3.18 Regional Growth

This section describes the regulatory setting and affected environment related to regional growth. It discusses the potential growth-inducing effects of the Fresno to Bakersfield Locally Generated Alternative (F-B LGA). Due to the nature of regional growth impacts, the analysis in this section focuses on the four-county region of Kern, Fresno, Tulare, and Kings counties. Environmental impacts that would be created by any contribution of the high-speed rail (HSR) project to regional growth are examined in Section 3.19, Cumulative Impacts, and other sections of this Draft Supplemental Environmental Impact Report/Environmental Impact Statement (EIR/EIS), including Section 3.13, Station Planning, Land Use, and Development. This analysis evaluates projected statewide and regional population and employment growth trends to determine how the F-B LGA could influence these trends, either directly or indirectly. Demographic analysis of population and employment growth are provided in the *Draft Fresno to Bakersfield Supplemental Community Impact Assessment Technical Report* (California High-Speed Rail Authority [Authority] and the Federal Railroad Administration [FRA] 2017).

This section also compares the F-B LGA to the complementary portion of the Preferred Alternative that was identified in the *Fresno to Bakersfield Section Final EIR/EIS*. 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 Alternative from Poplar Avenue to Hageman Road and the Bakersfield Hybrid from Hageman Road to Oswell Street (further referenced as the “May 2014 Project”). 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.

Population and employment growth are closely linked to land use regulations and economic activity, which are addressed in Section 3.12, Socioeconomics and Communities, and Section 3.13, Station Planning, Land Use, and Development. Section 3.12, Socioeconomics and Communities, includes a discussion of economic impacts on the cities and counties. Section 3.13, Station Planning, Land Use, and Development, includes a discussion of how growth is addressed in local land use regulations.

3.18.1 Regulatory Setting

The following federal, state, and local laws, regulations, and agency jurisdiction and management guidance are relevant to regional growth.

3.18.1.1 Federal

The HSR project is required to comply with requirements of the National Environmental Policy Act (NEPA) for analyzing direct and indirect growth effects. Please see Section 3.18.2.1 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-2) for a discussion of NEPA requirements for analyzing these effects.

3.18.1.2 State

The HSR project is required to comply with the California Environmental Quality Act (CEQA) requirements for analyzing growth effects. Please see Section 3.18.2.2 the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-2) for a discussion of CEQA requirements for analyzing growth.

3.18.1.3 Regional and Local

The following regional and local laws, regulations, and guidelines are relevant to this regional growth analysis:

- San Joaquin Valley Blueprint Roadmap
- Kern Council of Governments (KCOG) 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
- Kern County General Plan
- City of Shafter General Plan
- Metropolitan Bakersfield General Plan

Please see Section 3.18.2.3 the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: pages 3.18-4 through 3.18-10) for a discussion of the regional and local plans that are applicable to the proposed F-B LGA. Any local policies and regulations that have been updated or added since those discussed in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014), as well as any plans that apply specifically to the F-B LGA that were not included previously, are discussed in Table 3.18-1. In addition to these plans, the City of Bakersfield is currently preparing an HSR Station Area Plan, as discussed in Section 3.13, Station Planning, Land Use, and Development.

Table 3.18-1 Local Land Use Policies

Policy Title and Status	Summary
Kern County	
2014 RTP/SCS (KCOG 2014) – Updated Plan	The RTP/SCS is a 26-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. The RTP/SCS identifies the HSR project as a whole as a future transit option in the region, and supports state and federal actions that would increase accessibility to passenger rail service.
2014 Regional Housing Needs Assessment (KCOG 2014) – Updated Plan	Government Code Section 65584 requires the Department of Housing and Community Development to provide its determination of the region's projected housing needs to the KCOG. It is the KCOG's responsibility to allocate the projected needs for the unincorporated areas of Kern County and to each of the 11 incorporated cities. This document examines the status of housing in Kern County and proposes a housing allocation based upon market forces consistent with the KCOG traffic and air pollution analysis databases for Kern County.
City of Shafter	
Gossamer Grove Specific Plan (City of Shafter 2014) – New Plan, Applies Only to F-B LGA	Gossamer Grove is designed as a planned community on 953.4 gross acres in the southeastern portion of the city, in an area traversed by an approximate 1.2-mile segment of the F-B LGA. This development aims to convert agricultural land to urban uses characterized predominantly by suburban-type residential densities, with community amenities that will serve local neighborhood needs and which will be integrated into neighborhood centers.

