

3.14 Agricultural Farmland and Forest Land

This section provides the regulatory setting and affected environment for agricultural and forest land, identifies potential project impacts to this land, and describes impact avoidance and minimization features (IAMF) as well as prescribed mitigation measures that would avoid, minimize, or reduce these impacts. Because there is no forest land along the four High-Speed Rail (HSR) Bakersfield to Palmdale Project Section (B-P) Build Alternatives (including the César E. Chávez National Monument Design Option (CCNM Design Option), the Refined César E. Chávez National Monument Design Option [Refined CCNM Design Option], and the portion of the Fresno to Bakersfield Locally Generated Alternative (F-B LGA) alignment from the intersection of 34th Street and L Street to Oswell Street¹) between Bakersfield and Palmdale, forest land is not discussed further in this section.

Summary of Results

The agricultural farmland analysis considers the potential for the construction and operation of the Bakersfield to Palmdale Project Section of the California HSR System to temporarily and permanently convert Important Farmlands, including Important Farmland that is under a Williamson Act contract and Important Farmland zoned for agricultural use, to a nonagricultural use.

Construction of each of the four B-P Build Alternatives (including the CCNM Design Option, the Refined CCNM Design Option, and the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street) would result in the temporary use of Important Farmland for construction and staging activities outside of the permanent right-of-way. Construction of each of the four B-P Build Alternatives would also result in the temporary use of Important Farmland that is under a Williamson Act contract and/or Important Farmland zoned for agricultural use. Temporary impacts to Important Farmland would not be significant pursuant to the California Environmental Quality Act (CEQA) because Important Farmland would be restored and returned to agricultural use after project construction is completed.

Construction of the Bakersfield to Palmdale Project Section also would result in the permanent conversion of Important Farmland to nonagricultural use. This would happen directly where the permanent impact area of the project footprint overlaps Important Farmland, or it could happen indirectly through creation of remnant parcels due to severance (i.e., when a portion of a parcel is separated or cut off from the rest of the parcel), disruption to agricultural infrastructure, or interference with aerial spraying activities. Permanent conversions of Important Farmland would result from either direct conversion of Important Farmland to nonagricultural use to accommodate HSR facilities or indirect impacts of Important Farmland to nonagricultural use from parcel severance. A summary of the total acres of permanent conversion of Important Farmland is provided in Table 3.14-1.

Construction of the CCNM Design Option would not directly or indirectly convert any Important Farmland, including Important Farmland under a Williamson Act contract and Important Farmland zoned for agricultural use. The impacts to Important Farmland for the B-P Build Alternatives would be the same with or without the CCNM Design Option.

Assessment of Impacts from Conversion of Farmlands

Because millions of acres of farmlands are converted to other uses each year, federal law requires that impacts to farmlands be evaluated in the environmental process.

¹ The portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street is analyzed and considered as part of the HSR Bakersfield to Palmdale Project Section under all of the B-P Build Alternatives. The *Fresno to Bakersfield Section Final Supplemental EIR* (Authority 2018) approved the F-B LGA alignment from the City of Shafter through the Bakersfield F Street Station; however, the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street has not been approved. As such, the approval of this portion of the alignment may take place through approval of the Bakersfield to Palmdale Project Section.

Table 3.14-1 Permanent Conversion of Important Farmland (acres)

Alternative	Important Farmland			Total Important Farmland	Converted Important Farmland under Williamson Act Contract	Converted Important Farmland Zoned for Agricultural Use
	Prime Farmland	Unique Farmland	Farmland of Statewide Importance			
Alternative 1	551	119	92	762	93	674
Alternative 2	577	111	93	781	106	721
Alternative 3	551	119	89	760	93	671
Alternative 5	551	119	92	762	93	674
CCNM Design Option	No change	No change	No change	No change	No change	No change
Refined CCNM Design Option	No change	No change	No change	No change	No change	No change

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014f
CCNM = César E. Chávez National Monument

Construction of the Refined CCNM Design Option would not directly or indirectly convert any Important Farmland, including Important Farmland under a Williamson Act contract and Important Farmland zoned for agricultural use. The impacts to Important Farmland for the B-P Build Alternatives would be the same with or without the Refined CCNM Design Option.

The California High-Speed Rail Authority (Authority) would implement mitigation that would offset and minimize the permanent construction impacts that result from direct conversion of Important Farmland and indirect conversion of Important Farmland through the creation of remnant parcels. Because the mitigation would not create new farmland (e.g., convert natural land to agriculture), the B-P Build Alternatives would not avoid permanent conversion of Important Farmland from construction of the Bakersfield to Palmdale Project Section. By permanently converting hundreds of acres of Important Farmland, both directly and indirectly, to nonagricultural use, construction of each of the four B-P Build Alternatives would result in significant impacts pursuant to CEQA.

Operation of the Bakersfield to Palmdale Project Section could interfere with aerial spraying activities and generate wind-induced impacts, but these impacts would not permanently convert Important Farmland to nonagricultural use. Therefore, operation of any of the four B-P Build Alternatives would not be significant pursuant to CEQA.

While the HSR project would result in a substantial number of acres of agricultural farmland conversions, the potential agricultural farmland conversions are not substantially beyond the number of acres projected to be converted as part of existing and planned transportation and development projects in the affected cities and counties under the No Project Alternative.

3.14.1 Introduction

The 2005 *Final Statewide Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System (EIR/EIS)* (Authority and Federal Railroad Administration [FRA] 2005) concluded that the California HSR Project would have a significant impact on agricultural land, and the Authority committed to mitigation strategies and design practices to reduce those impacts. These mitigation strategies and design practices include avoiding farmland when selecting the HSR Preferred Alternative, situating the alternative adjacent to existing transportation corridors as much as possible, and securing conservation easements to mitigate impacts. Additionally, to the extent practicable, the Bakersfield to Palmdale Project Section has been designed to avoid existing railway spurs that serve agricultural businesses (e.g., by using overpasses).

Additional sections of this EIR/EIS address topics related to agricultural land and its uses in agricultural production.

- Discussion of how the project would impact rural roads and provide access across the right-of-way for farm equipment is evaluated in Section 3.2, Transportation.
- Impacts of the B-P Build Alternatives on water infrastructure (e.g., ditches, drains, pipelines, wells, and natural watercourses) and water use are evaluated in Section 3.6, Public Utilities and Energy.
- Impacts on groundwater supplies during project construction are addressed in Section 3.8, Hydrology and Water Resources.
- Impacts of the B-P Build 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 Farmland Security Zone (FSZ) contract, and loss of potential employment and revenue associated with agricultural land conversion are discussed in Section 3.12, Socioeconomics and Communities.
- Changes in land use from the conversion of agricultural lands are addressed in Section 3.13, Station Planning, Land Use, and Development.

Agriculture in Kern County and in portions of Los Angeles County represents a major economic base of the region. The following appendices in Volume 2 of this EIR/EIS support the analysis of agricultural farmland and provide additional information:

- Appendix 2-E, California High-Speed Rail: Impact Avoidance and Minimization Features, includes a list of all IAMFs incorporated into the Bakersfield to Palmdale Project Section.
- Appendix 2-H, Detailed Plan Consistency Analysis, provides a discussion of inconsistencies or conflicts that may exist between the Bakersfield to Palmdale Project Section and regional or local plans or laws.
- Appendix 3.14-A, NRCS Forms, summarizes the results of the farmland Land Evaluation and Site Assessment and the final impact rating from the Natural Resources Conservation Service's (NRCS) NRCS-CPA-106 Farmland Conversion Rating Forms for Alternatives 1, 2, 3, and 5.
- Appendix 3.14-B, Parcel Severance Methodology and Results, provides detailed information on the methods and results of the parcel severance analysis.
- Appendix 3.14-C, Agricultural Farmland and Forest Land Figures, provides Figure 3.14-C-1, which includes 12-sheet figures showing Important Farmland and Grazing Land, crop cover, Williamson Act Contract Land, and land zoned for agriculture in the farmland study area (Figures 3.14-C-2 through 3.14-C-5); and 12-sheet figures showing impacts to Important Farmland and Grazing Land (Figures 3.14-C-6 through 3.14-C-9), impacts to Williamson Act Contract Land (Figures 3.14-C-10 through 3.14-C-13), and impacts to land zoned for agricultural use for each of the B-P Build Alternatives (Figures 3.14-C-14 through 3.14-C-17).

3.14.2 Laws, Regulations, and Orders

The following sections summarize key laws and regulations for agricultural land relevant to the proposed project.

3.14.2.1 *Federal*

Farmland Protection Policy Act of 1981 (7 U.S. Code §§ 4201–4209 and Code of Federal Regulations Title 7, Part 658)

The Farmland Protection Policy Act (FPPA; U.S. Code Title 7, Section 4201 et seq.) is intended to protect farmland and requires federal agencies to coordinate with the U.S. Department of Agriculture (USDA) NRCS if their activities may irreversibly convert farmland to nonagricultural use, either directly or indirectly. The stated purpose of the FPPA is to “minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses.” The FPPA requires federal agencies to examine potential direct and indirect effects to farmland of a proposed action and its alternatives before approving any activity that would

convert farmland to nonagricultural use. The USDA issues regulations to implement the FPPA (Code of Federal Regulations Title 7, Chapter VI, Part 658).

For the purpose of the FPPA, “farmland” includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance, as defined by Section 1540(c)(1) of the FPPA. Classification standards differ from state to state; each state may set its own criteria for classification in each category. Federal farmland classification criteria may differ from those developed by the California Department of Conservation (DOC), which is described in Section 3.14.2.2. State farmland subject to FPPA requirements includes forest land, pastureland, cropland, and other land but does not include water or urban built-up land.

The FPPA exempts the following land types:

- Land area not suitable for crops, such as rocky terrain or sand dunes
- Land areas where the project’s right-of-way is entirely within a delineated urban area and where the project requires no Prime or Unique Farmland, or any Farmland of Statewide or Local Importance
- Farmland that has already been converted to industrial, residential, or commercial use or that is used for recreational activity

The FPPA applies to projects and programs sponsored or financed in whole or in part by the federal government. The FPPA implementing regulations spell out requirements to ensure that federal programs, to the extent practicable, are compatible with state, local, and private programs and policies to protect farmland. The FPPA requires a rating of farmland conversion impacts based on land evaluation and site assessment criteria identified in 7 Code of Federal Regulations Part 658.5. These criteria are addressed through completion of a Farmland Conversion Impact Rating for Corridor Type Projects (NRCS-CPA-106) form, which requires input from both the federal agency involved and the NRCS.

3.14.2.2 State

California Land Conservation Act of 1965 (California Government Code §§ 51200–51295) (also known as the Williamson Act)

The California Land Conservation Act of 1965, commonly known as the Williamson Act, provides a property tax incentive for the voluntary enrollment of agricultural and open space land in contracts between local governments and landowners. The contract restricts the land to agricultural and open space uses, and compatible uses defined in state law and local ordinances. A county or city establishes an agricultural preserve by defining the boundary within which the local government will enter into contracts with landowners. Local governments calculate the property tax assessment based on the actual land use instead of the potential land value assuming full development, thereby providing a financial incentive to conserve agricultural or open space uses.

Williamson Act contracts are for 10 years and longer. The contract is renewed automatically each year, maintaining a constant 10-year contract, unless the landowner or local government files to initiate nonrenewal. Should that occur, the Williamson Act contract would terminate 9 years after the filing of a notice of nonrenewal. Only a landowner can petition for a contract cancellation. Tentative contract cancellations can be authorized only after local government approval and payment by the landowner of a cancellation fee.

California has the following policies regarding public acquisition and location of public improvements on land in agricultural preserves and on land under Williamson Act contracts (California Government Code Sections 51290–51295):

Important Farmland

For the purpose of this analysis, Important Farmland includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

- State policy is to avoid locating federal, state, or local public improvements and improvements of public utilities, and the acquisition of land, in agricultural preserves.
- State policy is to locate public improvements that are in agricultural preserves on land other than land under a Williamson Act contract.
- State policy is that any agency or entity proposing to locate such an improvement, in considering the relative costs of the parcels of land and the development of improvements, give consideration of the value to the public of land, particularly prime agricultural land, in an agricultural preserve.

California Government Code Section 51295 provides that when an action to condemn or acquire a portion of a Williamson Act parcel is commenced, the existing contract shall be deemed null and void for all land to be condemned or acquired. As a result, the land actually taken will be removed from the contract. However, pursuant to this section, “under no circumstances shall land be removed that is not actually taken for a public improvement, except that when only a portion of the land or less than a fee interest in the land is taken or acquired, the contract may be canceled with respect to the remaining portion or interest upon petition of either party and pursuant to the [standard cancellation] provisions of Article 5” (commencing with Section 51280).

In 1998, another option in the Williamson Act Program was established with the creation of FSZ contracts. An FSZ is an area created within an agricultural preserve by a county board of supervisors upon the request of a landowner or group of landowners. FSZ contracts offer landowners greater property tax reductions and have a minimum initial term of 20 years. Like Williamson Act contracts, FSZ contracts renew annually unless an owner files a notice of nonrenewal.

Farmland Mapping and Monitoring Program

The California Farmland Mapping and Monitoring Program (FMMP) is the only statewide agricultural land use inventory conducted on a regular basis. The DOC administers the FMMP, under which it maintains an automated map and database system to record changes in agricultural land use. The FMMP categories include agricultural and nonagricultural land, as described below. Each category is defined according to USDA land inventory and monitoring criteria, as modified for California:

- **Prime Farmland**—Prime Farmland is land with the best combination of physical and chemical features to sustain long-term agricultural crop production. This land has the soil quality, growing season, and moisture supply necessary to produce sustained high yields. Soil must meet the physical and chemical criteria determined by the NRCS. Prime Farmland must have been used for production of irrigated crops at some time during the 4 years prior to the FMMP’s mapping date.
- **Farmland of Statewide Importance**—Farmland of Statewide Importance is similar to Prime Farmland but with minor differences, such as having greater slopes or soils with a lesser ability to store moisture. Farmland of Statewide Importance must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date.
- **Unique Farmland**—Unique Farmland has lesser-quality soils than Prime Farmland or Farmland of Statewide Importance. Unique Farmland is used for producing the state’s leading agricultural crops. This land is typically irrigated but may include nonirrigated orchards or vineyards found in some climatic zones. Unique Farmland must have been used for crops at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance**—Farmland of Local Importance is farmland that is important to the local agricultural community as determined by each county’s board of supervisors and local advisory committees.
- **Grazing Land**—Grazing Land represents land on which existing vegetation is suited to livestock grazing. This category was developed by the DOC in cooperation with the California

Cattlemen's Association, the University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

- **Urban and Built-Up Land**—Urban and Built-Up Land is land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Urban and Built-Up Land represents land used for residential, industrial, commercial, and institutional uses; public administrative purposes; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment; water control structures; and other developed purposes.
- **Other Land**—Other Land is land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock; poultry or aquacultural facilities; and waterbodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

The FMMP focuses on agricultural land that has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained yields of crops. Farmland of Local Importance can cover a broader range of agricultural uses and is initially identified by a local advisory committee convened in each county by the FMMP in cooperation with the NRCS and the county board of supervisors.

California Farmland Conservancy Program Act (California Public Resources Code §§ 10200–10277)

This act provides a mechanism for the DOC to establish agricultural conservation easements on farmland. “Agricultural conservation easement” means an interest in land, less than fee-simple interest, that represents the right to prevent the development or improvement of the land for any purpose other than agricultural production. The easement is granted for the California Farmland Conservancy Program by the landowner for fee-simple interest in the land to a local government, nonprofit organization, resource conservation district, or regional park or open space district (or regional park or open space authority) that has the conservation of farmland among its stated purposes or as expressed in the entity's locally adopted policies. It is granted in perpetuity and remains with the land. The landowner may make a request to the DOC that the easement be reviewed for possible termination 25 or more years from the date of sale of the agricultural conservation easement.

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

Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008), provides a planning process to coordinate community development and land use planning with regional transportation plans (RTP) in an effort to reduce sprawling land use patterns and dependence on private vehicles, thereby reducing vehicle miles traveled and greenhouse gas emissions associated with vehicle miles traveled. Senate Bill 375 is one major tool being used to meet the goals in Assembly Bill 32, the Global Warming Solutions Act (Chapter 488, Statutes of 2006). Under Senate Bill 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 Regulatory Framework

State and regional policies supporting the California HSR System have been described in Section 3.1.3 of this document. The regional and local plans and policies addressing preservation and protection of farmland identified and considered in the preparation of this analysis are summarized in Table 3.14-2.

Table 3.14-2 Regional and Local Plans and Policies

Jurisdiction	Document	Adoption/Document Date
Kern County	Kern County General Plan	2009
	Kern County Code of Ordinances	2016
	Breckenridge Hills Specific Plan	1989
City of Bakersfield	Metropolitan Bakersfield General Plan—Unincorporated Planning Area	2007
	City of Bakersfield Municipal Code	– ¹
City of Tehachapi	City of Tehachapi General Plan	2012
	City of Tehachapi Municipal Code	2015
Los Angeles County	Los Angeles County General Plan	2015
	Los Angeles County Code of Ordinances	2016
City of Lancaster	City of Lancaster General Plan 2030	2009
	City of Lancaster Zoning Ordinance	No date
City of Palmdale	City of Palmdale General Plan	1993, amended 2004
	City of Palmdale Zoning Ordinance	1994

Sources: County of Kern, 2007, 2009, 2016; City of Bakersfield, n.d.; City of Tehachapi, 2012, 2015; County of Los Angeles, 2015, 2016; City of Lancaster, 2009; City of Palmdale, 1993a (amended 2004), 1994

¹ No date is available for the adoption of this document.

3.14.3 Regional and Local Policy Analysis

The Council on Environmental Quality regulations requires the discussion of any inconsistencies or conflicts between a proposed action and regional or local plans and laws. Where inconsistencies or conflicts exist, the Council on Environmental Quality and the FRA require a description of the extent of reconciliation and the reason for proceeding if full reconciliation is not feasible (40 Code of Federal Regulations Part 1506.2(d) and 64 Code of Federal Regulations 28545, 14(n)(15)). The CEQA Guidelines also require that an EIR discuss the inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans (CEQA Guidelines Section 15125(d)).

The Bakersfield to Palmdale Project Section is a state and federal government project and is not subject to local government jurisdictional issues of land use because a city or county is not “an agency with jurisdiction over the project” as described in Appendix G of the CEQA Guidelines. Therefore, although the EIR/EIS describes the project section’s consistency with local plans in order to provide a context for the project, any inconsistency with a local plan is not considered an environmental impact. The Policy Consistency Analysis Summary addressing agricultural land issues (Table 3.14-3) lists the local and regional plans that are applicable to the Bakersfield to Palmdale Project Section and notes the proposed project section’s consistency with each. A full discussion regarding the project section’s consistency with each planning goal and objective addressing agricultural resources is provided in Appendix 2-H.

Table 3.14-3 Policy Consistency Analysis Summary

Plan	Jurisdictions	Alternatives	Consistency
Kern County General Plan (2009): Land Use, Open Space, and Conservation Element	Unincorporated Kern County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent/Not Consistent ¹
Kern County Code of Ordinances (2017)	Unincorporated Kern County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent
Breckenridge Hills Specific Plan (1989): Land Use Element, Conservation and Open Space Element	Kern County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent/Not Consistent ²
Metropolitan Bakersfield General Plan (2007): Conservation Element, Open Space Element	Unincorporated Kern County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent/Not Consistent ³
City of Bakersfield Municipal Code (2017)	City of Bakersfield	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Not Consistent
City of Tehachapi General Plan (2012): Economic Vitality Element, Natural Resources Element, Civic Health and Culture Element	City of Tehachapi	All B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option	Consistent
City of Tehachapi Municipal Code (2017)	City of Tehachapi	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent
Los Angeles County General Plan (2015): Conservation and Natural Resources Element	Unincorporated Los Angeles County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent
Los Angeles County Code of Ordinances (2017)	Unincorporated Los Angeles County	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	Consistent
City of Lancaster General Plan 2030 (2009)	City of Lancaster	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	N/A ⁴
City of Palmdale General Plan (1993): Environmental Resources Element	City of Palmdale	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	N/A ⁴
City of Palmdale Zoning Ordinance (2016)	City of Palmdale	All B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option	N/A ⁴

Source: California High Speed Rail Authority, 2016a

¹ The project section is not consistent with 2 of the 11 goals or policies in the Kern County General Plan that are applicable to agricultural farmland.

² The project section is not consistent with 2 of the 5 goals or policies in the Breckenridge Hills Specific Plan that are applicable to agricultural farmland.

³ The project section is not consistent with 2 of the 9 goals or policies in the Metropolitan Bakersfield General Plan that are applicable to agricultural farmland.

⁴ The project section would not traverse any Important Farmland, Williamson Act Contract Land, or land zoned for agricultural use in the Cities of Lancaster and Palmdale.

B-P = Bakersfield to Palmdale Project Section

CCNM = César E. Chávez National Monument

N/A = not applicable

3.14.4 Methods for Evaluating Impacts

The methods for evaluating project impacts describe the approach used to determine permanent and temporary and direct and indirect impacts from construction and operation of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option. The approach to evaluating impacts starts with identifying a resource study area (RSA). Then, within this RSA, information about the existing agricultural environment within the RSA, and more specifically within the footprint and buffer area of the B-P Build Alternatives—including the CCNM Design Option and Refined CCNM Design Option—is gathered through geographic information system (GIS) tools, the preparation of Farmland Conversion Forms NRCS-CPA-106, and input from and coordination with resource agencies and the public. Project-related impacts resulting in the conversion of agricultural lands to nonagricultural uses during construction and operation of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option, are then calculated and assessed based on a list of thresholds developed for the purpose of evaluating the significance of agricultural impacts. Project-related impacts resulting in the conversion of agricultural lands to nonagricultural uses are discussed in the Environmental Consequences section. The varying approaches used to determine permanent and temporary and direct and indirect impacts from construction and operation of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option, are discussed in more detail below.

3.14.4.1 Study Area for Analysis

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 area where direct and indirect impacts could result in conversion of Important Farmland to nonagricultural use. Direct impacts include temporary use and permanent conversion of Important Farmland and would be confined to the project footprint, where construction and operations of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option, would take place. Indirect impacts could increase the amount of Important Farmland conversion beyond that needed for use within the project footprint, such as severance of Important Farmland parcels and impacts of HSR-generated wind on insect pollination or aerial pesticide applications. The RSA comprises the combined project footprint of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) plus a 100-foot buffer from the combined project footprint. The buffer is measured from the outermost limit of the combined footprint of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option).

Figure 3.1-1, in Section 3.1, Introduction, 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.

3.14.4.2 Impact Avoidance and Minimization Features

As noted in Section 2.4.2.1, High-Speed Rail Project Impact Avoidance and Minimization Features, the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option, incorporate standardized IAMFs to avoid and minimize impacts. The Authority would incorporate IAMFs during project design and construction. As such, the analysis of impacts of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option, in this section factors in all applicable IAMFs. IAMFs applicable to agricultural farmland resources include:

- **AG-IAMF#1: Restoration of Important Farmland Used for Temporary Staging Areas—** Prior to any ground-disturbing activities at the site of a temporary construction staging area located on Important Farmland, the contractor shall prepare a restoration plan addressing specific actions, sequence of implementation, parties responsible for implementation and successful achievement of restoration for temporary impacts. Actions shall include removing and stockpiling the top 18 inches of soil for replacement on site during restoration activities. Before beginning construction use of sites on Important Farmland, the contractor shall submit

the restoration plan to the Authority for review and obtain Authority (and if applicable, landowner) approval. The restoration plan shall include time-stamped photo documentation of the pre-construction conditions of all temporary staging areas.

All construction access, mobilization, material laydown, and staging areas on Important Farmlands would be returned to a condition equal to the pre-construction staging condition. This requirement is included in the design-build construction contract requirements.

- **AG-IAMF#3: Farmland Consolidation Program**—The Authority would establish and administer a farmland consolidation program to sell remnant parcels to neighboring landowners for consolidation with adjacent farmland properties. In addition, the program would assist the owners of remnant parcels in selling those remnants to adjacent landowners, upon request. The goal of the program is to provide for continued agricultural use on the maximum feasible amount of remnant parcels that otherwise may not be economic to farm. The program would focus on severed remainder parcels, including those that were under Williamson Act or Farmland Security Act contract at the time of right-of-way acquisition and have become too small to remain in the local Williamson Act or Farmland Security Act program. The program would assist landowners in obtaining lot line adjustments where appropriate to incorporate remnant parcels into a larger parcel that is consistent with size requirements under the local government regulations.

