

3.14 Agricultural Land

This Draft Supplemental EIR/EIS compares the Fresno to Bakersfield Locally Generated Alternative (F-B LGA) to the complementary portion of the Preferred Alternative that was identified in the *Fresno to Bakersfield Section California High-Speed Train Final Project Environmental Impact Report/Environmental Impact Statement*. As discussed in Section 1.1.3 of this Draft Supplemental EIR/EIS, the complementary portion of the Preferred Alternative consists of the portion of the Burlington Northern and Santa Fe Railway (BNSF) Alternative from Poplar Avenue to Hageman Road and the Bakersfield Hybrid from Hageman Road to Oswell Street (further referenced as the “May 2014 Project” in this Draft Supplemental EIR/EIS). Since the Fresno to Bakersfield Section Final EIR/EIS does not evaluate the May 2014 Project as a discrete subsection of the Fresno to Bakersfield Project (as it did for the Allensworth Bypass, for example), affected environment and impact summary discussion included in this section for the May 2014 Project has been extrapolated from the available information contained in the Fresno to Bakersfield Section Final EIR/EIS.

This section describes the regulatory setting and affected environment for agricultural lands for the F-B LGA for the California High-Speed Rail (HSR) system. It identifies potential project impacts on agricultural lands and associated mitigation measures. Because there are no forests between Shafter and Bakersfield, forest lands are not discussed.

The Fresno to Bakersfield Section Final EIR/EIS (California High-Speed Rail Authority [Authority] and the Federal Railroad Administration [FRA] 2014a: pages 3.14-46 through 3.14-50) concluded that the construction and operation of all HSR alternatives considered would result in permanent conversion of agricultural land to nonagricultural use that would be significant under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). For the May 2014 Project, the permanent conversion to nonagricultural use totals 484 acres. Mitigation measures include preservation of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland (collectively “Important Farmland”), and the creation of a farmland consolidation program to sell noneconomic remnant parcels to neighboring landowners. Section 3.14.3, Methods for Evaluating Impacts, of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a: 9-10) offers a summary of methodology used to identify noneconomic remnant parcels. With the implementation of mitigation measures, the Fresno to Bakersfield Section Final EIR/EIS (pages 3.14-63 and 3.14-64) determined that impacts would continue to be significant under CEQA because farmland cannot be replaced.

Other sections of this Draft Supplemental EIR/EIS address topics related to agricultural lands and their use in agricultural production. Section 3.2, Transportation, discusses how the proposed F-B LGA would affect rural roads and provide access across the right-of-way (ROW) for farm equipment. Section 3.4, Noise and Vibration, discusses noise and vibration impacts on confined animals. Section 3.6, Public Utilities and Energy, addresses impacts on irrigation pipelines and canals, along with project water demand. Section 3.8, Hydrology and Water Resources, addresses the potential for groundwater impacts. Section 3.12, Socioeconomics and Communities, addresses agricultural economics and the potential for loss of tax revenues associated with agricultural land conversion. Section 3.13, Station Planning, Land Use, and Development, and Section 3.18, Regional Growth, discuss agricultural zoning and the effects of future urban development on farmlands.

3.14.1 Regulatory Setting

This section identifies the federal, state, regional, and local regulations, laws, and orders that apply to agricultural lands. The following sections summarize key laws and regulations relevant to the proposed project. A more detailed summary of these key laws and regulations can be found on pages 3.14-1 through 3.14-9 in Section 3.14 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a). There are no new or revised federal or state laws or regulations for agricultural lands relevant to the proposed project since the Fresno to Bakersfield Section Final EIR/EIS.

3.14.1.1 Federal

Applicable federal laws and regulations relevant to agricultural lands include the following:

Farmland Protection Policy Act of 1981 – [7 U.S.C. Sections 4201 to 4209 and 7 C.F.R. Part 658]

The Farmland Protection Policy Act (FPPA, 7 U.S.C. Section 4101 et seq.) is intended to protect farmland and requires federal agencies to coordinate with the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (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.”

3.14.1.2 State

Applicable state laws, regulations, and programs relevant to agricultural lands include the following:

California Land Conservation Act of 1965 (California Government Code S.51200-51295) (also known as the Williamson Act)

The California Land Conservation Act (Government Code Section 51200 et seq.) of 1965, commonly known as the Williamson Act, provides a property tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners. The contract restricts the land to agricultural and open space uses and compatible uses defined in state law and local ordinances. Williamson Act contracts are for 10 years or longer.

Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC) administers the Farmland Mapping and Monitoring Program (FMMP), under which it maintains an automated map and database system to record changes in agricultural land use. The FMMP focuses on agricultural land that has the special combination of soil quality, location, growing season, and moisture supply needed to produce a sustained yield of crops. “Important Farmland” under the FMMP includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, each described in detail below.

Prime Farmland

Prime Farmland is land with the best combination of physical and chemical features to sustain long-term agricultural crop production. These lands have 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 four 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 four 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. These lands usually are irrigated, but may include non-irrigated orchards or vineyards found in some climatic zones. Unique Farmland must have been used for crops at some time during the four years prior to the mapping date.

Farmland of Local Importance

Farmland of Local Importance is farmland that is important to the local agricultural community as determined by each county's Board of Supervisors and local advisory committees. There is no farmland of local importance in Kern County (DOC 2012b).

California Farmland Conservancy Program Act (Public Resources Code Sections 10200 to 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, which 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.

Sustainable Communities and Climate Protection Act of 2008

Adopted in September 2008, Senate Bill 375 provides a new planning process to coordinate community development and land use planning with Regional Transportation Plans in an effort to reduce sprawling land use patterns and dependence on private vehicles, and thereby reduce vehicle miles traveled and greenhouse gas emissions associated with vehicles miles traveled. Senate Bill 375 is one major tool being used to meet the goals in Assembly Bill 32, the Global Warming Solutions Acts.

3.14.1.3 Regional and Local

Since the certification of the Fresno to Bakersfield Section Final EIR/EIS, the Kern Council of Governments (KCOG), a federally designated Metropolitan Planning Organization and a state-designated Regional Transportation Planning Agency, adopted the 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a 26-year plan to guide development of planned multimodal transportation systems in Kern County. For the first time, the 2014 Regional Transportation Plan included an SCS to comply with two California laws requiring greenhouse gas reductions: Assembly Bill 32 or the Global Warming Solutions Act, and Senate Bill 375 or the SCS and Climate Protection Act. Under Senate Bill 375, the KCOG 2014 RTP/SCS demonstrates how the Kern County region will integrate transportation, housing, and land use planning to meet greenhouse gas reduction targets set by the State. The RTP/SCS includes a Rural Urban Connectivity Strategy analysis designed to ensure that the economic development of rural areas, including agriculture, are not left out of efforts to provide a more efficient transportation system.

At the local level, the Kern County General Plan contains policies that outline measures for the long-term retention of agriculture, timber, and other resource lands through participation in the Williamson Act Program and Farmland Security Zone Contracts, protection from incompatible land uses, and the orderly expansion of urban development (Policies 1.9-3, 1.9-5, 1.9-7, 1.9-8, 1.9-9, 1.9-12, 1.9-13, and 1.9-21 through 1.9-24) (Kern County 2009).

3.14.2 Methods for Evaluating Impacts

The potential impacts to agricultural lands for the F-B LGA and May 2014 Project were evaluated utilizing both quantitative and qualitative methods. Geographic information systems (GIS) and ArcGIS software were used as a tool to evaluate project impacts. Spatial data, including the DOC FMMP were used by GIS analysts to identify Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) and Grazing Land (California Public Resources Code 21060.1, DOC 2012b) for Kern County and Shafter. Williamson Act and Farmland Security Zone (FSZ) contract data provided by the Kern County Assessor's office and the City of Shafter, and soil type provided by USDA NRCS (USDA and NRCS 2015) were also included in the spatial data analysis. The Kern County Assessor's office was contacted to research all parcels in the permanent project footprint and to verify which parcels were in either a Williamson Act or an FSZ contract. This included both renewal and nonrenewal contracts. Copies of all Williamson Act or FSZ contracts were obtained from the Kern County Planning and Community Development Department.

Methodology used in Section 3.14.3 (pages 3.14-9 through 3.14-11) of the Fresno to Bakersfield Section Final EIR/EIS (Authority 2014a) was updated for this Draft Supplemental EIR/EIS on May 10, 2016. The updated methodology was used as the guidance document to evaluate agricultural land impacts for the F-B LGA and May 2014 Project (ICF International and Rincon Consultants 2016), and is summarized under Direct and Indirect Impacts to Important Farmland and Williamson Act and FSZ Contracts.

Direct Impacts to Important Farmland

To calculate the direct permanent conversion of Important Farmlands to nonagricultural use, the acreage in the permanent project footprint was quantified and identified as being permanently converted to HSR use. Conversion of Important Farmland to a nonagricultural use would be a permanent depletion of the resource and is considered a significant impact.

Indirect Impacts to Important Farmland

Indirect impacts may increase the amount of Important Farmland conversion beyond that needed for use in the permanent project footprint, resulting in additional losses of Important Farmland. To calculate indirect impacts on Important Farmland adjacent to, but outside, the permanent project footprint, farmland severance was considered on a parcel-by-parcel basis to identify where severance of a parcel by the permanent project footprint would create two parcels and result in remnant parcels. In a two-step process, adjacent farmland was subject to a remnant parcel analysis to evaluate additional losses to Important Farmland beyond that needed for use in the permanent project footprint. Step 1 of the remnant parcel analysis considered farmland severance on a parcel-by-parcel basis to identify where severance of a parcel by the permanent project footprint would create two parcels and result in remnant parcels smaller than 20 acres in size. The resulting parcel was identified as a noneconomic remnant parcel. Step 2, a further refinement of Step 1, identified noneconomic remnant parcels¹ that are not expected to remain in use as Important Farmland as a result of severance by the HSR project. Parcels meeting any of the four criteria (access, size and shape, location, and hardship), were assumed to be converted from agricultural use to a nonagricultural use. Appendix 3.14-B, Remnant Parcel Analysis, of this Draft Supplemental EIR/EIS provides the results of the remnant parcel analysis.

Additionally, indirect impacts of Important Farmland were calculated in a 25-foot-wide area adjacent to the permanent project footprint under the following conditions: (1) where the permanent project footprint would be adjacent to permanently fenced HSR infrastructure, and (2) where remnant parcels assumed to remain in agricultural use would be adjacent to the permanent project footprint. Indirect impacts in the 25-foot area would not apply where noneconomic remnant parcels² would be adjacent to the permanent project footprint.

Williamson Act and Farmland Security Zone Contracts

Williamson Act and FSZ contract lands were evaluated by GIS analysts on a parcel-by-parcel basis to determine where the HSR permanent project footprint would directly impact contract lands. Contract lands in the permanent project footprint are reported in two parts: (1) parcels, both renewal and nonrenewal, that continue to meet the minimum contract acreage in Kern County³ and (2) parcels that no longer meet the minimum contract acreage in the county because

¹ The purpose of this analysis is to determine whether HSR impacts have the potential to convert farmland to nonagricultural use. Impacts associated with farm efficiency or property transactions are social and economic effects that do not mean farmland would be lost and are not evaluated as part of the Agricultural Lands analysis.

² Noneconomic remnant parcels are remnant parcels that meet Step 1 and Step 2 of the remnant parcel analysis, meaning these parcels would be converted to a nonagricultural use.

³ Kern County's minimum requirement for entering into a new Williamson Act contract is 20 acres of Prime Farmland (Thompson 2015).

the resulting parcel would be less than the minimum acreage as described by the County (Thompson 2015).

Natural Resources Conservation Service-CPA-106 Form and Evaluation

The NRCS-CPA-106 form and evaluation was prepared in accordance with FPPA criteria and with guidance from the FPPA manual (USDA 2013). In addition to evaluating changes to Important Farmland using FMMP data, a farmland conversion impact rating was performed using Form NRCS-CPA-106 in accordance with FPPA criteria. The land evaluation portion of the NRCS-CPA-106 form was completed by considering the acreage of converted farmland. The site assessment was prepared using FPPA criteria (e.g., area of nonurban use, percentage of the F-B LGA corridor being farmed, protected farmland, size of farm, creation of non-farmable farmland, availability of farm support services, on-farm investments, and compatibility with existing agricultural uses). The scores were combined for both the land evaluation and site assessment portions of Form NRCS-CPA-106 to arrive at a total score, with a maximum possible score of 260 points. If the score was less than 160 points, no further evaluation was necessary under the FPPA. If the score was greater than 160, the FPPA required consideration of alternatives that avoid or minimize farmland impacts. The Act does not, however, mandate the adoption of such alternatives. These materials are included in Appendix 3.14-A of this Draft Supplemental EIR/EIS.

3.14.2.2 Methods for Evaluating Effects under NEPA

In the Fresno to Bakersfield Section Final EIR/EIS, specified thresholds were applied for each resource topic to assess whether the intensity of each impact is negligible, moderate, or substantial for the Build Alternatives, and a conclusion was provided indicating if the impact was “significant.” Since the Fresno to Bakersfield Section Final EIR/EIS does not evaluate the May 2014 Project as a discrete subsection of the Fresno to Bakersfield Project (as it did for the Allensworth Bypass, for example), it does not provide conclusions using intensity thresholds for the May 2014 Project. Therefore, intensity thresholds are not used for the F-B LGA. Instead, the evaluation of impacts under NEPA in this Draft Supplemental EIR/EIS focuses on a comprehensive discussion of the project’s potential impacts in terms of context, intensity, and duration and provides agency decision makers and the public with a comparison between the May 2014 Project and the F-B LGA.

3.14.2.3 CEQA Significance Criteria

The project would result in a significant impact on agricultural lands if it would do any of the following:

- Convert Prime Farmland, Unique Farmland of Statewide Importance, or Farmland of Local Importance (collectively, “Important Farmland”), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to a nonagricultural use
- Conflict with existing zoning for agricultural use or a Williamson Act contract in a manner that would result in conversion of Important Farmland to nonagricultural use
- Involve other changes in the existing environment that would result in conversion of Important Farmland to nonagricultural use because of their location or nature

3.14.3 Affected Environment

This section describes the affected environment for agricultural lands with a focus on statewide, regional, and local agricultural operations. The analysis of study area for the F-B LGA and May 2014 Project includes both direct and indirect effects. The direct effects on agricultural lands pertain to temporary construction staging areas and other construction-related activities located adjacent to or near the HSR corridor that could persist for the duration of construction activities, and the entire potential area of disturbance associated with the permanent project footprint. As described in Section 3.1, Introduction, the permanent project footprint components include the proposed HSR ROW and associated facilities, such as traction power supply stations, maintenance of infrastructure facility (MOIF), and switching and paralleling stations, as well as shifts in roadway ROW associated with those facilities (including overcrossings and interchanges)

that would be modified or shifted to accommodate the HSR project. The study area for indirect effects includes noneconomic remnant parcels created due to severance by the permanent project footprint, a 25-foot-wide area adjacent to the permanent project footprint and HSR permanently fenced infrastructure, and 100 feet from the track centerline. This study area was determined by federal standards for evaluating livestock noise impacts (ICF International and Rincon Consultants 2016, FRA 2012). Appendix 3.14-C (page 1) High Speed Train Noise Disturbance on Grazing Animals of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a) describes the requirements for these evaluations. The analysis also looked more broadly with a regional perspective to evaluate the potential for agricultural land conversion mitigation measures to create secondary impacts on the environment.

