact under CEQA would be significant because construction of the Central Valley Wye alternatives would result in the permanent direct conversion of Important Farmland to nonagricultural use. AG-MM#1, Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland, would offset impacts by preserving Important Farmland in an amount commensurate with the quantity and quality of converted farmlands. However, because implementation of AG-MM#1 would not avoid the permanent conversion of Important Farmland to nonagricultural use, the impact under CEQA would remain significant.

Impact AG#3: Creation of Remnant Parcels of Important Farmland

The Central Valley Wye alternatives could result in the creation of remnant parcels of Important Farmland because of severance. Some parcels could be severed from a larger parcel because the right-of-way boundary of the Central Valley Wye alternatives would bisect the parcel, and some parcels could be severed because roadway access would be restricted or eliminated. Some remnant parcels would remain in agricultural use. However, remnant parcels 20 acres or less have the potential to become unfarmable because of lack of access, size, shape, location, or other hardship. Section 3.14.4.3 describes the methods to determine potential conversion of Important Farmland as a result of parcel severance.

Implementation of EINU would not result in the creation of remnant parcels of 20 acres or less because of severance for any of the Central Valley Wye alternatives. Electrical interconnections associated with Site 7—Le Grand Junction/Sandy Mush Road and Site 6—El Nido would be located along existing roads and, therefore, would not bisect parcels. While the 230 kV Tie-Line (i.e., electrical interconnection facility) associated with Site 7—Wilson would traverse cross-country and a utility easement would be required, the acquisition of a utility easement would not result in creation of remnant parcels because of severance.

Agricultural land in the Central Valley is generally of very high quality and value, and the area where the Central Valley Wye alternatives are located is a thriving agricultural community. Although a substantial level of Important Farmland conversion is documented elsewhere in the Central Valley, the information from the FMMP indicates that this is not always the case in the San Joaquin Valley, including Merced and Madera Counties (DOC 2015a, 2015b, 2015c, 2015d, 2015e). As identified in Table 3.14-3, both counties slightly increased the amount of their Important Farmland between 2008 and 2014 (DOC 2008, 2014) as a result of Grazing Land being brought into crop production. As a consequence, where remnant parcels of Important Farmland

projects, the NRCS considers whether an alternative could be used that would be built on land that is not farmland, convert fewer acres of farmland, or convert other farmland that has a lower relative value. For projects with scores over 160 that receive federal funds and that would convert Important Farmland to nonagricultural uses, the alternative receiving the lowest score should be selected (NRCS 2015b).

are created as a result of construction of any one of the Central Valley Wye alternatives, a strong likelihood exists that many such parcels would remain in agricultural use as Important Farmland, whether by the original owner or another landowner. Therefore, remnant parcels were evaluated to determine whether they could reasonably be expected to remain in agricultural use as Important Farmland, despite parcel severance from construction of the Central Valley Wye alternatives. The criteria considered in the remnant parcel analysis are discussed under Section 3.14.4.3.

The Farmland Consolidation Program (AG-IAMF#3), which is administered by the Authority and would apply to any Central Valley Wye alternative, would provide for continued agricultural use on the maximum feasible amount of remnant parcels by facilitating the sale of remnant parcels to neighboring landowners for consolidation with adjacent farmland properties. Remnant parcels that are considered viable candidates for consolidation with adjoining agricultural properties through the Farmland Consolidation Program are anticipated to remain in agricultural use.

Table 3.14-10 shows the number of remnant parcels of 20 acres or less that would be potentially converted to nonagricultural use as a result of parcel severance, as well as the acreage of Important Farmland within the remnant parcels. As Table 3.14-10 shows, indirect permanent conversion of Important Farmland to nonagricultural use resulting from parcel severance associated with the Central Valley Wye alternatives would be greatest under the SR 152 (North) to Road 19 Wye Alternative (232 acres) and least under the SR 152 (North) to Road 11 Wye Alternative (192 acres). See Appendix 3.14-C for detailed information on Important Farmland converted to nonagricultural use as a result of severance.

Table 3.14-10 Number of Remnant Parcels and Acreage of Important Farmland Potentially Indirectly Permanently Converted to Nonagricultural Use as a Result of Parcel Severance by Alternative

Alternative	Number of Remnant Parcels	Important Farmland				
		Prime Farmland (Acres)	Farmland of Statewide Importance (Acres)	Unique Farmland (Acres)	Farmland of Local Importance (Acres)	Total (Acres)[1]
SR 152 (North) to Road 13 Wye	133	48	53	96	7	203
SR 152 (North) to Road 19 Wye	173	60	33	113	26	232
Avenue 21 to Road 13 Wye	186	49	68	80	7	204
SR 152 (North) to Road 11 Wye	140	74	33	73	11	192

Source: DOC, 2014; ARWS, 2016a, 2016b, 2016c
[1] Acreages are rounded to the nearest whole number.
SR = State Route