The program will operate for a minimum of 5 years after construction of the section is completed. The Authority shall document implementation of this measure through issuance of a compliance memorandum after the minimum operation period of 5 years has elapsed. The document shall be filed with Environmental Mitigation Management and Assessment system.

- **AG-IAMF#4: Notification to Agricultural Property Owners**—Prior to the start of any construction activity adjacent to farmland, the Authority shall provide written notification to agricultural property owners or leaseholders immediately adjacent to the disturbance limits for the HSR project section. The notification is to indicate the intent to begin construction, including an estimated date for the start of construction. In order to provide agricultural property owners or leaseholders sufficient lead time to make any changes to their operations due to project section construction, this notification shall be provided at least 3 months, but no more than 12 months, prior to the start of construction activity.
- **AG-IAMF#5: Temporary Livestock and Equipment Crossings**—Prior to the start of any construction activity adjacent to any farmland, the Authority shall coordinate with agricultural property owners or leaseholders to provide temporary livestock and equipment crossings to minimize impacts to livestock movement, as well as routine operations and normal business activities, during project construction.
- **AG-IAMF#6: Equipment Crossings**—During final design, and in coordination with the property owners of land in use for agricultural operations, the Authority shall finalize the realignments of any affected access roads to provide equipment crossings to minimize impediments to routine agricultural operations and normal business activities that may result from long-term project operation.
- **PUE-IAMF#2: Irrigation Facility Relocation**—Where relocating an irrigation facility is necessary, the contractor would verify the new facility is operational prior to disconnecting the original facility, where feasible. Irrigation facility relocation preferences are included in the design-build contract and reduce unnecessary impacts to continued operation of irrigation facilities. The contractor shall document all relocations in a memorandum for Authority review and approval.
- **PUE-IAMF#3: Public Notifications**—Prior to construction in areas 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) within that jurisdiction and the affected service providers of the planned outage. The notification would specify the estimated duration of the planned outage and would be published no less than 7 days prior to the outage. Construction would be coordinated to avoid interruptions of

utility service to hospitals and other critical users. The contractor would submit the public communication plan to the Authority 60 days in advance of the work for verification that appropriate messaging and notification are to be provided.

- **PUE-IAMF#4: Utilities and Energy**—Prior to construction, the contractor shall prepare a technical memorandum documenting how construction activities would be coordinated with service providers to minimize or avoid interruptions. It would include upgrades of existing power lines to connect the HSR system to existing utility substations. The technical memorandum shall be provided to the Authority for review and approval.

3.14.4.3 Method for NEPA and CEQA Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts on agricultural farmlands from implementation of the B-P Build Alternatives, including the CCNM Design Option and Refined CCNM Design Option. These methods apply to both the National Environmental Policy Act (NEPA) and CEQA unless otherwise indicated. Refer to Section 3.1.3.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA. Laws, regulations, and orders (Section 3.14.2) that regulate agricultural farmlands were also considered in the evaluation of impacts on Important Farmlands.

FMMP spatial data provided by the DOC for Kern and Los Angeles Counties identify subcategories of Important Farmland (Section 3.14.2.2). Spatial data for agricultural lands protected under Williamson Act and FSZ contracts were obtained from the Counties of Kern and Los Angeles. 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 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 the permanent features of the B-P Build 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 footprint. 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 B-P Build Alternative.

Permanent Conversion of Important Farmland to a Nonagricultural Use

Construction of the HSR system within the project footprint would result in direct permanent impacts where Important Farmland would be converted to a nonagricultural use. This analysis assumed that all Important Farmland within the permanent impact area of the project footprint would be permanently converted to a nonagricultural use. GIS software calculated the direct permanent conversion of Important Farmland to nonagricultural use for each B-P Build 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 B-P Build Alternative to determine the acreage of conversion.

In addition to the direct impact analysis calculated using GIS software, NRCS staff helped determine the farmland conversion impact rating of each B-P Build Alternative using Form NRCS-

CPA-106, in accordance with the FPPA (Appendix 3.14-A). The NRCS-CPA-106 form measures the impact of farmland conversion according to criteria such as area of nonurban use, percentage of the transportation corridor being farmed, protected farmland, size of the farm, and creation of nonfarmable land, among other criteria. The maximum possible score on the Land Evaluation and Site Assessment portion of the NRCS-CPA-106 form is 260 points. If the score is less than 160 points, the FPPA requires no further evaluation. If the score is greater than 160, the act requires consideration of alternatives that avoid or minimize farmland impacts. The FPPA does not mandate the adoption of such alternatives.

Indirect Impacts on Important Farmland

In addition to calculating the total acreage of Important Farmland directly converted to nonagricultural use by the project footprint, impacts to Important Farmland adjacent to, but not within, the project footprint were examined. These are referred to as indirect impacts. Indirect impacts may increase the amount of Important Farmland permanently converted to nonagricultural use beyond that which is converted within the direct project footprint.

Indirect impacts to Important Farmland were assessed in the following two ways:

1. Indirect impacts that would result in a noneconomic remnant parcel of Important Farmland, resulting in the conversion of Important Farmland to a nonagricultural use. This type of indirect impact was evaluated using a two-step process, as described below.
2. Indirect impacts that might disrupt certain agricultural activities, such as disruption to agricultural infrastructure (irrigation canals), interference with aerial spraying activities, and wind-induced impacts.

Noneconomic Remnant Parcels of Important Farmland

Parcel severance could result in the following scenarios:

1. A parcel is severed and the remnant parcel is economically viable as agricultural land.
2. A parcel is severed but can be consolidated with an adjacent agricultural parcel and, therefore, can continue to be used as agricultural land.
3. A parcel is severed and creates a remnant parcel that would not remain economically viable as agricultural land for reasons such as shape and location (as presented below) and cannot be consolidated with an adjacent agricultural parcel.

The third parcel severance scenario results in what the Authority refers to as a “noneconomic remnant parcel.”

The following two-step process was implemented to identify remnant parcels and determine whether the remnant parcel could be maintained as farmland or whether it would become a noneconomic remnant parcel, which would result in the conversion of agricultural land to nonagricultural use.

Step 1: Identify Remnant Parcels with Important Farmland

Remnant parcels of Important Farmland—including parcels under Williamson Act contracts—that were 20 acres or more after construction of the HSR permanent project footprint were considered economically viable and could be assumed to remain in agricultural use. Remnant parcels of Important Farmland that are or would be reduced to less than 20 acres after construction of the HSR permanent project footprint were considered noneconomic remnants and could be assumed to be converted to a nonagricultural use. GIS software was used in this step to identify parcels of Important Farmland that appear to be in active agricultural use and are or would be reduced to less than 20 acres in size following severance due to construction of the Bakersfield to Palmdale Project Section.

Step 2: Determine Acreage of Important Farmland Converted to Nonagricultural Use and Add to Direct Impact Calculation

In Step 2, an analyst licensed by the California Department of Consumer Affairs, Bureau of Real Estate Appraisers, with experience in appraising agricultural real estate, reviewed the characteristics of the remnant parcels identified in Step 1 on a parcel-by-parcel basis.

The licensed analyst determined the viability of continued agricultural use of remnant parcels or likely conversion to a nonagricultural use on the basis of the following considerations:

- **Access**—Would the HSR project 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 project create a parcel that could not be consolidated with adjacent agricultural parcels because of location?
- **Hardship**—Would the HSR project create a severance that causes an overall hardship in maintaining economic activity on what might otherwise appear to be an economically viable remnant parcel?

Step 2 results include: (1) the total parcels and acreage assumed to remain in agricultural use and therefore not included in the total of indirect impacts on Important Farmland; and (2) the total parcels and acreage classified as unusable remnant parcels and therefore reported as acreage of Important Farmland converted to nonagricultural use. Step 2 results are reported as an indirect impact on Important Farmland.

Appendix 3.14-B provides additional detail about the remnant parcel analysis.

Disruption to Agricultural Infrastructure Serving Important Farmland

Disruption to agricultural infrastructure through interruptions of utility services (e.g., electricity and water) and road closures could result in the conversion of Important Farmland if agricultural profitability is affected. Analysts used GIS software to qualitatively assess the potential for construction of the B-P Build Alternatives to result in utility interruptions that could lead to conversion of Important Farmland. Analysts also qualitatively evaluated road closures resulting from construction of the B-P Build Alternatives and compared them to existing access patterns to assess whether such road closures could increase response times such that they could result in impacts to 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 B-P Build Alternatives were compared to existing structures in the RSA to determine whether the construction of these new structures could obstruct aircraft movement to the extent that it 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 the Assessor's Offices in Kern and Los Angeles Counties and used GIS software to map the parcels that are intersected by the project footprint. Some parcels under Williamson Act or FSZ contracts that would be intersected by the project footprint would no longer qualify for Williamson Act or FSZ contracts because the remaining portion of the parcel after construction of the B-P Build 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 is under Williamson Act or FSZ

contracts are already accounted for in the analysis of direct impacts on Important Farmland. Therefore, these direct impacts are not repeated in this analysis.

Wind-Induced Impacts

Wind-induced impacts were evaluated by comparing the potential wind speeds generated at the HSR project right-of-way (i.e., the nearest proximity to Important Farmland that could be impacted by HSR-induced wind) to wind speeds that could impact common agricultural activities such as insect pollination or aerial pesticide applications. In the white paper titled *Induced Wind Impacts, Effects on Pollination; Blooms and Dust* (Authority 2012c), the modeled wind speeds were quantitatively compared to wind speeds known to impact insect pollination, and were also used to qualitatively describe potential impacts on the application of aerial pesticides.

Public and Agency Input

The Authority created an agricultural technical working group to study specific issues related to agriculture and the HSR project's impacts on agriculture. The working group evaluated project impacts on confined-animal facilities, agricultural equipment, induced wind (e.g., pollination, bee pollination, dust, and drift), agricultural infrastructure, and irrigation systems, and created guidance, or "white papers," for each of the topics. These white papers were used as a basis for determining impacts to specific agricultural issues.

Public and agency input (e.g., during the project EIR/EIS scoping process) also informed the agricultural land impact analysis. Scoping comments helped define a range of possible impacts to consider in the EIR/EIS for agricultural land adjacent to the HSR project, such as the disruption of adjacent agricultural operations, including Grazing Land. These comments helped the lead agencies consider a broader range of potential impacts than were identified by examining the direct permanent conversion of farmland within and adjacent to the project footprint using GIS resources.

Table 3.14-4 provides a list of public and agency meetings and events with members of agencies and stakeholders associated with agricultural farmland held from 2012 to 2016. See Chapter 9, Public and Agency Involvement, for the full list of all public and agency meetings and events.

Table 3.14-4 Summary of Bakersfield to Palmdale Project Section Stakeholder Outreach Meetings—Farmland

Date	Outreach Activity	Category
May 15, 2012	Kern County Farm Bureau, Ben McFarland, President	STO
January 30, 2013	Kern County Farm Bureau	STO
March 6, 2013	Loop Ranch	STO
March 6, 2013	Tejon Ranch	STO
March 7, 2013	Edison Agricultural Businesses	STO
April 11, 2013	Cummings Ranch	STO
July 28, 2014	Kern County Farm Bureau	STO
March 12, 2015	Kern County Farm Bureau	STO
February 23, 2016	Kern County Farm Bureau	STO
February 23, 2016	Tejon Ranch and Tejon Ranch Conservancy	STO
June 28, 2016	Cummings Ranch and Loop Ranch	STO
July 14, 2016	California Department of Transportation; Tejon Ranch Conservancy; The Nature Conservancy; Los Angeles County Department of Regional Planning; and University of California, Davis	AS, STO
March 4, 2015	Cummings Ranch	STO

Date	Outreach Activity	Category
March 12, 2015	Tejon Ranch	STO
March 12, 2015	Kern County Farm Bureau	STO
February 23, 2016	Kern County Farm Bureau	STO
February 23, 2016	Tejon Ranch and Tejon Ranch Conservancy	STO
May 3, 2016	Giumarra Vineyards Corporation	STO
June 28, 2016	Cummings Ranch and Loop Ranch	STO
July 14, 2016	California Department of Transportation; Tejon Ranch Conservancy; The Nature Conservancy; Los Angeles County Department of Regional Planning; University of California, Davis	AS, STO
September 6, 2016	Tejon Ranch	STO
September 6, 2016	Bolthouse Farms	STO
September 20, 2016	Cummings Ranch	STO
October 26, 2016	Bolthouse Farms	STO

AS = Agency Staff

STO = Stakeholder Organization

3.14.4.4 Method for 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 3.1.3.4, Methods for Evaluating Impacts, for further information). By contrast, under NEPA, significance is used to determine whether an EIS will be required. NEPA requires that an EIS be 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 CEQA threshold for each B-P Build Alternative, including the CCNM Design Option and the Refined CCNM Design Option. The Authority is using the following CEQA thresholds to determine whether a significant impact on agricultural lands would occur as a result of the B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option. 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 use²
- 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 types of existing agricultural land and agricultural uses in Kern and Los Angeles Counties, broad information about regional agricultural operations in the vicinity of the Bakersfield to Palmdale Project Section, and specific information about agricultural farmland, including important and protected agricultural farmland, within the RSA. This information provides context for the environmental analysis and the evaluation of impacts. The area covered by the discussion in the affected environment includes the geographic portion of the F-B LGA from the

² Grazing Land is not defined by the FMMP as Important Farmland; therefore, impacts to Grazing Land would not be considered an impact pursuant to NEPA or CEQA. However, because Grazing Land is a regionally important type of agricultural use, the location and total acres impacted by each of the four B-P Build Alternatives are provided in this analysis.

intersection of 34th Street and L Street to Oswell Street. However, there is no Important Farmland or Grazing Land located along the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street (see Figure 3.14-1 in Section 3.14.3 of the *Fresno to Bakersfield Section Final Supplemental EIR* [Authority 2018]). There is also no Protected Farmland along the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street (see Figure 3.14-3 in Section 3.14.3 of the *Fresno to Bakersfield Section Supplemental EIR/EIS*).

3.14.5.1 Regional Agriculture

In 2015, California had approximately 25.5 million acres of farmland and rangeland, with an estimated 77,500 farms (California Department of Food and Agriculture [CDFA] 2016a). In 2015, the average farm size in California was 329 acres, which is below the national average of 441 acres (CDFA 2016a). According to the CDFA (CDFA 2016b), the state produces more than 400 agricultural commodities and is the sole producer (99 percent or more) of 12 agricultural commodities. California's agricultural production ranks first among states in total value of cash receipts at \$53.5 billion (CDFA 2016a). California is also a major global supplier of food and agricultural commodities; the value of the state's agricultural exports grew more than 120 percent between 1995 and 2015 (CDFA 2016a). In 2015, California exported approximately 26 percent of its agricultural production by volume, accounting for \$20.69 billion in value (CDFA 2016a).

The San Joaquin Valley is California's leading agricultural production region and the single richest agricultural region in the world (USDA 2015; U.S. Environmental Protection Agency 2015). The San Joaquin Valley consists of 8 counties, including Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Of the 8 counties in the San Joaquin Valley, the following 7 are within the top 10 in total value of agricultural production in California: Tulare (1), Kern (2), Fresno (3), Stanislaus (5), Merced (6), San Joaquin (7), and Kings (9) (CDFA 2016b). Approximately one-quarter of the Bakersfield to Palmdale Project Section is located within Kern County in the southern San Joaquin Valley. The USDA produces a comprehensive summary of agricultural activity in the U.S. on a state-by-state basis. This summary is referred to as the Census of Agriculture. The most recent Census of Agriculture is from 2012. In 2012, the total market value of agricultural products sold from Kern County was just under \$4 billion, representing approximately 9.4 percent of the state's total market value of agricultural products sold. Los Angeles County produced a much smaller market value of \$193 million (USDA 2012b). Two other areas along the four proposed B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option, include the rural (undeveloped lands outside the urban areas) and urban (more developed areas, including the Cities of Lancaster and Palmdale) Antelope Valley regions, located in southeastern Kern County and northern Los Angeles County, and the Tehachapi Mountains, located entirely in Kern County between the San Joaquin and the Antelope Valley regions (Figure 3.14-1). The Antelope Valley regions have much less agricultural production than the San Joaquin Valley and are primarily classified as nonagricultural and natural vegetation (DOC 2016b). Land along the four B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option, in the Tehachapi Mountains consists primarily of Grazing Land with a few parcels containing Important Farmland (DOC 2016a) (Figure 3.14-2; a more detailed version is provided in the figures in Appendix 3.14-C in Volume 2: Technical Appendices of this EIR/EIS). Approximately 48 percent of the Bakersfield to Palmdale Project Section would be located on Grazing Land.

Grazing Land is not defined by the FMMP as Important Farmland; therefore, impacts to Grazing Land would not be considered an impact pursuant to NEPA or CEQA. However, because Grazing Land is a regionally important type of agricultural use, the location and total acres impacted by each of the four B-P Build Alternatives, including the CCNM Design Option and the Refined CCNM Design Option, are provided in this analysis.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2016); CHSRA (4/2016, 8/2018, 10/2019)

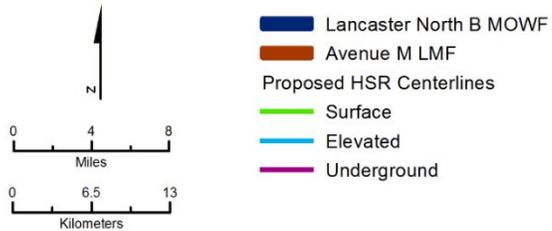
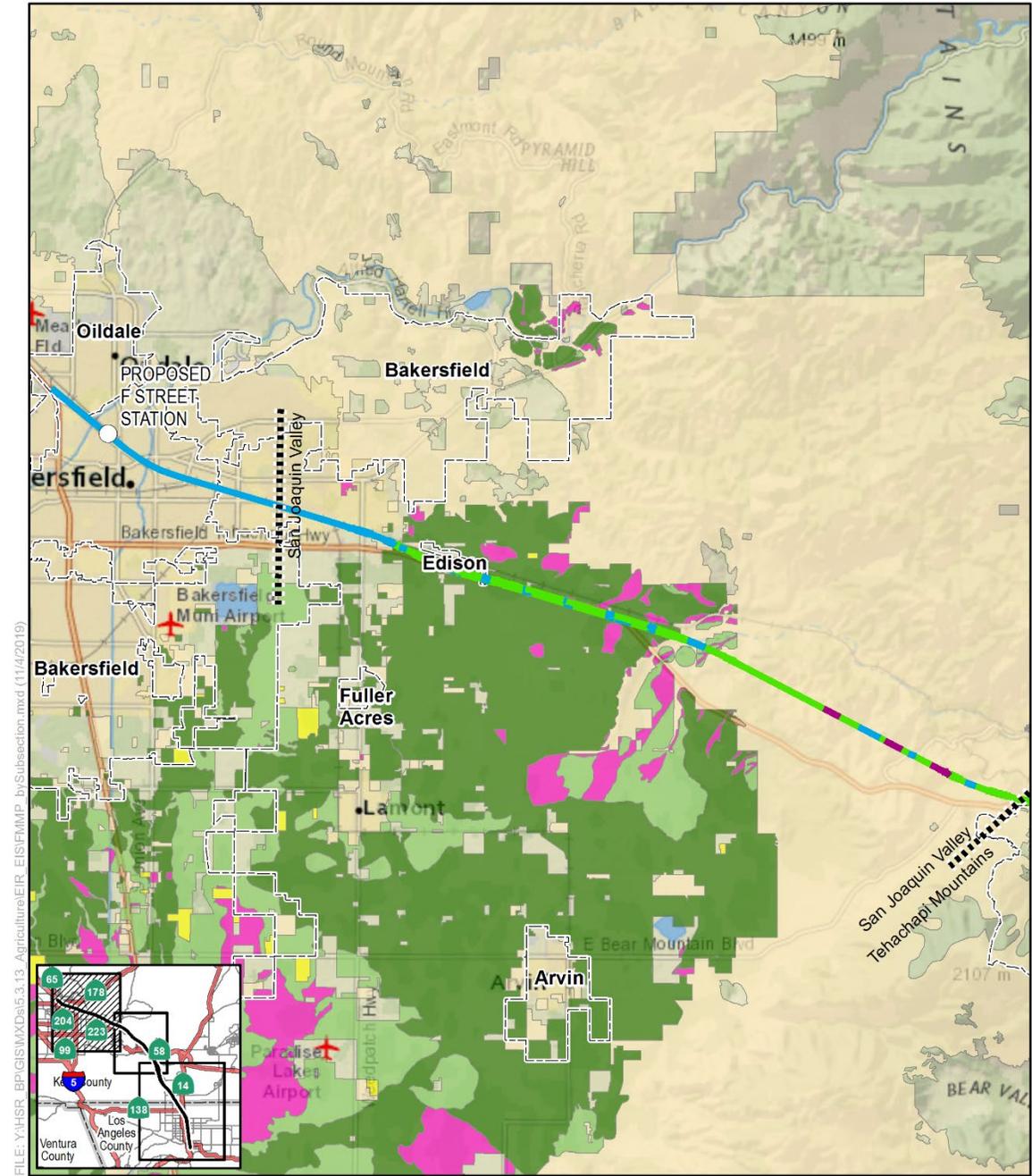
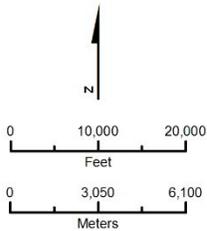


Figure 3.14-1 Project Segments



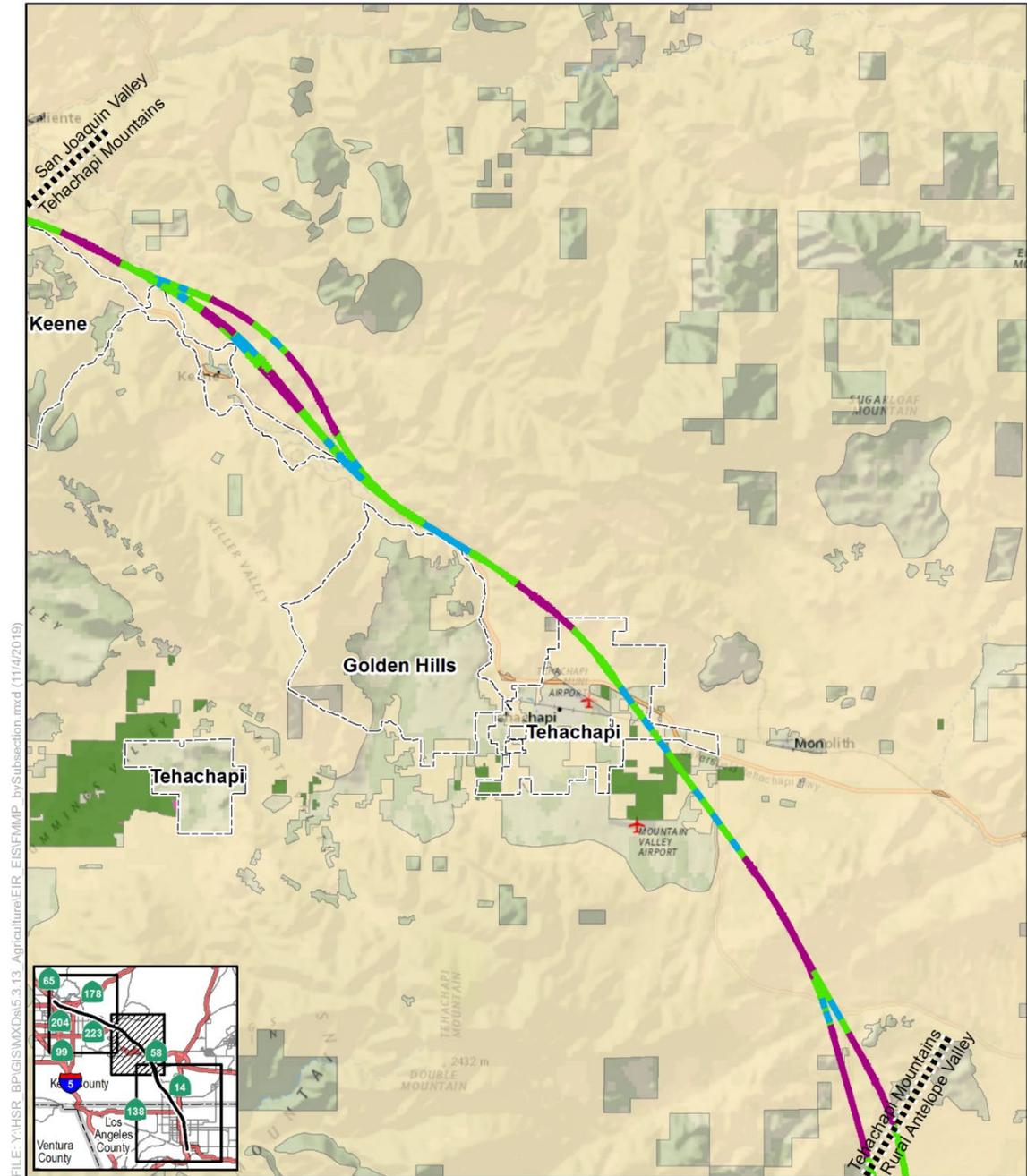
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); California Department of Conservation (2014)