3.14.3.1 Summary of the May 2014 Project Affected Environment

The affected environment for the May 2014 Project has been updated as part of Section 3.14.3.4 in this Draft Supplemental EIR/EIS.

3.14.3.2 Regional Agriculture

In 2012, California had approximately 25.6 million acres of farmland, with an estimated 77,857 farms (USDA 2014). According to the California Department of Food and Agriculture (CDFA) and the USDA (CDFA 2013, USDA 2015), the state produces more than 400 different types of agricultural products and in 2013 generated 46.4 billion dollars in direct farm sales. California's agricultural production represents 12 percent of the nation's total agricultural value in dollars. California is also a major global supplier of food and agricultural commodities, with exports reaching a high of 21.24 billion dollars in 2013, representing a 15 percent increase over the 2012 export totals (CDFA 2015).

Both the May 2014 Project and the F-B LGA are located in the southern San Joaquin Valley, which is California's and the nation's leading agricultural production region (CDFA 2013). Kern County ranks third among California's top agricultural counties, as measured by the gross value of agricultural production (CDFA 2012). The total county land area (unincorporated and incorporated) committed to agricultural production is 44.8 percent in Kern County (USDA 2014).

In Kern County, 1,938 farms occupied more than 2.3 million acres of land in 2012, with an average farm size of 1,202 acres. About 38.6 percent of the farmland was devoted to crops and 31 percent of this land was irrigated (USDA 2014). The market value of agricultural products in 2012 was nearly \$4 billion, 81 percent of which was from crop sales and 19 percent from livestock sales (USDA 2014a). In order of sales value, the top eight agricultural commodities were grapes, almonds, milk, citrus, cattle and calves, pistachios, carrots, and alfalfa (Kern County Department of Agriculture and Measurement Standards 2015).

When originally established, farms in the project vicinity were rectangular parcels that followed township and range survey patterns that were composed of many similarly shaped parcels. Over time, construction of the railroads, state highways, and local roads divided some farms, creating irregularly shaped parcels.

The majority of farms in Kern County are family-owned and typically range from one to 49 acres, but the county does have 329 farms over 1,000 acres in size (USDA 2014). Many owners of these large farms hire agricultural management companies to run agricultural operations and specialized service firms to oversee pesticide application, bee pollination, or harvesting. 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.

Although weather conditions, such as temperature and wind, affect crop production, timing and scheduling of agricultural management and operations help maximize yields. For example, farmers apply chemicals to extend blooms of bee-pollinated trees to increase the pollination potential. Depending on the crop and the application, ground-level spray rigs and crop dusters are used to apply pesticides and other chemicals. In accordance with Federal Aviation Regulation 137, Agricultural Aircraft Operations; the California Code of Regulations, Division 6, Pesticides

and Pest Control Operations; and the Kern County Department of Agriculture and Measurement Standard, General Permit Conditions for pesticide application (Kern County 2015), aircraft apply some pesticides when the wind speed and direction are favorable to avoid dispersing chemicals beyond the target area. Aerial applications occur near existing railroad tracks (Greynolds 2015).

3.14.3.3 Important and Protected Farmlands

According to FMMP data, there are more than 900,000 acres of Important Farmland in Kern County, as shown in Table 3.14-1. In addition, there are more than 1.8 million acres of Grazing Land in the county. The FMMP defines Grazing Land as land that has existing vegetation suitable for the grazing of livestock (DOC 2012a). In Kern County, the practice is to fence grazing areas to prevent livestock from crossing major transportation corridors, such as the BNSF Railway, State Route 99, and State Route 43. Table 3.14-1 lists the total acreage of each category of Important Farmland and Grazing Land in Kern County. Figure 3.14-1 (Sheets 1 and 2) shows the distribution of Important Farmland and Grazing Land near the F-B LGA and the May 2014 Project, and Figure 3.14-2 (Sheets 1 and 2) shows the distribution of crop cover in these areas.

Table 3.14-1 Important Farmland and Grazing Land in Kern County

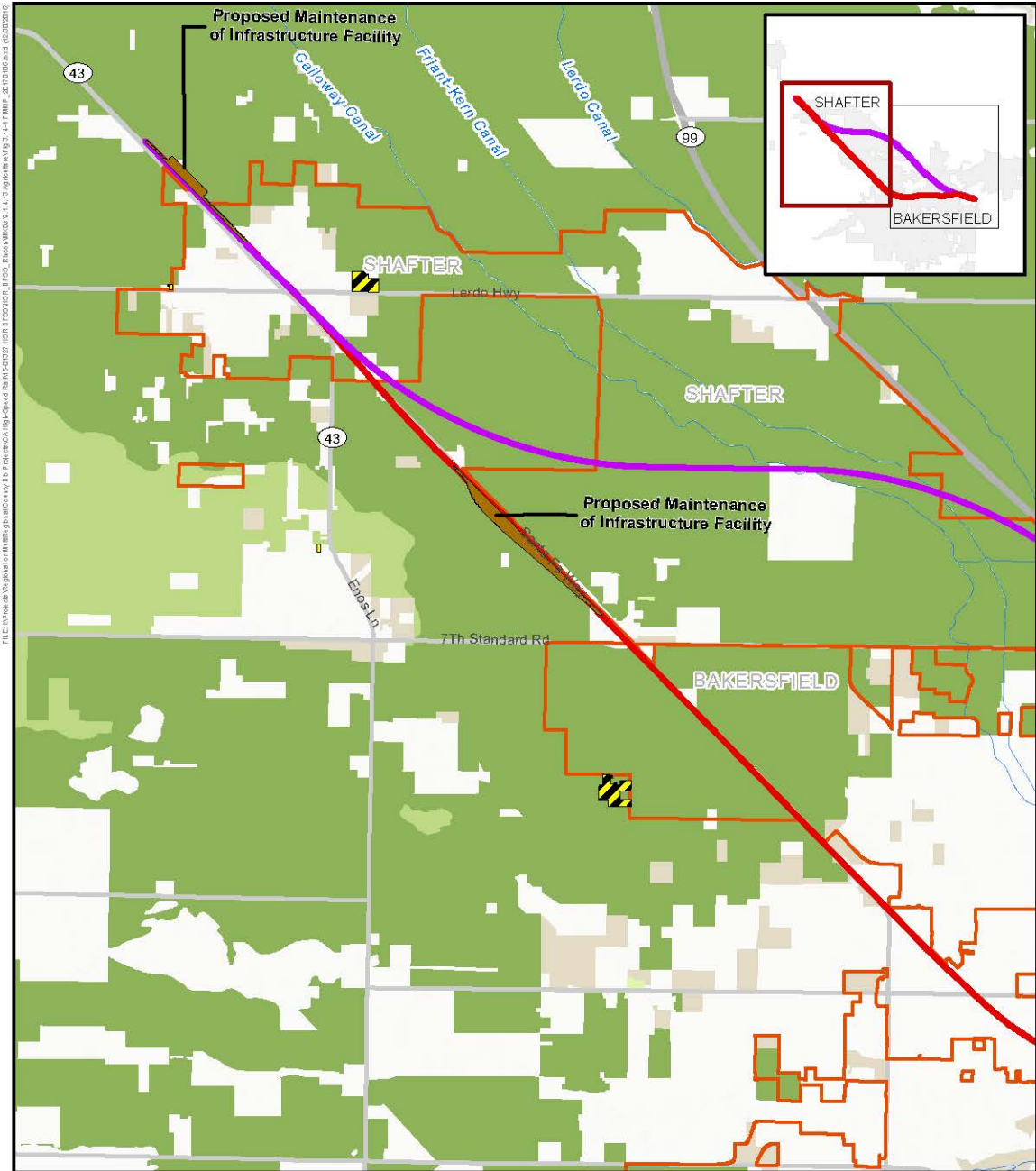
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Grazing Land	Total
Acres¹						
Kern County	597,800	212,900	89,700	0	1,843,600	2,743,900

Source: DOC 2012b

¹ Rounded to nearest 100 acres.

Although Kern County has policies to protect agricultural lands, according to DOC farmland conversion data, conversions of Important Farmland continue to occur. Table 3.14-2 presents the change in acreage of Important Farmland and Grazing Land between 2008 and 2012. Kern County reported a reduction in Important Farmland acreage during this period. Population growth and the associated pressure for rural, small ranches, and urban development primarily drive the loss of Important Farmland. More recently, the trend to situate solar photovoltaic facilities on agricultural lands has reduced the total number of Important Farmland acres. Gains in Important Farmland can occur, for example, when grazing land goes into crop production (e.g., increased areas planted in almonds). Nevertheless, the San Joaquin Valley is one of the leading regions in the state that is losing Important Farmland to urban or other nonfarming uses (DOC 2015). From fiscal year 2012 to 2013, over half of the cancellation petitions received by the DOC to convert 9,000 acres of agricultural land to commercial solar use were from the southern San Joaquin Valley, including Fresno, Kern, Kings, and Tulare counties (DOC 2015). In addition, the KCOG 2014 RTP/SCS forecasts the addition of 602,900 residents by 2040 (2014-2040 planning period). As a result, Important Farmland loss from urban expansion is expected to convert approximately 24 square miles. Nevertheless, this is less than two percent of Important Farmland and 1/10th the conversion compared to the previous 22 years. This substantially lower rate of farmland conversion is largely due to local government efforts to balance urban expansion with the conservation of economically viable farmland (KCOG 2014).

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SOURCE: Kern County, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; U.S. Census Bureau, 2014; California Department of Conservation, Farmland Mapping and Monitoring Program, 2012; CHSRA, 2017. January 13, 2017

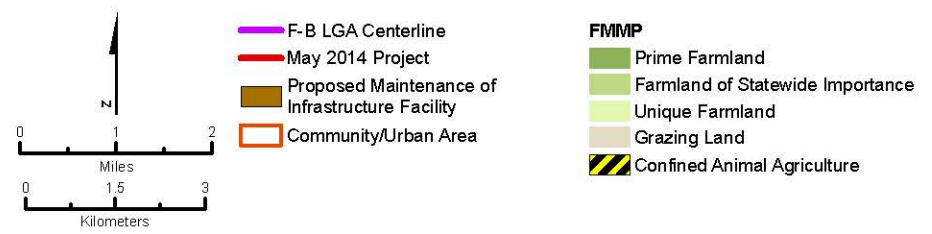
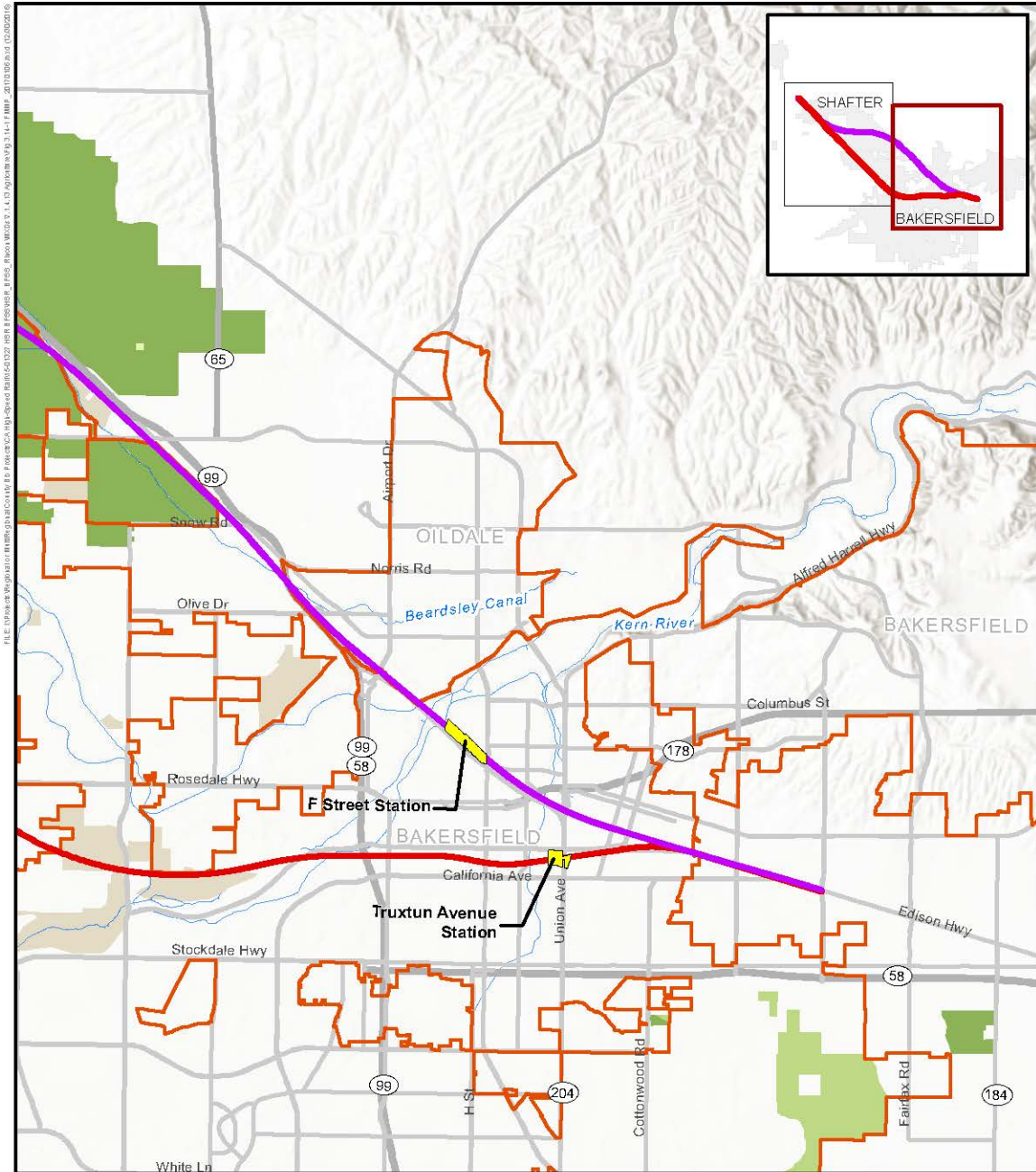


Figure 3.14-1 Important Farmland and Grazing Land in the Project Vicinity

(Sheet 1 of 2)



SOURCE: Kern County, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; U.S. Census Bureau, 2014; California Department of Conservation, Farmland Mapping and Monitoring Program, 2012; CHSRA, 2017. January 13, 2017