Some of the Important Farmland indirectly converted to a nonagricultural use as a result of parcel severance is also under Williamson Act or FSZ contract. The amount of conversion would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would indirectly convert 72 acres of Important Farmland under Williamson Act or FSZ contract to a nonagricultural use. This acreage is a subset of the acreage of indirect conversion of Important Farmland reported in Table 3.14-10. The Avenue 21 to Road 13 Wye Alternative would result in the next greatest amount of conversion (96 acres), followed by the SR 152 (North) to Road 13 Wye Alternative (72 acres). The SR 152 (North) to Road 11 Wye Alternative would indirectly convert 59 acres of Important Farmland under Williamson Act or FSZ contract, the least of all the alternatives. Appendix 3.14-D

provides the total acreage and list of parcels under Williamson Act and FSZ contract, inclusive of land classified as Important Farmland and other agricultural land, that would be affected by the Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be significant because parcel severance resulting from construction of the Central Valley Wye alternatives would result in the permanent conversion of Important Farmland to nonagricultural use. The Farmland Consolidation Program provides an effective means of reducing the permanent conversion of Important Farmland resulting from parcel severance that would minimize but not avoid the indirect permanent conversion of Important Farmland to nonagricultural use. AG-MM#1 would offset impacts by preserving Important Farmland in an amount commensurate with the quantity and quality of converted farmlands. However, because implementation of AG-MM#1 would not avoid the permanent conversion of Important Farmland to nonagricultural use as a result of parcel severance, the impact under CEQA would remain significant.

Impact AG#4: Disruption of Agricultural Infrastructure

Agricultural operations in the Central Valley depend on utility systems and other infrastructure, such as irrigation systems (e.g., ditches, drains, pipelines, and wells) and access roads. Construction of the Central Valley Wye alternatives could disrupt agricultural operations through interruptions of utility service and road closures. Prolonged interruptions of utility service could affect agricultural profitability by inhibiting normal farm operations and, if the impacts were severe enough, could result in indirect conversion of Important Farmland. Similarly, road closures, which could affect access to irrigation facilities and irrigation canal maintenance activities, could increase response times to emergencies such as canal breaches, causing damage to Important Farmland, and potentially resulting in indirect conversion of Important Farmland. The extent of the damage would depend on the duration of the disruption and the crop type. Damage to permanent crops[6] would likely result in a longer delay in the return to full productivity than would the flooding of seasonal row crops.

Table 3.14-11 shows the number of major electrical lines and water canals/pipelines that would be crossed by the Central Valley Wye alternatives and could require temporary interruptions in service during reconfiguration or relocation of the utility. Electrical line crossings would be greatest under the SR 152 (North) to Road 19 Wye Alternative and the Avenue 21 to Road 13 Wye Alternative (11 each) and least under the SR 152 (North) to Road 11 Wye Alternative (7). The number of crossings of canals/ditches would be greatest under the Avenue 21 to Road 13 Wye Alternative (69) and least under the SR 152 (North) to Road 19 Wye Alternative (42). Figure 3.6-5 in Section 3.6.6.3, Central Valley Wye Alternatives, depicts the location of these utilities in relation to the Central Valley Wye alternatives. In addition, reconductoring of existing power and transmission lines under all Central Valley Wye alternatives and the connection of new electrical interconnection facilities to the grid associated with the SR 152 (North) to Road 19 Wye Alternative could require the temporary shutdown of overhead electrical lines. Disruptions of onsite farm utilities, such as electrical lines smaller than 60 kV and local irrigation ditches serving individual farms, could also occur. The extent of these disruptions is not known at this stage of the design but it is expected that the potential for impacts would be similar among the alternatives because each alternative crosses similar acreage of Important Farmland (see Table 3.14-4).

[6] *Permanent crops* refers to crops grown for many seasons, such as grape vines, fruit, nut, or olive orchards. It does not include tree farms.

Table 3.14-11 Major Utility Crossings by Alternative

Utility	Central Valley Wye Alternatives			
	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Electrical Lines[1]	8	11	11	7
Canals/Pipelines	44	42	69	45

Source: Authority and FRA, 2016a
[1] Overhead electrical lines greater than or equal to 60 kV and underground electrical lines greater than or equal to 300 kV
Note: Multiple crossings of an individual utility are counted only once.
SR = State Route

IAMFs incorporated by the Authority and the design/build contractor would largely avoid temporary utility interruptions and associated impacts on agricultural operations. The impacts on crops from fugitive dust emissions would be reduced through construction practices that are part of the alternatives, including the incorporation of a dust control plan (AQ-IAMF#1), so construction-related fugitive dust would have little or no potential to temporarily or permanently convert Important Farmland to nonagricultural use. PUE-IAMF#4 would require the contractor to coordinate with service providers so that interruptions to utility service can be minimized or avoided during construction. Where utility service interruptions are unavoidable, the contractor would notify the public through a combination of communication media (e.g., by phone, email, mail, newspaper notices, or other means) and the affected service providers of the planned outage (PUE-IAMF#3). This would provide agricultural operators with sufficient notice to plan in advance for outages. Where relocation of an irrigation facility is necessary, the contractor would verify that the new facility is operational prior to disconnecting the original facility, where feasible (PUE-IAMF#2). These measures would be effective in avoiding impacts on agricultural operations from utility disruptions, and permanent conversion of Important Farmland to a nonagricultural use is not expected to occur under any of the Central Valley Wye alternatives.