Source: Authority and FRA 2016

3.18.2 Methods for Evaluating Impacts

This analysis considers potential environmental effects of regional growth that would occur over the short-term due to HSR project construction and the long-term due to HSR project operation.

3.18.2.1 Study Area

The study area for the analysis of impacts related to regional growth comprises Kern County, including the incorporated cities of Shafter and Bakersfield, and the unincorporated community of Oildale. This impact analysis discusses most environmental impacts by geographic area (at the county and city level).

Although some economic data sources provide economic data (such as total employment and the unemployment rate) for cities, most describe the correlation between various economic sectors only at the county level. County-level information includes data for the unincorporated parts of the county as well as for the cities.

For the incorporated cities of Shafter and Bakersfield, changes in demographic and economic data between 2000 and later years are based on both (1) changes that occurred inside their incorporated boundaries, as defined in 2000, and (2) changes related to the expansions of these boundaries that occurred after 2000. Shafter and Bakersfield annexed large areas of land into their incorporated boundaries between 2000 and 2010, and are continuing to expand geographically.[1] Changes in the population, housing, and other metrics in these two cities are, therefore, affected by changes in the incorporated boundaries for these cities. As a result, demographic and economic data showing population increases between 2000 and 2010 for these two cities reflect increases related to changes inside the cities' jurisdictional boundaries as well as changes related to incorporating newly annexed areas. Increases in population are, therefore, higher than those related purely to births, deaths, and relocations.

3.18.2.2 Short-Term Growth Effects

Construction spending for the HSR project would result in short-term, direct construction jobs and additional indirect and induced jobs. Direct employment refers to the jobs created to construct the project and primarily involves employment in the construction sector. Indirect employment refers to the jobs created in existing businesses in the region (e.g., material and equipment suppliers) that provide goods and services to project construction. Induced employment refers to jobs created in new or existing businesses (e.g., retail stores, gas stations, banks, restaurants, service companies) that supply goods and services to workers and their families.

This analysis includes estimates for the number of direct, indirect, and induced short-term jobs that would be created in the region as a result of HSR project spending during the construction period. The short-term job creation estimates were used to evaluate potential employment effects and associated population growth that could occur in Kern County as a result of additional available jobs. The methodology used to determine short-term growth effects follows the approach used in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-10). However, this analysis evaluates employment effects in Kern County alone, as opposed to considering the entire region evaluated in the Fresno to Bakersfield Section Final EIR/EIS, and uses updated data sets and multipliers in order to provide up-to-date estimates of short-term job creation for both the May 2014 Project and the F-B LGA.[2] For a detailed discussion of the methods and data used to evaluate short-term growth in the region, refer to Appendix A.4, Short-Term Job Creation Methodology, of the *Draft Fresno to Bakersfield Section Supplemental Community Impact Assessment Technical Report* (Authority and FRA 2017).

[1] According to the incorporated boundaries that were used by the U.S. Census Bureau for the 2000 and 2010 Censuses, the cities of Bakersfield and Shafter expanded by 29.1 and 10.0 square miles, respectively. The incorporated boundary for Shafter expanded from 17.9 to 27.9 square miles, while the incorporated boundary for Bakersfield expanded from 114.6 to 143.7 square miles.

[2] The cost per worker used in this analysis to estimate the number of direct short-term jobs that would be created by HSR project spending is lower than that used in the Fresno to Bakersfield Section CIA. This lower cost per worker results in higher estimates for the number of direct jobs. This analysis uses the revised cost per worker to estimate the number of direct short-term construction jobs under both the May 2014 Project and the F-B LGA to ensure comparability between the two alternatives.

3.18.2.3 Long-Term Growth Effects

The HSR project would result in the creation of long-term jobs and associated increases in population in areas served by the project. As growth impacts would be regional, the analysis of long-term, operations-induced growth focuses on Kern County and determines how the HSR project could influence projected county employment and population growth trends, either directly or indirectly.

This regional growth analysis considers growth from the HSR project when considered in combination with projected growth without the HSR project, which are the projected conditions under the No Project Alternative. Unlike the analyses for most of the resource areas in this Draft Supplemental EIR/EIS, this analysis is cumulative in nature and makes a comparison between the future conditions under the HSR project versus the No Project Condition.