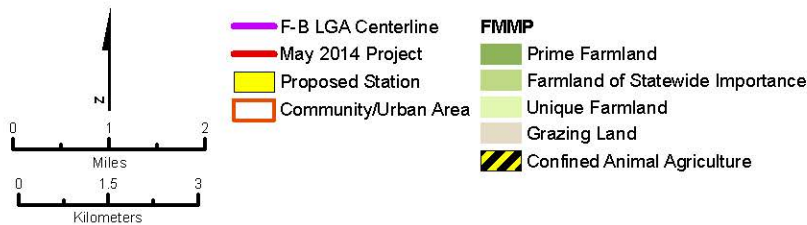
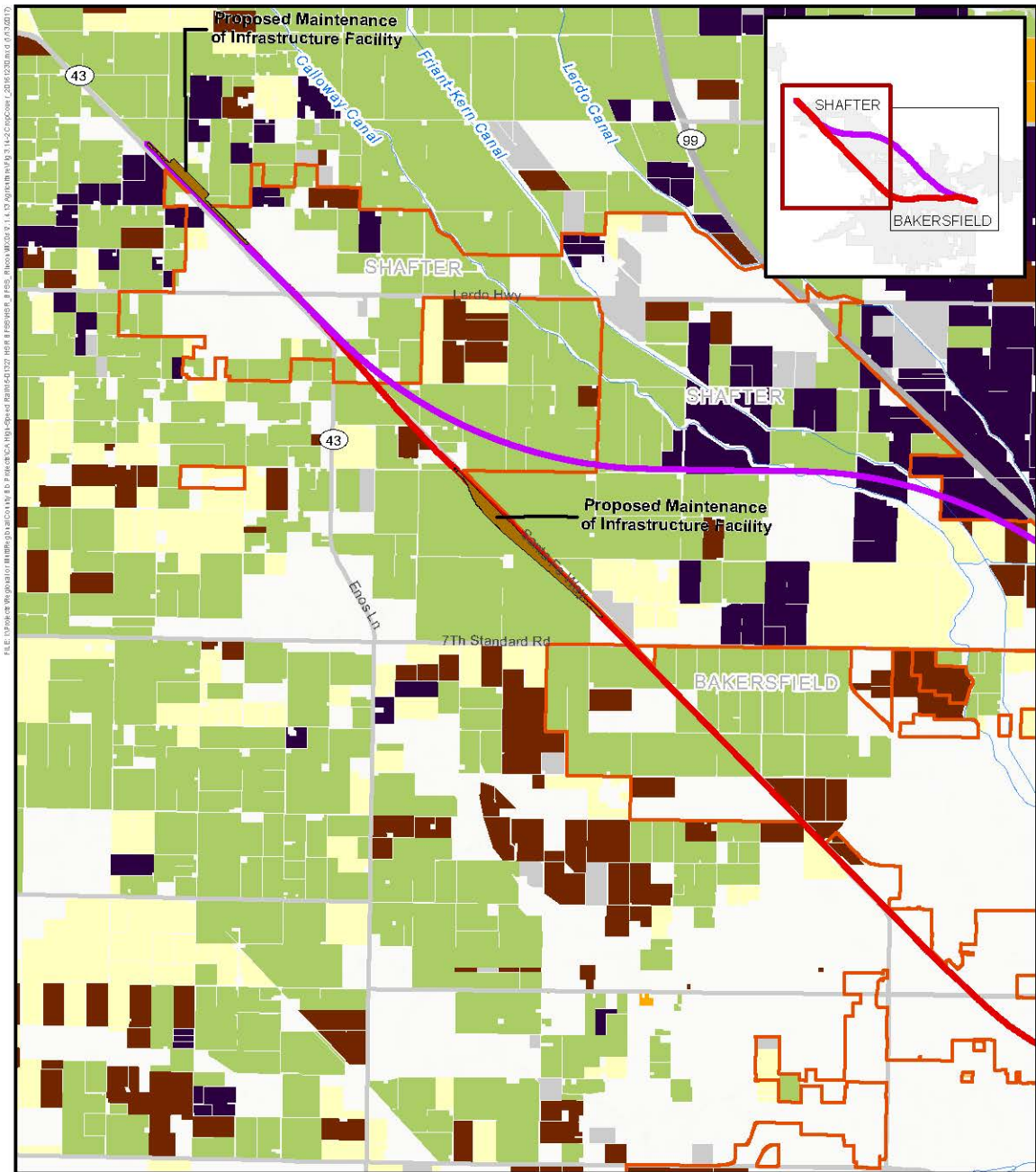


Figure 3.14-1 Important Farmland and Grazing Land in the Project Vicinity
(Sheet 2 of 2)



SOURCE: City of Shafter, 2015; Kern County, 2015; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017. January 13, 2017

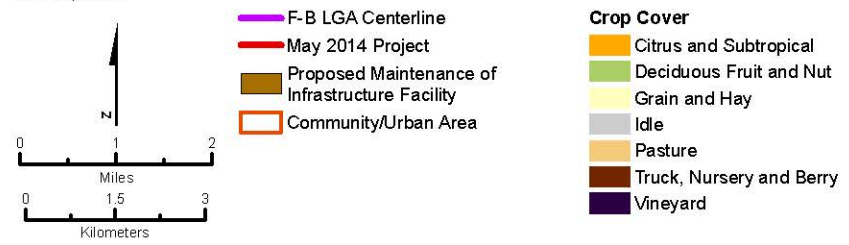
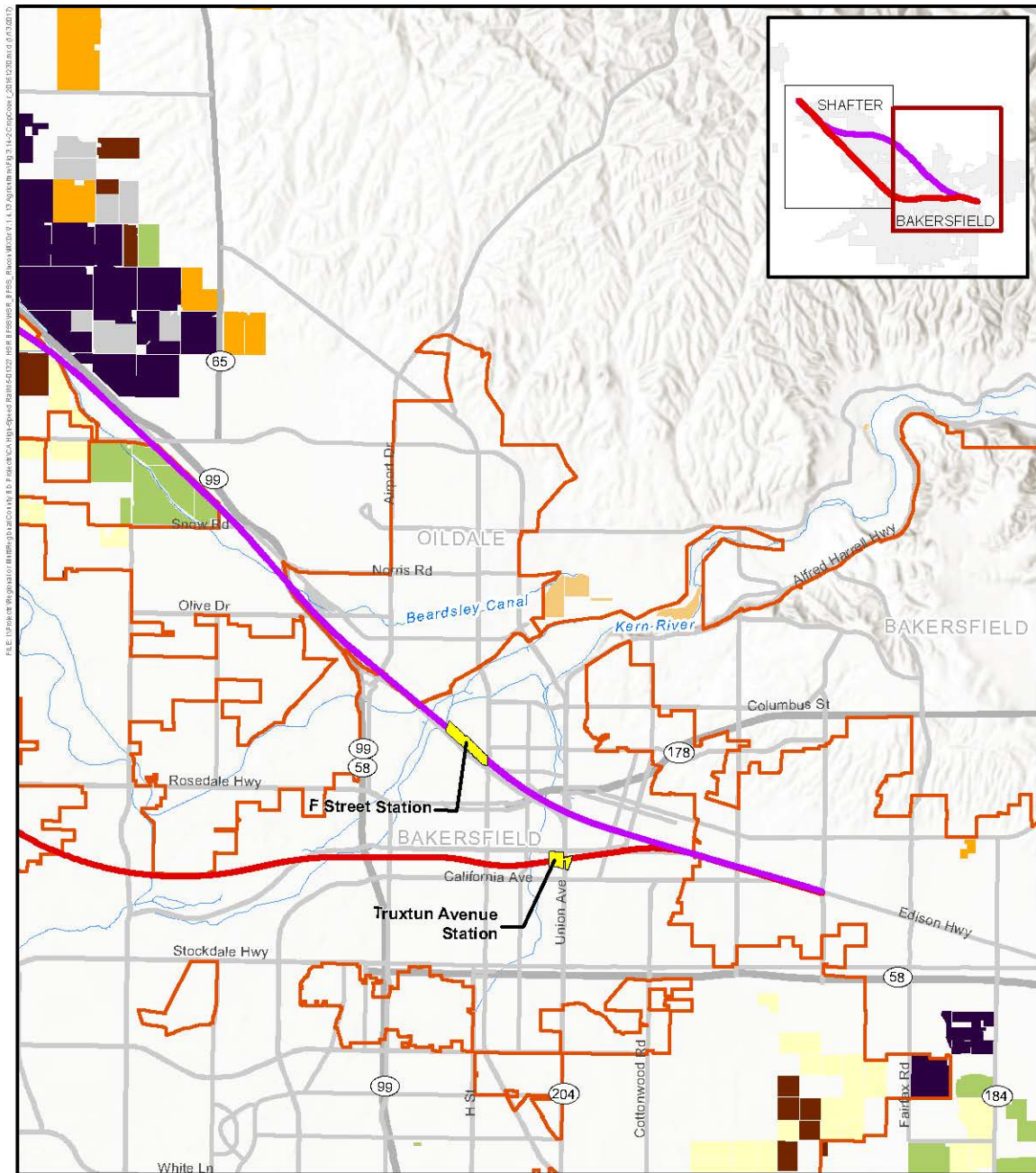


Figure 3.14-2 Distribution of Crop Cover in the Project Vicinity

(Sheet 1 of 2)



SOURCE: City of Shafter, 2015; Kern County, 2015; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017.

January 13, 2017

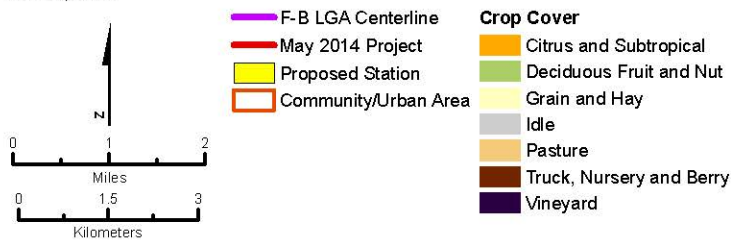


Figure 3.14-2 Distribution of Crop Cover in the Project Vicinity

(Sheet 2 of 2)

Table 3.14-2 Farmland Conversions in Kern County from 2008 to 2012

Farmland Category	Net Change in Acreage
Prime Farmland	-28,446
Farmland of Statewide Importance	-3,480
Unique Farmland	-6,963
Farmland of Local Importance	0
Total Change in Important Farmland	-38,889
Grazing Land	36,536
Total Change in Agricultural Land	-2,353

Sources: DOC 2012b; DOC 2014a

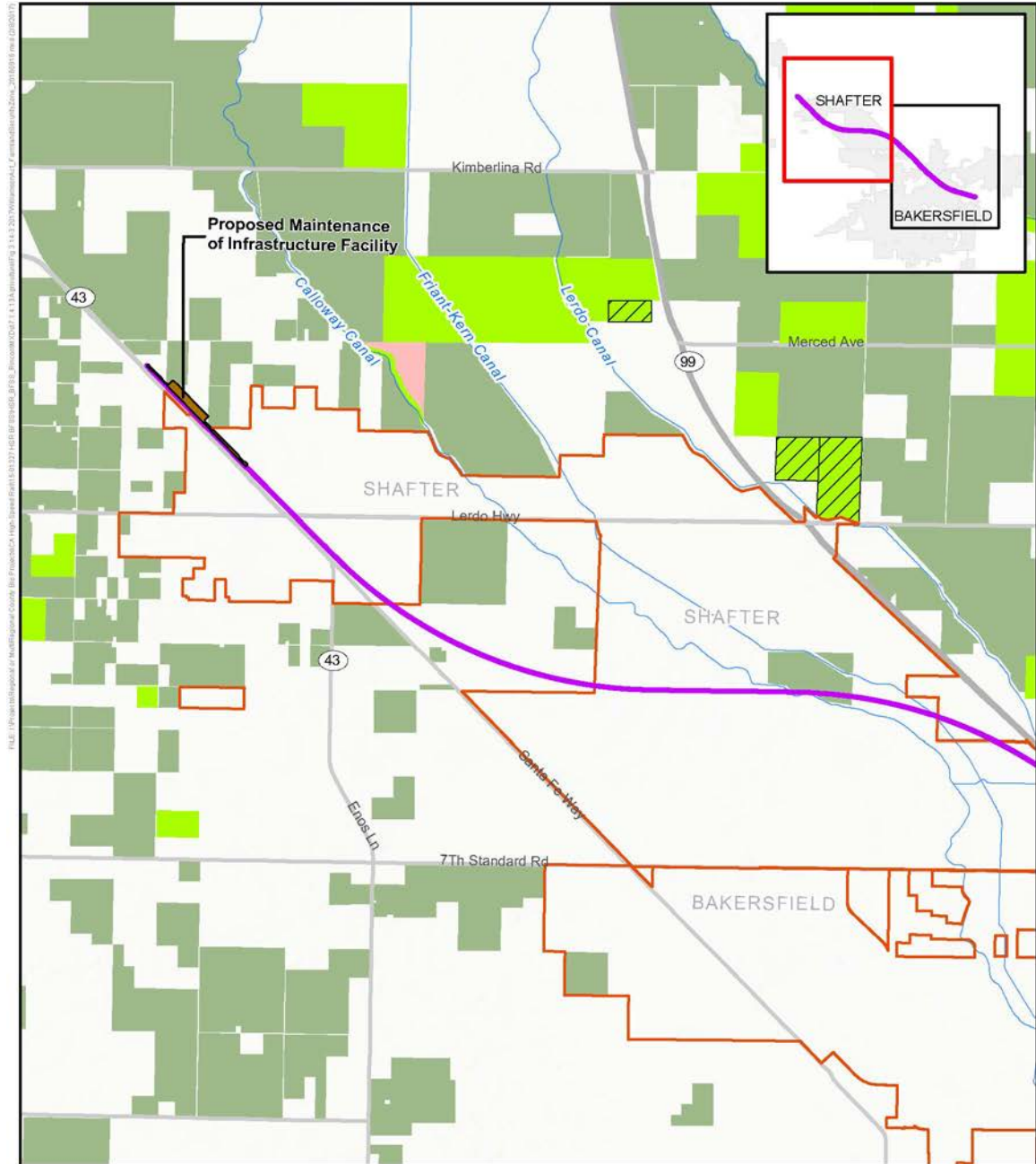
Protected farmland consists of farmland under Williamson Act contract or FSZ contract. Table 3.14-3 lists the farmland acreage protected under Williamson Act and FSZ contracts in Kern County. Approximately 62 percent of Kern County's Important Farmland and Grazing Land is protected under Williamson Act and FSZ contracts (DOC 2012b, DOC 2015). Most of the Important Farmland in the county is zoned for agriculture as detailed in Figure 5-2 of the *Fresno to Bakersfield Draft Supplemental Community Impact Assessment Technical Report* (Authority and FRA 2017). Figure 3.14-3 and Figure 3.14-4 (Sheets 1 and 2) shows that protected farmlands occur along the F-B LGA and May 2014 Project outside urban communities.