Groundwater well closures, when needed, could disrupt agricultural operations. Agricultural wells closed or otherwise made inoperable by project construction or operations would be replaced in kind. New groundwater well plans would be identified during the right-of-way acquisition process. Groundwater well decommissioning and construction of replacement groundwater wells would follow all applicable laws and obtain necessary permits from local agencies.

Closure of public and private roadways could result in reduction or elimination of access to irrigation ditches and other infrastructure, resulting in potential crop damage and corresponding decrease in agricultural productivity. For all Central Valley Wye alternatives, impacts of temporary roadway closures would be minimized by TR-IAMF#2, which would require detours, temporary signage, advanced notification of temporary road closures, and other measures designed to maintain traffic flow and avoid delays. These measures would provide for continued access to irrigation facilities during construction and would avoid disruption to irrigation canal maintenance activities. Road closures in agricultural areas would be coordinated with local and state agriculture and trucking agencies to avoid impacts, particularly during June through September (peak harvest season in the RSA). Although detours could still result in increased travel times, advanced notification would be required prior to temporary road closures, which would allow agricultural operators time to plan for these closures and would avoid the potential for crop damage. Table 3.14-12 shows the number of temporary road closures and length of detours that would occur during construction by alternative. The total distance of travel required as a result of the detours would be greatest under the Avenue 21 to Road 13 Wye Alternative and least under the SR 152 (North) to Road 19 Wye Alternative. After construction, the distance between overcrossings or undercrossings would vary from less than 2 miles to approximately 5 miles where roads would be perpendicular to the proposed HSR alignment. Response times to emergencies, such as canal breaches, should increase by no more than a few minutes because of this increased travel distance. As a result, none of the Central Valley Wye alternatives, regardless of the number of road closures or length of detours, would result in conversion of

Important Farmland to nonagricultural use because IAMFs and design features would minimize the impacts on irrigation facility access and response time to emergencies.

Table 3.14-12 Central Valley Wye Alternatives Temporary Road Closures and Detours

Resource Category	Central Valley Wye Alternatives			
	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Temporary Road Closures (number of closures)	17	13	15	13
Total Length of Detours (miles)	30	25	36	26

Source: Authority and FRA, 2016b
SR = State Route

These impacts are discussed in more detail in the following related sections in this Final Supplemental EIR/EIS:

- Impacts on utilities, including electrical infrastructure, irrigation canals, and groundwater wells, are also discussed in Section 3.6.6.3, Central Valley Wye Alternatives, Public Utilities and Energy, under Impact PUE#1 and Impact PUE#5.
- Impacts on transportation infrastructure, including major and rural roadway closures, are also discussed in Section 3.2.6.3, Central Valley Wye Alternatives, Transportation, under Impact TR#1, Impact TR#2, Impact TR#7, and Impact TR#8.

The associated EINU are not anticipated to necessitate long-term road closures. Electrical interconnections do not require work within roadways. For network upgrades, a road closure or a rolling stop (i.e., one-lane closure with flagging on each end of the closure to allow for controlled flow in one direction at a time) would be arranged for any locations where power/transmission lines cross over roads before conductor installation begins. Any road closures that must occur on private and county roads typically would not exceed a few minutes in duration and would be coordinated with the county or landowner. Alternatively, guard structures may be installed at road crossings in lieu of road closures. Temporary road closures and/or rolling stops would be greatest under the SR 152 (North) to Road 19 Wye Alternative because more reconductoring along power and transmission lines that cross public roads would occur. These closures would occur along the alignments as reconductoring is conducted and would only last up to one week at each structure. Because the road closures would be temporary and of short-duration, no meaningful impacts on access to agricultural infrastructure are anticipated and conversion of Important Farmland would not occur under any of the Central Valley Wye alternatives.

Overall, construction activities would result in utility interruptions and road closures that would affect agricultural operations, but the impacts would not be severe enough to convert Important Farmland to a nonagricultural use under any alternative. IAMFs would largely avoid utility interruptions under all Central Valley Wye alternatives, and when interruptions would occur, advanced notification to the public and coordination with service providers would minimize effects from these interruptions. Road closures would result in increased travel distances during construction, which would be greatest under the Avenue 21 to Road 13 Wye Alternative and least under the SR 152 (North) to Road 19 Wye Alternative. However, impacts on irrigation facility access from road closures would be minimized through IAMFs and design features, and conversion of Important Farmland is not expected to occur under any of the Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant because disruptions of agricultural infrastructure as a result of construction of the Central Valley Wye alternatives would not result in the indirect conversion of Important Farmland to non-agricultural use. The Central Valley Wye

alternatives would be constructed to provide access to agricultural infrastructure, maintain irrigation activities, and limit utility interruptions. Therefore, CEQA does not require any mitigation.