The HSR project would result in the creation of direct, long-term jobs associated with operation and maintenance of the project. It would also indirectly generate new jobs related to the following:

- Jobs created to support these new workers
- Businesses attracted to the region as a result of the project
- Existing businesses in the region that expand as a result of the project

The generation of long-term employment would also affect population growth, as new residents move into Kern County to fill these jobs.

These growth effects were considered in the 2010 Cambridge Systematics growth inducement study, which provided estimates of induced population and employment that could occur through the year 2035 as a result of the HSR project in each affected county along the entire HSR project (Cambridge Systematics, Inc. 2010). These estimates are the same as those used in Section 3.18, Regional Growth, of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-33). The following summary describes key steps of the evaluation:

- **Define Transportation Investments**. The analysis used the future baseline (year 2035) conditions of the No Project Alternative and the economic modeling process to forecast the incremental increase in transportation investments associated with the HSR project.
- **Estimate Transportation Benefits**. Using results from the California Statewide High-Speed Rail Travel Demand Model, benefits such as reduced travel times and costs of the HSR system for air, highway, and conventional rail trips were estimated using travel demand model results. Congestion, pollution, and crash reduction benefits and accessibility benefits were directly estimated using travel demand model results for the HSR system in comparison with the No Project Alternative. Mode shift benefits arising from the introduction of HSR service are estimated by scaling benefits calculated for the statewide program EIR/EIS using HSR ridership and other output from the travel demand model.
- **Estimate Reasonably Foreseeable Direct Economic Benefits that would Induce Growth**. Direct economic impacts were evaluated for the following three categories:
  - *Business Cost Savings*. Reductions in travel time and cost for long-distance business travelers and commuters benefiting from the transportation improvements sufficient to result in their relocation to the study area.
  - *Business Attraction Effects*. New and relocated firms taking advantage of market accessibility improvements provided through transportation investments associated with the project.
  - *Amenity (Quality of Life) Changes*. Non-business travel time and cost benefits and other societal benefits that improve the attractiveness of the region to a sufficient degree that residential and business growth would occur.
- **Determine Total Economic Impacts for Regions and Counties**. All direct economic impacts have the potential to create additional multiplier effects on the regional and statewide economies of California. Total regional impacts are estimated using the Transportation

Economic Development Impact System-Regional Dynamics macroeconomic simulation model. For this analysis, total economic impacts included population and industry-specific employment.

This information was used to allocate county-level population and employment for each county, and to develop estimates of county population and employment growth that would occur as a result of the project.

The growth and development forecasts are based on HSR ridership assumptions at the high end of the potential ridership range. Accordingly, the growth analysis evaluates a reasonable worst-case scenario in that it represents the higher potential growth-related impacts from the HSR project.

Impacts of induced growth were evaluated based on the infill potential and magnitude of land needed to accommodate the population and employment growth. The analysis of land consumption estimated the population and employment growth that could fit inside the urban growth boundaries delineated by Shafter and Bakersfield and Kern County in their current general plans. The population, employment, and land consumption estimates were then reviewed to characterize the nature and magnitude of potential secondary impacts on the human and natural environment.

3.18.2.4 Methods for Evaluating Effects under NEPA

Although NEPA regulations require evaluation of direct and indirect growth effects, they do not require separate analysis or offer specific guidance with respect to evaluating growth-inducing impacts. Instead, these effects are evaluated in terms of the direct and indirect effects to specific resource areas (e.g., direct and indirect effect of regional growth on air quality). As such, this section provides analysis of the growth effects for use in other sections of this Draft Supplemental EIR/EIS (e.g., cumulative effects analysis).

3.18.2.5 Methods for Evaluating Effects under CEQA

Section 15126.2(d) of the CEQA Guidelines require an EIR to, “Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” This section further states that, “Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.” This section, therefore, provides a discussion of potential growth effects of the HSR project and whether or not they would contribute to the need for new facilities, construction of which could cause significant environmental effects.