Table 3.14-3 Protected Farmland in Kern County (2015)

Protected Farmland	Kern County (acres)
Williamson Act Contract	1,539,778
Farmland Security Zone Contract	158,927
Total	1,698,705

Source: DOC 2015

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SOURCE: City of Shafter, 2017; Kern County, 2017; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017. February 8, 2017

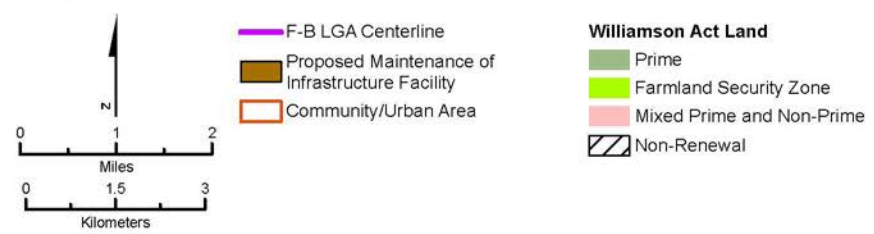
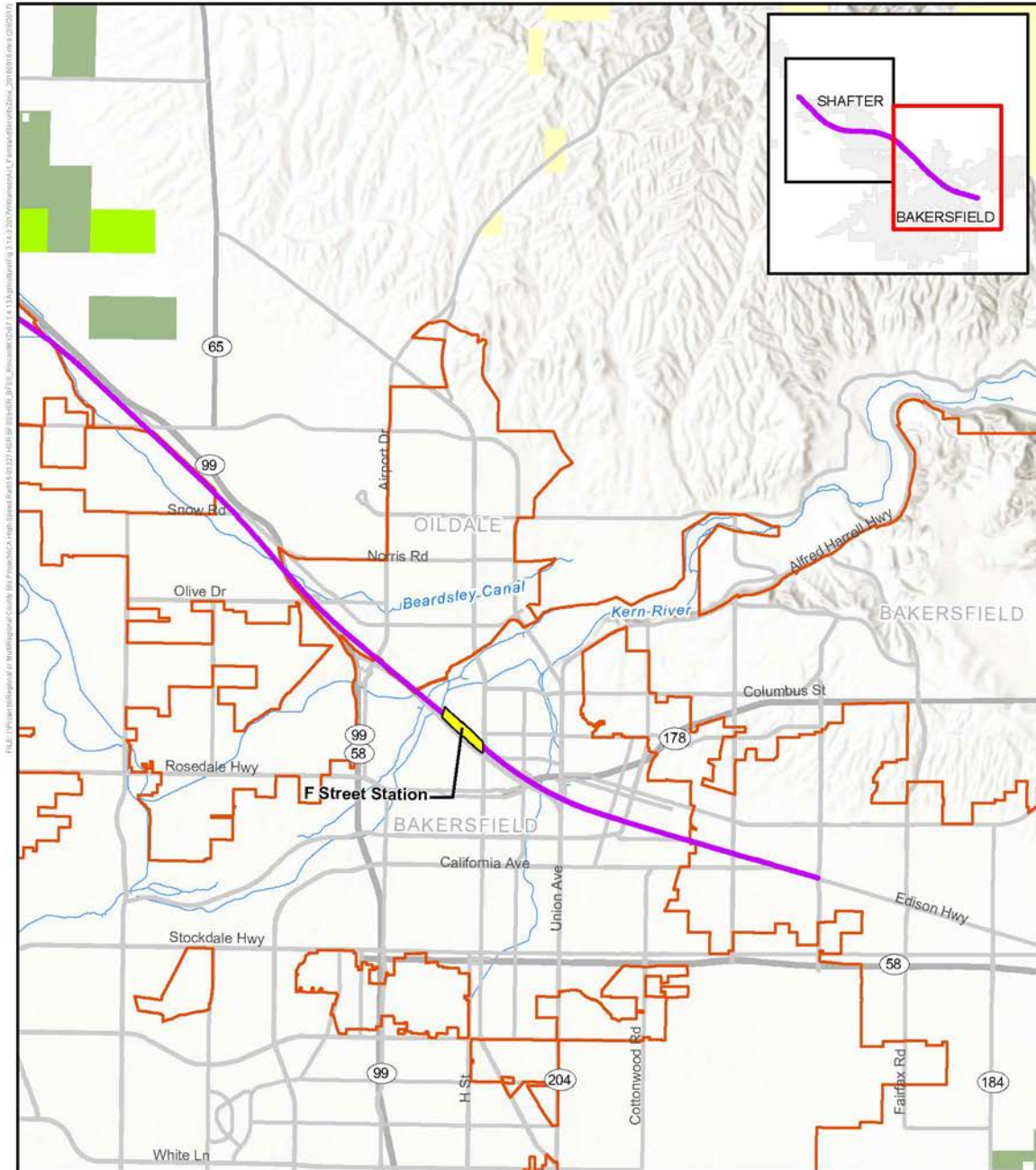


Figure 3.14-3 Protected Lands in the F-B LGA Project Vicinity

(Sheet 1 of 2)



SOURCE: City of Shafter, 2017; Kern County, 2017; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017.

February 8, 2017

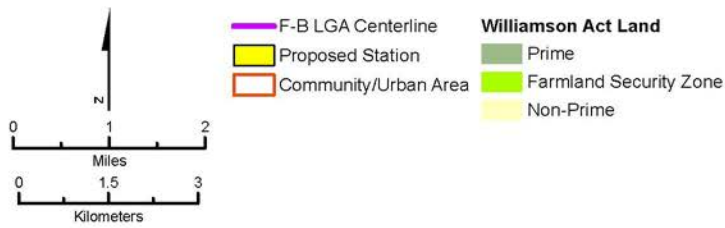
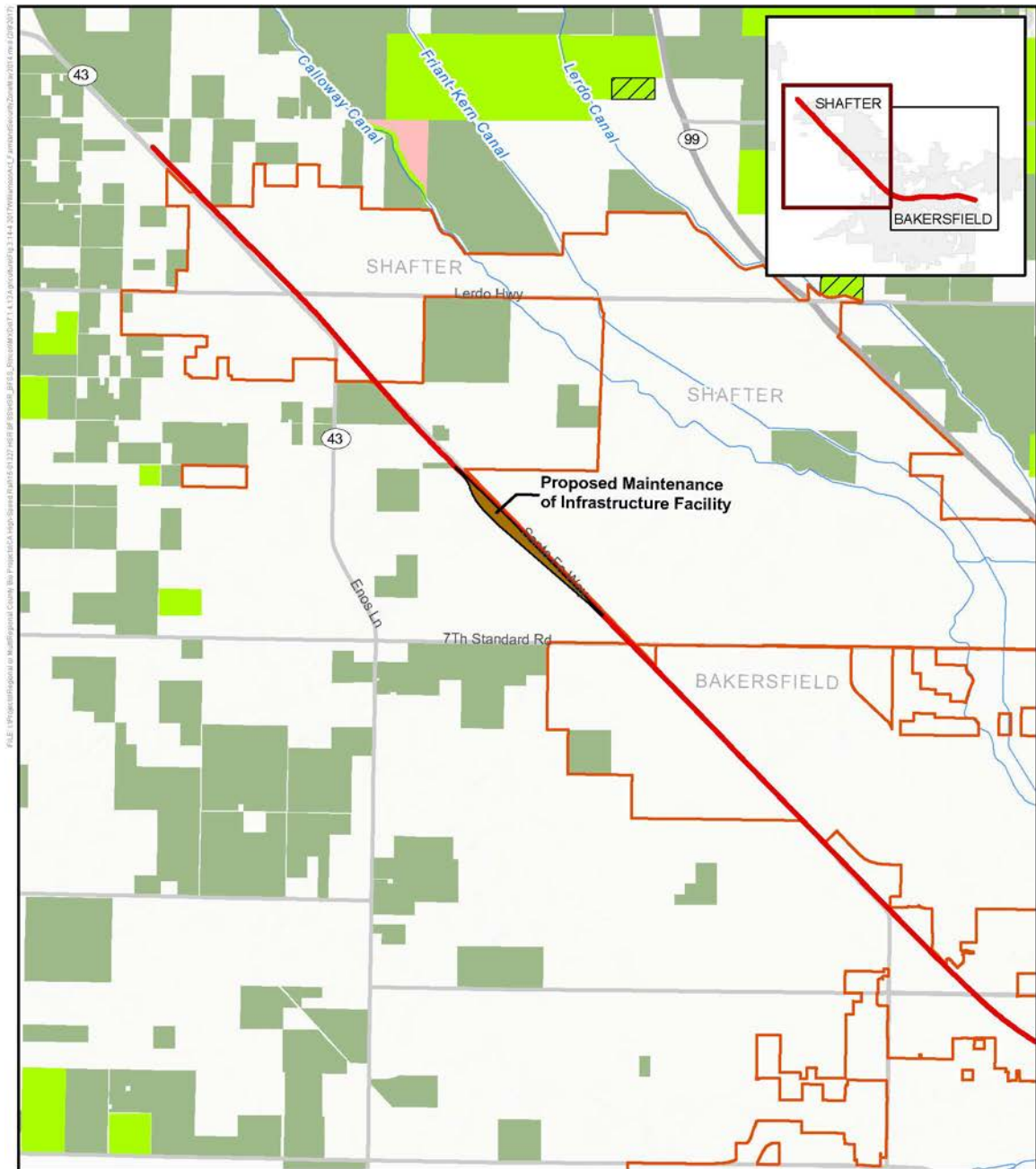


Figure 3.14-3 Protected Lands in the F-B LGA Project Vicinity

(Sheet 2 of 2)



SOURCE: City of Shafter, 2017; Kern County, 2017; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017. February 8, 2017

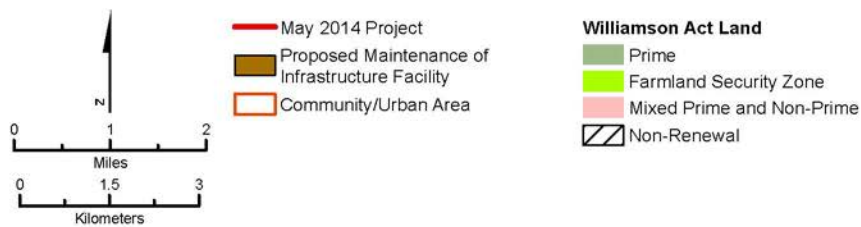
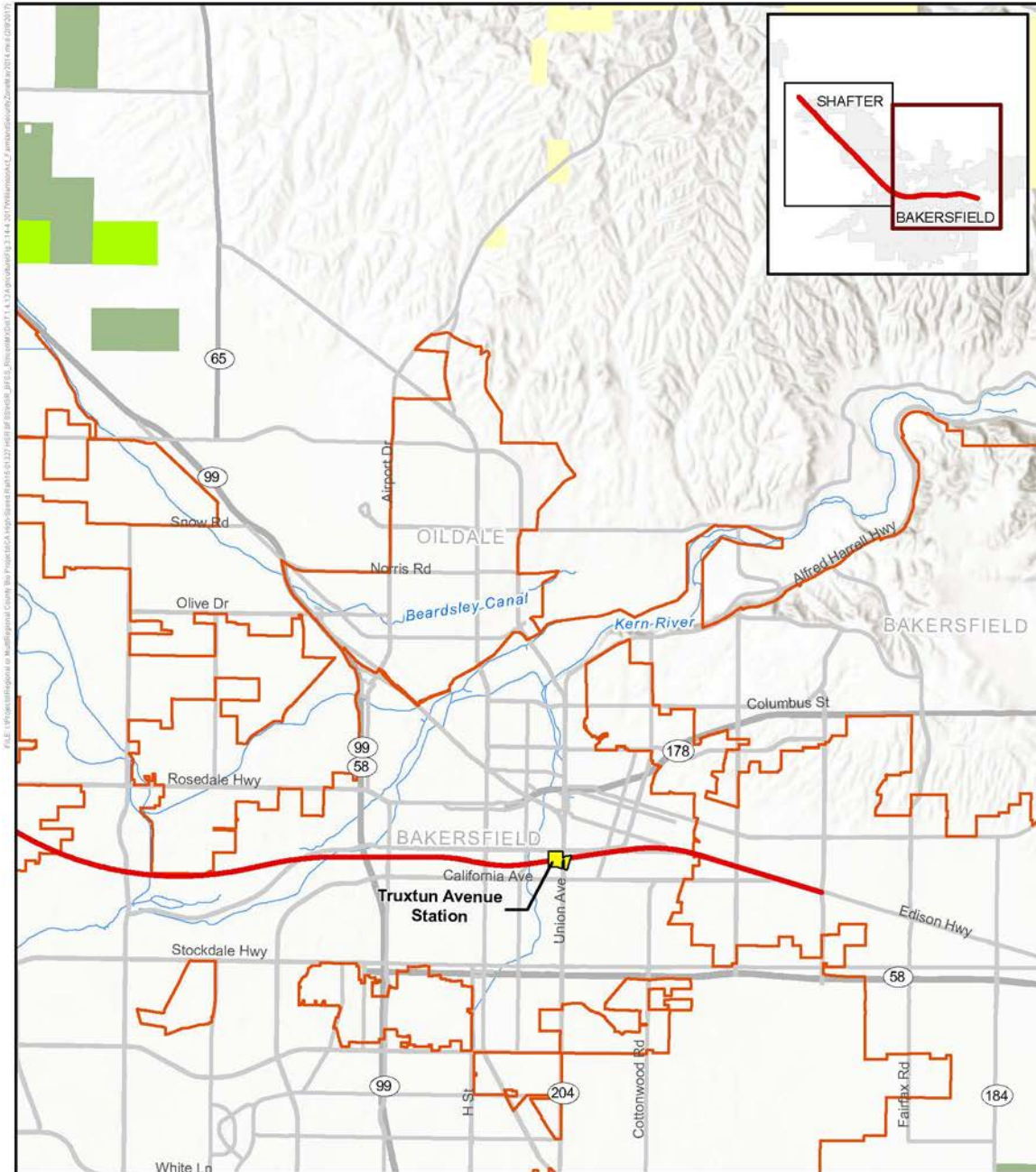


Figure 3.14-4 Protected Lands in the Vicinity of the May 2014 Permanent Project Footprint
(Sheet 1 of 2)



SOURCE: City of Shafter, 2017; Kern County, 2017; U.S. Census Bureau, 2014; USGS 30m Hillshade, 2015; National Hydrography Dataset USGS, 2015; ESRI, 2012; CHSRA, 2017.

February 8, 2017



Figure 3.14-4 Protected Lands in the Vicinity of the May 2014 Permanent Project Footprint
(Sheet 2 of 2)

3.14.3.4 Agricultural Lands Along the May 2014 Project

May 2014 Project

Agricultural lands adjacent to the May 2014 Project are located mostly in unincorporated Kern County between Shafter to the north and Bakersfield to the south. Approximately 50 percent, or 485 acres, in the permanent project footprint of the direct impact study area and approximately 36 acres in the indirect study area are classified as Important Farmland.

Figure 3.14-3 shows four locations where the May 2014 Project would affect lands classified as Prime Farmland under Williamson Act contract. Two are in unincorporated Kern County north of Shafter and four are in unincorporated Kern County southwest and northeast of Santa Fe Way. Approximately six percent of Williamson Act contract land lies on the perimeter of the permanent project footprint. There are FSZ contracts in Kern County, but no FSZ contracts in the May 2014 Project permanent project footprint (DOC 2014b, Hansen 2015). The May 2014 Project lies near land classified as Grazing Land: east of Grazing Land in the southern limits of Shafter, and east and west of Grazing Land in the northern limits of Bakersfield. The closest confined animal facility is located approximately 2,500 feet from the proposed alignment.

Truxtun Avenue Station

The Truxtun Avenue Station site is located in the Metropolitan Bakersfield planning area and in the incorporated limits of Bakersfield, in an area that is predominantly designated industrial, commercial, and community facility in the *Metropolitan Bakersfield General Plan* (City of Bakersfield and Kern County 2007). Figure 3.14-1 (Sheet 2) shows that this land is not classified as Important Farmland and Figure 3.14-4 (Sheet 2) shows that this land is not under Williamson Act contract. No confined animal facilities are adjacent to or within 100 feet of the proposed station site. Section 3.13.3.2 of Station Planning, Land Use, and Development, in this Draft Supplemental EIR/EIS offers additional and detailed land use information for the proposed station site. The Fresno to Bakersfield Section Final EIR/EIS offers additional information on the Truxtun Avenue Station in pages 3.13-30 through 3.13-32.