Impact AG#5: Interference with Aerial Spraying Activities

Some agricultural operations in the Central Valley depend on aerial spraying. The height of vertical HSR structures, such as utility poles, radio communication towers, and elevated guideways, as well as new transmission/power structures, raised transmission/power structures, and new telecommunication microwave towers could interfere with aerial spraying of Important Farmland adjacent to the alternative alignment or EINU facilities or pose increased risk of collisions for aircraft used for spraying. If HSR structures interfere with aerial spraying activities, then agricultural productivity could decrease, potentially leading to indirect permanent conversion of Important Farmland to a nonagricultural use. Each Central Valley Wye alternative would require vertical structures, although the number and exact location of the structures along the alternatives is not known at this stage in the design. Most vertical structures, such as communication towers and utility poles, would be evenly spaced along the alternative alignments. Therefore, this analysis uses the overall length of the alternative alignments as a means for estimating the relative number of vertical structures with the potential to interfere with aerial spraying. The SR 152 (North) to Road 19 Wye Alternative would be the longest and therefore have the most vertical structures (55 miles), followed by the Avenue 21 to Road 13 Wye Alternative (53 miles), the SR 152 (North) to Road 13 Wye Alternative (52 miles), and the SR 152 (North) to Road 11 Wye Alternative (51 miles). Specific to the EINU, new transmission/power structures and raised transmission/power structures would be installed at the Site 6—El Nido, El Nido Substation under all Central Valley Wye alternatives and at Site 7—Le Grand Junction/Sandy Mush Road, Dutchman Switching Station under the SR 152 (North) to Road 19 Wye Alternative. These vertical structures have the potential to interfere with aerial spraying of Important Farmland adjacent to the facilities or pose increased risk of collisions for aircraft used for spraying.

Currently, no regulatory restrictions exist on the distances agricultural aircrafts must maintain from utility lines or towers (Gage 2016). Agricultural aircraft fly in areas where utility lines of varying heights, such as telephone poles and electrical transmission structures, exist in or near the sprayed fields. The distance that agricultural aircrafts maintain from power lines and poles depends on the cropping pattern, the field's orientation, and operator-determined safety factors.

The HSR structures of greatest concern for aerial spraying are the 100-foot-tall radio communication towers that would be placed approximately every 3 miles along the alignments. These towers would be among the tallest structures in the Central Valley. The HSR vertical structures would be permanent structures, and any effect on aerial spraying patterns that could result in impacts on Important Farmland would be permanent.

The potential for interference with aerial spraying from new vertical structures, such as radio towers, would only occur where crops require aerial spraying. Because the HSR radio communication towers would be widely spaced and their placement can be flexible, the area in which pilots would need to alter spraying patterns would be limited and spraying would not be prevented from occurring. Electricity transmission towers associated with the network upgrades are pre-existing, and changes in spraying patterns are not anticipated from changes to these structures. Therefore, changes in spraying patterns resulting from construction of any of the alternatives, regardless of the length of the alternatives and number of vertical structures, are not anticipated to cause permanent conversion of Important Farmland to a nonagricultural use.

CEQA Conclusion

The impact under CEQA would be less than significant because the potential interference with aerial spraying resulting from Central Valley Wye alternatives would not restrict aerial spraying to the extent that it is no longer feasible, and therefore is not anticipated to result in the conversion of Important Farmland to nonagricultural use. Therefore, CEQA does not require any mitigation.

Impact AG#6: Impacts on Land under Williamson Act or FSZ Contracts

Voluntary farmland protection mechanisms, such as the Williamson Act, encourage farmland conservation by providing a tax break for landowners who agree to retain their property in agricultural production for a set term. Parcels protected under Williamson Act and FSZ contracts often, but not always, contain Important Farmland. Permanent direct conversion of parcels of Important Farmland that are under Williamson Act and FSZ contract is considered in Impact AG#2 and indirect conversion of Important Farmland under Williamson Act and FSZ contract from creation of remnant parcels is considered in Impact AG#3 and are not repeated here.

Construction impacts associated with the Central Valley Wye alternatives could result in remnant parcels that are smaller than the county threshold for Williamson Act or FSZ contracts. Remnant parcels would be created by the right-of-way of the Central Valley Wye alternatives bisecting a parcel or by severance of access. Merced County sets minimum acreage requirements for Williamson Act contracts of 10 acres for Prime Farmland and 80 acres for Nonprime Farmland. Similarly, Madera County sets minimum acreage requirements for Williamson Act contracts of 10 acres for Prime Farmland and 40 acres for Nonprime Farmland. The Madera County threshold for FSZ lands[7] is 100 acres.

Creation of remnant parcels below each county's threshold for Williamson Act and FSZ contracts could potentially result in a change in a parcel's tax status that may affect agricultural profitability. However, loss of Williamson Act and FSZ contract status would not result in additional conversion of Important Farmland beyond what is described in Impact AG#2 and Impact AG#3 for any of the Central Valley Wye alternatives. This is because Important Farmland can be in agricultural use whether or not it is part of a Williamson Act or FSZ contract. As described in Impact AG#3, because of the high quality and value of agricultural land in the Central Valley, a strong likelihood exists that after severance, Important Farmland would remain in agricultural use. This would be true for each of the Central Valley Wye alternatives, regardless of the status of Williamson Act or FSZ contract status, because all of the alternatives cross the same high-value farmland of the Central Valley. Therefore, additional conversion of Important Farmland (beyond what is reported in Impact AG#2 and Impact AG#3) as a result of loss of Williamson Act and FSZ contract status would not occur under any of the Central Valley Wye alternatives.