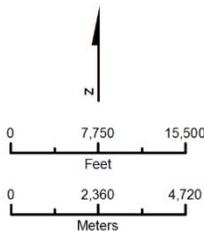


- Project Subsection Boundary
- Proposed HSR Centerlines
- Surface
- Elevated
- Underground
- FMMP Farmlands
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Grazing Land
- Confined Animal Agriculture

Figure 3.14-2 Important Farmland and Grazing Land
 (Sheet 1 of 3)



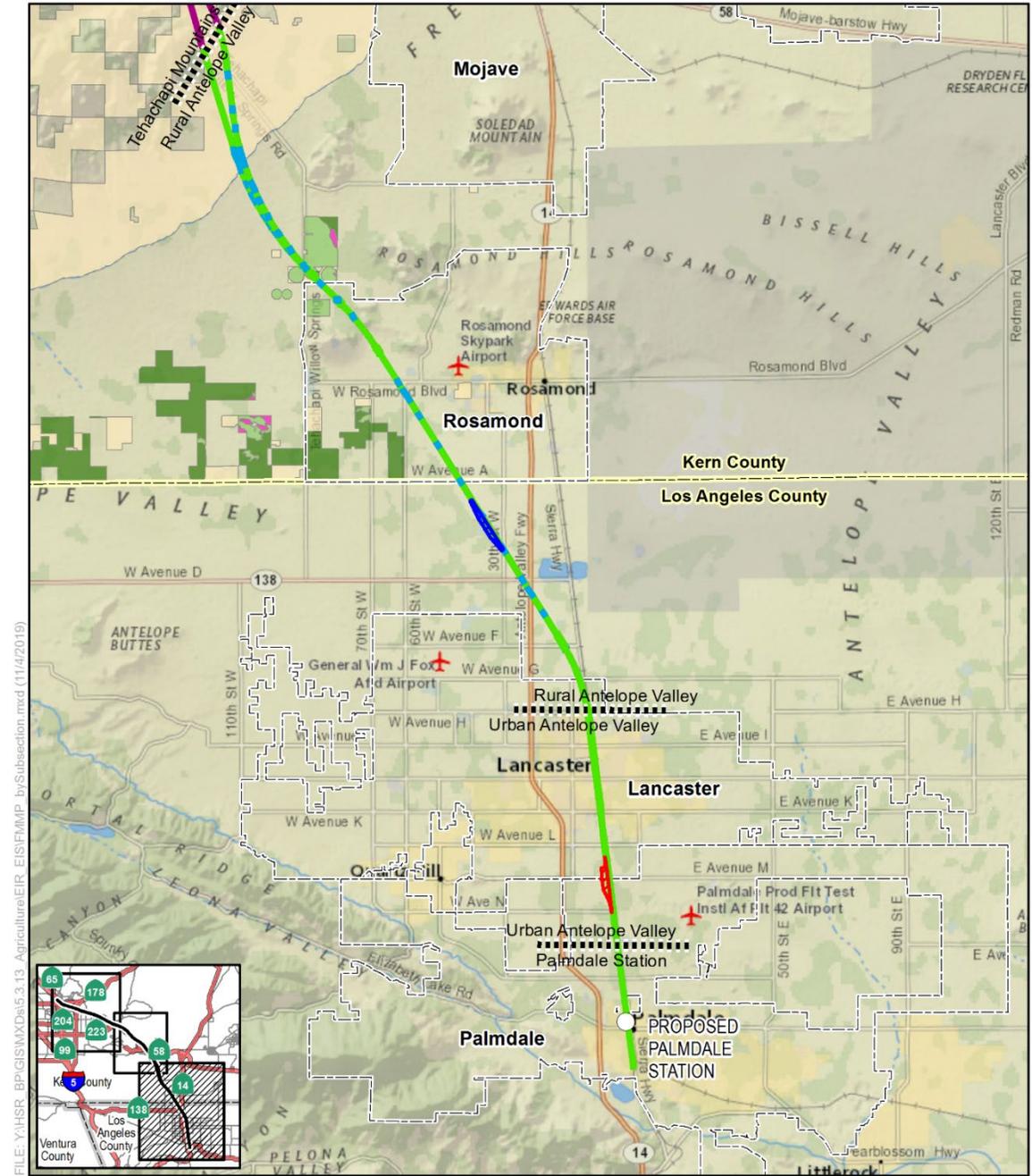
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); California Department of Conservation (2014)



- Project Subsection Boundary
 - Proposed HSR Centerlines
 - Surface
 - Elevated
 - Underground
- FMMP Farmlands
 - Prime Farmland
 - Farmland of Statewide Importance
 - Unique Farmland
 - Grazing Land
 - Confined Animal Agriculture

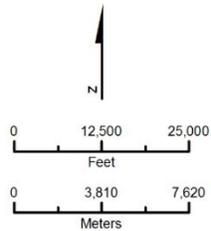
Figure 3.14-2 Important Farmland and Grazing Land

(Sheet 2 of 3)



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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); California Department of Conservation (2014)



- | | |
|-----------------------------|----------------------------------|
| Lancaster North B MOWF | FMMP Farmlands |
| Avenue M LMF | Prime Farmland |
| Project Subsection Boundary | Farmland of Statewide Importance |
| Proposed HSR Centerlines | Unique Farmland |
| Surface | Grazing Land |
| Elevated | Confined Animal Agriculture |
| Underground | |

Figure 3.14-2 Important Farmland and Grazing Land
 (Sheet 3 of 3)

In 2012, Kern County contained 1,938 farms that occupied more than 2.33 million acres of land. The average farm size was 1,202 acres. Approximately 39 percent of the farmland was devoted to crops, and approximately 31 percent of the land was irrigated. The market value of agricultural products in 2012 included 81 percent from crop sales and 19 percent from livestock, poultry, and livestock products (USDA 2012b). In order of sales value, the 10 most important agricultural commodities were grapes, almonds, citrus, pistachios, milk, carrots, cattle and calves, potatoes, cherries, and pomegranates (Kern County Department of Agriculture and Measurement Standards 2017).

In 2012, Los Angeles County contained 1,294 farms that occupied 91,689 acres of land. The average farm size was 71 acres. Approximately 65 percent of the farmland was devoted to crops and 43 percent of the land was irrigated. The market value of agricultural products in 2012 included 90 percent from crop sales and 10 percent from livestock, poultry, and livestock products (USDA 2012b). In order of sales value, the 10 most important agricultural commodities were woody ornamentals, root vegetables, bedding plants, alfalfa hay, dairy and livestock, turf, orchard fruits, indoor plants (flowering), vegetable plants, and outdoor plants (foliage) (Los Angeles County Farm Bureau 2013).

When originally established, farms in the RSA were typically composed of rectangular parcels that followed township and range survey patterns. Over time, land sales, as well as construction of railroads, state highways, and local roads, divided some farms, creating irregularly shaped agricultural parcels. Currently, farm infrastructure typically includes irrigation and drainage systems, field access roads that often surround the farmed parcels, storage structures such as silos and barns, power distribution systems, and residences.

3.14.5.2 Important and Protected Farmland

Important Farmland is land that is designated by the California Department of Conservation Farmland Mapping and Monitoring Program as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Protected farmland consists of farmland under Williamson Act or Farmland Security Zone contracts and farmland under an agricultural conservation easement. According to the DOC FMMP data, there are 935,665 acres of Important Farmland in Kern and Los Angeles Counties combined (Table 3.14-5) and 1,703,364 acres of protected farmlands in Kern County Table 3.14-8). There are no protected farmlands in Los Angeles County. In addition, there are more than 2 million acres of Grazing Land in the two counties (DOC 2016a; 2016b). The FMMP defines Grazing Land as land that has existing vegetation that is suitable for the grazing of livestock (DOC 2004). Figure 3.14-2 shows the distribution of Important Farmland and Grazing Land in Kern and Los Angeles Counties.

Table 3.14-5 Important Farmland and Grazing Land Acreage in Kern and Los Angeles Counties (2014) (acres)

Type of Agricultural Land	Kern County	Los Angeles County	Total
Prime Farmland	597,771	27,733	625,504
Farmland of Statewide Importance	212,867	841	213,708
Unique Farmland	89,694	1,088	90,782
Farmland of Local Importance	0	5,671	5,671
Total Important Farmland	900,332	35,333	935,665
Grazing Land	1,843,605	235,829	2,079,434
Total Agricultural Land	2,743,937	271,162	3,015,099

Source: California Department of Conservation, 2014f

Figure 3.14-C-3 in Appendix 3.14-C (Volume 2: Technical Appendices) shows the distribution of crop cover in Kern and Los Angeles Counties.

According to the DOC FMMP data, there are 1,390 acres of Important Farmland in the RSA (Table 3.14-6). The RSA is 15,770 acres.

Table 3.14-6 Farmland Acres by Category within the Bakersfield to Palmdale Project Section Farmland Resource Study Area

Land Mapping Category ¹	Acres within the Farmland RSA	Percentage of the RSA
Prime Farmland	1,057	7
Unique Farmland	176	1
Farmland of Statewide Importance	158	1
Farmland of Local Importance	0	0
Total Important Farmland	1,390	9
Grazing Land	7,498	48
Total Agricultural Land	8,888	56

Source: California Department of Conservation, Division of Land Resource Protection, 2014

¹ There is no Farmland of Local Importance located within the farmland RSA.

RSA = resource study area

Although the two counties in the RSA have policies to protect agricultural land, according to the DOC farmland conversion data, conversions of Important Farmland continue to occur despite policies that seek to protect them because of ongoing pressure to use agricultural lands to accommodate growth. Table 3.14-7 presents the change in acreages of Important Farmland and Grazing Land between 2004 and 2016. Both counties reported a reduction in Important Farmland acreage during this period. When measured in total acres, most of the reductions occurred in Kern County; however, a greater percentage of Los Angeles County's Important Farmland (47 percent) was converted during this timeframe than of Kern County's (10 percent) Important Farmland. This is because Los Angeles County has only a fraction of the amount of Important Farmland in Kern County (35,333 acres versus 900,332 acres). Therefore, any reduction in Important Farmland in Los Angeles County would amount to a greater percentage of remaining Important Farmland than would a reduction of Important Farmland in Kern County. While urbanization is an important factor driving the loss of Important Farmland, other factors (including economic considerations and the lack of available resources such as water) lead to changes in farming practices. Gains in Important Farmland also can occur when Grazing Land is shifted to crop production (DOC 2016a, 2016b).

Table 3.14-7 Farmland Conversions in Kern and Los Angeles Counties (2004–2016)

Type of Agricultural Land	Net Change in Acreage	
	Kern County	Los Angeles County
Prime Farmland	-63,833	-10,605
Farmland of Statewide Importance	-5,221	-259
Unique Farmland	-17,995	157
Farmland of Local Importance	0	-5,639
Total Change in Important Farmland	-87,049	-16,660
Grazing Land	57,799	10,211
Total Change in Agricultural Land	-29,250	-6,449

Source: California Department of Conservation, Division of Land Resource Protection, California Farmland Conversion Reports, 2004–2006 and 2014–2016

Table 3.14-8 presents the acreage of farmland protected under Williamson Act and FSZ contracts in each county, and Table 3.14-9 presents the acreage of farmland protected under Williamson

Act contracts within the farmland RSA. Kern County is the top participating county in the Williamson Act and FSZ contract programs in California. Los Angeles County has no land under the Williamson Act contract program and has not had land in the program since 2005.

Table 3.14-8 Protected Farmland Acreage in Kern and Los Angeles Counties (2015)

Protected Farmland	Kern County	Los Angeles County
Williamson Act Contract	1,543,797	0
Farmland Security Zone Contract	159,567	0
Total	1,703,364	0

Sources: California Department of Conservation, 2014b; Kern County Department of Agriculture and Measurement Standards, 2014. According to the California Department of Conservation, Los Angeles County has not had any land under Williamson Act or Farmland Security Zone contracts since 2005.

Table 3.14-9 Williamson Act Contract Land Acres by Category within the Bakersfield to Palmdale Project Section Farmland Resource Study Area

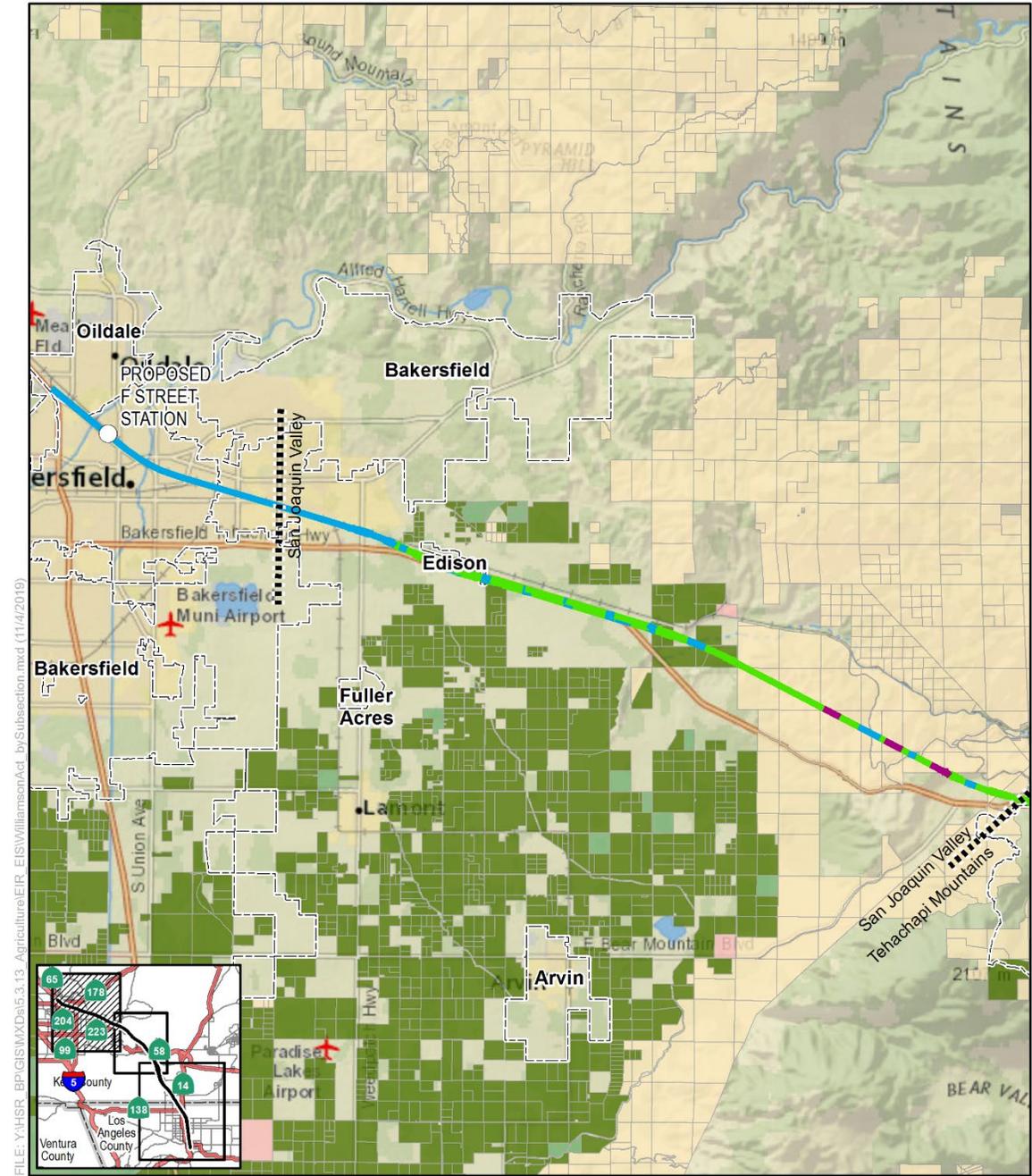
Land Mapping Category	Acres within the Farmland RSA	Percentage of the RSA
Prime Williamson Act Contract Land	364	3
Non-Prime Williamson Act Contract Land	2,205	14
Total Williamson Act Contract Land	2,569	16
Total RSA	15,770	-

Source: Kern County Department of Agriculture and Measurement Standards, 2014. Numbers may appear to not add up correctly due to rounding. RSA = resource study area

Figure 3.14-3 (a more detailed version is provided in figures in Appendix 3.14-C in Volume 2: Technical Appendices) shows that there is a significant amount of farmland under a Williamson Act contract within the RSA outside of the urban communities and urban Antelope Valley. There are no FSZ contracts within the RSA.

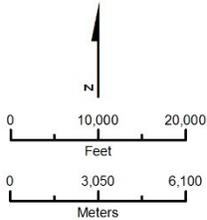
The majority of the Williamson Act Contract Land within the RSA consists of Non-Prime Williamson Act Contract Land. Non-Prime Williamson Act Contract Land is land that is typically used for range and grazing land, while Prime Williamson Act Contract Land represents land that meets specific soil quality criteria under state regulations. All land under a Williamson Act contract is also designated as an agricultural preserve within its respective county.

Protected farmland also includes land that is not in the Williamson Act and FSZ contract programs, but is zoned for agricultural use and/or is protected by an agricultural conservation easement. Kern County has approximately 1,000 acres of farmland under conservation easements in addition to land protected under Williamson Act and FSZ contracts (California Farmland Conservancy Program 2016). There is no farmland under conservation easements within the RSA. Based on the DOC enrollment figures for 2015, Los Angeles County has approximately 40,000 acres of land in open space easements; however, these easements are on Santa Catalina Island and are not within the RSA (DOC 2016b). As depicted on Figure 3.14-4 (a more detailed version is provided in the figures in Appendix 3.14-C in Volume 2: Technical Appendices), most of the Important Farmland in the vicinity of the Bakersfield to Palmdale Project Section is zoned for agriculture.



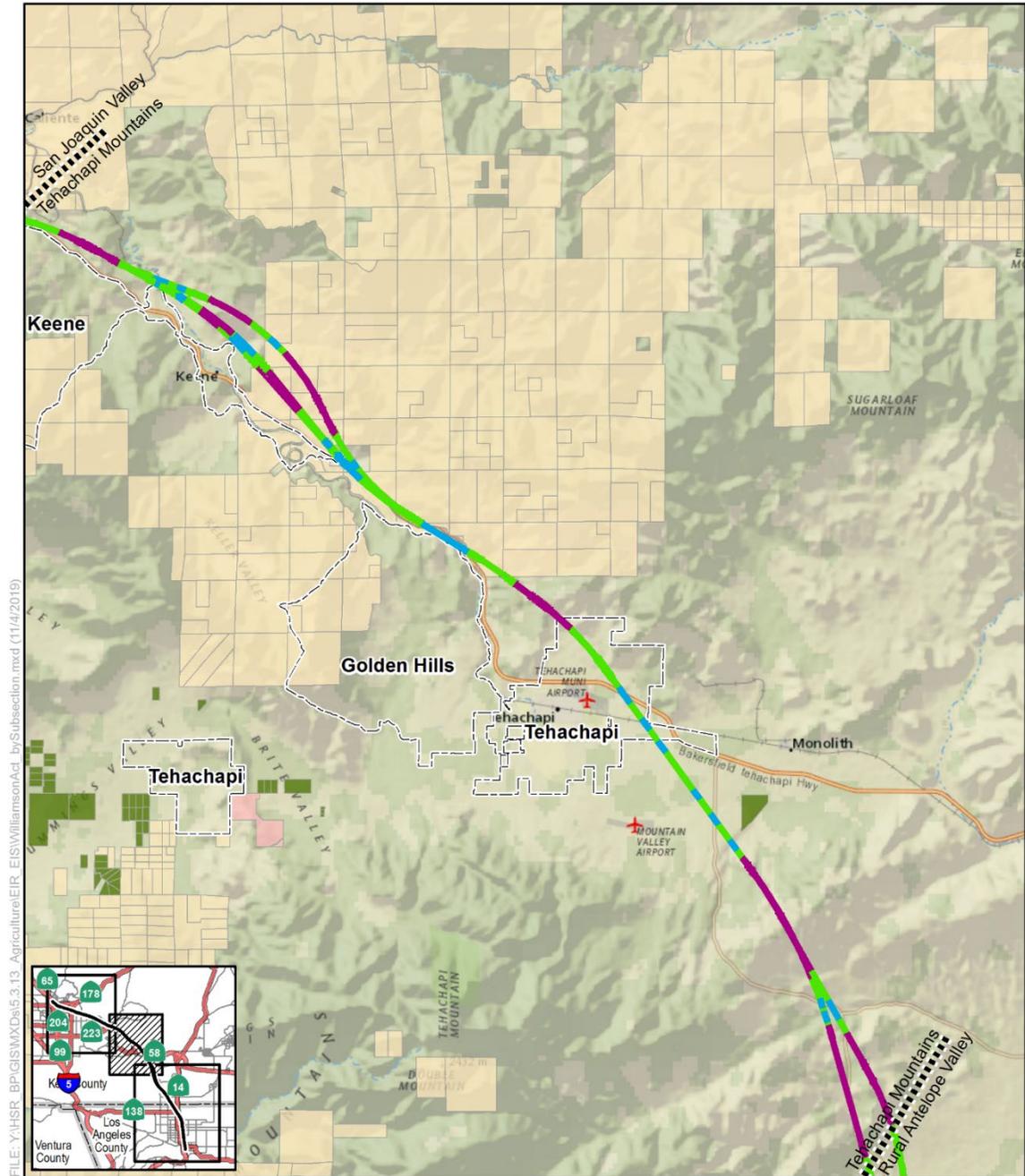
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2014); Kern County Planning and Natural Resources -- Department (2014)



- Project Subsection Boundary
 - Proposed HSR Centerlines
 - Surface
 - Elevated
 - Underground
- Williamson Act Lands
 - Prime Agricultural Land
 - Mixed Enrollment Agricultural Land
 - Farmland Security Zone
 - Non-Prime

Figure 3.14-3 Williamson Act Contract Land
(Sheet 1 of 3)