Maintenance of Infrastructure Facility

An MOIF is proposed to be located just north of Bakersfield and 7th Standard Road. MOIFs provide equipment, materials, and replacement parts for the HSR system subdivision. For additional information on the May 2014 Project MOIF, see Chapter 8, Section 8.2 of this Draft Supplemental EIR/EIS.

3.14.3.5 Agricultural Lands Along the Proposed Fresno to Bakersfield Locally Generated Alternative

Fresno to Bakersfield Locally Generated Alternative

Agricultural lands adjacent to the F-B LGA are located mostly in unincorporated Kern County between Shafter to the north and Bakersfield to the south. Approximately 46 percent or 372 acres in the permanent project footprint of the direct impact study area and approximately 89 acres in the indirect study area are classified as Important Farmland. Figure 3.14-3 shows four locations where the F-B LGA would affect lands classified as Prime Farmland under Williamson Act contract: two in unincorporated Kern County north of Shafter, two south of Shafter northwest and southeast of Santa Fe Way, and one in Shafter. Approximately five percent of Williamson Act contract land lies on the perimeter of the permanent project footprint. There are FSZ contracts in Kern County, but no FSZ contracts in the F-B LGA permanent project footprint (DOC 2014b, Hansen 2015). The F-B LGA lies near and east of two areas classified as Grazing Land in the southern limits of Shafter. The F-B LGA would come within one mile of four confined animal facilities. The closest facility is located approximately 2,500 feet from the proposed alignment.

Bakersfield F Street Station

The Bakersfield F Street Station site is located in the Metropolitan Bakersfield planning area and in the incorporated limits of Bakersfield in an area designated Light Industrial in the *Metropolitan*

Bakersfield General Plan (City of Bakersfield and Kern County 2007). Figure 3.14-1 (Sheet 2) shows that this land is not classified as Important Farmland and Figure 3.14-3 (Sheet 2) shows that this land is not under Williamson Act contract. No confined animal facilities are adjacent to or within 100 feet of the proposed station site. In general, the proposed F Street Station would be consistent with policies for downtown Bakersfield development. Section 3.13.3.2 of Station Planning, Land Use, and Development, in this Draft Supplemental EIR/EIS offers additional and detailed land use information for the proposed station site.

Maintenance of Infrastructure Facility

An MOIF is proposed to be located in the city of Shafter between the northern terminus of the F-B LGA at Poplar Avenue and Fresno Avenue. Figure 3.14-1 (Sheet 1) shows that this land is partially designated Important Farmland, while the remainder is an industrial land use. The area surrounding the MOIF is predominantly Important Farmland. MOIFs provide equipment, materials, and replacement parts for the HSR system subdivision. For additional information on the proposed MOIF, see Chapter 2 of this Draft Supplemental EIR/EIS.

3.14.4 Environmental Consequences

This section summarizes the analysis of the potential effects on agricultural lands for the May 2014 Project and describes the potential effects on agricultural lands for the F-B LGA. As described in Section 3.14.2.1, the significance of impacts under NEPA was determined in terms of the full project rather than individual subsections of the Fresno to Bakersfield Section. The analysis here is provided so that an informative comparison can be made between the May 2014 Project and F-B LGA.

3.14.4.1 Summary of Analysis for May 2014 Project

In order to compare the potential impacts to agricultural lands under the May 2014 Project and the F-B LGA, this Draft Supplemental EIR/EIS evaluated potential impacts to direct and indirect agricultural lands and potential impacts to Williamson Act contract land using the updated methodology, as described under Section 3.14.2 Methods for Evaluating Impacts of this Draft Supplemental EIR/EIS (ICF International and Rincon Consultants 2016). Table 3.14-4 of this Draft Supplemental EIR/EIS summarizes the direct and indirect permanent impacts of the May 2014 Project to Important Farmland, using the updated methodology. Additionally, this section provides a summary of those effects of the May 2014 Project using information from the Fresno to Bakersfield Section Final EIR/EIS. Avoidance and minimization measures and mitigation measures for the May 2014 Project are provided in Section 3.14.5 and Section 3.14.6.

Table 3.14-4 Direct and Indirect Effects to Important Farmland from the May 2014 Project

Alignment	Important Farmlands (acres) ¹	
	Direct Impacts	Indirect Impacts ²
May 2014 Project	485	36

¹ Acreages are rounded to the nearest whole number.

² Indirect impacts include noneconomic remnant parcels that meet Step 2 of the remnant parcel analysis (i.e., Important Farmland converted from agricultural to nonagricultural use) and Important Farmland in the 25-foot area. Refer to Section 3.14.2, Methods for Evaluating Impacts, in this Draft Supplemental EIR/EIS for a complete description of the methods used to reach these conclusions.

EIR/EIS = Environmental Impact Report/Environmental Impact Statement

Temporary Agricultural Land Impacts

Impact AG #1 – Temporary Use of Agricultural Land

Construction of the May 2014 Project would result in the temporary use of agricultural land for construction sites outside of the permanent ROW, such as for staging and material laydown areas. Table 3.14-5 of this Draft Supplemental EIR/EIS summarizes the temporary impacts of the May 2014 Project to Important Farmland, using the updated methodology. This land includes 337 acres of Important Farmland. The May 2014 Project would therefore result in the temporary use of Important Farmland, but this land would be restored and returned to agricultural use after project construction is completed. As a result, impacts related to temporary conversion to nonagricultural use would be less than significant impact under CEQA.

Table 3.14-5 Important Farmland Temporarily Used for Project Construction

Alignment	Important Farmlands in Acres ¹				Total
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	
May 2014 Project	337	--	--	--	337

¹ Acreages are rounded to the nearest whole number.

Impact AG #2 – Temporary Utility and Infrastructure Interruption

Utility disruptions due to the construction of the May 2014 Project and related improvements (e.g., road and irrigation canal and railroad realignments) could disrupt farm productivity (i.e., onsite utilities needed for farm operations) (Authority 2012a). As noted in Section 3.6.3.1 of this Draft Supplemental EIR/EIS, the Authority would work with irrigation districts and landowners to protect irrigation systems as they intersect the HSR. When relocating an irrigation facility is necessary, the Authority will ensure that, where feasible, the new facility is operational prior to disconnecting the original facility to help alleviate the potential for service interruptions. Because utility disruptions would be avoided or resolved, or the landowner compensated for losses during the ROW acquisition process, these disruptions would not result in the permanent conversion of Important Farmland to nonagricultural use (Appendix 3.12-A, Uniform Relocation Assistance Program, of the Fresno to Bakersfield Section Final EIR/EIS provides more detailed information on this process). The impacts related to temporary utility disruptions would, therefore, be less than significant under CEQA.

Impact AG #3 – Temporary Noise and Vibration Effects on Adjacent Farm Animals

Construction of the May 2014 Project would generate noise and vibration from construction equipment and vehicles (e.g., clearing, grading, track installation). Noise levels from project construction are estimated to be 89 dBA equivalent continuous sound level (L_{eq}) at 50 feet for an eight-hour workday. Section 3.4, Noise and Vibration, of the Fresno to Bakersfield Section Final EIR/EIS provides a detailed discussion of the project noise effects. The FRA threshold for construction noise impacts on commercial land uses, such as confined animal operations, is 85 dBA eight-hour L_{eq} (day or night). There are no confined animal facilities within 100 feet of the May 2014 Project track centerline. The closest confined animal facility from the May 2014 Project is located approximately 2,500 feet from the proposed alignment. Table 8-6 in the April 2014 Noise and Vibration Technical Report of the Fresno to Bakersfield Section Final EIR/EIS provides construction noise levels for the HSR Corridor. At a distance of 2,500 feet from construction activity, the eight-hour L_{eq} for project construction would be no greater than 65 dBA eight-hour L_{eq}. Because noise at the nearest confined animal facility would be below the 85 dBA eight-hour L_{eq} threshold, there would be no direct impacts to these facilities from construction noise. Further, vibration impacts on adjacent farm animals would be temporary and would not disrupt the current use. Therefore, noise and vibration would not lead to the permanent conversion of Important

Farmland to a nonagricultural use. The project construction vibration effects would have a less than significant impact under CEQA.

Permanent Project Impacts

Impact AG #4 – Permanent Conversion of Agricultural Land to Nonagricultural Use

The May 2014 Project would convert 485 acres of Important Farmland to nonagricultural uses, and would result in a significant impact under CEQA. Table 3.14-6 of this Draft Supplemental EIR/EIS summarizes the permanent impacts to Important Farmland, using the updated methodology, as a result of the May 2014 Project. The farmland conversion ratings for the May 2014 Project in Kern County, based on the NRCS-CPA-106 forms, was 144 or below the 160-point threshold for consideration of other alternatives. Appendix 3.14-A, Results and Findings of Land Evaluation and Site Assessment, of the Draft Supplemental EIR/EIS provides further detail on these findings.

Table 3.14-6 Important Farmland Permanently Affected by the May 2014 Project

Alignment	Important Farmlands (acres) ¹				Total
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	
May 2014 Project	485	0	0	0	485

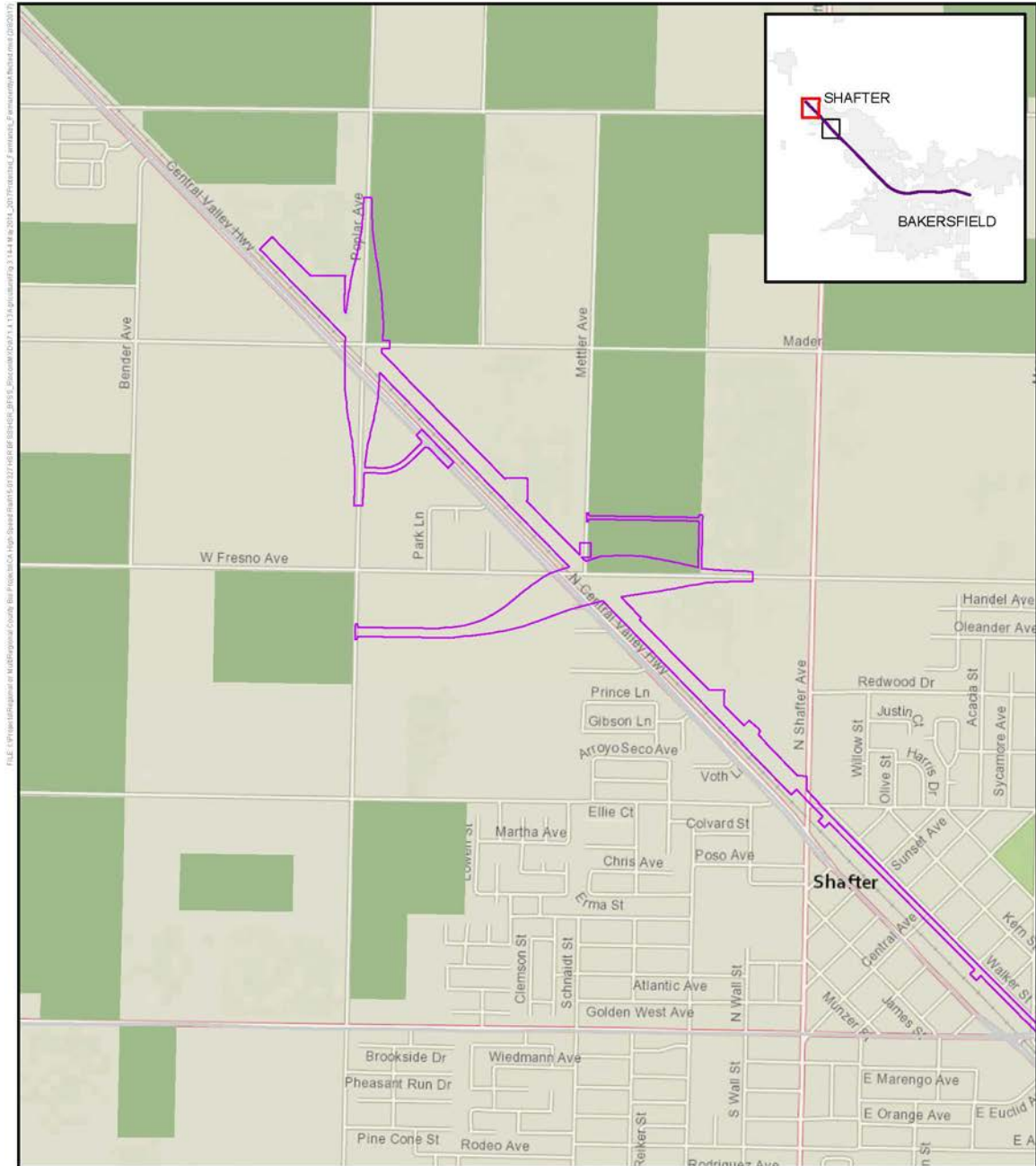
¹ Acres are rounded to the nearest whole number

Impact AG #5 – Effects on Agricultural Land from Parcel Severance

In addition to conversion of Important Farmland, the Fresno to Bakersfield Section Final EIR/EIS also considered whether parcel severance would lead to further conversion of Important Farmland (Authority and FRA 2014a: pages 3.14-50 and 3.14-51). The May 2014 Project alignment would follow existing transportation corridors to the extent possible, but in some cases the alignment would deviate from those corridors and bisect agricultural parcels, creating noneconomic remainder parcels. As described in the Fresno to Bakersfield Section Final EIR/EIS severed parcels of less than 20 acres are included in the permanent conversion data. However, the Authority has committed to implement a Farmland Consolidation Program as part of the HSR project, that will work to transfer noneconomic remainder parcels to neighboring landowners, and whenever possible, to consolidate with adjacent parcels (Authority 2012g). In addition, the ROW acquisition process provides additional opportunities to reduce hardships caused by parcel severance. While parcel ownership may change due to severance, the larger remnant parcels would remain in agricultural use. The parcel severance impact would, therefore, be less than significant under CEQA.

Impact AG #6 – Effects on Land under Williamson Act or Farmland Security Zone Contracts, Local Zoning

Table 3.14-7 lists the acreage of Williamson Act lands permanently affected by the May 2014 Project, which includes a total of 47 acres of farmland under active Williamson Act contract (i.e., not currently in nonrenewal). Figure 3.14-5 (Sheets 1 and 2) depict the location of Williamson Act impacts in the May 2014 Project permanent project footprint. In addition to parcels directly affected by the May 2014 Project, one active Williamson Act parcel totaling 20 acres may be forced into nonrenewal because the project would reduce the size of this parcel by one acre, below the minimum 20 acres prescribed by the County for the Williamson Act. Two Williamson Act parcels, of 19 acres and 16 acres, already below the minimum 20-acre size may be forced into nonrenewal because the project would reduce their size by an additional five and two acres, respectively. The further reduction of these parcels below the minimum 20 acres prescribed by the County for the Williamson Act may result in the parcels being permanently converted to nonagricultural use. Table 3.14-8 shows the acreage of lands that could be subject to contract nonrenewal due to the permanent project footprint reducing or further reducing the size of these parcels below the minimum allowable acres prescribed by the Williamson Act.