Appendix 3.14-D provides the list of parcels under Williamson Act and FSZ contract that could potentially be affected by the Central Valley Wye alternatives, along with the total number and acreage of parcels that would be smaller than each county's threshold for protected farmland contracts. Refer to Section 3.12, Impact SO#14, for a discussion of the socioeconomic implications of potential tax status changes for remnant parcels that are smaller than County thresholds.

CEQA Conclusion

The impact under CEQA would be less than significant because loss of Williamson Act or FSZ contract status as a result of the Central Valley Wye alternatives would not result in additional conversion of Important Farmland beyond what is described in Impact AG#2 and Impact AG#3. Therefore, CEQA does not require any mitigation.

Operations Impacts

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, electric interconnection facilities, and communications. The operations and maintenance activities associated with the network upgrades would not change from baseline conditions. Operations and maintenance activities are more fully described in Chapter 2.

[7] Merced County does not participate in an FSZ program.

Impact AG#7: Wind-Induced Effects

During operations, HSR trains generate wind along the sides and at the end of the train (known as wake). High winds could interfere with agricultural activities such as insect pollination or aerial pesticide applications. For example, research on honey bees found that they do not forage in wind stronger than 12 miles per hour (mph) (Authority 2012a, 2012b). As HSR trains would travel at the same approximate speeds up to 220 mph for each of the Central Valley Wye alternatives, the potential for effects would be the same between the four alternatives.

A 1999 study by the FRA found that the strength of the airflow depends on the distance from the train, the train's geometry, and the train's operating speed, and that the airflow dissipates in less than 1 second (FRA 1999). Another study found that train-induced wind has a velocity of approximately 10 percent of the train velocity at a distance of 3 meters (approximately 10 feet) from the train (Neppert and Sanderson 1977). Extrapolation from these studies suggests that an HSR train traveling at 220 mph would generate a wind gust up to 22 mph lasting less than 1 second at a distance of approximately 10 feet from the train tracks. Wind speed is estimated at approximately 3 mph at the edge of the HSR right-of-way (refer to Appendix C of the *Merced to Fresno Section: Central Valley Wye Air Quality and Global Climate Change Technical Report* [Authority and FRA 2016c]). As discussed in HSR Agricultural Working Group White Papers (Authority 2012a, 2012b), this airflow at the edge of the HSR right-of-way is not strong enough to interfere with agricultural activities such as insect pollination or aerial pesticide application. For example, bees can fly in wind speeds up to 15 to 20 mph, which is much greater than the expected wind speed at the edge of the right-of-way (Authority 2012a, 2012b). The risk of induced wind creating conditions to cause pesticides to drift onto adjoining fields or the HSR right-of-way is also minimal because of the expected wind speed at the edge of the right-of-way (Authority 2012b). Therefore, it is anticipated that none of the Central Valley Wye alternatives would result in permanent conversion of Important Farmland as a result of wind-induced effects.

CEQA Conclusion

There would be no impact under CEQA because operation of HSR trains would not generate enough wind along the alignments of any of the Central Valley Wye alternatives to interfere with any existing or future agricultural activities to the extent that Important Farmland would be converted to nonagricultural use. Therefore, CEQA does not require any mitigation

3.14.7 Mitigation Measures

Direct and indirect impacts on Important Farmland resulting in permanent conversion of Important Farmland to a nonagricultural use would be mitigated with the objective of conserving Important Farmland. Mitigation ratios determine the amount of Important Farmland that must be conserved given an acreage of land directly or indirectly affected, as provided in AG-MM#1.

AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland)

The Authority has entered into an agreement with the DOC California Farmland Conservancy Program to implement agricultural land mitigation for the HSR project. The Authority will fund the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio of not less than 1:1 for lands that are permanently converted to nonagricultural use by the project.

In addition to mitigation for Important Farmlands that are permanently converted to nonagricultural use, the Authority will fund the purchase of an additional increment of acreage for agricultural conservation easements at a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to HSR permanently fenced infrastructure. The Authority shall document implementation of this measure through issuance of a compliance memorandum annually.

Figure 3.14-3 depicts how mitigation ratios would be applied on parcels of Important Farmland affected by the Central Valley Wye alternatives.

This mitigation measure would be effective in minimizing the overall impacts of permanent conversion of Important Farmland to a nonagricultural use because it would preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands and within the same agricultural regions as the impacts occur. Implementation of AG-MM#1 would not, however, avoid the impacts on Important Farmland within the permanent impact area of the project footprint of each Central Valley Wye alternative, and permanent conversion of Important Farmland to nonagricultural use would still occur. Table 3.14-13 displays the acreage of Important Farmland that would be subject to mitigation.