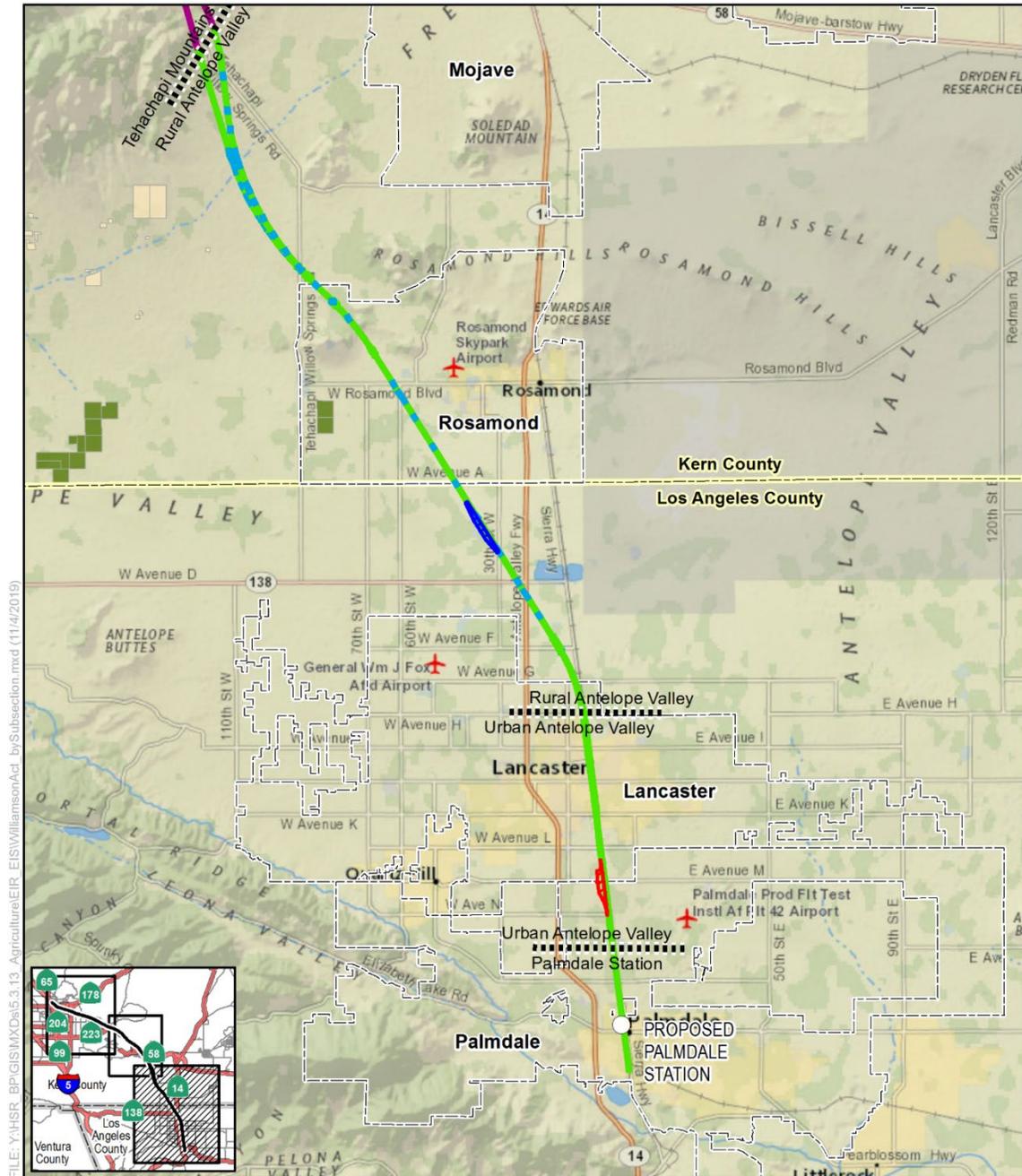


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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2014); Kern County Planning and Natural Resources -- Department (2014)

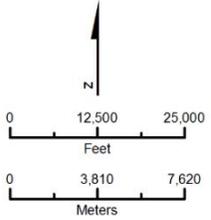


Figure 3.14-3 Williamson Act Contract Land
 (Sheet 2 of 3)



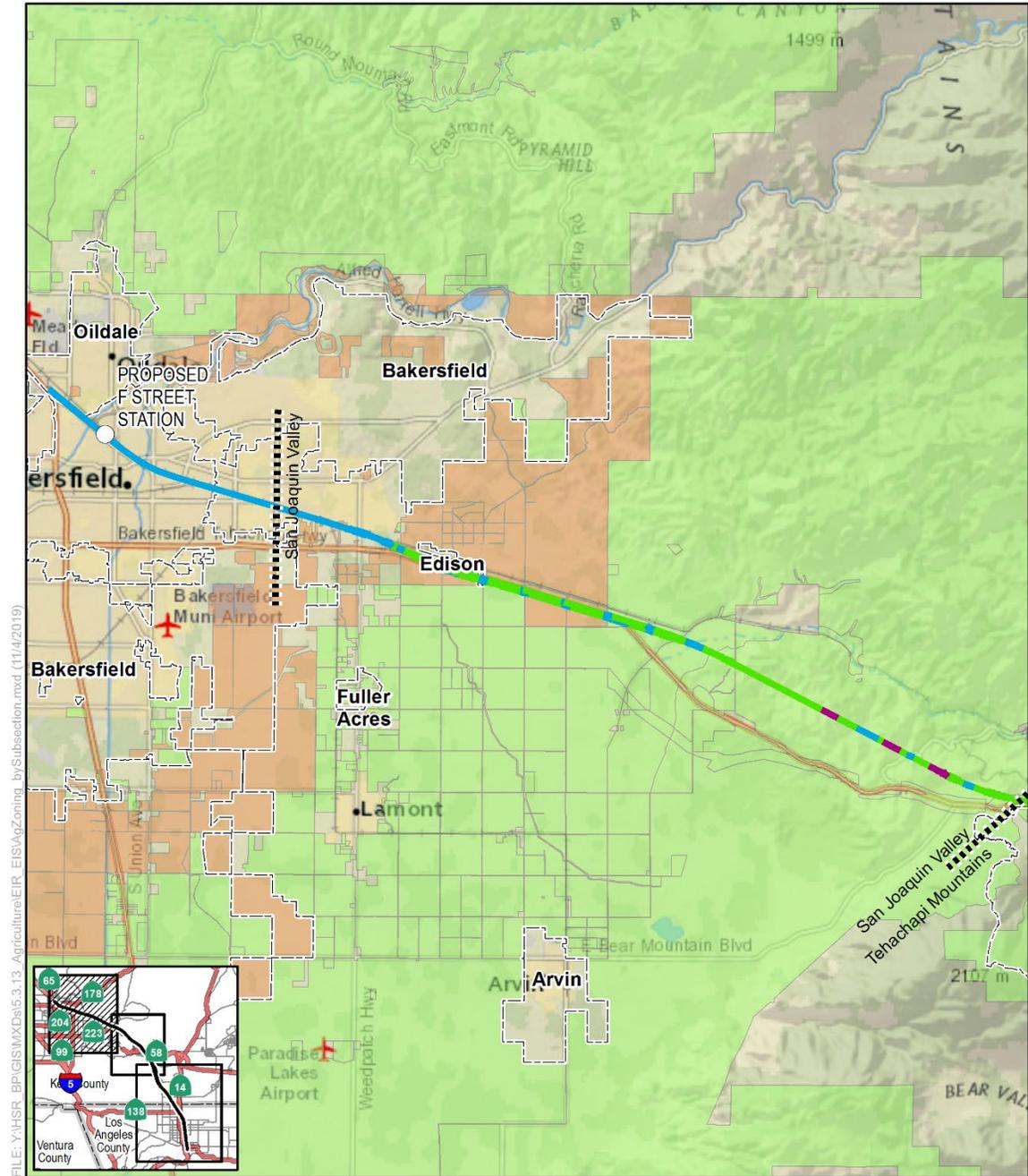
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2014); Kern County Planning and Natural Resources -- Department (2014)



- Lancaster North B MOWF
- Avenue M LMF
- Project Subsection Boundary
- Proposed HSR Centerlines
- Surface
- Elevated
- Underground
- Williamson Act Lands
- Prime Agricultural Land
- Mixed Enrollment Agricultural Land
- Farmland Security Zone
- Non-Prime

Figure 3.14-3 Williamson Act Contract Land
 (Sheet 3 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2010, 2012)

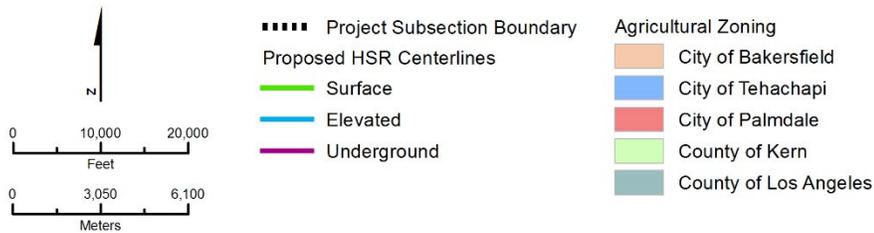


Figure 3.14-4 Land Zoned for Agriculture

(Sheet 1 of 3)



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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2010, 2012)

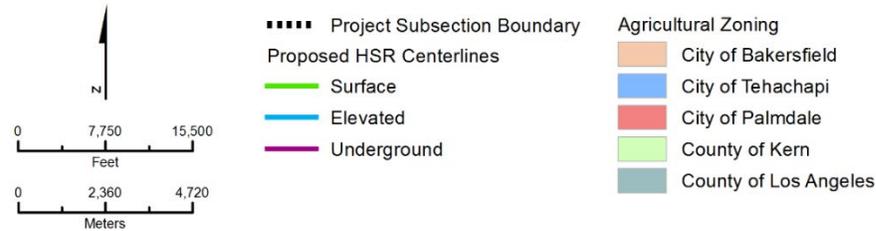
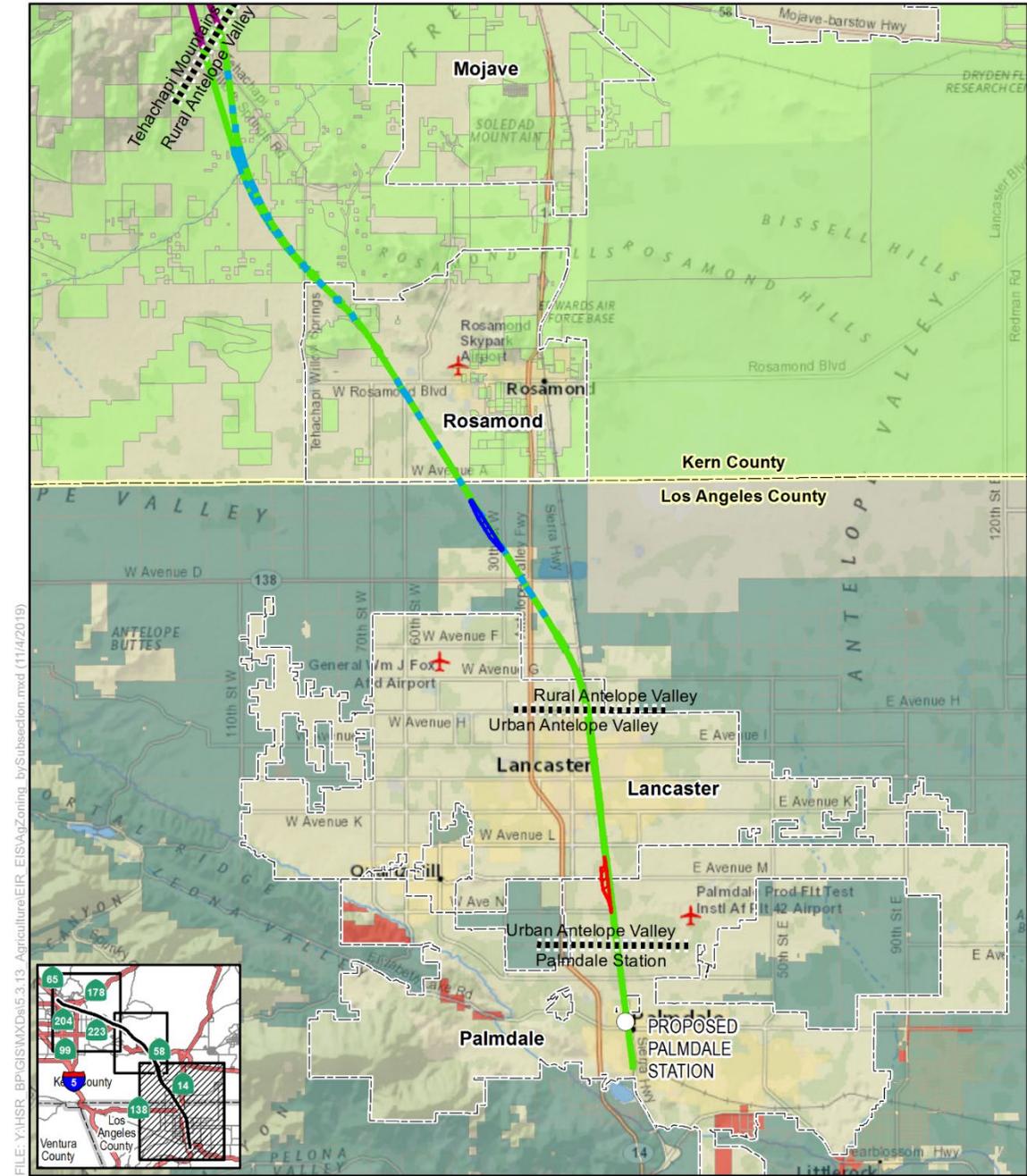


Figure 3.14-4 Land Zoned for Agriculture
(Sheet 2 of 3)



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: National Geographic (2013); CHSRA (4/2016, 8/2018, 10/2019); Department of Conservation (2010, 2012)

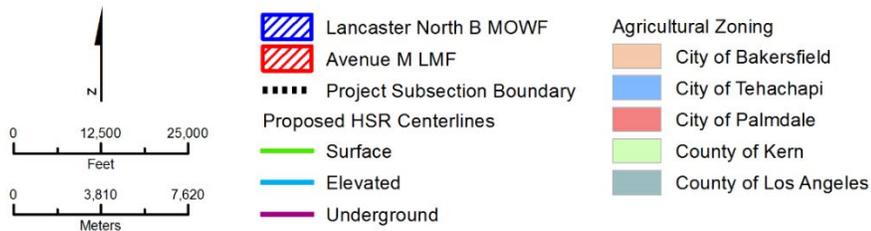


Figure 3.14-4 Land Zoned for Agriculture
 (Sheet 3 of 3)

3.14.5.3 **Agricultural Land along the Proposed Bakersfield to Palmdale Project Section Build Alternatives**

Although each of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) is being considered as one section, the geographic landscape through which each alternative passes has four very distinct regions, making it easier to characterize and describe the agricultural land within the RSA. Therefore, for the purpose of describing the existing agricultural environment, the existing agricultural land is described within the geographic context of the San Joaquin Valley, Tehachapi Mountains, and rural and urban Antelope Valley regions. Refer to Section 3.14.5.1, Regional Agriculture, and Figure 3.14-1 for a more detailed description of the San Joaquin Valley, the Tehachapi Mountains, and the rural and urban Antelope Valley regions.

The RSA begins in the San Joaquin Valley, which, for the purpose of this qualitative description, starts at the Bakersfield Station in the City of Bakersfield and ends at the Palmdale Station in the City of Palmdale (Figure 3.14-1). As described in more detail in Chapter 2, Alternatives, the alignments for Alternatives 1, 2, 3, and 5 are in an identical location except for the following:

1. An approximately 12-mile section in the San Joaquin Valley near the unincorporated community of Edison
2. An approximately 14-mile section between the Tehachapi Mountains and west of Rosamond
3. An approximately 12-mile section in urban Antelope Valley between just north of the City of Lancaster and the City of Palmdale

In addition, the CCNM Design Option is a 16.5-mile design option that diverges from Alternatives 1, 2, 3, and 5 for approximately 7 of the 16.5 miles. The Refined CCNM Design Option is also a 16.5-mile design option that would diverge from Alternatives 1, 2, 3 and 5 for approximately 8 of the 16.5 miles. The divergence of both design options is near the Nuestra Señora Reina de La Paz National Historic Landmark/César E. Chávez National Monument in Keene and converges with Alternatives 1, 2, 3, and 5 near Bear Mountain Boulevard, just north of Keene. The remaining 9.5 miles and 8.5 miles, respectively, fall within the same horizontal profile as Alternatives 1, 2, 3 and 5, but have different vertical profiles.

Information presented in this section includes the most recent data available for Important Farmland, Grazing Land, Williamson Act Contract Land, and crop cover. All of the Important Farmland, Grazing Land, and Williamson Act Contract Land are within Kern County. There are no local agricultural easements, FSZ contracts, or confined-animal facilities on or adjacent to the four B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option; there is also no Farmland of Local Importance along any of the four B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option. Therefore, this type of agricultural land is not discussed further in this section.

Geographic Location of Important Farmland within the RSA

All of the Important Farmland, Grazing Land, and Williamson Act Contract Land in the RSA is located within Kern County.

Types of Agricultural Resources Not Within the B-P Build Alternatives or Design Options

There are no agricultural easements, FSZ contracts, or confined-animal facilities located on or adjacent to the four B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option; there is also no Farmland of Local Importance along each of the four B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option.

In each of the geographic areas—San Joaquin Valley, the Tehachapi Mountains, the rural Antelope Valley, and the urban Antelope Valley—all four B-P Build Alternatives, including with the CCNM Design Option and the Refined CCNM Design Option, would traverse primarily the same agricultural land uses. Therefore, the geographic distribution of the existing Important Farmland, Grazing Land, Williamson Act Contract Land, and crop cover within each of the geographic areas in the farmland RSA is largely the same for all four B-P Build Alternatives, including with the CCNM Design Option or the Refined CCNM Design Option, (Figure 3.14-2 and Figure 3.14-3 in this section, and Figure 3.14-C-3 in Appendix 3.14-C). See Table 3.14-10 for a summary of the qualitative discussion of Important Farmland and Grazing Land, Williamson Act Contract Land, and crop cover on or adjacent to all four B-P Build Alternatives within each region, which is provided in more detail below.

Table 3.14-10 Affected Environment Summary by Region

Project Region	Summary
Important Farmland and Grazing Land	
San Joaquin Valley	The majority of the Important Farmland on or adjacent to the B-P Build Alternatives is in the San Joaquin Valley region outside of the urban Bakersfield area and is primarily composed of Prime Farmland. Some Farmland of Statewide Importance, and Unique Farmland. Grazing Lands are also on or adjacent to the B-P Build Alternatives in the San Joaquin Valley.
Tehachapi Mountains	The majority of the land on or adjacent to all four B-P Build Alternatives and all of the land on or adjacent to the CCNM Design Option and the Refined CCNM Design Option within the Tehachapi Mountains region is designated as Grazing Land. All four B-P Build Alternatives would also traverse several parcels containing Prime Farmland as they approach rural Antelope Valley to the east. None of the parcels on or adjacent to the CCNM Design Option or the Refined CCNM Design Option contain Prime Farmland.
Rural Antelope Valley	Although all four B-P Build Alternatives would traverse Grazing Land for the first approximately 4 miles of the rural Antelope Valley region, the majority of the land on or adjacent to all four B-P Build Alternatives within this region is not designated Important Farmland or Grazing Land. The B-P Build Alternatives would also traverse several parcels containing a mixture of Farmland of Statewide Importance and Grazing Land as they converge just north of Rosamond.
Urban Antelope Valley	No Important Farmland or Grazing Land is on or adjacent to the four B-P Build Alternatives within the urban Antelope Valley region.
Williamson Act Contract Land	
San Joaquin Valley	The San Joaquin Valley region contains the majority of the parcels that are under Williamson Act contracts and are on or adjacent to the B-P Build Alternatives. While several parcels on or adjacent to all four B-P Build Alternatives within the San Joaquin Valley are designated as Prime Williamson Act Contract Land, the majority of Williamson Act Contract Land in the San Joaquin Valley region is designated as Non-Prime Williamson Act Contract Land.
Tehachapi Mountains	The Tehachapi Mountains contain the majority of the Williamson Act Contract Land on or adjacent to the B-P Build Alternatives. All of the Williamson Act Contract Land on or adjacent to the B-P Build Alternatives, the CCNM Design Option, and the Refined CCNM Design Option within the Tehachapi Mountains is designated Non-Prime Williamson Act Contract Land. No Prime Williamson Act Contract Land is within the Tehachapi Mountains. Approximately one-third of the Grazing Land located on or adjacent to the B-P Build Alternatives, approximately half of the land located on or adjacent to the CCNM Design Option, and approximately two-fifths of the land on or adjacent to the CCNM Design Option in the Tehachapi Mountains contains Non-Prime Williamson Act Contract Land. The majority of this land is managed by three ranches.

Project Region	Summary
Rural Antelope Valley	No Williamson Act Contract Land is on or adjacent to the four B-P Build Alternatives within the rural Antelope Valley region.
Urban Antelope Valley	No Williamson Act Contract Land is on or adjacent to the four B-P Build Alternatives within the urban Antelope Valley region.
Crop Cover	
San Joaquin Valley	The majority of the agricultural commodities cultivated on or adjacent to all four B-P Build Alternatives are concentrated within the San Joaquin Valley. Although several parcels are designated Vineyards and one parcel is designated Grain and Hay Crops, the majority of agricultural commodities cultivated in the San Joaquin Valley portion of the HSR system consist of Citrus and Subtropical and Truck, Nursery, and Berry Crops.
Tehachapi Mountains	Agricultural commodities in the Tehachapi Mountains are cultivated on only a few parcels on or adjacent to all four B-P Build Alternatives and contain Truck, Nursery, and Berry Crops. In addition, some parcels of farmland are designated as idle farmland that does not contain cultivated crops. No parcels with cultivated crops are on or adjacent to the CCNM Design Option or the Refined CCNM Design Option within the Tehachapi Mountains.
Rural Antelope Valley	Agricultural commodities are cultivated only on one parcel within rural Antelope Valley and consist of Truck, Nursery, and Berry Crops.
Urban Antelope Valley	No parcels with cultivated crops are located on or adjacent to the four B-P Build Alternatives within urban Antelope Valley.

Sources: California High-Speed Rail Authority, 2016a, 2018; County of Kern, 2014

B-P = Bakersfield to Palmdale Project Section

CCNM = César E. Chávez National Monument

HSR = high-speed rail

Bakersfield to Palmdale Project Section Build Alternatives

San Joaquin Valley

Important Farmland and Grazing Land

The first approximately 9 miles of all four B-P Build Alternatives would traverse land classified as Urban and Built-Up Land in the vicinity of the City of Bakersfield. Beyond the Bakersfield area, for the next approximately 7 miles, the majority of land along the B-P Build Alternatives is classified as Prime Farmland and Urban and Built-Up Land within the unincorporated community of Edison. The majority of the land designated as Prime Farmland is on or adjacent to the B-P Build Alternatives within the San Joaquin Valley. Some Farmland of Statewide Importance, Grazing Land, and Unique Farmland are also on or adjacent to the B-P Build Alternatives in the San Joaquin Valley (Figure 3.14-2).

Williamson Act Contract Land

Several parcels on or adjacent to all four B-P Build Alternatives are designated as Prime Williamson Act Contract Land. All of these parcels are within the San Joaquin Valley (Figure 3.14-3). Approximately 14 parcels on or adjacent to all four B-P Build Alternatives are designated as Non-Prime Williamson Act Contract Land within the San Joaquin Valley.³

Geographic Location of Important Farmland along B-P Build Alternative Alignments

All of the Important Farmland that is located on or adjacent to the B-P Build Alternatives is within the San Joaquin Valley.

³ Land designated Prime Williamson Act Land is land that meets certain economic or production criteria, as defined by the DOC, that is similar to the criteria for designating Important Farmland identified as Prime Farmland. Land designated Non-Prime Williamson Act Land is typically not characterized as Important Farmland and can include uses such as the farming of dry-land grain crops or range and grazing land. Although it is not irrigated and does not meet the economic or production criteria for Prime Williamson Act Land, Non-Prime Williamson Act Land is considered an important economic resource.

Crop Cover

Although there are approximately nine designated Vineyards and one parcel designated Grain and Hay Crops, the majority of agricultural commodities cultivated in the San Joaquin Valley portion of the HSR system consist of Citrus and Subtropical and Truck, Nursery, and Berry Crops (Figure 3.14-C-3 in Appendix 3.14-C). Overall, the majority of the agricultural commodities cultivated on or adjacent to all four B-P Build Alternatives are located within the San Joaquin Valley.

Tehachapi Mountains

Important Farmland and Grazing Land

The majority of the land on or adjacent to all four B-P Build Alternatives within the Tehachapi Mountains is designated as Grazing Land (Figure 3.14-2). All four B-P Build Alternatives would also traverse several parcels containing Prime Farmland in the Tehachapi Mountains in Kern County as they approach rural Antelope Valley. The entire length of the CCNM Design Option and the Refined CCNM Design Option would traverse Grazing Land.