SOURCE: City of Shafter, 2017; Kern County, 2017; ESRI, 2017; CHSRA, 2017. February 8, 2017

- May 2014 Project Permanent Impacts Project Footprint
- Williamson Act Land Prime

Figure 3.14-5 Williamson Act Property in the May 2014 Permanent Project Footprint
(Sheet 1 of 2)



SOURCE: City of Shafter, 2017; Kern County, 2017; ESRI, 2017; CHSRA, 2017.

February 8, 2017



Figure 3.14-5 Williamson Act Property in the May 2014 Permanent Project Footprint
(Sheet 2 of 2)

The May 2014 Project would require full or partial acquisition of parcels under Williamson Act and FSZ contracts. A partial acquisition of land protected by Williamson Act or the FSZ contract could constrain the potential use of that land for farming for the reasons described in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a: page 3.14-51). While the May 2014 Project would not cause impacts to FSZ contract land, the potential impact for the May 2014 Project to cause removal of lands from Williamson Act contracts and the ensuing potential conversion of Important Farmlands to nonagricultural uses, beyond the lands needed for the HSR project facilities, is significant under CEQA.

Table 3.14-7 Protected Farmland Permanently Affected by the May 2014 Project

Protected Farmland Classification	Acres ^{1,2}
Williamson Act Land, Prime, Renewal, Less than 20 acres ²	8
Williamson Act Land, Prime, Renewal, 20 acres or greater in size ³	39
Williamson Act Land, Prime, Nonrenewal, Less than 20 acres ²	0
Williamson Act Land, Prime, Nonrenewal, 20 acres or greater in size ³	0
Williamson Act Land, Non-Prime, 40 acres or greater ³	0
Farmland Security Zone	0
Total	47

¹ Acreages are rounded to the nearest whole number.

² Williamson Act parcel less than 20 acres prior to May 2014 Project, and continues to be less than 20 acres after the May 2014 Project.

³ In Kern County, Prime Farmland under Williamson Act contract is allowed to be on a smaller parcel (20 acres) than non-Prime farmland (40 acres).

Table 3.14-8 Protected Farmland Reduced to less than the Williamson Act Minimum Size

Alignment Alternative	Williamson Act Land Acres ¹	Williamson Act Parcels ²
May 2014 Project	8	3

¹ Acreages are rounded to the nearest whole number.

² These totals reflect only active Williamson Act parcels potentially no longer eligible for Williamson Act contracts because they do not meet the 20-acre minimum.

Impact AG #7 – Effects on Confined Animal Agriculture

As described on pages 3.14-56 and 3.14-57 in Section 3.14, the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a) considered whether effects on confined animal agriculture could lead to additional conversion of Important Farmlands. As discussed on pages 3.14-41 through 3.14-60 in Section 3.14.5.3, High-Speed Rail Alternatives, of the Fresno to Bakersfield Section Final EIR/EIS, the FMMP impact analysis does not directly address agricultural operations such as confined animal facilities. Federal and state environmental laws regarding farmland, such as the FPPA and the California Land Conservation Act of 1965, focus on the conversion of Important Farmland to nonagricultural uses. The May 2014 Project's effects on confined animal facilities are not addressed under these acts and would not, therefore, result in Important Farmland conversion other than those discussed above. There are no confined animal facilities within 100 feet of the May 2014 Project track centerline. The closest facility is approximately 2,534 feet north of the May 2014 Project, east of Shafter. Because of the distance between the May 2014 Project and the nearest confined animal facility, there would be no conversions of confined animal operations to nonagricultural uses, and would not lead to additional conversion of Important Farmland. Therefore, impacts from the loss of confined animal facilities would be less than significant under CEQA from the standpoint of Important Farmland conversion. In addition, the noise levels from HSR operation would not exceed the FRA's established threshold for HSR noise effects on livestock of 100 A-weighted decibels (dBA) sound exposure level (SEL) (FRA 2012) and, therefore, would not result in noise effects on livestock. Confined animal facilities may be affected by vibration levels, but this impact would not preclude

agricultural use and would not result in farmland conversion. The impact from project operation vibration effects on confined animal facilities, therefore, would be less than significant under CEQA.

Impact AG #8 – Effects on Irrigation Distribution Canals

As described on page 3.6-60 in Section 3.6 of the Fresno to Bakersfield Final EIR/EIS, the rural portion of the project would cross irrigation pipelines and canals. The Authority will work with irrigation districts and landowners to protect these irrigation systems and where relocating an irrigation facility is necessary, the Authority will ensure that where feasible the new facility is operational prior to disconnecting the original facility to help alleviate the potential for service interruptions. Canals may be bridged or placed in pipelines beneath the HSR right-of-way. Irrigation pipelines crossing the alignment would be buried to an appropriate depth to sustain the weight of the HSR, and would be placed in protective casing so that future maintenance of the line could be accomplished outside of the HSR right-of-way. As described on page 3.14-59 in Section 3.14 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a), the Final EIR/EIS considered whether effects on irrigation distribution canals could lead to additional conversion of Important Farmlands. Irrigation districts raised concerns that the HSR could cause increased response time to emergencies, such as canal blowout. The May 2014 Project would close 14 public roads and no at-grade rural road crossings would be removed (See Table 8-A-1, Appendix 8-A, of this Draft Supplemental EIR/EIS). Effects to response times for canal maintenance would not result in the conversion of Important Farmland, therefore, the impact would be less than significant under CEQA.

Impact AG #9 – Noise Effects to Grazing Animals

Operation of the May 2014 Project would result in noise effects to grazing lands. The impact would not convert either Important Farmland or Grazing Lands to nonagricultural use, but it may result in increased stress to grazing cattle that remain in the affected area. Losses in farm productivity from these effects may be considered an economic impact to be addressed during the ROW acquisition process. Because the impact from noise disturbance would not preclude agricultural use and would not result in Important Farmland conversion, there would be no impact under CEQA.

Impact AG #10 – Wind-Induced Effects

As described on page 3.14-59 in Section 3.14 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a), the Final EIR/EIS considered whether wind-induced effects from the HSR would lead to additional conversion of Important Farmlands. Based on an extrapolation of studies, the HSR would not cause adverse wind effects on adjacent farmland (Authority 2012d) and indirect effects (e.g., interference with insect pollination, additional pesticide drift, or application restrictions) (Authority 2012e) would not result in additional farmland conversions. There would be no impact under CEQA.

Impact AG #11 – Effects on Aerial Spraying

As described on page 3.14-60 in Section 3.14 of the *Fresno to Bakersfield Section Final EIR/EIS* (Authority and FRA 2014a), the Final EIR/EIS considered whether any potential effects on aerial spraying could lead to additional conversion of Important Farmlands. The height of vertical HSR structures, such as poles, radio communication towers, and elevated guideways, could interfere with aerial spraying of agricultural lands adjacent to the alignment. The HSR structures of greatest concern for aerial spraying are the radio communication towers. These structures would be taller than many of those currently located in the rural areas along the May 2014 Project alignment. Construction of the towers would follow federal, state, and local safety guidelines for radio masts, including lighting, and would thus ensure that any tall structures are properly visible to aircraft conducting aerial spraying. Therefore, changes in spraying patterns would not cause conversion of Important Farmland to a nonagricultural use, and there would be no impact under CEQA.

3.14.4.2 Fresno to Bakersfield Locally Generated Alternative

This section evaluates direct and indirect impacts to agricultural land that would result from the F-B LGA. Impacts during construction, like temporary construction staging, are not permanent, as they would cease when construction is completed. Project impacts, such as conversion of agricultural lands for the HSR alignment and associated facilities, are permanent because these lands would remain in nonagricultural use for the duration of project operation. The project would compensate property owners and tenants in accordance with statutory requirements, which apply to all real property including the acquisition of farmland whether converted to other uses or because of severance. Please see pages 3.12-2, 3.12-3, and 3.12-7 in Section 3.12, Socioeconomics, Communities, and Environmental Justice, of the Fresno to Bakersfield Section Final EIR/EIS for a detailed discussion of property acquisition, including the Uniform Relocation Assistance and Real Properties Acquisition Policy Act and the California Relocation Assistance Act (Authority and FRA 2014a).

Construction Period Impacts

Project implementation would include purchasing ROW, constructing the project, and testing on the HSR line. Heavy construction (such as grading, excavating, constructing the HSR railbed, and laying the tracks) would occur over an approximately four-year period. A preliminary construction schedule is provided on pages 2-115 and 2-116 in Chapter 2, Alternatives, of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a).

Temporary Agricultural Land Impacts

The construction of the F-B LGA would require the temporary use of agricultural land outside the permanent ROW, and would result in disruption of some utilities and infrastructure, the impacts of which are described in detail below.

Impact AG #1 – Temporary Use of Agricultural Land

Some agricultural land outside of the permanent ROW would be used for construction sites, such as staging areas and material laydown areas. This land would be leased from the landowner and used for one to three years during construction. Prior to construction, agricultural land top soil will be conserved through temporary stockpiling, and will be returned to the soil after construction is completed. As a result, the agricultural productivity of the restored agricultural lands would be comparable to pre-project conditions.

Table 3.14-9 presents estimates of the temporary use of Important Farmlands for the construction of the F-B LGA. Approximately 13 acres of Prime Farmland would be directly and temporarily impacted during the construction phase. Because this land would be restored and returned to agricultural use after project construction is completed, and would not be permanently converted to nonagricultural uses, the temporary use of farmland for project construction is considered to have less than significant impacts under CEQA.

Table 3.14-9 Important Farmland Temporarily Used for Project Construction

Alignment	Important Farmlands in Acres ¹				Total
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	
F-B LGA	13	--	--	--	13

¹ Acreages are rounded to the nearest whole number.

Impact AG #2 – Temporary Utility and Infrastructure Interruption

Construction of the F-B LGA and related improvements (e.g., road and irrigation canal and railroad realignments) would affect productive farmland utilities and infrastructure. Each farm maintains a system of onsite utilities needed for operations, such as irrigation systems (e.g., ditches, drains, pipelines, and wells), access roads, and power supplies, which could be disrupted

by the by the F-B LGA during construction. Utility disruptions could jeopardize farm productivity (Authority 2012a).

Appendix 3.12-A in the Fresno to Bakersfield Section Final EIR/EIS describes the process for ROW acquisition and the rights of property owners under the Uniform Relocation Assistance Program. Because utility disruptions would be avoided or resolved, or the land owner would be compensated for losses during the ROW acquisition process, these disruptions would not result in the permanent conversion of Important Farmland to nonagricultural use, and, therefore, would result in a less than significant impact under CEQA.

Section 3.6, Public Utilities and Energy, of the Fresno to Bakersfield Section Final EIR/EIS presented detailed information on large regional utilities. The analysis of Impact AG #5 addresses potential project impacts associated with severing parcels.

Impact AG #3 – Temporary Noise and Vibration Effects on Adjacent Farm Animals

Construction of the F-B LGA would generate noise and vibration from construction equipment and vehicles (e.g., clearing, grading, track installation). Noise levels from project construction are estimated to be 89 dBA equivalent continuous sound level (L_{eq}) at 50 feet for an eight-hour workday. Section 3.4, Noise and Vibration, of this Draft Supplemental EIR/EIS provides a detailed discussion of the project noise effects. The FRA threshold for construction noise impacts on commercial land uses, such as confined animal operations, is 85 dBA eight-hour L_{eq} (day or night). There are no confined animal facilities within 100 feet of the F-B LGA track centerline. The closest confined animal facility from the F-B LGA centerline is located approximately 2,500 feet north of the alignment, east of Shafter. Table 3.4-4 of Section 3.4, Noise and Vibration, of this Draft Supplemental EIR/EIS, provides the distances to FRA Noise Impact Contours from Construction Activities for the HSR Corridor. At a distance of 2,500 feet from the track centerline, the eight-hour L_{eq} for project construction would be no greater than 62 dBA eight-hour L_{eq} . Because noise at the nearest confined animal facility would be below the 85 dBA eight-hour L_{eq} threshold, there would be no direct impacts to these facilities from construction noise.

A wide range of studies have been conducted on the effects of noise and/or vibration on confined animal facilities like dairies and livestock holding areas. These found that dairy cows are particularly affected, but impacts could also occur in grazing land where cattle are present. Appendix 3.14-C in the Fresno to Bakersfield Section Final EIR/EIS provides more detail about project effects on grazing. Mammals in particular appear to react to noise at levels higher than 90 decibels. They can exhibit behavior related to the startle response, such as freezing or becoming temporarily stationary and then fleeing from the sound source. As noise associated with F-B LGA construction is below 90 decibels, these effects on confined animal facilities would not occur. Temporary noise impacts on adjacent farm animals would, therefore, not lead to the conversion of Important Farmland to a nonagricultural use, because the current use would continue. The impact would have a less than significant impact under CEQA.

No criteria have been established for vibration effects on domestic animals or poultry. However, the FRA has established a 75 velocity decibel (VdB) criterion for ground-borne vibration impacts on institutional land uses (Category 3). Institutional land uses include schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential to experience activity interference from vibration effects. The 75 VdB level of sensitivity to vibration is judged appropriate for confined animal facilities as it is deemed appropriate for quiet human activity (Authority 2012b).

Project construction would generate vibration levels of 75 VdB at up to 70 feet from the construction site (Section 3.4, Noise and Vibration). The closest confined animal facility near the F-B LGA is approximately 2,500 feet from the edge of where construction activities would occur. At this distance, vibration levels would be well below the threshold of 75 VdB. Temporary vibration impacts on adjacent farm animals would therefore not lead to the conversion of Important Farmland to a nonagricultural use, because the current operation of confined animal facilities would continue. Construction vibration effects, therefore, would result in a less than significant impact under CEQA.

Permanent Project Impacts

The F-B LGA would result in the direct, permanent conversion of some Important Farmland to nonagricultural use, including imposing permanent access severance and conflicts with farmland protection contracts (e.g., Williamson Act contracts). Table 3.14-10 summarizes direct and indirect permanent impacts to Important Farmland by the F-B LGA. As with the May 2014 Project, the F-B LGA would not result in additional response times for canal maintenance; would not result in wind-induced effects to pollination, additional pesticide drift, or application restrictions; and would not change spraying patterns that would cause conversion of Important Farmland to a nonagricultural use. Also similar to the May 2014 Project, noise from operation of the F-B LGA would not preclude agricultural use and would not result in additional conversion of Important Farmland.

Table 3.14-10 Direct and Indirect Effects to Important Farmland by the F-B LGA

Alignment	Important Farmlands (acres) ¹	
	Direct Impacts	Indirect Impacts ²
F-B LGA	372	89

¹ Acreages are rounded to the nearest whole number.

² Indirect impacts include noneconomic remnant parcels that meet Step 2 of the remnant parcel analysis (i.e., Important Farmland converted from agricultural to nonagricultural use) and Important Farmland in the 25-foot area. (Section 3.14.2, Methods for Evaluating Impacts).