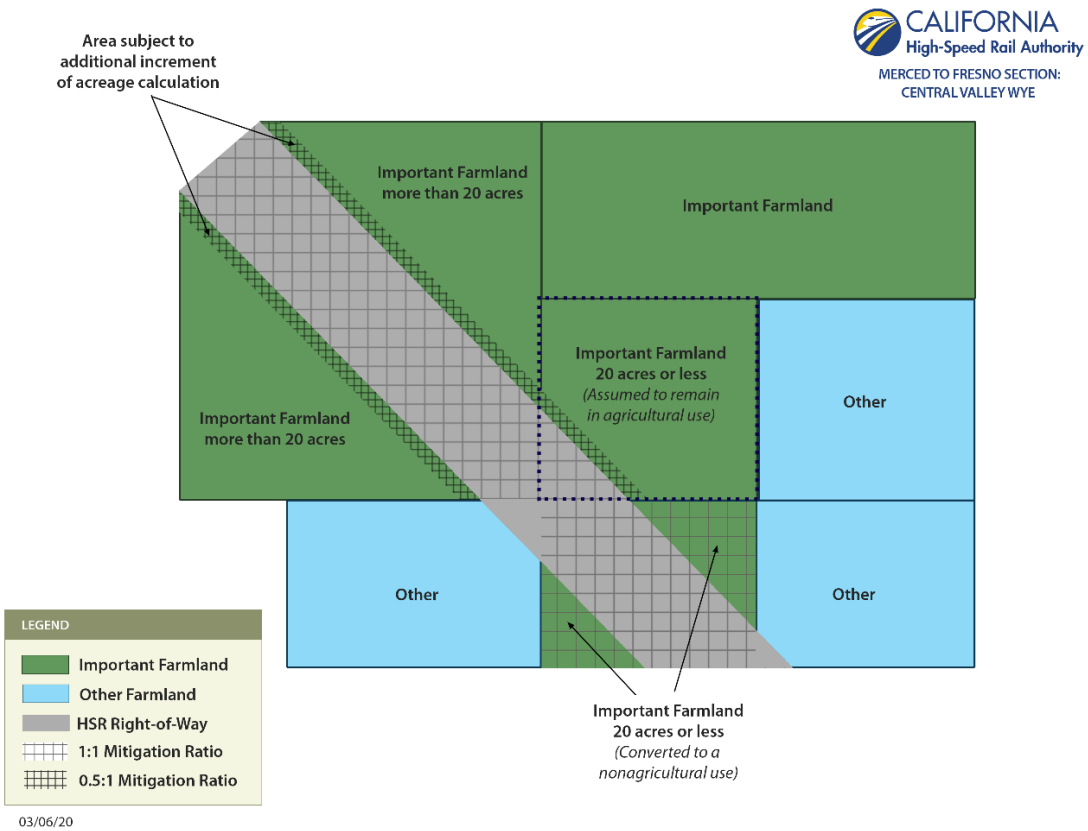
Table 3.14-13 Important Farmland Mitigation Calculations

Alternative	Mitigation Ratio 1:1 (acres)	Mitigation Ratio 0.5:1[1] (acres)	Total Mitigation (acres)
SR 152 (North) to Road 13 Wye	2,385	356	2,741
SR 152 (North) to Road 19 Wye	2,537	374	2,911
Avenue 21 to Road 13 Wye	2,467	412	2,879
SR 152 (North) to Road 11 Wye	2,336	335	2,671

Source: DOC, 2014; ARWS 2016a, 2016b, 2016c

[1] These acres are considered indirectly impacted, and mitigated at a 0.5:1 ratio, under the terms of the 2013 agreement reached to settle CEQA litigation filed against the 2012 Merced to Fresno Final EIR.

SR = State Route



Source: Authority, 2016

MARCH 6, 2020

Figure 3.14-3 Important Farmland Mitigation Ratios

AG-MM#1 would place existing agricultural lands that are currently not under any type of agricultural conservation easement into a new easement that would protect the agricultural land from future conversion to nonagricultural uses. Because no agricultural land uses would be changed as a result of the mitigation, no secondary impacts would occur. The mitigation measure would benefit the agricultural community by preserving land for agricultural use.

3.14.8 Impacts Summary 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. Table 3.14-14 provides a comparison of the potential impacts of each of the Central Valley Wye alternatives, summarizing the more detailed information provided in Section 3.14.6, Environmental Consequences. A comparison discussion of the impacts on agricultural farmland resources of the different Central Valley Wye alternatives follows Table 3.14-14.