Williamson Act Contract Land

The Tehachapi Mountains contain the majority of the Williamson Act Contract Land on or adjacent to the B-P Build Alternatives. All of the Williamson Act Contract Land in the Tehachapi Mountains is designated Non-Prime Williamson Act Contract Land and is in areas where all four B-P Build Alternatives are identical (Figure 3.14-3). In addition, several parcels on or adjacent to the CCNM Design Option and Refined CCNM Design Option in the Tehachapi Mountains are designated Non-Prime Williamson Act Contract Land. There is no Prime Williamson Act Contract Land within the Tehachapi Mountains. Approximately one-third of the Grazing Land on or adjacent to the B-P Build Alternatives. One-half of the Grazing Land on or adjacent to the CCNM Design Option, and two-fifths of the land on or adjacent to the Refined CCNM Design Option in the Tehachapi Mountains contains Non-Prime Williamson Act Contract Land, a large portion of which is part of the White Wolf section of Tejon Ranch. Tejon Ranch is a 270,000-acre ranch operated by the Tejon Ranch Conservancy, of which 240,000 acres are permanently preserved. The remaining Non-Prime Williamson Act Contract Land on or adjacent to all four B-P Build Alternatives, the CCNM Design Option, and the Refined CCNM Design Option within the Tehachapi Mountains is occupied by Loop Ranch and the Erickson and McCarthy properties.

Crop Cover

Agricultural commodities in the Tehachapi Mountains are cultivated on approximately six parcels and contain Truck, Nursery, and Berry Crops. In addition, some parcels of farmland are designated as idle farmland that does not contain cultivated crops (Figure 3.14-C-3 in Appendix 3.14-C).

Rural Antelope Valley

Important Farmland and Grazing Land

All four B-P Build Alternatives traverse Grazing Land for the first approximately 4 miles of rural Antelope Valley. The B-P Build Alternatives would also traverse several parcels containing a mixture of Farmland of Statewide Importance and Grazing Land as they converge just north of Rosamond (Figure 3.14-2).

Williamson Act Contract Land

There is no Williamson Act Contract Land on or adjacent to the four B-P Build Alternatives within rural Antelope Valley (Figure 3.14-3).

Crop Cover

Agricultural commodities are cultivated only on one parcel within rural Antelope Valley, just north of and adjacent to Rosamond, and consist of Truck, Nursery, and Berry Crops (Figure 3.14-C-3 in Appendix 3.14-C).

Urban Antelope Valley

Important Farmland and Grazing Land

There is no Important Farmland and Grazing Land on or adjacent to the four B-P Build Alternatives within urban Antelope Valley (Figure 3.14-2).

Williamson Act Contract Land

There is no Williamson Act Contract Land on or adjacent to the four B-P Build Alternatives within urban Antelope Valley (Figure 3.14-3).

Crop Cover

There are no parcels with cultivated crops on or adjacent to the four B-P Build Alternatives within urban Antelope Valley (Figure 3.14-C-3 in Appendix 3.14-C).

Stations and Facilities

Stations and maintenance facilities included as part of the Bakersfield to Palmdale Project Section (B-P Build Alternatives) analysis include the Bakersfield Station—F Street (Locally Generated Alternative), the Palmdale Station site, the Lancaster North B Maintenance-of-Way Facility, and the Avenue M Light Maintenance Facility. No Important Farmland is on or within 100 feet of the station, maintenance facilities, and other facilities proposed as part of the Bakersfield to Palmdale Project Section.

Other lesser facilities associated with the Bakersfield to Palmdale Project Section would include maintenance of infrastructure siding (storage for on-track equipment), traction power substations, and switching and paralleling stations. These lesser facilities are within the overall project footprint for each B-P Build Alternative; therefore, the land they would occupy and the associated agricultural impacts are described as part of the discussion and analysis provided for each B-P Build Alternative.

3.14.6 Environmental Consequences

This section describes the environmental impacts of the No Project Alternative and Alternatives 1, 2, 3, and 5 (including the CCNM Design Option, the Refined CCNM Design Option, and the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street) on agricultural resources (farmland). The discussion of the potential direct and indirect impacts of each B-P Build Alternative is organized by the timeframe during which they occur (i.e., construction or operation). Evaluations of direct and indirect project impacts reflect the integration of project features to avoid or minimize impacts, as well as mitigation commitments derived from the *Statewide Program EIR/EIS* (Authority and FRA 2005) and the *Bay Area to Central Valley Final Program EIR* (Authority and FRA 2012) (as appropriate to the geographic location of the Bakersfield to Palmdale Project Section). Impact significance is based on whether the B-P Build Alternatives would exceed any of the CEQA thresholds (detailed in Section 3.14.4.4), as well as the context, intensity, and duration of the impact.

To fully understand a proposed project's environmental implications, CEQA and NEPA require that its impacts be examined in conjunction with other past, present, and reasonably foreseeable projects. The cumulative impacts for each resource (including agriculture) and the relative importance of the Bakersfield to Palmdale Project Section's contribution to any significant cumulative impact to agricultural resources are discussed in Section 3.19.

3.14.6.1 Overview

This section describes the potential impacts to farmland from construction and operation of the proposed B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) and how the No Project Alternative and the B-P Build Alternatives could result in the conversion of Important Farmland to a nonagricultural use. Section 3.14.4.2, Impact Avoidance and Minimization Features, details the IAMFs that are designed to avoid and minimize project impacts to farmland. Section 3.14.7, Mitigation Measures, details the mitigation measures prescribed to address impacts to farmland. The impacts of the B-P Build Alternatives are

described and organized in Section 3.14.6.3, Bakersfield to Palmdale Project Section Build Alternatives, as follows:

- **Construction Impacts**
 - Impact AG #1: Temporary Use of Important Farmland
 - Impact AG #2: Temporary Use of Important Farmland under Williamson Act Contracts
 - Impact AG #3: Temporary Utility and Infrastructure Disruption
 - Impact AG #4: Temporary Noise and Vibration Impacts to Adjacent Farm Animals
 - Impact AG #5: Permanent Conversion of Important Farmland to Nonagricultural Use
 - Impact AG #6: Creation of Remnant Parcels of Important Farmland
 - Impact AG #7: Permanent Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Agricultural Conservation Easement Land
 - Impact AG #8: Permanent Impacts to Irrigation Distribution Canals
- **Operations Impacts**
 - Impact AG #9: Permanent Operations—Conversion of Important Farmland to Nonagricultural Land
 - Impact AG #10: Permanent Operations—Impacts to Land under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Conservation Easement Land
 - Impact AG #11: Permanent Operations—Interference with Aerial Spraying Activities
 - Impact AG #12: Permanent Operations—Noise Impacts to Grazing Animals that Would Lead to Conversion of Important Farmland
 - Impact AG #13: Permanent Operations—Wind-Induced Impacts to Agricultural Operations

3.14.6.2 No Project Alternative

Under the No Project Alternative, the Bakersfield to Palmdale Project Section would not be constructed. However, with the No Project Alternative, there would still be impacts to agricultural resources because existing and planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems would be constructed to accommodate planned growth in the project section through 2040. Therefore, for assessing future conditions under the No Project Alternative, it was assumed that all currently known programmed and funded improvements to the intercity transportation system (highway, rail, and transit) and reasonably foreseeable local development projects (with funding sources identified) would be developed by 2040 as represented by the Cumulative Project list in Table 3.19-A in Appendix 3.19-A.

In addition to the direct conversion of Important Farmland, growth and development under the No Project Alternative would result in the conversion of Important Farmland, including from the severance of Important Farmland. Important Farmland affected would include Important Farmland zoned for agricultural use and Important Farmland under a Williamson Act contract, resulting in parcels smaller than County of Kern thresholds for Williamson Act contracts. Growth and development under the No Project Alternative would also result in remnant parcels of agriculture that are small and/or isolated and infrastructure disruption that could lead to indirect conversions when these changes result in farmland that does not have convenient access to roads, water, and other necessities to support agricultural use.

Under the No Project Alternative, development would continue, leading to permanent conversion of Important Farmland to nonagricultural use, including Important Farmland zoned for agricultural use and Important Farmland under a Williamson Act contract. 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 Kern and Los Angeles Counties (Section 3.14.5.2, Important and Protected 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 would create new agricultural land (e.g., convert natural land to agriculture) to replace farmland converted to nonagricultural use from the No Project Alternative.

3.14.6.3 Bakersfield to Palmdale Project Section Build Alternatives

This section describes the potential impacts to farmland from construction and operation of the proposed B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option). Impacts are assessed after consideration of the proposed IAMFs detailed in Section 3.14.4.2 but before consideration of the project mitigation measures identified in Section 3.14.7. There is no Important Farmland, Grazing Land, or Protected Farmland along the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street. Therefore, there is no further discussion in this section regarding the portion of the F-B LGA alignment from the intersection of 34th Street and L Street to Oswell Street, and this portion of the alignment is not included in the quantitative farmland analysis.

Construction Impacts

Temporary and permanent farmland impacts are categorized based on whether they would occur during construction and/or operation of the Bakersfield to Palmdale Project Section. Construction impacts that would occur for a limited time are considered temporary, and construction impacts that would result in long-term changes to the physical environment are considered permanent. Operations impacts that would occur during the incremental stages of HSR implementation and that would change with build out of the HSR project are considered interim; impacts that are not continuous but recur during the operation of the Bakersfield to Palmdale Project Section on an episodic or occasional basis are considered intermittent; and impacts that are continuous throughout the life of the Bakersfield to Palmdale Project Section are considered permanent.

Temporary Construction Impacts

Temporary construction impacts would occur for a limited time and would involve the temporary use of Important Farmland and Williamson Act Contract Land for construction and staging activities outside of the permanent right-of-way (see Figures 3.14-C-6 through 3.14-C-17 in Appendix 3.14-C in Volume 2: Technical Appendices). These types of construction impacts are considered temporary because after project construction is completed, the farmland would be restored and returned to agricultural use. The construction of each of the four B-P Build Alternatives would require the temporary use of Important Farmland. Construction activities would also result in the disruption of some utilities and infrastructure that support agricultural use during this time.

The following sections discuss the potential temporary construction impacts of each B-P Build Alternative on Important Farmland.

Impact AG #1: Temporary Use of Important Farmland

Some farmland outside the permanent right-of-way would be used for construction activities, such as staging areas and material laydown areas. This land would be leased from the landowner and used for 1 to 5 years during construction.

Table 3.14-11 shows the total acres of Important Farmland estimated to be temporarily impacted during project construction. Most of the Important Farmland estimated to be temporarily impacted during project construction is classified as Prime Farmland. A sizeable amount of Grazing Land (approximately three times the amount of Important Farmland), would also be temporarily impacted during project construction.

Table 3.14-11 Important Farmland Temporarily Used for Construction of the Bakersfield to Palmdale Project Section Build Alternatives (Acres)

Alternative	Important Farmland				Grazing Land
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Total Important Farmland	
Alternatives					
Alternative 1	263	17	42	322	967
Alternative 2	234	16	26	276	964
Alternative 3	263	16	42	321	933
Alternative 5	263	17	42	322	967
CCNM Design Option (Net Change)	0	0	0	0	+15
Refined CCNM Design Option (Net Change)	0	0	0	0	-81

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014f
 CCNM = César E. Chávez National Monument

Alternatives 1 and 5 would temporarily impact a total of 322 acres of Important Farmland, Alternative 2 would temporarily impact 276 acres of Important Farmland, and Alternative 3 would temporarily impact 321 acres of Important Farmland. Neither the CCNM Design Option nor the Refined CCNM Design Option would temporarily impact any Important Farmland.

Alternative 2 would result in the fewest acres of impacts to Important Farmland among the B-P Build Alternatives. However, there are only small differences in acres of Important Farmland impacted by all four B-P Build Alternatives. In addition, as detailed in AG-IAMF#1, the temporarily impacted Important Farmland would not be permanently converted from agricultural use but rather restored by the design-build contractor to as close to pre-construction condition as possible after construction. This IAMF would reduce potential impacts resulting from the temporary use of Important Farmland during construction through the following mechanisms:

- AG-IAMF #1: Restoration of Important Farmland Used for Temporary Staging Areas—**
 Prior to any ground disturbing activities at the site of a temporary construction staging area on Important Farmland, the Contractor shall prepare a restoration plan addressing specific actions, sequence of implementation, parties responsible for implementation and successful achievement of restoration for temporary impacts. Actions shall include removing and stockpiling the top 18 inches of soil for replacement on-site during restoration activities. Before beginning construction use of sites on Important Farmland, the Contractor shall submit the restoration plan to the Authority for review and obtain Authority (and if applicable, landowner) approval. The restoration plan shall include time-stamped photo documentation of the pre-construction conditions of all temporary staging areas.

All construction access, mobilization, material laydown, and staging areas on Important Farmlands would be returned to a condition equal to the pre-construction staging condition. This requirement is included in the design-build construction contract requirements.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland to a nonagricultural use during construction. As such, impacts would be less than significant. The B-P Build Alternatives would temporarily use between 276 and 322 acres of Important Farmland during construction, such as for construction staging. Neither the CCNM Design Option nor the refined CCNM Design Option would temporarily impact any Important Farmland. Important Farmland that is temporarily impacted during construction of the B-P Build Alternatives would be

restored and returned to agricultural use after project construction is completed (AG-IAMF#1). No mitigation measures are required.

Impact AG #2: Temporary Use of Important Farmland under Williamson Act Contracts

As described above, Important Farmland outside of the permanent right-of-way would be used for construction activities, such as staging areas and material laydown areas. This land would be leased from the landowner and used for 1 to 5 years during project construction. Some of this Important Farmland is under a Williamson Act contract. Table 3.14-12 shows the total acres of Williamson Act Contract Land and Williamson Act Contract Land that is also designated as Important Farmland and that is estimated to be temporarily impacted from construction of the B-P Build Alternatives.

Table 3.14-12 Williamson Act Contract Land Temporarily Used for Construction of the Bakersfield to Palmdale Project Section Build Alternatives (Acres)

Alternative	Williamson Act Contract Land ¹	Important Farmland under Williamson Act Contracts
B-P Build Alternatives		
Alternative 1	315	29
Alternative 2	317	30
Alternative 3	317	29
Alternative 5	315	29
CCNM Design Option (Net Change)	-7	0
Refined CCNM Design Option (Net Change)	-59	0

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014f; Kern County Planning and Natural Resources Department, 2014

¹ No Farmland Security Zone land is within the farmland RSA.

CCNM = César E. Chávez National Monument

RSA = resource study area

Alternatives 1, 3, and 5 would temporarily impact 29 acres of Important Farmland that is under a Williamson Act contract, and Alternative 2 would temporarily impact 30 acres. Neither the CCNM Design Option, nor the Refined CCNM Design Option would temporarily impact any Important Farmland under a Williamson Act contract.

Alternative 2 would temporarily impact the most acres of Important Farmland that is under a Williamson Act contract. Alternatives 1, 3, and 5 would result in the fewest acres of temporary impacts to Important Farmland that is under a Williamson Act contract among the B-P Build Alternatives. However, the difference in acres of Important Farmland that is under a Williamson Act contract impacted by all four B-P Build Alternatives is nominal (1 acre). In addition, as detailed in AG-IAMF#1, the temporarily impacted Important Farmland would not be permanently converted from agricultural use but rather restored by the design-build contractor to as close to the pre-construction condition as possible after construction. With the implementation of AG-IAMF#1, the B-P Build Alternatives would temporarily convert Important Farmland that is under a Williamson Act contract to nonagricultural use for uses such as construction staging areas, but the B-P Build Alternatives would not permanently convert Important Farmland under a Williamson Act contract to nonagricultural use.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland under a Williamson Act contract to a nonagricultural use during construction. As such, impacts would be less than significant. Overall, there are nominal differences (1 acre) in the acreage of Important Farmland under Williamson Act contracts temporarily impacted by Alternatives 1, 2, 3, and 5. Neither the CCNM Design Option nor the Refined CCNM Design Option would temporarily impact any Important Farmland under a Williamson Act contract. Important Farmland under Williamson

Act contracts that is temporarily impacted during construction of the B-P Build Alternatives would be restored and returned to agricultural use after project construction is completed (AG-IAMF#1). No mitigation measures are required.

Impact AG #3: Temporary Utility and Infrastructure Disruption

Construction of the four B-P Build Alternatives (including the CCNM Design Option) and related improvements (e.g., road and irrigation canal and railroad realignments) would temporarily impact farmland operations. Each farm maintains a system of on-site utilities needed for operations, such as irrigation systems (e.g., ditches, drains, pipelines, and wells), access roads, and power supplies that could be disrupted by construction of the Bakersfield to Palmdale Project Section. Utility disruptions could jeopardize farm productivity during construction (Authority 2012c). Temporary utility and infrastructure disruptions would not result in the permanent conversion of Important Farmland to nonagricultural use because the Authority would implement AG-IAMF#4, AG-IAMF#5, PUE-IAMF#3, and PUE-IAMF#4. These IAMFs require notification to the public through a combination of communication media, including written notification to agricultural property owners or leaseholders, within and adjacent to the disturbance limits for the Bakersfield to Palmdale Project Section so that they can make operational adjustments to avoid construction impacts associated with temporary utility and infrastructure disruptions. Operational adjustment may include requesting that the Authority provide temporary livestock and/or equipment crossings for the duration of construction.

Temporary impacts to on-farm infrastructure, including required restorative work, would be analyzed on a case-by-case basis during the appraisal process, with consultation from experts in hydraulic engineering and agricultural management. Section 3.6, Public Utilities and Energy, explains the potential for temporary utility (e.g., irrigation and power systems) and farmland infrastructure disruptions. Irrigation systems would be allowed to cross the HSR right-of-way, but the design of those systems would need to meet specific design standards to ensure HSR operation and serviceability, as well as serviceability of the irrigation systems. Individual negotiations as part of the acquisition process are intended to resolve redesign, productivity, and reimbursement issues.

The timing of restorative work or reconfigurations would be addressed in the acquisition process and documented in a right-of-way contract. Provisions regarding the timing of disruptions to irrigation systems also would be addressed at this time to correlate with periods of decreased water demand. The Authority is also working with local districts and municipalities to minimize service disruptions to water distribution systems (Section 3.6). The Authority would implement PUE-IAMF#2, which requires any new irrigation facilities to be operational prior to disconnection of the existing facility where feasible. In most cases, compensation for the temporary loss of infrastructure (e.g., irrigation facilities, wells) would allow time for upgrades and relocations to occur before construction to minimize irrigation disruptions. However, in cases where construction results in a disruption, the farm owner would be compensated for any reduction in agricultural production.

Appendix 3.12-B describes the expected acquisition process and the rights of property owners under the Uniform Relocation Assistance Program. As part of this process, the Authority Right-of-Way agents would work with each affected property owner to address issues of concern during the appraisal process. The required property appraisal would identify affected utilities and infrastructure, and the agents would attempt to resolve conflicts. For example, the acquisition agreements could require that the contractor relocate the affected utilities before construction, maintain service during construction, or time the disruption to avoid active periods (e.g., during the winter idle period for annual crops). In some cases, the agents may not be able to resolve the conflict. When construction activities cannot avoid a utility or infrastructure impacts, the agent would negotiate a fair compensation for loss of agricultural production.

Construction of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) and related improvements (e.g., road and irrigation canal and railroad realignments) would temporarily impact farmland operation through temporary utility and infrastructure disruptions. As described above, AG-IAMF#4, AG-IAMF#5, PUE-IAMF#2, PUE-

IAMF#3, and PUE-IAMF#4 are included as part of the project design and would be implemented for all B-P Build Alternatives to avoid or minimize the temporary impacts of construction. These IAMFs would reduce potential impacts resulting from the temporary use of Important Farmland during construction through the following mechanisms:

- **AG-IAMF#4: Notification to Agricultural Property Owners**—Prior to the start of any construction activity adjacent to farmland, the Authority shall provide written notification to agricultural property owners or leaseholders immediately adjacent to the disturbance limits for the HSR project section. The notification is to indicate the intent to begin construction, including an estimated date for the start of construction. In order to provide agricultural property owners or leaseholders sufficient lead time to make any changes to their operations due to project section construction, this notification shall be provided at least 3 months, but no more than 12 months, prior to the start of construction activity.
- **AG-IAMF#5: Temporary Livestock and Equipment Crossings**—Prior to the start of any construction activity adjacent to any farmland, the Authority shall coordinate with agricultural property owners or leaseholders to provide temporary livestock and equipment crossings to minimize impacts to livestock movement, as well as routine operations and normal business activities, during project construction.
- **PUE-IAMF#2: Irrigation Facility Relocation**—Where relocating an irrigation facility is necessary, the Contractor would verify the new facility is operational prior to disconnecting the original facility, where feasible. Irrigation facility relocation preferences are included in the design-build contract and reduce unnecessary impacts to continued operation of irrigation facilities. The Contractor shall document all relocations in a memorandum for Authority review and approval.
- **PUE-IAMF#3: Public Notifications**—Prior to construction in areas 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) within that jurisdiction and the affected service providers of the planned outage. The notification would specify the estimated duration of the planned outage and would be published no less than 7 days prior to the outage. Construction would be coordinated to avoid interruptions of utility service to hospitals and other critical users. The contractor would submit the public communication plan to the Authority 60 days in advance of the work for verification that appropriate messaging and notification are to be provided.
- **PUE-IAMF#4: Utilities and Energy**—Prior to construction, the contractor shall prepare a technical memorandum documenting how construction activities would be coordinated with service providers to minimize or avoid interruptions. It would include upgrades of existing power lines to connect the HSR system to existing utility substations. The technical memorandum shall be provided to the Authority for review and approval.

With implementation of AG-IAMF#4, AG-IAMF#5, PUE-IAMF#2, PUE-IAMF#3, and PUE-IAMF#4, temporary utility and infrastructure disruptions would be avoided or resolved, or in situations where the temporary utility or infrastructure disruption cannot be avoided, the land owner would be compensated for the loss of agricultural production during construction through the right-of-way acquisition process. Therefore, temporary utility and infrastructure disruptions would not result in the permanent conversion of Important Farmland to nonagricultural use. No mitigation measures are required. For additional information on large regional utilities, see Section 3.6, Public Utilities and Energy.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland to a nonagricultural use as a result of temporary utility and infrastructure disruption during project construction. As such, impacts would be less than significant. The construction of each of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would result in similar temporary utility and infrastructure disruptions to agricultural operations. With implementation of AG-IAMF#4, AG-IAMF#5, PUE-IAMF#2, PUE-IAMF#3, and PUE-IAMF#4,

temporary utility and infrastructure disruptions would not result in the permanent conversion of Important Farmland to nonagricultural use. No mitigation measures are required.

Impact AG #4: Temporary Noise and Vibration Impacts to Adjacent Farm Animals

Construction of the project would generate noise and vibration from construction equipment and vehicles (e.g., clearing, grading, track installation).

Noise

Construction of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would generate noise from construction equipment and vehicles (e.g., clearing, grading, track installation). Temporary noise impacts could occur on Grazing Land where livestock is present. There are no confined animal facilities within 100 feet of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option). Therefore, construction-related noise would not temporarily impact livestock and poultry in confined-animal facilities.

As described below under Permanent Operations Impacts, the FRA Guidelines in *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (2005; updated in 2012) provide noise criteria for assessing the permanent impact of high-speed trains on farm animals, including poultry and livestock. However, there are no guidelines for assessing temporary construction-related noise and vibration impacts to farm animals. Nevertheless, temporary construction-related impacts could occur on Grazing Land where livestock is present.

While there are no criteria for assessing temporary construction noise impacts to grazing livestock, permanent operational noise assessment criteria assume that the noise exposure limit for livestock is 100 A-weighted decibels from a passing train operating at 220 miles per hour (mph). The noise exposure limit would occur at approximately 100 feet from the track centerline if the track is at-grade and approximately 15 feet from the track centerline if the track is elevated. Fences control access to the HSR right-of-way, and the right-of-way would be 100 feet wide in rural locations. Based on analysis presented in the *Bakersfield to Palmdale Project Section Noise and Vibration Technical Report* (Authority 2016b), under the worst-case scenario, noise during construction would range from 87 to 102 A-weighted decibels equivalent continuous sound level at a distance of 50 feet from the construction boundary for all B-P Build Alternatives. Assuming that the noise exposure limit would occur at approximately 100 feet from the track centerline, even though estimated construction noise is less than noise from a passing train, livestock would have to be within 50 feet of the edge of the right-of-way to experience noise impacts above the recommended noise threshold during construction. Therefore, where the track is being constructed at-grade (approximately 23.0 to 23.8 miles in total), livestock would need to be grazing within 50 feet of the right-of-way (i.e., 100 feet of the centerline) for noise impacts to occur. Because livestock would not be in a confined situation and could move away from noise sources, noise impacts associated with construction of at-grade segments of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would be limited. For information on how to access and review technical reports, please refer to the Authority's website at www.hsr.ca.gov.