Impact AG #4 – Permanent Conversion of Agricultural Land to Nonagricultural Use

The F-B LGA involves construction of rail and associated transportation structures, and other HSR facilities (e.g., a station and MOIF) in areas with Important Farmlands, permanently displacing agricultural uses on these lands. Table 3.14-11 presents estimates of the number of acres that would be subject to the permanent conversion of Important Farmlands for the F-B LGA, based on the land required for the project ROW and ancillary facilities. Approximately 372 acres of Important Farmland would be converted, including approximately 370 acres of Prime Farmland and two acres of Unique Farmland. Because the construction of the F-B LGA would permanently convert Important Farmland to nonagricultural uses, the project would result in a significant impact under CEQA. With the implementation of Mitigation Measure AG-MM#1, the Fresno to Bakersfield Section Final EIR/EIS (page 3.14-62) determined that impacts would continue to be of substantial intensity and, in the context of the regional agricultural setting where the permanent loss of any agricultural land is significant, the impacts would be significant under CEQA after implementation of mitigation.

Table 3.14-11 Important Farmland Permanently Affected by the F-B LGA

Alignment	Important Farmlands (acres) ¹				Total
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	
F-B LGA	370	0	2	0	372

¹ Acres are rounded to the nearest whole number.

The analysis also considers impacts to Grazing Land, which is not included in the definition of Important Farmland. The F-B LGA would also convert approximately 22 acres of Grazing Land to nonagricultural uses.

The following discussion focuses on the conversion of Important Farmland to nonagricultural use and the results calculated by the NRCS-CPA-106 farmland conversion evaluation for the F-B LGA. Permanently converting Important Farmland to nonagricultural uses would have a significant impact under CEQA. The farmland conversion impact rating for the F-B LGA is 140, as shown on the NRCS-CPA-106 forms. Appendix 3.14-A, *Results and Findings of Land Evaluation and Site Assessment*, in this Draft Supplemental EIR/EIS provides more information on the

farmland conversion impact rating. This is below the 160-point threshold and, therefore, consideration of other alternatives would not be required (Code of Federal Regulations Title 7, Part 658.5c).

As discussed in Chapter 1, Project Purpose, Need, and Objectives of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a: page 1-24), and in Section 3.18, Regional Growth (page 3.18-5), the HSR system would ease the pressure on the state's agricultural land base by reducing the need to expand existing transportation infrastructure, and offering a new public transportation option that would provide the opportunity to create transit centers in urban areas (i.e., central business districts). If the communities impose zoning to take advantage of the increase in land values, the growth could be redirected to limit low-density development, which has been consuming large amounts of land area. There is an opportunity to encourage walkable, concentrated development patterns to meet new growth demands and reduce the rate and occurrence of low-density development, which erodes valuable land resources. Providing opportunities that would focus future development on land that is already in nonagricultural use would reduce the amount of farmland converted to uses other than agriculture. The San Joaquin Valley Blueprint preferred B+ Scenario (San Joaquin Valley Regional Planning Agencies 2009), incorporates the HSR system and adopts Smart Growth principles to encourage growth that is directed towards existing communities with the goal of preserving agriculture and open space. Implementation of the B+ Scenario would result in the reduction of farmland conversion from 327,000 acres (the business-as-usual or "A" Scenario) to 209,000 acres and the preservation of 118,000 acres. The Senate Bill 375-compliant SCS encourages similar land use patterns and limits sprawl that would similarly benefit from the HSR stations.

Impact AG #5 – Effects on Agricultural Land from Parcel Severance

In addition to the permanent conversion of Important Farmland from placement of the F-B LGA infrastructure, the analysis also considers indirect impacts to Important Farmland parcels as a result of parcel severance by the HSR system (i.e., the permanent project footprint). The F-B LGA transitions from the BNSF Railway corridor in Shafter to the Union Pacific Railroad corridor in Bakersfield mainly to accommodate an optimized location for the Bakersfield station. This alignment follows existing transportation corridors (i.e., State Route 43, the Union Pacific Railroad, and the BNSF Railway) as much as possible, but in some cases the alignment deviates from those corridors and would bisect agricultural parcels. The two-step process for remnant parcel analysis determined by whether Important Farmland parcels severed by the permanent project footprint would convert agricultural land into land that is no longer viable for agricultural use. These nonviable parcels are identified as noneconomic remnant parcels.⁴ Appendix 3.14-B, Remnant Parcel Analysis, in this Draft Supplemental EIR/EIS provides the complete evaluation of all remnant parcels for the F-B LGA. In summary, the total indirect impacts resulting from parcel severance includes 12 noneconomic remnant parcels totaling 20 acres. In addition to indirect impacts from parcel severance, as described above, indirect impacts also occur to Important Farmland within a 25-foot-wide area adjacent to permanently fenced HSR infrastructure. The F-B LGA would result in indirect impacts to 69 acres of Important Farmland inside this 25-foot area adjacent to permanently fenced HSR infrastructure.

This acreage reflects a significant impact under CEQA. As discussed in 3.14.5, the Authority has committed to implement a Farmland Consolidation Program as part of the HSR project, and will attempt to transfer these noneconomic remainder parcels to neighboring landowners wherever possible to consolidate with adjacent parcels (Authority 2012g). Mitigation Measure AG-MM#2

⁴ Many severed parcels contain small or irregularly shaped remnants. Some of these parcels would not be added to the acquisition area because the analysis determined that some agricultural use will continue to be viable. For example, some small parcels could be consolidated with adjacent landowners and larger, irregularly shaped parcels could still be farmed (although with some loss of efficiency). The purpose of this analysis is to determine whether HSR impacts have the potential to convert farmland to non-agricultural use. Impacts associated with farm efficiency or property transactions are social and economic effects that do not mean farmland would be lost, and therefore are not evaluated as part of the Agricultural Lands analysis.

would apply for indirect impacts to Important Farmland within a 25-foot-wide area adjacent to permanently fenced HSR infrastructure, but only to the extent that such acreage is not otherwise subject to mitigation under AG-MM#1. The Authority will fund the purchase of agricultural conservation easements from willing sellers through the California Farmland Conservancy Program at a ratio of not less than 0.5:1 for Important Farmland. With the implementation of Mitigation Measure AG-MM#2, adverse effects associated with the conversion of Important Farmland would be mitigated to the extent feasible.

The HSR corridor could divide agricultural parcels with sole ownership, resulting in difficulty transporting machinery between fields and accessing farm support services. The project design reduces the costs of increased travel distances by providing alignment crossings on public roads. As described on page 2-7 in Chapter 2 of the Fresno to Bakersfield Section Final EIR/EIS, grade-separated crossings (i.e., overpasses and underpasses) would occur at intervals of approximately one mile or less. Technical Appendix 2-A, Road Crossings, of this Draft Supplemental EIR/EIS identifies road crossing locations for the F-B LGA. In addition, Table 2-1 in Chapter 2 of this Draft Supplemental EIR/EIS identifies the number of road crossings associated with the F-B LGA. The specifications are based on county road standards with shoulders four to eight feet wide, depending on average daily traffic volumes. The paved surface for vehicles would range from 32 to 40 feet wide with a minimum clearance of 27 feet over the HSR track. All roadway crossing improvements proposed under the F-B LGA would not result in a reduction in current roadway widths. According to the Agricultural Working Group White Paper, *Ag Equipment Transport and Movement Impacts*, the movement of agriculture equipment through the HSR corridor can be accommodated with over and under crossings (Authority 2012c), but these facilities must be designed and constructed with consideration given to height, weight, sight-distance, and the travel speed capabilities of the equipment. Generally, over and under crossings with a travel width of 40 feet, height of over 16 feet, and slope gradient of no more than six percent would adequately accommodate agricultural equipment movement (Authority 2012c). Therefore, the provision of regular crossings (i.e., overpasses and underpasses) at intervals of one mile or less would not result in increased travel to reach severed parcels across the HSR right-of-way. In summary, all roadway crossing improvements proposed under the F-B LGA would not result in a reduction in current roadway widths and the vertical distance of grade-separated crossings would adequately accommodate equipment movement; therefore, F-B LGA roadway crossing improvements would not result in the permanent conversion of more Important Farmland for accommodating movement of agricultural equipment.

In addition, parcel severance could cause hardships to irrigation systems. As noted in Section 3.6 of this Supplemental EIR/EIS, the rural portion of the F-B LGA would cross a number of irrigation pipelines and canals. The Authority would work with irrigation districts and landowners to protect irrigation systems as they intersect the HSR. Avoidance and Minimization Measure, PUE-IAMM#1, would require that when relocating an irrigation facility is necessary, if feasible the Contractor will provide a new operational facility prior to disconnecting the original facility where feasible; therefore, reducing any potential hardships caused by parcel severance.

Further, the ROW acquisition process provides additional opportunities to reduce hardships caused by parcel severance. As part of this process, the Authority's ROW agents will work with each affected property owner to address issues of concern as discussed in the public outreach materials prepared by the Authority (Authority 2013). The ROW acquisition process for businesses and farms is discussed in detail on page 3-17 of Appendix 3.12-A, Relocation Assistance Program Brochures, and on page 3.12-7 of Section 3.12, Socioeconomics, Communities, and Environmental Justice, of the Fresno to Bakersfield Section Final EIR/EIS. Parcel ownership may change as a result of farmland consolidation in order for some parcels to remain in agricultural use.

As stated in the impact discussion, above, the provision of regular crossings in the F-B LGA project design would not result in increased travel to reach a severed parcel across the HSR right-of-way. Existing travel widths would be maintained and vertical distance of grade-separated crossings would adequately accommodate equipment movement and would not result in the permanent conversion of more Important Farmland for accommodating movement of agricultural

equipment (Authority 2012c). Therefore, this impact would have a less than significant impact under CEQA.

Impact AG #6 – Effects on Land under Williamson Act, Farmland Security Zone Contracts, or Local Zoning

This analysis also considers whether the F-B LGA would have effects on parcels under Williamson Act, FSZ contracts, or local zoning that could lead to the additional conversion of Important Farmlands to nonagricultural use. Parcels required for the F-B LGA that are under Williamson Act contracts would be subject to property acquisition in accordance with the applicable provisions of the program. Williamson Act contracts provide tax incentives for parcels that remain in agricultural production. Partial acquisitions of Williamson Act properties might result in remaining portions of the parcels staying under Williamson Act contracts if minimum acreage requirements established by the local jurisdiction are met. In Kern County, in order to establish new Williamson Act contracts, land must meet minimum parcel size and land quality requirements (e.g., 20 acres minimum, classified as Prime Farmland) (Thompson 2015). There are no parcels with FSZ contracts in the permanent project footprint of the F-B LGA.

As discussed on page 3.14-52 in Section 3.14, Agricultural Lands, of the Fresno to Bakersfield Section Final EIR/EIS, a partial acquisition of land protected by Williamson Act contract could constrain the potential continued use of that land for farming because (1) the remaining land acreage might be too small to meet the minimum requirements under this program, and (2) the resulting increase in property taxes on such land might affect the financial feasibility of continued farming. Although it could be possible to combine adjacent farmlands, this approach might not be feasible in every case due to variations in topography and soils between adjacent farms. This would potentially result in Important Farmland converting to nonagricultural use. As previously discussed, Important Farmland conversion is a significant impact of the F-B LGA as it is located in an agricultural area. This analysis considers the potential for the F-B LGA to cause removal of agricultural lands from Williamson Act contracts and therefore the potential conversion of Important Farmlands to nonagricultural uses, beyond the lands needed for the HSR project facilities.

Local zoning codes and general plan policies also protect most of the Important Farmlands discussed above for agricultural use. Section 3.13, Station Planning, Land Use, and Development, of this Draft Supplemental EIR/EIS addresses the project's consistency with local zoning and general plan policies for the protection and preservation of agricultural lands.

Table 3.14-11 lists the acreage of Williamson Act lands permanently affected by the F-B LGA, which includes a total of 114 acres of farmland under active Williamson Act contract (i.e., not currently in nonrenewal). Figure 3.14-6 (Sheets 1 through 3) depicts the location of Williamson Act impacts inside the F-B LGA permanent project footprint. In addition to these parcels directly affected by the F-B LGA, three active Williamson Act parcels just under 20 acres, 19 acres, and 18 acres may be forced into nonrenewal because the project would reduce the size of these parcels by 0.26-acre, 1 acre, and 16 acres, respectively, further reducing these parcels below the minimum 20 acres prescribed by the County for the Williamson Act. These Williamson Act parcels were less than 20 acres prior to being impacted by the project. Because these parcels could be further reduced to a size less than the minimum eligible size, they may be permanently converted to nonagricultural use. Table 3.14-12 shows the acreage of lands that could be subject to contract nonrenewal due to the permanent project footprint, further reducing the size of the parcel to below the minimum allowable acres prescribed by the Williamson Act. The Authority will follow the required notification procedures and report acreages of the affected parcels under Williamson Act contract, summarized in Table 3.14-13, to the DOC and respective counties. The effects of the project in causing the removal of lands from Williamson Act contracts and, therefore, the potential conversion of Important Farmlands to nonagricultural uses is considered a significant impact under CEQA.



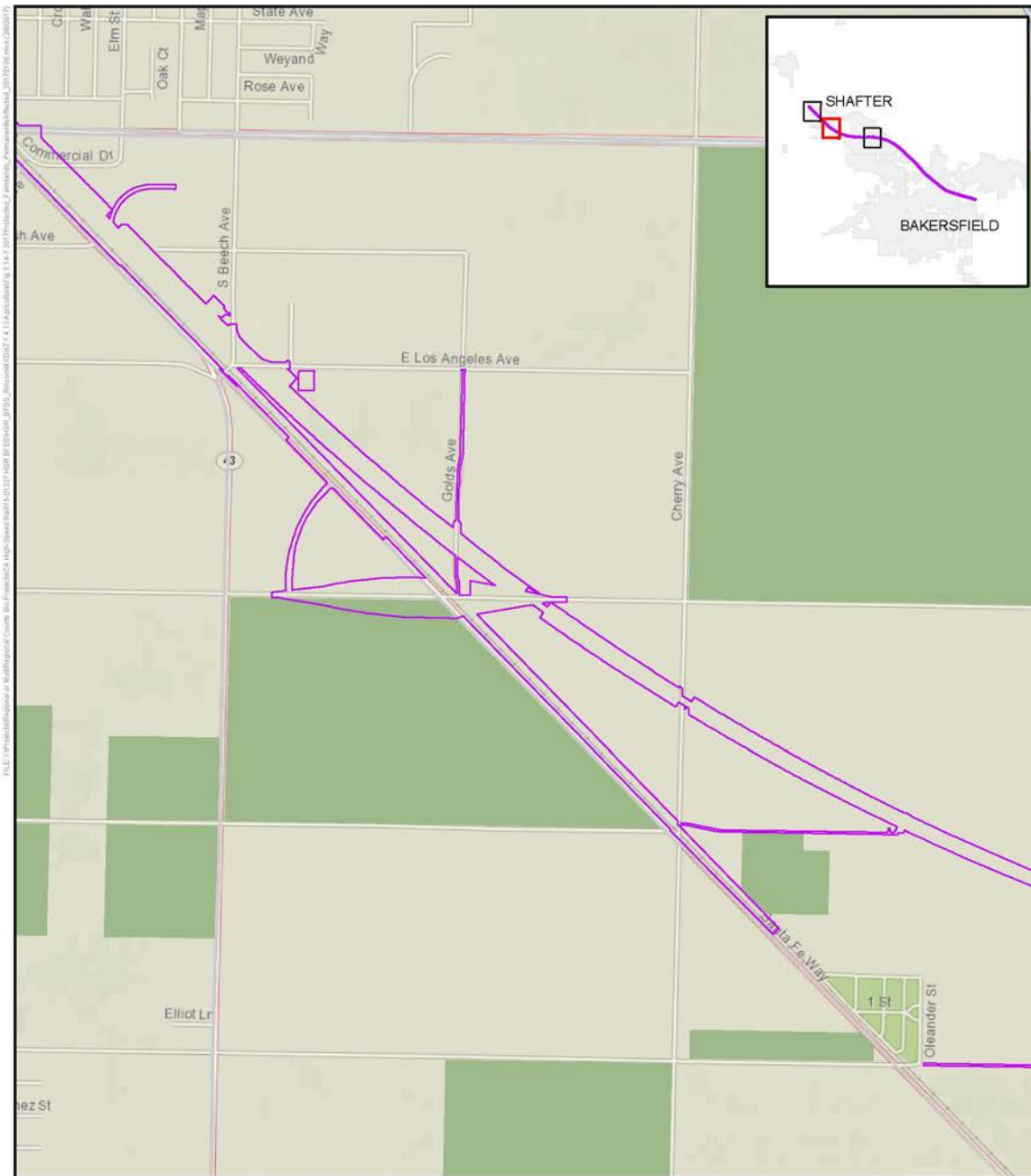
SOURCE: City of Shafter, 2017; Kern County, 2017; ESRI, 2017; CHSRA, 2017.