Under the No Project Alternative, development pressures resulting from an increasing population in Merced, Madera, Fresno, and Stanislaus Counties would continue to lead to associated direct and indirect impacts on agricultural farmland. The No Project Alternative is anticipated to result in a continuation of recent development trends that have led to the conversion of agricultural land to nonagricultural uses throughout the San Joaquin Valley. From 2008 to 2014, more than 4,300 acres of agricultural land were converted to nonagricultural uses in Merced and Madera Counties (DOC 2008, 2014), and this trend is anticipated to continue under the No Project Alternative. Development under the No Project Alternative would result in similar types of impact on

Table 3.14-14 Comparison of the Central Valley Wye Alternatives Impacts on Agricultural Farmland

Impacts	Central Valley Wye Alternatives			
	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Construction				
Impact AG#1: Temporary Use of Important Farmland				
Temporary Use (number of acres)	493	590	412	375
Impact AG#2: Permanent Conversion of Important Farmland to Nonagricultural Use				
Permanent Direct Conversion (number of acres)	2,182	2,305	2,263	2,145
NRCS Conversion Rating Score[1] - Merced County	142	147	138	146
NRCS Conversion Rating Score[1] - Madera County	159	161	162	159
Impact AG#3: Creation of Remnant Parcels of Important Farmland				
Permanent Indirect Conversion from Creation of Remnant parcels (number of acres)	203	232	204	192
Impact AG#4: Disruption of Agricultural Infrastructure	Impacts on agricultural operations from utility interruptions, crop damage, and road closures would be minimized and conversion of Important Farmland to a nonagricultural use would not occur under any of the Central Valley Wye alternatives			

Impacts	Central Valley Wye Alternatives			
	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Impact AG#5: Interference with Aerial Spraying Activities	Limited potential for changes in spraying patterns resulting from construction of any of the Central Valley Wye alternatives; no potential for conversion of Important Farmland to a nonagricultural use for any Central Valley Wye alternative			
Impact AG#6: Impacts on Land under Williamson Act or FSZ Contracts	Loss of Williamson Act or FSZ contract status would not result in additional conversion of Important Farmland beyond what is described in Impact AG#2 and Impact AG#3 for any Central Valley Wye alternative			
Operations				
Impact AG#7: Wind-Induced Effects	Wind generated by HSR trains would not be strong enough to interfere with agricultural activities such as insect pollination or aerial pesticide application under any of the Central Valley Wye alternatives; no potential for conversion of Important Farmland to a nonagricultural use for any Central Valley Wye alternative			

Source: Authority, 2019
[1] The NRCS recommends that for projects with scores over 160 that receive federal funding and that convert Important Farmland to nonagricultural uses, the alternative with the lowest score should be selected. Sites receiving scores that exceed 160 points are to be given increasingly higher levels of consideration for protection. Refer to Section 3.14.4.3 for a more complete description of the NRCS farmland conversion rating scores.
SR = State Route
FSZ = Farmland Security Zone
NRCS = Natural Resources Conservation Service
HSR = high-speed rail

agricultural farmland as the Central Valley Wye alternatives. Planned residential, commercial, industrial, recreational, transportation, and agricultural projects would lead to impacts on Important Farmland from temporary construction activities, permanent conversion of Important Farmland to a nonagricultural use, and direct impacts on protected farmland.

The Merced to Fresno Final EIR/EIS concluded that development of the HSR system would result in impacts on agricultural lands, including temporary use of Important Farmland and the direct and indirect conversion of Important Farmland. Implementing the Central Valley Wye alternatives would likewise result in impacts on agricultural lands from temporary construction activities and permanent conversion of Important Farmland to a nonagricultural use. Both the Merced to Fresno Final EIR/EIS and this Final Supplemental EIR/EIS identify mitigation to offset the impacts from permanent conversion of Important Farmland to a nonagricultural use.

The Central Valley Wye alternatives would incorporate IAMFs that would minimize impacts on agricultural farmland. These IAMFs would include restoring Important Farmland used for temporary construction activities, incorporating a construction transportation plan, coordinating construction activities with utility providers, and administering a farmland consolidation program (see, Appendix 2-B). Although these IAMFs would minimize the impacts of construction of the Central Valley Wye alternatives on agricultural farmland, they would not avoid the permanent conversion of Important Farmland to a nonagricultural use. Accordingly, the Authority has proposed mitigation measures to offset these impacts.

Construction of all four Central Valley Wye alternatives would require the temporary use of Important Farmland for construction staging areas and other construction-related activities. These impacts would be greatest under the SR 152 (North) to Road 19 Wye Alternative, which would temporarily use the largest area of Important Farmland (590 acres), and least under the SR 152 (North) to Road 11 Wye Alternative, which would temporarily use the smallest area (375 acres). All Important Farmland temporarily used for construction purposes would be restored to agricultural use, and therefore would not be subject to permanent conversion to nonagricultural use under any of the Central Valley Wye alternatives.