Where the track is being constructed at an elevated grade, the noise exposure limit of 15 feet would occur within the right-of-way. As stated above, the right-of-way would be fenced off within 50 feet of each side of the track centerline, and livestock would not be able to access these areas. Therefore, if livestock are grazing near the construction of elevated track, noise impacts associated with construction would fall below the noise exposure limit for livestock.

Vibration

Construction of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would generate vibration from construction equipment and vehicles (e.g., clearing, grading, track installation). Temporary vibration impacts could occur on Grazing Land where livestock is present. As indicated above, almost 50 percent of the land on or adjacent to all four B-P Build Alternatives and all of the land on or adjacent to the CCNM Design Option and Refined CCNM Design Option contains Grazing Land. Since livestock would not be in a

confined situation and could move away from sources of vibration, vibration impacts on grazing livestock would be temporary and would not disrupt the current use.

CEQA Conclusion

Noise and Vibration

The B-P Build Alternatives would not permanently convert Important Farmland to nonagricultural use as a result of temporary noise and vibration impacts from construction. As such, impacts would be less than significant. The construction of each of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not generate temporary noise and vibration impacts that would result in impacts to grazing livestock and lead to the permanent conversion of Important Farmland. Temporary noise and vibration impacts from construction of the B-P Build Alternatives would not result in the permanent conversion of Important Farmland to nonagricultural use. No mitigation measures are required.

Permanent Construction Impacts

The construction of any of the four B-P Build Alternatives would permanently convert Important Farmland to nonagricultural use and would sever farmland parcels, particularly where the B-P Build Alternatives are not adjacent to existing transportation corridors (Figures 3.14-C-6 through 3.14-C-9, and Figures 3.14-C-10 through 3.14-C-13 in Appendix 3.14-C in Volume 2: Technical Appendices). Permanent construction impacts are impacts that result in long-term changes to the physical environment and include the permanent conversion of farmland to right-of-way for construction of the four B-P Build Alternatives, associated facilities, and permanent structures to support the HSR system. Such impacts are permanent because the HSR facilities would occupy this land for the life of the project; therefore, the affected Important Farmland would be converted to and remain in nonagricultural use in perpetuity.

The following sections discuss the potential permanent construction impacts of each B-P Build Alternative on Important Farmland with the incorporation of IAMFs, consistent with the Statewide and Bay Area to Central Valley Program EIR/EISs (Authority and FRA 2005, 2012), but prior to consideration of Bakersfield to Palmdale Project Section mitigation measures. Mitigation measures are discussed in Section 3.14.7, and NEPA and CEQA impacts after mitigation are discussed in Sections 3.14.9 and 3.14.10, respectively.

Impact AG #5: Permanent Conversion of Important Farmland to Nonagricultural Use

The Bakersfield to Palmdale Project Section involves construction of rail and associated transportation structures, as well as other HSR facilities (e.g., maintenance of infrastructure siding facilities, switching and paralleling stations, and a potential terminal storage and maintenance facility and/or maintenance-of-way facility site) through areas with Important Farmland, permanently converting this Important Farmland to nonagricultural use. The permanent conversion of and impacts to Important Farmland that is under a Williamson Act contract from project construction are addressed under Impact AG #7. In addition, the four B-P Build Alternatives would sever large agricultural properties, especially where the B-P Build Alternatives are not directly alongside existing transportation facilities. See Impact AG #6 for an analysis of impacts to Important Farmland resulting from parcel severance.

Table 3.14-13 shows the total acres of Important Farmland estimated to be permanently impacted by construction of any of the four B-P Build Alternatives. Most of the Important Farmland estimated to be permanently impacted during project construction is classified as Prime Farmland. Although Grazing Land is not considered Important Farmland, information regarding the total acres of affected Grazing Land is provided because almost 50 percent of the agricultural land along the four B-P Build Alternatives, including with the CCNM Design Option and the Refined CCNM Design Option, is designated as Grazing Land.

Table 3.14-13 Important Farmland Directly and Permanently Converted to Nonagricultural Use by Each Bakersfield to Palmdale Project Section Build Alternative Footprint (acres)

Alternative	Important Farmland				Grazing Land
	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Total Important Farmland	
B-P Build Alternatives					
Alternative 1	497	119	92	708	2,691
Alternative 2	534	111	93	738	2,693
Alternative 3	497	119	89	705	2,681
Alternative 5	497	119	92	708	2,691
CCNM Design Option (Net Change)	0	0	0	0	-12
Refined CCNM Design Option (Net Change)	0	0	0	0	+783

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014
 B-P = Bakersfield to Palmdale Project Section
 CCNM = César E. Chávez National Monument

Based on the acreage of Important Farmland permanently converted shown in Table 3.14-1, Table 3.14-14 shows the final impact rating for Alternatives 1, 2, 3, and 5 from the NRCS-CPA-106 Farmland Conversion Impact Rating Forms. The Farmland Conversion Impact Rating Form is completed on a countywide basis; separate forms were completed for both Kern and Los Angeles Counties. The NRCS-CPA-106 Farmland Conversion Impact Rating Forms are provided in Appendix 3.14-A (Volume 2: Technical Appendices). The impact rating addresses both permanent conversions of Important Farmland during construction and operation of the B-P Build Alternatives. Overall, there are nominal differences in the acreage of Important Farmland impacted by Alternatives 1, 2, 3, and 5. Thus, the NRCS-CPA-106 farmland conversion impact rating is similar for all four B-P Build Alternatives. According to Form NRCS-CPA-106, for project sites for which the total points equal or exceed 260 points, alternative actions, as appropriate, should be considered to reduce impacts to farmland. Based on the total points calculated using Form NRCS-CPA-106, none of the B-P Build Alternatives equals or exceeds the 260-point threshold in either of the counties. This means no further analysis is necessary to ensure that farmlands are protected per the requirements of the FPPA.

Table 3.14-14 Farmland Conversion Impact Rating (points)

Alternative ¹	Kern County	Los Angeles County
Alternative 1	139	98
Alternative 2	137	98
Alternative 3	142	98
Alternative 5	139	99

Sources: California High-Speed Rail Authority and Federal Railroad Administration, 2015; Natural Resources Conservation Service, 2015 (Appendix 3.14-A)

¹ The CCNM Design Option and the Refined CCNM Design Option would not impact any Important Farmland. Therefore, the Farmland Conversion Impact Ratings for the B-P Build Alternatives are the same with or without the CCNM Design Option and the Refined CCNM Design Option.
 CCNM = César E. Chávez National Monument

CEQA Conclusion

The B-P Build Alternatives would directly and permanently convert Important Farmland to a nonagricultural use pursuant to CEQA as a result of construction of the B-P Build Alternatives, and impacts would be significant and unavoidable. To address significant impacts associated with the permanent conversion of Important Farmland to a nonagricultural use, the Authority would implement Mitigation Measure AG-MM#1, which requires the Authority to fund the purchase of agricultural conservation easements. The purchased easements would be at a ratio of not less than 1:1 for direct impacts to Important Farmland and a ratio of not less than 0.5:1 for indirect impacts to Important Farmland within a 25-foot-wide area adjacent to HSR permanently fenced right-of-way. All purchased conservation easements would be located within the same agricultural regions where the impacts occur. However, because the prescribed mitigation measure protects land that is already in agricultural use and would not create new farmland (e.g., convert natural land to agriculture), the mitigation measure does not result in a net increase in agricultural land, thereby offsetting the conversion of Important Farmland to a nonagricultural use. Therefore, Mitigation Measure AG-MM#1 would not reduce impacts to Important Farmland, and the permanent conversion of Important Farmland from the construction of Alternatives 1, 2, 3, and 5 would be significant and unavoidable pursuant to CEQA.

Impact AG #6: Creation of Remnant Parcels of Important Farmland

Although the four B-P Build Alternatives follow existing transportation corridors as much as possible, in some cases the B-P Build Alternatives deviate from these corridors and divide agricultural parcels, potentially severing parcels actively being cultivated.

Therefore, in addition to the direct conversion of Important Farmland from construction of the Bakersfield to Palmdale Project Section, the analysis also considers whether construction of the project section would result in an indirect conversion of Important Farmland by severing agricultural parcels, which could lead to further conversion of Important Farmland.

Parcel severance can result in the following scenarios:

1. A parcel is severed and the remnant parcel is economically viable as agricultural land
2. A parcel is severed but can be consolidated with an adjacent agricultural parcel and therefore can continue to be used as agricultural land
3. A parcel is severed and creates a remnant parcel that would not remain economically viable as agricultural land for reasons such as shape and location and cannot be consolidated with an adjacent agricultural parcel.

The third parcel severance scenario results in what the Authority refers to as a “noneconomic remnant parcel.” This analysis was undertaken in compliance with the *Updated Methodology for Evaluation of Agricultural Farmland Impacts* (Authority 2017). The acreage of Important Farmland converted to nonagricultural use that is presented in this section represents Step 2 calculations.⁴ Refer to Appendix 3.14-B, Parcel Severance Methodology and Results (Volume 2: Technical Appendices), for a more detailed explanation of the parcel severance methodology, as well as the initial Step 1 calculations.

The Authority is committed to implementing AG-IAMF#3, a Farmland Consolidation Program, as part of construction of the Bakersfield to Palmdale Project Section. The Farmland Consolidation Program involves working with landowners to transfer noneconomic remnant parcels of Important Farmland to neighboring landowners and/or consolidate with adjacent parcels that are in agricultural use wherever possible. However, if efforts to transfer and consolidate agricultural land designated as Important Farmland are not feasible, the Authority has committed to purchasing the noneconomic remnant parcels. The acreage of noneconomic remnant parcels of Important Farmland is included in the total acres of Important Farmland converted to nonagricultural use.

⁴ In Step 1, GIS software was used to identify remnant parcels of Important Farmland that are 20 acres or less in size. In Step 2, a real estate appraiser licensed by the California Department of Consumer Affairs, Bureau of Real Estate Appraisers, reviewed each of the remnant parcels identified in Step 1 and determined whether or not each of these parcels would likely remain viable as agricultural land. The appraiser then calculated a more refined acreage of Important Farmland converted to nonagricultural use from parcel severance based on this analysis.

Table 3.14-15 provides the total acres of Important Farmland that would be directly converted from construction of the Bakersfield to Palmdale Project Section as well as the total acres of Important Farmland that would be indirectly converted to nonagricultural use because it is a noneconomic remnant parcel. Table 3.14-15 breaks down the acreage of impacted Important Farmland by type to show how much of the impact is from direct conversion and how much can be attributed to parcel severance.

Table 3.14-15 Permanent Impacts to Important Farmland from Direct Impacts and Parcel Severance for the Bakersfield to Palmdale Project Section Build Alternatives (Acres)

Land Mapping Category	Alternative 1	Alternative 2	Alternative 3	Alternative 5
Direct Impact Acreage (Project Footprint)				
Prime Farmland	497	534	497	497
Unique Farmland	119	111	119	119
Farmland of Statewide Importance	92	93	89	92
Total²	708	738	705	708
Indirect Impact Acreage (Parcel Severance¹)				
Prime Farmland	54 (7 parcels)	43 (7 parcels)	54 (7 parcels)	54 (7 parcels)
Unique Farmland	0	0	0	0
Farmland of Statewide Importance	0	0	0	0
Total²	54	43	54	54
Grand Total	762	781	760	762

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014; Bender Rosenthal, Inc., 2017

¹ The conversion of Important Farmland from parcel severance would occur on a total of seven parcels for each of the B-P Build Alternatives.

² Neither the CCNM Design Option nor the Refined CCNM Design Option crosses any Important Farmland. Therefore, the impact acreages for Important Farmland from direct impacts and parcel severance are the same for the B-P Build Alternatives with or without the CCNM Design Option and the Refined CCNM Design Option.

B-P = Bakersfield to Palmdale Project Section

CCNM = César E. Chávez National Monument

The Bakersfield to Palmdale Project Section also has the potential to cause increased travel times to severed parcels, which could interfere with agricultural operations and result in additional conversion of Important Farmland. According to the transportation analysis (Section 3.2, Transportation), the design of the B-P Build Alternatives includes new grade-separated intersections, which would reduce traffic delay and improve safety for all transportation modes. In addition, access easements would be provided to maintain access to properties severed by the HSR alignment. Permanent impacts to Important Farmland from disruptions to parcel access and the resulting conversion of Important Farmland to nonagricultural use would be minimized with implementation of AG-IAMF#6. This measure requires the Authority to coordinate with property owners of land currently in agricultural use to finalize the realignments of any access roads in order to provide livestock and equipment crossings that are impacted by long-term project operations. With implementation of AG-IAMF#6, the project design would minimize the costs of increased travel distances by providing alignment crossings on public roads and thereby avoid the conversion of Important Farmland to nonagricultural use from disrupting access to a portion of land currently in agricultural use. As described in Chapter 2 (and listed in Appendix 2-A), grade-separated crossings (overpasses or underpasses) would typically occur at intervals of approximately 1 to 2 miles, except in mountainous areas where there is no agricultural land. The roadway crossings would typically include shoulders 4 to 8 feet wide, depending on average daily traffic volumes and roadway classifications. The paved surface for vehicles would therefore range from 32 to 40 feet wide with a minimum clearance of 27 feet over the HSR alignment. Increased travel to reach a severed parcel across the HSR right-of-way is therefore not anticipated to result in the permanent conversion of more Important Farmland than identified above (Table 3.14-15).

In addition to implementing AG-IAMF#6, the Authority would implement SO-MM#4, which ensures access modifications to affected farmlands are provided when necessary (refer to Section 3.12, Socioeconomics and Communities). Furthermore, the impacts of severance on agricultural equipment movement may be considered during the right-of-way acquisition process for determining property values.

As shown in Table 3.14-15, Alternative 1, 2, and 5 would permanently convert approximately 54 acres (7 parcels) of Important Farmland to nonagricultural use from parcel severance. Alternative 2 would permanently convert approximately 43 acres (7 parcels) of Important Farmland to nonagricultural use from parcel severance.

In addition, for Alternatives 1, 2, and 5, 64 acres (15 parcels) of severed Important Farmland would remain viable agricultural land, while for Alternative 3, 56 acres (15 parcels) of severed Important Farmland would remain viable agricultural (Table 3.14-16).

Table 3.14-16 Important Farmland to Remain in Agricultural Use after Parcel Severance—Step 2

Land Mapping Category	Alternative 1	Alternative 2	Alternative 3	Alternative 5
Parcel Severance Acreage—Step 1				
Prime Farmland	63	55	63	63
Unique Farmland	1	1	1	1
Farmland of Statewide Importance	0 ¹	0 ¹	0 ¹	0 ¹
Total	64 (15 parcels)	56 (15 parcels)	64 (15 parcels)	64 (15 parcels)

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014; Bender Rosenthal, Inc., 2017

¹ Denotes a number that is greater than 0 but smaller than 0.5.

² Neither the CCNM Design Option nor the Refined CCNM Design Option crosses any Important Farmland. Therefore, the impact acreages for Important Farmland from direct impacts and parcel severance are the same for the B-P Build Alternatives with or without the CCNM Design Option and the Refined CCNM Design Option.

Implementation of AG-IAMF#3, which requires the Authority to work with landowners to transfer noneconomic remnant parcels of Important Farmland to neighboring landowners and/or consolidate with adjacent parcels that are in agricultural use wherever possible, would reduce the acres of Important Farmland that would be permanently converted to nonagricultural use from parcel severance.

Neither the CCNM Design Option nor the Refined CCNM Design Option would permanently convert any Important Farmland to nonagricultural use from direct impacts or parcel severance.

CEQA Conclusion

The B-P Build Alternatives would indirectly and permanently convert Important Farmland to nonagricultural use from parcel severance, and impacts would be significant and unavoidable. To address significant impacts associated with the permanent conversion of Important Farmland to a nonagricultural use from parcel severance, as well as indirect impacts from parcel severance, the Authority would implement Mitigation Measures SO-MM#4 and AG-MM#1. SO-MM#4 requires the Authority to evaluate each partial-property acquisition and determine if the acquisition would impact access to the parcel. If so, the contractor must evaluate opportunities for providing modified access to allow continued use of agricultural lands and facilities. AG-MM#1 requires the Authority to fund the purchase of agricultural conservation easements at a ratio of not less than 1:1 for direct impacts to Important Farmland and a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to HSR permanently fenced infrastructure and located within the same agricultural regions where the impacts occur. However, because the prescribed mitigation measure protects land that is already in agricultural use and would not create new farmland (e.g., convert natural land to agriculture), the mitigation measure does not result in a net increase in agricultural land thereby offsetting the conversion of Important Farmland to a nonagricultural use. Therefore, AG-MM#1 would not reduce impacts from either direct or parcel severance impacts, and the permanent conversion of Important Farmland as a

result of parcel severance from the construction of Alternatives 1, 2, 3, and 5 would be significant and unavoidable pursuant to CEQA.

Impact AG #7: Permanent Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Agricultural Conservation Easement Land

The Bakersfield to Palmdale Project Section involves construction of rail and associated transportation structures and other HSR facilities (e.g., maintenance of infrastructure siding facilities, switching and paralleling stations, and a potential terminal storage and maintenance facility and/or maintenance of way facility site) through areas with designated Important Farmland that is under a Williamson Act contract and/or zoned for agricultural use that would permanently convert Important Farmland to nonagricultural use.

There is no FSZ land or agricultural conservation easement land within 100 feet of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option), and no FSZ land or agricultural conservation easement land would be impacted by the Bakersfield to Palmdale Project Section. Therefore, FSZ land and agricultural conservation easement land will not be discussed further in this analysis.

In addition to direct and permanent impacts to Important Farmland under a Williamson Act contract, the four B-P Build Alternatives would also sever agricultural properties designated Important Farmland that are under a Williamson Act contract, especially where the B-P Build Alternatives are not directly alongside existing transportation facilities. In some cases, severing the parcels would create two farmable parcels of sufficient size to meet the minimum Williamson Act contract acreage requirements on both parcels.⁵ This would mean that the only loss of Important Farmland under a Williamson Act contract would be as a result of the project footprint. In other instances, severing the parcels would result in the need to partially acquire land protected by the Williamson Act program because either the remnant parcel would be reduced to below 20 acres, the minimum acreage requirements of the Williamson Act program in Kern County, and/or the remnant parcel would not be farmable because of other factors, such as shape and location.

Direct impacts on Important Farmland that is under a Williamson Act contract or zoned for agricultural use are already accounted for in the analysis of direct impacts on Important Farmland and are not in addition to the acreages of impacts noted in Impact AG #5, Permanent Conversion of Important Farmland to Nonagricultural Use.

Table 3.14-17 shows both the total acres of Williamson Act Contract Land within the footprint of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) and the total acres of Important Farmland under a Williamson Act contract that are estimated to be permanently impacted by construction of the B-P Build Alternatives.

⁵ Minimum acreage requirements are established by the local jurisdiction and vary by county, parcel size, and land quality. In Kern County, parcels under Williamson Act contracts must be at least 20 acres in size. There is no Important Farmland under a Williamson Act contract in Los Angeles County.

Table 3.14-17 Permanent Impacts to Williamson Act Contract Land and Important Farmland under a Williamson Act Contract for the Bakersfield to Palmdale Project Section Build Alternatives (Acres)

Alternative	Williamson Act Contract Land	Important Farmland under a Williamson Act Contract ¹
Alternatives		
Alternative 1	928 (44 parcels)	93 (19 parcels)
Alternative 2	941 (44 parcels)	106 (19 parcels)
Alternative 3	960 (44 parcels)	93 (19 parcels)
Alternative 5	928 (44 parcels)	93 (19 parcels)
CCNM Design Option (Net Change)	+13 (+1 parcel)	0 (no change)
Refined CCNM Design Option (Net Change)	+481 (+5 parcels)	0 (no change)

Sources: California High Speed Rail Authority, 2016a; California Department of Conservation, 2014; Kern County Planning and Natural Resources Department, 2014

¹ Direct impacts on Important Farmland under Williamson Act contracts are already accounted for in the analysis of direct impacts on Important Farmland and are therefore not in addition to the acreages of impacts noted in Impact AG #5.

CCNM = César E. Chávez National Monument

Table 3.14-18 shows the total acres of Important Farmland under a Williamson Act contract that would be reduced in size to below the minimum allowable acres (20) prescribed by the County of Kern. There is no Williamson Act Contract Land in Los Angeles County.

Table 3.14-18 Williamson Act Contract Land and Important Farmland under a Williamson Act Contract Reduced below the Minimum Parcel Size (Acres)

Alternative	Williamson Act Contract Land	Important Farmland Under a Williamson Act Contract ¹
Alternatives		
Alternative 1	39 (4 parcels)	12
Alternative 2	40 (4 parcels)	14
Alternative 3	39 (4 parcels)	12
Alternative 5	39 (4 parcels)	12
CCNM Design Option	0 (0 parcels)	0
Refined CCNM Design Option	0 (0 parcels)	0

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014

¹ Direct impacts on Important Farmland under Williamson Act contracts are already accounted for in the analysis of direct impacts on Important Farmland and are therefore not in addition to the acreages of impacts noted in Impact AG #5.

CCNM = César E. Chávez National Monument

Section 3.13, Station Planning, Land Use, and Development, addresses the project's consistency with local zoning and general plan policies for the protection and preservation of farmland. Table 3.14-19 shows the total acres of land zoned for agricultural use and the total acres of land zoned for agricultural use that are designated as Important Farmland that is estimated to be permanently impacted from construction of the four B-P Build Alternatives (Figures 3.14-C-14 through 3.14-C-17 in Appendix 3.14-C in Volume 2: Technical Appendices). The data in this table represents impacts to land zoned for agricultural use by the County of Kern, the County of Los Angeles, and local cities.

Table 3.14-19 Permanent Impacts to Land Zoned for Agricultural Use and Important Farmland Zoned for Agricultural Use for the Bakersfield to Palmdale Project Section Build Alternatives (Acres)

Alternative	Land Zoned for Agricultural Use	Important Farmland Zoned for Agricultural Use ¹
Alternatives		
Alternative 1	3,390 (2,134 parcels)	674 (98 parcels)
Alternative 2	3,488 (2,079 parcels)	721 (91 parcels)
Alternative 3	3,442 (2,156 parcels)	671 (98 parcels)
Alternative 5	3,390 (2,022 parcels)	674 (98 parcels)
CCNM Design Option (Net Change)	-12 (no change to number of parcels affected)	0 (no change to number of parcels affected)
Refined CCNM Design Option (Net Change)	+784 (+7 parcels)	0 (no change to number of parcels affected)

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014

¹ Direct impacts on Important Farmland zoned for agricultural use are already accounted for in the analysis of direct impacts on Important Farmland and are therefore not in addition to the acreages of impacts noted in Impact AG #5.

CCNM = César E. Chávez National Monument

CEQA Conclusion

The B-P Build Alternatives would permanently convert Important Farmland acres that are under a Williamson Act contract and/or zoned for an agricultural use to a nonagricultural use as a result of construction of the B-P Build Alternatives, and impacts would be significant and unavoidable. To address Important Farmland that is converted to nonagricultural use from project construction, including Important Farmland under Williamson Act contracts and Important Farmland zoned for agricultural use, the Authority would implement Mitigation Measure AG-MM#1. AG-MM#1 requires the Authority to fund the purchase of agricultural conservation easements at a ratio of not less than 1:1 for direct impacts to Important Farmland and a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to HSR permanently fenced infrastructure within the same agricultural regions where the impacts occur. However, because the prescribed mitigation measure protects land that is already in agricultural use and would not create new farmland (e.g., convert natural land to agriculture), the mitigation measure would not result in a net increase in agricultural land, thereby offsetting the conversion of Important Farmland to a nonagricultural use. Therefore, AG-MM#1 would not reduce impacts associated with the permanent conversion of Important Farmland under Williamson Act contracts and Important Farmland zoned to a nonagricultural use from the construction of Alternatives 1, 2, 3, and 5 and impacts would be significant and unavoidable pursuant to CEQA.