February 8, 2017



Figure 3.14-6 Williamson Act Property in the F-B LGA Permanent Project Footprint

(Sheet 1 of 3)



SOURCE: City of Shafter, 2017; Kern County, 2017; ESRI, 2017; CHSRA, 2017.

February 8, 2017



Figure 3.14-6 Williamson Act Property in the F-B LGA Permanent Project Footprint

(Sheet 2 of 3)



SOURCE: City of Shafter, 2017; Kern County, 2017; ESRI, 2017; CHSRA, 2017.

February 8, 2017



Figure 3.14-6 Williamson Act Property in the F-B LGA Permanent Project Footprint

(Sheet 3 of 3)

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Table 3.14-12 Protected Farmland Permanently Affected by the F-B LGA

Protected Farmland Classification	Acres ^{1,2}
Williamson Act Land, Prime, Renewal, Less than 20 acres ²	17
Williamson Act Land, Prime, Renewal, 20 acres or greater in size ³	97
Williamson Act Land, Prime, Nonrenewal, Less than 20 acres ²	0
Williamson Act Land, Prime, Nonrenewal, 20 acres or greater in size ³	0
Williamson Act Land, Non-Prime, 40 acres or greater ³	0
Farmland Security Zone	0
Total	114

¹ Acreages are rounded to the nearest whole number.

² Williamson Act parcel less than 20 acres prior to the F-B LGA project, and continues to be less than 20 acres after the F-B LGA project.

³ In Kern County, Prime Farmland under Williamson Act contract is allowed to be on a smaller parcel (20 acres) than non-Prime Farmland (40 acres).

Table 3.14-13 Protected Farmland Reduced to Less Than the Williamson Act Minimum Size

Alignment Alternative	Williamson Act Land Acres ¹	Williamson Act Parcels ²
F-B LGA	17	3

¹ Acreages are rounded to the nearest whole number.

² These totals reflect only active Williamson Act parcels potentially no longer eligible for Williamson Act contracts because they do not meet the 20-acre minimum.

Impact AG #7 – Effects on Confined Animal Agriculture

This analysis considers whether effects on confined animal agriculture (i.e., dairy operations, feedlots, horses, and livestock) could lead to additional conversion of Important Farmlands. There are four confined animal facilities, specifically livestock and horses, within one mile of the F-B LGA (Figure 3.14-1, Sheet 1). The closest facility is approximately 0.47 mile (2,500 feet) north of the F-B LGA alignment, east of Shafter. Because of the distance between the F-B LGA and the nearest confined animal facility, there would be no conversions of confined animal operations to nonagricultural uses. Therefore, project effects on confined animal facilities would not lead to additional conversion of Important Farmland. Impacts from the loss of confined animal facilities would have a less than significant impact under CEQA from the standpoint of Important Farmland conversion.

The FRA has established a threshold for HSR noise effects on livestock at 100 dBA SEL and for vibration effects at 75 VdB (FRA 2012). As discussed in Section 3.4, Noise and Vibration, of this Draft Supplemental EIR/EIS, the noise level for project operations would reach 100 dBA SEL at a distance of up to 184 feet, and the vibration level would reach 75 VdB at a distance of up to 146 feet from the track centerline. SEL describes the noise from a single event such as a train passing a given point. The closest confined animal facility would be approximately 2,500 feet from the project. The noise level at a distance of 2,500 feet would reach 85.9 dBA SEL, and the vibration level at a distance of 2,500 feet from track centerline would reach 50.6 VdB in locations with an at-grade/retained track type and 40.6 VdB in locations with a viaduct/straddle bent track type. The remaining three facilities would be located more than 2,500 feet away from the tracks, and therefore, noise and vibration levels would not exceed the established threshold at any confined animal facility as a result of the F-B LGA. The impact of noise and vibration at confined animal facilities would not preclude agricultural use and would not result in farmland conversion. The impact from project operation with regard to noise and vibration effects on confined animal operations would be less than significant under CEQA.

Impact AG #8 – Effects on Irrigation Distribution Canals

This analysis considers whether effects on irrigation distribution canals could lead to additional conversion of Important Farmlands. Irrigation districts have raised concerns that the HSR could

cause increased response time to emergencies such as a canal blowout. The F-B LGA would result in the closure of a total of 10 public roads under the F-B LGA, four fewer than the May 2014 Project (See Table 8-A-1, Appendix 8-A, of this Draft Supplemental EIR/EIS). The F-B LGA would result in the removal of seven at-grade rural road crossings, while the May 2014 Project would not result in the removal of at-grade crossings. F-B LGA road crossings of the HSR in rural areas would occur approximately once every mile. Therefore, the amount of out-of-direction travel would at most be approximately three miles (based on blocks measuring one square mile). These three miles of travel at an average speed of 45 miles per hour would equal an approximately four-minute increase in travel time. Effects to response times for canal maintenance would not result in conversion of Important Farmland, and are considered to be less than significant under CEQA.

Impact AG #9 – Noise Effects to Grazing Animals

This analysis considers whether noise effects on grazing animals could lead to additional conversion of Important Farmlands. HSR operation would result in noise levels of over 100 dBA SEL when trains run through Grazing Lands. The screening distance (i.e., the distance from trackway centerline inside which an impact could result) for a single-train pass-by SEL of 100 dBA would be approximately 100 feet from the track centerline. Section 3.4 Noise and Vibration of this Draft Supplemental EIR/EIS provides more detailed information. Noise disturbance to Grazing Lands in the F-B LGA would impact 18 acres. The impact would not convert either Important Farmland or Grazing Lands to nonagricultural use, but it may result in increased stress to grazing cattle that remain in the affected area. This potential effect of the F-B LGA would be the same as described under Impact AG #9 on page 3.14-59 in Section 3.14.5.3 of the Fresno to Bakersfield Section Final EIR/EIS. Because the impact from noise disturbance would not preclude agricultural use and would not result in Important Farmland conversion, there would be no impact under CEQA.

Impact AG #10 – Wind-Induced Effects

This analysis considers whether wind-induced effects from the HSR could lead to additional conversion of Important Farmlands. During operation, HSR induces airflow (i.e., generates 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. The FRA found that the airflow dissipates in less than one second (FRA 1999). Another study found that wind generated by the train has a velocity of approximately 10 percent of the train velocity at a distance of approximately 10 feet from the train (Neppert and Sanderson 1977, Sterling and Baker 2010). As discussed on pages 3.14-59 and 3.14-60 in Section 3.14 of the Fresno to Bakersfield Section Final EIR/EIS, Impact AG #10, an extrapolation of these studies for a train traveling at 220 miles per hour indicates that it would generate a wind gust lasting less than one second at a distance of approximately 10 feet from the train tracks.

In the agricultural areas, the F-B LGA would be developed primarily on embankment-fill (i.e., at-grade or retained fill) north of Shafter to north of Saco with the exception of locations where the F-B LGA would be on a steel truss at canal crossings. The F-B LGA would be developed primarily on a viaduct north of Saco to Oswell Street in Bakersfield. The top of the embankment-fill would be 52 feet wide for the two mainline tracks and overhead contact system poles and between 150 to 260 feet wide at the base. The alignment corridor also includes two 15-foot-wide maintenance access roads at the base of fill, making the total width of the corridor approximately 200 to 300 feet. The viaduct structure would be approximately 50 feet wide and the HSR corridor along the viaduct would be 80 feet wide, including two 15-foot maintenance access roads outside the limits of the structure. Distance from the train dictates the force and wind speed substantially more than elevation does (Authority 2012d). The 15-foot distance is, therefore, used to estimate maximum air flows from the F-B LGA in agricultural lands. The maximum induced airflow from a distance of 15 feet is calculated to be approximately 7.7 miles per hour at the edge of the maintenance access easement (Appendix 3.3-A in the Fresno to Bakersfield Section Final EIR/EIS). Because of typical equipment-turning areas of 35 feet, orchards or fields would have an additional buffer from the HSR ROW along the embankment-fill. Therefore, in these locations, wind speeds would be lower where trees or crops are present.

As discussed in the Agricultural Working Group White Papers (Authority 2012d, Authority 2012e, Authority 2012f) prepared for the Fresno to Bakersfield Section Final EIR/EIS, the HSR would not cause adverse wind effects on adjacent farmland and indirect effects (e.g., interference with insect pollination, additional pesticide drift, or application restrictions) would not result in additional farmland conversions. Therefore, there would be a less than a significant impact under CEQA.

Impact AG #11 – Effects on Aerial Spraying

This analysis considers whether any potential effects on aerial spraying could lead to additional conversion of Important Farmlands. 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 three miles along the alignment. These structures would be taller than many of the structures currently located in the rural areas along the alternative alignments. Construction of these towers would follow federal, state, and local safety guidelines for radio masts, including lighting, thus ensuring that they are properly visible to aircraft conducting aerial spraying. The maximum height of utility structures (i.e., 100 feet) identified on page 3.14-60 in Section 3.14.5.3 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a:60) has not changed, and the potential effect of the F-B LGA would be the same as described for the May 2014 Project under Impact AG #11 on page 3.14-60 in Section 3.14.5.3 of the Fresno to Bakersfield Section Final EIR/EIS. Therefore, changes in spraying patterns from vertical HSR structures would not cause conversion of Important Farmland to a nonagricultural use. As such, there would be a less than a significant impact under CEQA.

3.14.5 Avoidance and Minimization Measures

All of the avoidance and minimization measures listed below and described in Section 3.14.6 of the Fresno to Bakersfield Section Final EIR/EIS (where they are referred to as project design features) are applicable to the May 2014 Project and the F-B LGA. These measures are identified in Technical Appendix 2-G Mitigation Monitoring and Enforcement Plan of this Draft Supplemental EIR/EIS. Technical Appendix 2-H of this Draft Supplemental EIR/EIS describes how implementation of these three measures would reduce adverse effects on agricultural lands.

- **AG-IAMM #1: Restoration of Land Used for Temporary Staging Areas.** This action reduces temporary impacts on Important Farmland by conserving agricultural land top soil through temporary stockpiling and then using that soil to restore agricultural lands to pre-project conditions after construction is completed. By stockpiling topsoil (the rich upper layer in which most plants have their roots) the agricultural productivity of the restored agricultural lands would be comparable to pre-project conditions.
- **AG-IAMM #2: Farmland Consolidation Program.** This measure reduces impacts on agricultural farmland by administering a farmland consolidation program to sell remnant agricultural parcels to neighboring landowners for combining with adjacent farmland properties and continued agricultural productivity. Program implementation will reduce the amount of agricultural lands affected by HSR construction and operation.
- **AG-IAMM #3: Permit Assistance.** This commitment reduces permanent impacts to agricultural operations (confined animal facility) by providing land use and regulatory agency permit assistance to landowners needing to obtain new or amended permits to continue operation of a confined animal facility whose operations would be modified or facilities relocated resulting from high-speed rail (HSR) construction and operation. Obtaining land use and regulatory permits for modified or relocated confined animal facilities can be a lengthy and arduous process that can result in the inability to modify or relocate such facilities in a timely manner. By providing permitting assistance, the Authority can reduce potential impacts on agricultural operations.

3.14.6 Mitigation Measures

3.14.6.1 Mitigation Measures identified in the Fresno to Bakersfield Section Final EIR/EIS

Mitigation measure, AG-MM#1, was identified in the Fresno to Bakersfield Section Final EIR/EIS and approved under the *Fresno to Bakersfield Section Mitigation and Monitoring Enforcement Plan* (Authority and FRA 2014b: pages 1-49 and 1-50). Mitigation Measure AG-MM#1 is applicable to the May 2014 Project and the F-B LGA, and would place lands that are currently not under any type of farmland conservation easement into a new easement that would permanently protect the farmland from future conversion to nonagricultural uses. The Authority would implement this measure to reduce substantial adverse impacts resulting from this project.

In April 2016, new guidance in defining mitigation for Important Farmland was provided resulting in a memorandum that summarized the updated methodology for evaluating agricultural land impacts (ICF International and Rincon Consultants 2016). Mitigation Measure, AG-MM#2, is new and would apply to the May 2014 Project for indirect impacts to agricultural lands. Table 3.14-14 summarizes the Mitigation Measures applicable to both the May 2014 Project and the F-B LGA.

Table 3.14-14 Mitigation Measure Applicable to the F-B LGA and May 2014 Project

Number	Description
AG-MM#1	<p>Identify and Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland</p> <p>This mitigation measure is intended to preserve Important Farmland, in an amount commensurate with the quantity and quality of the converted farmlands, in the same agricultural regions as the impacts occur. The replacement ratio is not less than 1:1 for lands that are permanently converted to non-agricultural use by the project. This approach will provide a consistent way of calculating the total number of acres in agricultural preservation easements provided across the Central Valley.</p>
AG-MM#2	<p>Conserve Additional Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland) for Indirect Impacts Adjacent to HSR Permanently Fenced Infrastructure</p> <p>The Authority will fund the purchase of agricultural conservation easements from willing sellers through the California Farmland Conservancy Program at a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to permanently fenced HSR infrastructure, but only to the extent that such acreage is not otherwise subject to mitigation under AG-MM#1. The Authority shall document implementation of this measure through issuance of a compliance memorandum.</p>

3.14.6.2 Mitigation Measures Specific to F-B LGA

Mitigation Measure AG-MM#1, approved under the *Fresno to Bakersfield Section Mitigation and Monitoring Enforcement Plan* (Authority and FRA 2014b: pages 1-49 and 1-50), is applicable to the F-B LGA. Mitigation measure AG-MM#2 is new and would apply to the F-B LGA for indirect impacts to agricultural lands.

With implementation of Mitigation Measures AG-MM#1 and AG-MM#2 (Table 3.14-14), adverse effects associated with the conversion of Important Farmland would be mitigated to the extent feasible. These mitigation measures identify the responsible party (Authority) to ensure that the measures are appropriately implemented. The mitigation measures would minimize or avoid significant adverse agricultural impacts to the extent feasible. However, adverse impacts to agricultural resources related to the conversion of Important Farmland, in the context of the regional agricultural setting where the permanent loss of any agricultural land is significant, would remain significant under CEQA after implementation of mitigation.