Each of the Central Valley Wye alternatives would result in permanent conversion of Important Farmland as a result of direct and indirect impacts. Direct permanent conversion would occur where the permanent impact area of the Central Valley Wye alternatives overlaps Important Farmland and would be greatest under the SR 152 (North) to Road 19 Wye Alternative (2,305 acres) and least under the SR 152 (North) to Road 11 Wye Alternative (2,145 acres). Indirect permanent conversion would occur as a result of parcels of Important Farmland being severed by the Central Valley Wye alternatives. Remnant parcels that are not viable to continue in agricultural use based on access, size, shape, location, or other hardship, would be converted to a nonagricultural use. This indirect conversion of Important Farmland would be greatest under the SR 152 (North) to Road 19 Wye Alternative (232 acres) and least under the SR 152 (North) to Road 11 Wye Alternative (192 acres). In total, permanent direct and indirect conversion of Important Farmland to nonagricultural use under the Central Valley Wye alternatives would range from 2,336 acres for the SR 152 (North) to Road 11 Wye Alternative to 2,537 acres for the SR 152 (North) to Road 19 Wye Alternative. To offset these impacts, the Authority has entered into an agreement with the Department of Conservation to implement agricultural land mitigation for the HSR system. AG-MM#1 would preserve Important Farmland in an amount commensurate with the quantity and quality of converted farmlands through the purchase of agricultural conservation easements. Mitigation would range from 2,671 acres for the SR 152 (North) to Road 11 Wye Alternative to 2,911 acres for the SR 152 (North) to Road 19 Wye Alternative.

Construction of the Central Valley Wye alternatives could also interfere with agricultural infrastructure and aerial spraying of crops. Impacts on agricultural infrastructure from utility interruptions would be largely avoided, and when interruptions would occur, advanced notification to the public and coordination with service providers would minimize impacts from these interruptions, such that the conversion of Important Farmland is not expected to occur under any of the alternatives. Road closures would result in increased travel distances to access irrigation facilities and other infrastructure during construction, which would be greatest under the Avenue 21 to Road 13 Wye and least under the SR 152 (North) to Road 19 Wye Alternative. IAMFs and design features would be effective in minimizing the impacts of road closures and, regardless of the length of detours, conversion of Important Farmland is not expected to occur under any of the Central Valley Wye alternatives.

Vertical HSR structures would be present along the length of all Central Valley Wye alternatives and could interfere with aerial spraying. The number of vertical structures would vary slightly by alternative based on the length of the alignments, with the most structures expected to be constructed for the SR 152 (North) to Road 19 Wye Alternative and the fewest constructed for the SR 152 (North) to Road 11 Wye Alternative. For construction of the associated EINU, new transmission/power structures and raised transmission/power structures would be installed at the Site 6–El Nido, El Nido Substation under all Central Valley Wye alternatives, and at the Site 7—Le Grand Junction/Sandy Mush Road, Dutchman Switching Station associated with the SR 152 (North) to Road 19 Wye Alternative, and could interfere with aerial spraying. Because vertical HSR structures would be widely spaced and their placement can be flexible, the area in which pilots would need to alter spraying patterns would be limited and spraying would not be prevented from occurring. Therefore, changes in spraying patterns resulting from construction of any of the alternatives, regardless of the length of the alternatives and number of vertical structures, are not anticipated to cause permanent conversion of Important Farmland to a nonagricultural use.

All of the Central Valley Wye alternatives would result in the creation of remnant parcels smaller than county thresholds for Williamson Act or FSZ contract. Given the high value of farmland in the Central Valley, it is expected that Important Farmland would remain in agricultural use after severance, regardless of whether it is part of a Williamson Act or FSZ contract. Therefore, loss of Williamson Act and FSZ contract status would not result in additional direct or indirect conversion of Important Farmland to a nonagricultural use for any of the Central Valley Wye alternatives, beyond those impacts described in Impact AG#2 and Impact AG#3.

Operation of any Central Valley Wye alternative would generate wind from passing HSR trains, but a wind gust would last less than 1 second and affect only the area at the edge of the HSR right-of-way. Wind generated by a passing HSR train, therefore, would not interfere with any

existing or future agricultural activities, such as insect pollination or aerial pesticide, and would not result in the permanent conversion of Important Farmland to a nonagricultural use. Accordingly, none of the Central Valley Wye alternatives would result in operations impacts on Important Farmland.

3.14.9 CEQA Significance Conclusions

Table 3.14-15 provides a summary of the CEQA determination of significance for all construction and operations impacts discussed in Section 3.14.6.3. The CEQA level of significance before and after mitigation for each impact in this table is the same for all Central Valley Wye alternatives.

Table 3.14-15 CEQA Significance Conclusions for Agricultural Farmland for the Central Valley Wye Alternatives

Impact	CEQA Level of Significance before Mitigation	Mitigation Measures	CEQA Level of Significance after Mitigation
Construction Impacts			
Impact AG#1: Temporary Use of Important Farmland	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact AG#2: Permanent Conversion of Important Farmland to Nonagricultural Use	Significant for all alternatives	AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland)	Significant and unavoidable
Impact AG#3: Creation of Remnant Parcels of Important Farmland	Significant for all alternatives	AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland)	Significant and unavoidable
Impact AG#4: Disruption of Agricultural Infrastructure	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact AG#5: Interference with Aerial Spraying Activities	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Impact AG#6: Impacts on Land under Williamson Act or FSZ Contracts	Less than significant for all alternatives	No mitigation measures are required	Not applicable
Operations Impacts			
Impact AG#7: Wind-Induced Effects	No impact for all alternatives	No mitigation measures are required	Not applicable

Source: Authority, 2019
CEQA = California Environmental Quality Act
FSZ = Farmland Security Zone