Impact AG #8: Permanent Impacts to Irrigation Distribution Canals

Disruption to irrigation canal maintenance activities could result in the conversion of Important Farmland as a result of road closures that increase irrigation district response times to emergencies. For example, major canal breaches could result in damage to agricultural land (crops) if response times are excessive. Where the Bakersfield to Palmdale Project Section parallels existing transportation infrastructure such as State Route 58, response times to such incidents would typically be improved. The project section would not have any at-grade crossings and would provide access points approximately every 2 miles (Section 3.11, Safety and Security). According to the transportation analysis (Section 3.2, Transportation), the design of the B-P Build Alternatives includes new grade-separated intersections, which would result in a permanent change to vehicle movements in the areas affected by the closures. Traffic from permanently closed or modified roads would be diverted to nearby streets, which was accounted for in the traffic analysis. The traffic analysis concluded that changes in vehicle movements from road closures would not substantially increase delay.

Because there would be regular access points and traffic diversions would not substantially increase delay, construction of the Bakersfield to Palmdale Project Section would not impact response times for canal emergencies. Therefore, impacts to irrigation distribution canals would not result in the permanent conversion of Important Farmland to nonagricultural use. Consequently, none of the four B-P Build Alternatives would result in the permanent loss of Important Farmland related to increased response times to irrigation distribution canal emergencies.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland to nonagricultural use from the potential disruption of irrigation distribution canals during project construction. As such, impacts would be less than significant. The potential disruption to irrigation distribution canals from project construction would be similar for all B-P Build Alternatives. No mitigation measures are required.

Operations Impacts

Project operations would include train operations, temporary system termini, mitigation maintenance, and HSR land use development. Overall, the operations of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would cause permanent impacts to Important Farmland.

This section assesses permanent impacts to farmland resulting from the operations of the Bakersfield to Palmdale Project Section.

Interim operations impacts would occur during the incremental stages of HSR implementation that would change with build out of the HSR project and would include activities such as temporary system termini. Such impacts are categorized as interim because affected farmland and related infrastructure would be restored and returned to agricultural use after full build out of the HSR system.

Intermittent operations impacts are not continuous but recur during operation of the system on an episodic or occasional basis throughout the life of the system and can include actions such as traction power infrastructure maintenance and cyclical maintenance-of-way. Such impacts are intermittent because they would not be continuous.

Permanent operations impacts continue over the long term and can include actions such as mitigation maintenance. Such impacts are permanent because this land would remain in nonagricultural use in perpetuity. None of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would result in permanent operations impacts to agricultural land.

Interim Operations Impacts

The Bakersfield to Palmdale Project Section would have no interim operations impacts to agricultural land.

Intermittent Operations Impacts

The Bakersfield to Palmdale Project Section would have no intermittent operations impacts to agricultural land.

Permanent Operations Impacts

The operation of any of the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would permanently impact Important Farmland (Figure 3.14-2 and Figure 3.14-3). The following sections discuss the potential permanent operations impacts of each B-P Build Alternative on Important Farmland prior to mitigation. Mitigation measures are discussed in Section 3.14.7, and NEPA and CEQA impacts after mitigation are discussed in Sections 3.14.8 and 3.14.9, respectively.

Impact AG #9: Permanent Operations—Conversion of Important Farmland to Nonagricultural Land

The operation of the Bakersfield to Palmdale Project Section does not involve land development and therefore would not permanently convert additional Important Farmland to nonagricultural use. The context and intensity of permanent operations impacts on the conversion of Important Farmland to nonagricultural use is the same for all four B-P Build Alternatives (including the CCNM Design Option and Refined CCNM Design Option). The operations of the Bakersfield to Palmdale Project Section would have no permanent impact to Important Farmlands pursuant to CEQA.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland to nonagricultural use during project operations. As such, impacts would be less than significant. Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) does not involve land development and therefore would not permanently convert Important Farmland to nonagricultural use. No mitigation measures are required.

Impact AG #10: Permanent Operations—Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Conservation Easement Land

The operation of the Bakersfield to Palmdale Project Section would not permanently convert land under Williamson Act or FSZ contracts, local zoning, or conservation easement land that is designated Important Farmland to nonagricultural use. The context and intensity of permanent operations impacts on the conversion of Important Farmland under Williamson Act or FSZ contracts, local zoning, or conservation easement land is the same for all four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option). The permanent operations of the Bakersfield to Palmdale Project Section would have no impact to Important Farmland pursuant to CEQA.

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland that is under a Williamson Act contract or zoned for agricultural use to nonagricultural use during project operations. As such, impacts would be less than significant. Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) does not involve land development and therefore would not permanently convert Important Farmland under a Williamson Act contract and/or Important Farmland zoned for agricultural use to nonagricultural use. No mitigation measures are required.

Impact AG #11: Interference with Aerial Spraying Activities

Project operations would involve the use of vertical HSR structures, such as poles, radio communication towers, and elevated guideways. This analysis evaluates whether HSR project operations would curtail aerial spraying in such a way as to lead to additional conversion of Important Farmland. For example, the height of vertical HSR structures could interfere with aerial spraying of farmland adjacent to the four B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option). Currently, no restrictions exist on the distances an agricultural aircraft must maintain from utility lines or towers. Agricultural aircraft currently fly in areas where utility lines of varying heights (such as telephone poles and electrical transmission towers) exist in or near the agricultural fields. The distance that aircraft maintain from power lines and poles depends on the cropping pattern, the field's orientation, and operator-determined safety factors.

Many of the vertical HSR structures are similar to existing utility structures placed in and near agricultural fields. The HSR structures of the greatest concern for aerial spraying are the 100-foot-tall radio communication towers that would be placed approximately every 3 miles along the B-P Build Alternatives. These structures would be taller than many of the structures currently in the rural areas along the B-P Build Alternatives. Construction of these towers would follow federal, state, and local safety guidelines for radio masts (including lighting), thereby ensuring that they are properly visible to aircraft conducting aerial spraying. Therefore, if the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) necessitate changes in aerial spraying to avoid vertical structures constructed as part of the Bakersfield to Palmdale Project Section, the changes in aerial spraying patterns would consist of

nominal adjustments to flight patterns and would not cause conversion of Important Farmland to nonagricultural use (Arroyo 2016).

CEQA Conclusion

The B-P Build Alternatives would not permanently convert Important Farmland to a nonagricultural use from the interference with aerial spraying activities during project operations. As such, impacts would be less than significant. Permanent operations impacts of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not interfere with aerial spraying. No mitigation measures are required.

Impact AG #12: Permanent Operations—Noise and Vibration Impacts to Grazing Animals that Would Lead to Conversion of Important Farmland

There are no confined-animal facilities within 100 feet of the four B-P Build Alternatives. Therefore, noise from HSR operations would not permanently impact livestock and poultry in confined-animal facilities.

Operation of the Bakersfield to Palmdale Project Section would generate permanent noise and vibration from the operation of the high-speed trains. This analysis considers whether noise and vibration impacts to grazing animals could lead to additional conversion of Important Farmland. The FRA Guidelines (2005; updated 2012) provide noise criteria for assessing the permanent impact of high-speed trains on domestic animals. The FRA Guidelines assume that the noise exposure limit for livestock is 100 A-weighted decibels from a passing train operating at 220 mph. The noise exposure limit would occur at approximately 100 feet from the track centerline if the track is at-grade and approximately 15 feet from the track centerline if the track is elevated. Given that the track would gradually rise from grade level to peak elevation, the noise exposure limit would also move gradually from 100 feet at grade to 15 feet at the track's peak elevation. Fences control access to the HSR right-of-way, and the right-of-way would be 100 feet wide in rural locations. Therefore, livestock would have to be within 50 feet of the edge of the at-grade right-of-way to experience noise impacts above the recommended threshold.

Where the track is elevated, the noise exposure limit of 15 feet would occur within the right-of-way. As stated above, the right-of-way would be fenced off within 50 feet of each side of the track centerline and livestock would have no access to these areas. Therefore, if livestock is grazing alongside an elevated track, the livestock would not be able to access areas where noise thresholds would be exceeded by operation of the train.

Where the track is at-grade (approximately 23.0 to 23.8 miles in total), grazing livestock would be exposed to noise exceeding the noise exposure limits within 50 feet of the edge of the right-of-way. Livestock grazing beyond 50 feet from the edge of the right-of-way would not be exposed to noise levels that exceed the noise exposure limit for grazing livestock. Beyond 50 feet from the edge of the right-of-way, noise impacts associated with operation of the Bakersfield to Palmdale Project Section would fall below the noise exposure limit for livestock.

According to the *Fresno to Bakersfield Section Noise and Vibration Technical Report* (Authority 2011), animals startle when exposed to noises for which they have not developed sufficient habituation. Operation of the HSR system would occur on a regular schedule. Therefore, it is expected that livestock grazing within 50 feet of the edge of the right-of-way would habituate to the noise and vibration of the passing trains. Furthermore, because livestock would not be in a confined situation, they could move away from sources of noise and vibration. Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not disrupt grazing animals and therefore would not lead to the conversion of Important Farmland to nonagricultural use.

CEQA Conclusion

The B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not permanently convert Important Farmland to a nonagricultural use as a result of noise and vibration impacts on grazing animals during project operations. As such, impacts would be less than significant. Permanent noise and vibration impacts from project operation would be the same for all the B-P Build Alternatives (including the CCNM Design Option and the Refined

CCNM Design Option) and would not result in the permanent conversion of Important Farmland to nonagricultural use. No mitigation measures are required.

Impact AG #13: Permanent Operations—Wind-Induced Impacts to Agricultural Operations

HSR operations would generate increased winds from high-speed trains. Wind-induced impacts could indirectly convert Important Farmland through the disruption of bee pollination activities, impacts to blossoms and flowering trees, and dust and pesticide drift.

During operation, the high-speed trains would induce airflow (i.e., generate wind) along the sides and at the end of the train (known as *wake*). Studies summarized by the FRA in 1999 found that the strength of the airflow depends on the distance from the train, the train’s geometry (i.e., the shape of the nose and end of the train), and the train’s operating speed. For example, a study regarding induced wind impacts that was completed by a technical working group with the Authority found that wind generated by the train has a velocity of approximately 10 percent of the train’s velocity at a distance of 3 meters (approximately 10 feet) from the train (Authority 2012c). Induced air flow from a passing train traveling at 220 mph is estimated at approximately 38.9 mph at the track where the train passes through and decreases incrementally to approximately 2.4 mph at 30 feet from the train’s body, which is the maximum distance for wind speed calculations (Authority 2012c).

Research on honey bees found that they forage when temperatures are 55 degrees Fahrenheit or higher, and they do not forage in rain or in wind stronger than 12 mph (Authority 2012b). The winds generated by passing trains would equal or exceed 12 mph within 9 feet of the side of the train (Authority 2012c) when at-grade. The Bakersfield to Palmdale Project Section would traverse the majority of Important Farmland at-grade. Therefore, farmland impacts induced by wind are likely to occur within approximately 10 feet of the train. However, the HSR right-of-way would be 100 feet wide in rural locations. Agricultural operations, including beekeeping, would not occur within the HSR right-of-way. Furthermore, bees would aggregate where the crops are located, which would also be outside of the HSR right-of-way.

As noted above in Impact AG #12, the HSR right-of-way would be 100 feet wide in rural locations. Since agricultural operations would not occur within the HSR right-of-way, wind-induced impacts to blossoms and flowering trees and the creation of dust and pesticide drift would be expected to occur starting at the edge of the right-of-way, or 50 feet from the track centerline. Because the edge of the right-of-way is beyond the maximum distance for wind speed calculations (30 feet), winds induced by passing high-speed trains would not be excessive at the edge of the right-of-way. Therefore, wind-induced impacts to agriculture, such as impacts to blossoms and flowering trees and creation of dust and pesticide drift, would be minimal (Authority 2012b).

CEQA Conclusion

The B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not permanently convert Important Farmland to a nonagricultural use as a result of wind-induced impacts during project operations. As such, impacts would be less than significant. Wind-induced impacts to agricultural operations, such as impacts to blossoms and flowering trees and creation of dust and pesticide drift, would be minimal and would be the same for all B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option). No mitigation measures are required.

3.14.7 Mitigation Measures

The *Fresno to Bakersfield Section Final Supplemental EIR* (Authority 2018) and the *Final Supplemental EIS* (Authority 2019) identified two agricultural lands-related mitigation measures that apply to the F-B LGA as a whole. The portion of the F-B LGA from 34th Street and L Street to Oswell Street is in an urbanized area of Bakersfield, and the F-B LGA mitigation measures would not be applicable to the portion of the F-B LGA from 34th Street and L Street to Oswell Street.

Direct and indirect impacts on Important Farmland resulting from the permanent conversion of Important Farmland to a nonagricultural use would be mitigated with the objective of conserving Important Farmland. Prescribed mitigation measures are based on the Statewide Program EIR/EIS (Authority and FRA 2005) mitigation strategies and the *Updated Methodology for*

Evaluation of Agricultural Land Impacts (Authority 2017). Mitigation ratios determine the amount of Important Farmland that must be conserved given an acreage of land directly or indirectly impacted, 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 Department of Conservation California Farmland Conservancy Program to implement agricultural land mitigation for the California High-Speed Rail 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 non-agricultural 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 3.14-5 depicts how mitigation ratios would be applied on parcels of Important Farmland affected by the B-P Build Alternatives.

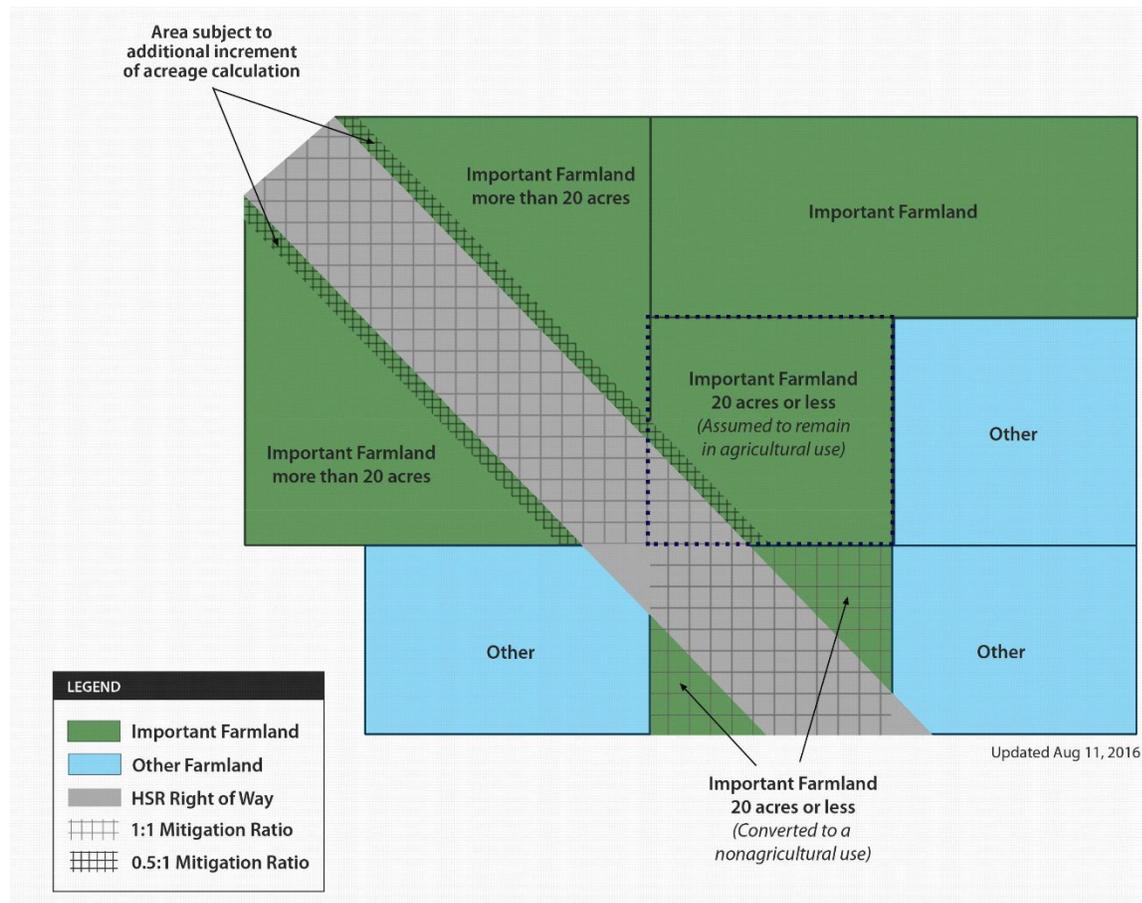


Figure 3.14-5 Important Farmland Mitigation Ratios

Table 3.14-20 shows the acreage of Important Farmland that would be subject to mitigation under each B-P Build Alternative.

Table 3.14-20 Important Farmland Mitigation Calculations (Acres)

Alternative ¹	Mitigation Ratio 1:1	Mitigation Ratio 0.5:1 ²	Total Mitigation
Alternative 1	762	51	813
Alternative 2	781	46	827
Alternative 3	760	51	811
Alternative 5	762	51	813

Sources: California High-Speed Rail Authority, 2016a; California Department of Conservation, 2014; Bender Rosenthal, Inc., 2017

¹ Neither the CCNM Design Option nor the Refined CCNM Design Option would impact any Important Farmland, and the impacts and associated mitigation for the B-P Build Alternatives would be the same with or without the CCNM Design Option and the refined CCNM Design Option.

² The Authority would 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 the permanently fenced HSR system infrastructure. This acreage of Important Farmland is part of AG-MM#1 and does not represent additional impacts to Important Farmland.

Authority = California High-Speed Rail Authority
 B-P = Bakersfield to Palmdale Project Section
 CCNM = César E. Chávez National Monument

Related land use impacts, as discussed in Section 3.12, Socioeconomics and Communities, include the following mitigation measure that applies to agricultural lands and would further reduce impacts related to the conversion of Important Farmlands to nonagricultural use:

- SO-MM#4: Provide Access Modifications to Affected Farmlands:** Prior to Construction in cases where partial-property acquisitions result in division of agricultural parcels by the HSR alignment or facilities, the Authority will evaluate with the property owner’s input modified access, including the effectiveness of providing overcrossings or undercrossings of the HSR track to allow continued use of agricultural lands and facilities. This could include the design of overcrossings or undercrossings to allow farm equipment passage. The Contractor shall prepare a technical memorandum for Authority review and approval detailing outreach to affected property owners, evaluation results and what measures were implemented to address bifurcated agricultural properties.

3.14.7.1 Impacts from Implementing Mitigation Measures

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

Mitigation Measure AG-MM #1 would place land that is currently not under any type of farmland conservation easement into a new easement that would permanently protect the farmland from future conversion to nonagricultural use. Because no farmland is being converted as a result of the mitigation, there are no agricultural land impacts attributable to the easements required by the mitigation measure. The mitigation measure would instead create a beneficial impact by preserving agricultural land in perpetuity for agricultural use. The agricultural land conversion easements would help maintain the land in its current agricultural use; therefore, no other secondary impacts are anticipated.

Mitigation Measure SO-MM#4: Provide Access Modifications to Affected Farmlands

The development of new overcrossings or undercrossings of the HSR track generally may require vegetation removal, grading, trenching, and other ground-disturbing activities, construction of roads and infrastructure, and the consumption of water and energy resources. Depending on their location, the construction of these new overcrossings or undercrossings may require the removal of native habitat or the conversion of farmland. Construction would also result in the emission of criteria pollutants and greenhouse gases, and the generation of noise and vibration, possibly near sensitive receptors. Because the goal of the new overcrossings and undercrossings is to

eliminate circuitous routes for farm equipment to travel between severed properties, it would likely reduce vehicle miles traveled. The new overcrossing or undercrossing would also provide access to agricultural properties that might otherwise be abandoned due to lack of access and thereby reduce the conversion of agricultural land to a nonagricultural use. Many of these potential impacts are likely to be avoided through local land use policies, laws, regulations, and permit requirements and would be subject to separate analysis under CEQA where appropriate, including measures to mitigate impacts to a less than significant level. For this reason, the impacts of mitigation would be less than significant under CEQA.

3.14.8 NEPA Impacts Summary

This section summarizes the impacts of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) and compares them to the anticipated impacts of the No Project Alternative. Table 3.14-21 provides a comparison of the potential impacts of each of the B-P Build Alternatives, the CCNM Design Option, and the Refined CCNM Design Option, and follows the discussion of the No Project Alternative. This section reports impacts after implementation of the recommended mitigation measures.

Table 3.14-21 Comparison of the Bakersfield to Palmdale Project Section Build Alternative Impacts for Important Farmland

Resource Category	Alternative 1	Alternative 2	Alternative 3	Alternative 5	CCNM Design Option	Refined CCNM Design Option
Construction Impacts						
Impact AG #1: Temporary Use of Important Farmland (number of acres)	322	276	321	322	0	0
Impact AG #2: Temporary Use of Important Farmland under Williamson Act Contracts (number of acres)	29	30	29	29	0	0
Impact AG #3: Temporary Utility and Infrastructure Disruption	Impacts on agricultural operations from utility disruptions and infrastructure disruption would be minimized, and conversion of Important Farmland to nonagricultural use would not occur under any of the B-P Build Alternatives. ¹					
Impact AG #4: Temporary Noise and Vibration Impacts to Adjacent Farm Animals	Because livestock would not be in a confined situation and could move away from noise and vibration sources, noise impacts associated with construction of any of the B-P Build Alternatives, the CCNM Design Option, and the Refined CCNM Design Option would be limited.					
Impact AG #5: Permanent Conversion of Important Farmland (number of acres converted) (Table 3.14-13) NRCS-CPA-106 Farmland Conversion Impact Rating (points) (Table 3.14-14)	708	738	705	708	0	0
	Kern County: 139 Los Angeles County: 98	Kern County: 137 Los Angeles County: 98	Kern County: 142 Los Angeles County: 98	Kern County: 139 Los Angeles County: 99	Kern County: N/A Los Angeles County: N/A	Kern County: N/A Los Angeles County: N/A
Impact AG #6: Creation of Remnant Parcels of Important Farmland (number of acres) (Table 3.14-15)	54	43	54	54	0	

Resource Category	Alternative 1	Alternative 2	Alternative 3	Alternative 5	CCNM Design Option	Refined CCNM Design Option
Impact AG #7: Permanent Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Agricultural Conservation Easement Land (number of acres) (Table 3.14-17)						
Important Farmland under Williamson Act Contracts (number of acres) (Table 3.14-17)	93	106	93	93	0	0
Important Farmland Zoned for Agricultural Use (number of acres) (Table 3.14-17)	674	721	671	674	0	0
Important Farmland under a Williamson Act Contract Reduced below the Minimum Parcel Size (number of acres) (Table 3.14-18)	12	14	12	12	0	0
Impact AG #8: Permanent Impacts to Irrigation Distribution Canals	Impacts on emergency access would be minimized and would not impact response times for canal emergencies in the event of major breaches at irrigation district canals, which could result in damage to agricultural land (crops) if response times are excessive. The conversion of Important Farmland to nonagricultural use from impacts to irrigation distribution canals would not occur under any of the B-P Build Alternatives, the CCNM Design Option or the Refined CCNM Design Option.					
Operations Impacts						
Impact AG #9: Permanent Operations—Conversion of Important Farmland to Nonagricultural Land	The conversion of Important Farmland to nonagricultural use from operation of the B-P Build Alternatives would not occur under any of the B-P Build Alternatives, the CCNM Design Option or the Refined CCNM Design Option.					
Impact AG #10: Permanent Operations—Impacts to Land under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Conservation Easement Land	The conversion of Important Farmland (including Important Farmland under Williamson Act contracts or zoned for agricultural use) to nonagricultural use from operation of the B-P Build Alternatives would not occur under any of the B-P Build Alternatives, the CCNM Design Option or the Refined CCNM Design Option.					
Impact AG #11: Interference with Aerial Spraying Activities	Any changes in aerial spraying, if necessary, would consist of nominal adjustments to flight patterns and would not cause conversion of Important Farmland to nonagricultural use from operation of any of the B-P Build Alternatives. ²					

Resource Category	Alternative 1	Alternative 2	Alternative 3	Alternative 5	CCNM Design Option	Refined CCNM Design Option
Impact AG #12: Permanent Operations— Noise Impacts to Grazing Animals that Would Lead to Conversion of Important Farmland	Noise exceeding the noise exposure limits for livestock during the intermittent operation of high-speed trains would occur within the right-of-way, which would be fenced off within 50 feet of each side of the track centerline. In addition, because livestock would not be in a confined situation and could temporarily move away from intermittent noise and vibration from passing high-speed trains, noise and vibration impacts associated with operation of any of the B-P Build Alternatives, the CCNM Design Option or the Refined CCNM Design Option would be limited.					
Impact AG #13: Permanent Operations— Wind-Induced Impacts to Agricultural Operations	Wind generated by high-speed trains during operation would not be strong enough to interfere with agricultural activities such as insect pollination or aerial pesticide application under any of the B-P Build Alternatives, the CCNM Design Option or the Refined CCNM Design Option. Wind generated by high-speed trains would not cause conversion of Important Farmland to a nonagricultural use for any B-P Build Alternative. ³					

The CCNM Design Option would not temporarily or permanently impact any Important Farmland, and the impacts to Important Farmland for the B-P Build Alternatives would be the same with or without the CCNM Design Option.

¹ Neither the CCNM Design Option nor the Refined CCNM Design Option would impact any Important Farmland. Therefore, impacts to Important Farmland associated with temporary utility disruptions would be the same with or without the CCNM Design Option and the refined CCNM Design Option.

² Neither the CCNM Design Option nor the Refined CCNM Design Option would impact any Important Farmland. Therefore, impacts to Important Farmland associated with aerial spraying activities would be the same with or without the CCNM Design Option and the refined CCNM Design Option.

³ Neither the CCNM Design Option nor the Refined CCNM Design Option would impact any Important Farmland. Therefore, impacts to Important Farmland associated with wind generated by high-speed trains would be the same with or without the CCNM Design Option and the refined CCNM Design Option.

B-P = Bakersfield to Palmdale Project Section

CCNM = César E. Chávez National Monument

N/A = not applicable

3.14.8.1 No Project Alternative

Under the No Project Alternative, the Bakersfield to Palmdale Project Section would not be constructed. However, implementing the No Project Alternative is not equivalent to no impacts to agricultural resources. Although, the project section would not be constructed under the No Project Alternative, existing and planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems would still be constructed to accommodate planned growth through 2040. Therefore, for the purpose of assessing future conditions under the No Project Alternative, it was assumed that all currently known programmed and funded improvements to the intercity transportation system (highway, rail, and transit) and reasonably foreseeable local development projects (with funding sources identified) would be developed by 2040. Therefore, although the exact parcels and acreages would be different because the planned improvements are not necessarily located on the same land as that which is planned for the project section, the No Project Alternative would have an impact to Important Farmland, Important Farmland under a Williamson Act contract, and Important Farmland zoned for agricultural uses to accommodate projected future growth. Because, based on crop value, the agricultural land in the San Joaquin Valley within Kern County is among the highest-quality and most productive farmland in the U.S., the incremental impact to Important Farmland from the No Project Alternative would lead to temporary impacts on Important Farmland from construction activities as well as direct and indirect permanent conversion of Important Farmland to nonagricultural use from construction and operation activities.

All B-P Build Alternatives would result in direct and indirect impacts to farmland from implementation of the alternatives.⁶ Direct impacts include the permanent conversion of Important

⁶ Neither the CCNM Design Option nor the Refined CCNM Design Option would impact Important Farmland.

Farmland to nonagricultural use. Indirect impacts to farmland include potential conversion of agricultural land to nonagricultural uses from parcel severance.

An impact to farmland pursuant to NEPA is measured by the context, intensity, and duration of impacts to Important Farmland associated with implementation of the four B-P Build Alternatives, including Important Farmland that is under a Williamson Act contract, Important Farmland zoned for agricultural use, and Important Farmland that is under an agricultural conservation easement. As defined in Section 3.14.2.2, Grazing Land is not included in the definition of Important Farmland. Therefore, the conversion of Grazing Land to nonagricultural use is not considered an impact to farmland pursuant to NEPA. Furthermore, there are no confined-animal facilities, Farmland of Local Importance, FSZ land, or agricultural conservation easements within the farmland RSA. Therefore, there would be no impacts to these types of farmland, and they will not be further discussed in this summary of impacts.

As described in more detail in Chapter 2, Alternatives, the alignments for Alternatives 1, 2, 3, and 5 are identical except for the following:

1. An approximately 12-mile section in the San Joaquin Valley near the unincorporated community of Edison
2. An approximately 14-mile section between the Tehachapi Mountains and west of Rosamond
3. An approximately 12-mile section in urban Antelope Valley between just north of the City of Lancaster and the City of Palmdale

The geographic distribution of existing Important Farmland and Williamson Act Contract Land that the Bakersfield to Palmdale Project Section would traverse is the same for all four B-P Build Alternatives. Therefore, the intensity, context, and duration of impacts to Important Farmland, Important Farmland under a Williamson Act contract, and Important Farmland zoned for agricultural use is very similar for all four B-P Build Alternatives.

In addition, the CCNM Design Option and the Refined CCNM Design Option, which diverge from the B-P Build Alternatives for approximately 7 and 8 miles, respectively, near Nuestra Señora Reina de La Paz National Historic Landmark/César E. Chávez National Monument in Keene, would not traverse any Important Farmland. Therefore, the intensity, context, and duration of impacts to Important Farmland, Important Farmland under a Williamson Act contract, and Important Farmland zoned for agricultural use are the same for all four B-P Build Alternatives with or without the CCNM Design Option.

Table 3.14-21 provides a comparison of the key quantitative impacts of the B-P Build Alternatives on Important Farmland. Data from this table and the information summarized below are described in detail in Section 3.14.6.

Implementing the B-P Build Alternatives would result in impacts on agricultural lands, including temporary use of Important Farmland and the direct and indirect conversion of Important Farmland to a nonagricultural use. The B-P Build Alternatives would incorporate IAMFs that would minimize impacts on agricultural farmland. These IAMFs would include restoring Important Farmland used for temporary construction activities, coordinating construction activities with agricultural property owners and utility providers, providing temporary livestock and equipment crossing, providing permanent livestock and equipment access road realignments as necessary, relocating irrigation facilities where necessary, and administering a farmland consolidation program (Appendix 2-E). Although these IAMFs would minimize the impacts from construction of the B-P Build Alternatives on agricultural farmland, they would not avoid the permanent conversion of Important Farmland to a nonagricultural use. The Authority is proposing a mitigation measure to further offset impacts associated with the conversion of Important Farmland to nonagricultural use.

3.14.8.2 Bakersfield to Palmdale Project Section Build Alternatives

Construction Impacts

Construction of all four B-P Build Alternatives would require the temporary use of Important Farmland for construction staging areas and other construction-related activities. These impacts would be greatest under Alternatives 1 and 5, which would temporarily use the largest area of Important Farmland (322 acres), and least under Alternative 2, which would temporarily use the smallest area (276 acres). Under all four B-P Build Alternatives, some of the Important Farmland that would be temporarily impacted is also under a Williamson Act contract. Indirect impacts on Important Farmland under Williamson Act contracts would range from 29 acres for Alternatives 1, 3, and 5 to 30 acres for Alternative 2, and are already accounted for in the analysis of indirect impacts on Important Farmland. The B-P Build Alternatives would incorporate IAMFs that would minimize temporary impacts on agricultural farmland. These IAMFs would include restoring Important Farmland used for temporary construction activities, coordinating construction activities with agricultural property owners and utility providers, and providing temporary livestock and equipment crossing. 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 B-P Build Alternatives.

Construction of all four B-P Build Alternatives could also temporarily interfere with agricultural infrastructure. Temporary impacts on agricultural infrastructure from utility interruptions would be largely avoided. When interruptions would occur, advance 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 from these interruptions under any of the B-P Build Alternatives.

Construction of all four B-P Build Alternatives would generate temporary noise and vibration from construction equipment and vehicles. Where the track is being constructed at-grade, livestock would need to be within 50 feet of the edge of the right-of-way for noise impacts to occur. Where the track is being constructed at an elevated grade, the noise exposure limit of 15 feet would occur within the right-of-way. The right-of-way would be fenced off within 50 feet of each side of the track centerline, and livestock would have no access to areas where noise thresholds would be exceeded by construction of the B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option. Vibration impacts during construction of the B-P Build Alternatives, the CCNM Design Option, or the Refined CCNM Design Option could occur on Grazing Land where livestock is present. However, livestock would not be in a confined situation and could move away from sources of noise and vibration. Therefore, during construction of any of the B-P Build Alternatives, Important Farmland would not be subject to permanent conversion as a result of noise and vibration.

Each of the B-P Build Alternatives would result in the 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 B-P Build Alternatives overlaps Important Farmland, and would be greatest under Alternative 2 (738 acres) and least under Alternative 3 (705 acres). Indirect permanent conversion would occur as a result of parcels of Important Farmland being severed by the B-P Build Alternatives. Realigning access roads and providing alternative livestock and equipment crossings to those that are impacted from construction of the B-P Build Alternatives would help minimize the indirect impact of parcel severance. 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 Alternatives 1, 3, and 5 (54 acres) and least under Alternative 2 (42 acres). In total, permanent direct and indirect conversion of Important Farmland to nonagricultural use under the B-P Build Alternatives would range from 759 acres for Alternative 3 to 762 acres for Alternatives 1 and 5, and 780 acres for Alternative 2. To offset these impacts, the Authority has entered into an agreement with the DOC to implement agricultural land mitigation for the HSR system. Mitigation Measure 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 827 acres for Alternative 2 to 813 acres for Alternative 1 and 5, and 811 acres for Alternative 3.

Under all four B-P Build Alternatives, some of the Important Farmland that would be directly and permanently converted to nonagricultural use is also under a Williamson Act contract. Construction of Alternatives 1, 3, and 5 would directly convert 93 acres of Important Farmland under a Williamson Act contract, and construction of Alternative 2 would directly convert 106 acres of Important Farmland under a Williamson Act contract. All four B-P Build Alternatives would sever agricultural properties designated Important Farmland that are under a Williamson Act contract. In some instances, parcel severance would create a remnant parcel on land protected by the Williamson Act program that would need to be partially acquired either because the remnant parcel would be reduced to below the minimum acreage requirements of the Williamson Act program in Kern County, and/or the remnant parcel would not be farmable because of other factors, such as shape and location. Direct impacts on Important Farmland under Williamson Act contracts are already accounted for in the analysis of direct impacts on Important Farmland. Therefore, loss of Williamson Act contract status would not result in additional direct or indirect conversion of Important Farmland to a nonagricultural use for any of the B-P Build Alternatives.

Under all four B-P Build Alternatives, some of the Important Farmland that would be directly and permanently converted to nonagricultural use is also zoned for agricultural use. Construction of Alternatives 1 and 5 would directly convert 674 acres of Important Farmland zoned for agricultural use; construction of Alternative 2 would directly convert 721 acres of Important Farmland zoned for agricultural use; and construction of Alternative 3 would directly convert 671 acres of Important Farmland zoned for agricultural use. Direct impacts on Important Farmland zoned for agricultural use are already accounted for in the analysis of direct impacts on Important Farmland.

Construction of the B-P Build Alternatives would result in road closures, which could temporarily increase irrigation district response times to emergencies during project construction. There would be regular access points to irrigation distribution canals under all four of the B-P Build Alternatives and response times for canal emergencies would not be impacted. Therefore, during construction of any of the B-P Build Alternatives, the permanent conversion of Important Farmland to nonagricultural use would not result from disruption to irrigation canal maintenance activities. Therefore, loss of land zoned for agricultural use would not result in additional direct or indirect conversion of Important Farmland to a nonagricultural use for any of the B-P Build Alternatives.

Operations Impacts

The operation of any of the four B-P Build Alternatives would not permanently convert Important Farmland—including Important Farmland under Williamson Act or FSZ contracts, local zoning, or conservation easement land that is designated Important Farmland—to a nonagricultural use.

Vertical HSR structures would be present along the length of all four B-P Build Alternatives. The HSR structures of the greatest concern for aerial spraying are the 100-foot-tall radio communication towers that would be placed approximately every 3 miles along the B-P Build Alternatives. In rural areas, these towers would be taller than many of the existing structures. Construction of these towers would follow federal, state, and local safety guidelines for radio masts (including lighting), thereby ensuring they are properly visible to aircraft conducting aerial spraying. Any changes in aerial spraying to avoid vertical structures constructed as part of the B-P Build Alternatives would consist of nominal adjustments to flight patterns and would not cause conversion of Important Farmland to nonagricultural use.

Operation of all four B-P Build Alternatives would generate permanent noise and vibration impacts from the operation of high-speed trains. Where the track is at-grade, livestock would have to be within 50 feet of the edge of the right-of-way to experience noise impacts above the recommended noise threshold during operations. Where the track is elevated, the noise exposure limit of 15 feet would occur within the right-of-way. The right-of-way would be fenced off within

50 feet of each side of the track centerline, and livestock would have no access to these areas where noise thresholds would be exceeded by operation of the train. In addition, operation of the HSR system would take place on a regular schedule, and it is expected that livestock grazing within 50 feet of the edge of the right-of-way would habituate to the noise of the passing trains. Vibration impacts during project operations could occur on Grazing Land where livestock is present. However, livestock would not be in a confined situation and could move away from sources of noise and vibration. Therefore, during operation of any of the B-P Build Alternatives, Important Farmland would not be subject to permanent conversion as a result of noise and vibration.

Operation of all four B-P Build Alternatives would generate wind from passing high-speed trains. Induced airflow from passing trains would dissipate in less than 1 second and would occur within approximately 10 feet of the train when at-grade. The HSR right-of-way would be 50 feet from the track centerline in rural areas, and agricultural operations, including beekeeping, would not take place within the HSR right-of-way. Bees would aggregate where the crops are, outside of the HSR right-of-way. In addition, winds induced by passing high-speed trains would not be excessive at the edge of the right-of-way and would have minimal impacts to blossoms and flowering trees and the creation of dust and pesticide drift. Therefore, operation of the B-P Build Alternatives would not result in the permanent conversion of Important Farmland to a nonagricultural use as a result of wind generated by passing trains.

3.14.9 CEQA Significance Conclusions

This section summarizes the impacts discussed in the Environmental Consequences section, reports the level of significance prior to mitigation, indicates mitigation measures available to reduce the level of significance for each impact, and concludes by reporting on the level of significance after mitigation is implemented. If implementing a measure would reduce the potential impact below the applicable significance threshold, the impact would be considered less than significant after mitigation. If, however, implementing a mitigation measure cannot reduce the level of impact below the significance threshold, the impact would be considered significant and unavoidable. This section summarizes the project impacts pursuant to CEQA thresholds for agricultural resources and identifies the CEQA level of significance before and after mitigation.

Under the No Project Alternative, the Bakersfield to Palmdale Project Section would not be constructed. However, implementing the No Project Alternative is not equivalent to no impacts to agricultural resources. Although, the project section would not be constructed under the No Project Alternative, existing and planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems would still be constructed to accommodate planned growth through 2040. Therefore, for the purpose of assessing future conditions under the No Project Alternative, it was assumed that all currently known programmed and funded improvements to the intercity transportation system (highway, rail, and transit) and reasonably foreseeable local development projects (with funding sources identified) would be developed by 2040. Therefore, although the exact parcels and acreages would be different because the planned improvements are not necessarily located on the same land as that which is planned for the project section, the No Project Alternative would have a significant impact to Important Farmland to accommodate projected future growth. Because, based on crop value, the agricultural land in the San Joaquin Valley within Kern County is among the highest-quality and most productive farmland in the U.S., the incremental impact to Important Farmland from the No Project Alternative would result in a significant impact pursuant to CEQA.

As described in more detail in Section 3.14.5, Affected Environment, the geographic distribution of the existing Important Farmland that the project section would traverse is largely the same for all four B-P Build Alternatives. Neither the CCNM Design Option nor the Refined CCNM Design Option traverses Important Farmland. Therefore, the impacts to Important Farmland are the same for all four B-P Build Alternatives with or without the CCNM Design Option and the Refined CCNM Design Option. Impacts from the B-P Build Alternatives that remain significant pursuant to CEQA after implementing the recommended mitigation measures are outlined in Table 3.14-22.

Table 3.14-22 Summary of CEQA Significance Conclusions and Mitigation Measures for Agricultural Lands

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Construction Impacts			
<p>Impact AG #1: Temporary Use of Important Farmland Alternatives 1 and 5:</p> <ul style="list-style-type: none"> ▪ Temporarily impacts 322 acres of Important Farmland <p>Alternative 2:</p> <ul style="list-style-type: none"> ▪ Temporarily impacts 276 acres of Important Farmland <p>Alternative 3:</p> <ul style="list-style-type: none"> ▪ Temporarily impacts 321 acres of Important Farmland <p>CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No temporary impacts to Important Farmland 	Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant
<p>Impact AG #2: Temporary Use of Important Farmland under Williamson Act Contracts Alternatives 1, 3 and 5:</p> <ul style="list-style-type: none"> ▪ Temporarily impacts 29 acres of Important Farmland under Williamson Act contracts <p>Alternative 2:</p> <ul style="list-style-type: none"> ▪ Temporarily impacts 30 acres of Important Farmland under Williamson Act contracts <p>CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No temporary impacts to Important Farmland, including Important Farmland under Williamson Act contracts 	Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<p>Impact AG #3: Temporary Utility and Infrastructure Disruption Construction of the four B-P Build Alternatives (including the CCNM Design Option and Refined CCNM Design Option) and related improvements (e.g., road and irrigation canal and railroad realignments) would temporarily impact farmland operations. Each farm maintains a system of on-site utilities needed for operations, such as irrigation systems (e.g., ditches, drains, pipelines, and wells), access roads, and power supplies that could be disrupted by construction of the B-P Build Alternatives (including the CCNM Design Option and Refined CCNM Design Option) during construction. However, temporary utility disruptions would be avoided or resolved, or the landowner compensated, during the right-of-way acquisition process. Infrastructure disruptions would not result in the permanent conversion of Important Farmland or Important Farmland under a Williamson Act contract to nonagricultural use.</p>	<p>Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>No mitigation measures are required</p>	<p>Less than significant</p>
<p>Impact AG #4: Temporary Noise and Vibration Impacts to Adjacent Farm Animals Construction noise would occur only temporarily during construction activities and would, by definition, be temporary and at levels unlikely to reach the noise exposure limits for grazing livestock. Furthermore, although construction of the B-P Build Alternatives (including the CCNM Design Option and Refined CCNM Design Option) could result in increased stress to grazing livestock that remain within the impacted area, the impact would not convert Grazing Lands (which are not included in the definition of Important Farmland) to a nonagricultural use. Losses in farm productivity from temporary noise impacts may be considered an economic impact to be addressed during the right-of-way acquisition process.</p>	<p>Less than significant for all B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option)</p>	<p>No mitigation measures are required</p>	<p>Less than significant</p>

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<p>Impact AG #5: Permanent Conversion of Important Farmland to Nonagricultural Use Direct Impacts Alternatives 1 and 5:</p> <ul style="list-style-type: none"> ▪ Directly and permanently convert 708 acres of Important Farmland to nonagricultural use <p>Alternative 2:</p> <ul style="list-style-type: none"> ▪ Directly and permanently converts 738 acres of Important Farmland to nonagricultural use <p>Alternative 3:</p> <ul style="list-style-type: none"> ▪ Directly and permanently converts 705 acres of Important Farmland to nonagricultural use <p>CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No direct permanent conversion of Important Farmland <p>Refined CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No direct permanent conversion of Important Farmland 	<p>Significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland)</p>	<p>Significant and unavoidable for all B-P Build Alternatives</p>
<p>Impact AG #6: Permanent Indirect Impacts to Important Farmland from Parcel Severance Alternatives 1, 3, and 5:</p> <ul style="list-style-type: none"> ▪ Permanently convert 54 acres of Important Farmland to nonagricultural use from parcel severance <p>Alternative 2:</p> <ul style="list-style-type: none"> ▪ Permanently converts 42 acres of Important Farmland to nonagricultural use from parcel severance <p>CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No permanent conversion of Important Farmland from parcel severance <p>Revised CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No permanent conversion of Important Farmland from parcel severance 	<p>Significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland) SO-MM#4: Provide Access Modifications to Affected Farmlands</p>	<p>Significant and unavoidable for all B-P Build Alternatives</p>

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<p>Impact AG #7: Permanent Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Agricultural Conservation Easement Lands</p> <p>Direct impacts on Important Farmland under Williamson Act contracts or zoned for agricultural use are already accounted for in the analysis of direct impacts on Important Farmland. Therefore, the acreages provided below are a subset of, and not in addition to, the acreages of impacts noted in Impact AG #5.</p> <p>Alternatives 1 and 5:</p> <ul style="list-style-type: none"> ▪ Permanently convert 93 acres of Important Farmland under Williamson Act contracts to nonagricultural use ▪ Permanently convert 674 acres of Important Farmland zoned for agricultural use to nonagricultural use <p>Alternative 2:</p> <ul style="list-style-type: none"> ▪ Permanently converts 106 acres of Important Farmland under Williamson Act contracts to nonagricultural use ▪ Permanently converts 721 acres of Important Farmland zoned for agricultural use to nonagricultural use <p>Alternative 3:</p> <ul style="list-style-type: none"> ▪ Permanently converts 93 acres of Important Farmland under Williamson Act contracts to nonagricultural use ▪ Permanently converts 671 acres of Important Farmland zoned for agricultural use to nonagricultural use <p>CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No permanent conversion of Important Farmland, including Important Farmland under Williamson Act contracts or zoned for agricultural use <p>Refined CCNM Design Option:</p> <ul style="list-style-type: none"> ▪ No permanent conversion of Important Farmland, including Important Farmland under Williamson Act contracts or zoned for agricultural use 	<p>Significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>AG-MM#1: Conserve Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland)</p>	<p>Significant and unavoidable for all B-P Build Alternatives</p>

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<p>Impact AG #8: Permanent Impacts to Irrigation Distribution Canals Disruption to irrigation canal maintenance activities could result in the conversion of Important Farmland as a result of road closures that increase irrigation district response times to emergencies. For example, major canal breaches could result in damage to agricultural land (crops) if response times are excessive. Because there would be regular access points, construction of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not impact response times for canal emergencies and would not result in the permanent conversion of Important Farmland to nonagricultural use.</p>	Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant
Operations Impacts			
<p>Impact AG #9: Permanent Operations—Conversion of Important Farmland to Nonagricultural Land Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not permanently convert Important Farmland to nonagricultural use.</p>	Less than significant for all B-P Build Alternatives (the CCNM Design Option and Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant
<p>Impact AG #10: Permanent Operations—Impacts to Important Farmland under Williamson Act or Farmland Security Zone Contracts, Local Zoning, or Conservation Easement Land Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not permanently convert Important Farmland under Williamson Act or FSZ contracts, local zoning, or conservation easement lands to nonagricultural use.</p>	Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant
<p>Impact AG #11: Interference with Aerial Spraying Activities Project operations would involve the use of vertical HSR structures, such as poles, radio communication towers, and elevated guideways. Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not curtail aerial spraying in such a way as to lead to additional conversion of Important Farmland, Important Farmland under a Williamson Act contract, or Important Farmland zoned for agricultural use to nonagricultural use.</p>	Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)	No mitigation measures are required	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
<p>Impact AG #12: Permanent Operations—Noise Impacts to Grazing Animals that Would Lead to Conversion of Important Farmland Operation of the B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would generate permanent noise and vibration from the operation of high-speed trains. The B-P Build Alternatives (including the CCNM Design Option and the Refined CCNM Design Option) would not permanently impact grazing from noise and vibration such that the B-P Build Alternatives would lead to the conversion of Important Farmland.</p>	<p>Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>No mitigation measures are required</p>	<p>Less than significant</p>
<p>Impact AG #13: Permanent Operations—Wind-Induced Impacts to Agricultural Operations HSR operations would generate increased winds from high-speed trains. Wind-induced impacts can indirectly convert Important Farmland and Williamson Act Contract Land through the disruption of bee pollination activities, impacts to blossoms and flowering trees, and dust and pesticide drift. Because a majority of the wind-induced impacts would occur within the fenced right-of-way, permanent wind-induced impacts would be minimal and would not result in the permanent conversion of Important Farmland to nonagricultural use.</p>	<p>Less than significant for all B-P Build Alternatives (the CCNM Design Option and the Refined CCNM Design Option do not traverse Important Farmland; therefore, the significance conclusions are not affected by the inclusion of either the CCNM Design Option or the Refined CCNM Design Option)</p>	<p>No mitigation measures are required</p>	<p>Less than significant</p>

B-P = Bakersfield to Palmdale Project Section
 CCNM = César E. Chávez National Monument
 FSZ = Farmland Security Zone