3.18.3 Affected Environment

The affected environment describes the context for evaluating impacts. This context is used to better understand existing conditions in the study area and to assess the direct and indirect growth effects under NEPA and the level of significance of these growth effects under CEQA. This section presents the affected environment for jurisdictions and unincorporated communities that would be affected by either the May 2014 Project or F-B LGA. Both of these alternatives would traverse portions of Kern County and the cities of Shafter and Bakersfield, while the F-B LGA would also traverse a portion of the community of Oildale. The existing setting for all of these geographic areas in terms of population, employment, and housing is presented here. Updated regional information is also provided for comparison with the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014).

3.18.3.1 Summary of the May 2014 Project Affected Environment

The affected environment for the May 2014 Project is similar to that of the F-B LGA. The May 2014 Project would affect Kern County and the cities of Shafter and Bakersfield. These communities would also be affected by the F-B LGA, and are therefore discussed as part of the affected environment for the F-B LGA.

3.18.3.2 Fresno to Bakersfield Locally Generated Alternative

Economic Recession of 2008 through 2009

The economic recession of 2008 through 2009 had substantial effects on income and employment in the region. Kern County experienced declines in average and median incomes during this period and the following years. The average income in Kern County returned to 2007 pre-recession levels in 2012, and the median income returned to 2007 pre-recession levels in 2014. Poverty rates have risen in Kern County following the recession, from 18.1 percent in 2007 to 24.8 percent in 2014, and have neither returned to pre-recession levels nor started to trend downward (Authority and FRA 2016).

Unemployment rates in Kern County show a trend of recovery from the recession, peaking at 15.0 percent in 2011 and dropping to 11.0 percent by 2014 (Figure 3.18-1). These rates, however, are still above the pre-recession rate of 10.0 percent in 2007. For more information about income and employment during and following the recession, refer to Sections 3.18.2.2, Employment, and 3.18.2.3, Unemployment Rates. A detailed discussion is also provided in Section 4.4.1, Economic Recession of 2008 to 2009, in the *Draft Fresno to Bakersfield Section Supplemental Community Impact Assessment Impact Report* (Authority and FRA 2017: pages 4-21 through 4-23).

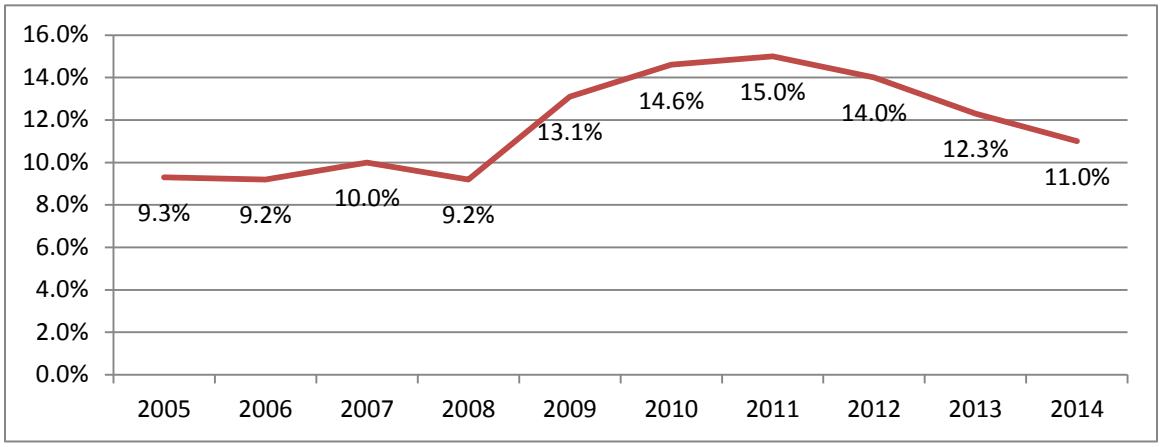

Figure 3.18-1 Unemployment Rates in Kern County from 2005 to 2014

This data on average and median incomes and unemployment rates indicates that Kern County's economy has been recovering from the recession of 2008 through 2009, with incomes returning to pre-recession levels and unemployment rates approaching pre-recession levels. The percentage of people below the poverty line, however, has been increasing, indicating a shift in the distribution of income. This change may be related to changes in the types of jobs available. In recent history, the agricultural industry has been the fastest-growing source of jobs in Kern County. Although these jobs support a large portion of the community, they are generally low-paying and often seasonal, with annual wages averaging $24,200 dollars in 2013 (Milken Institute 2015).

Population

Table 3.18-2 shows the population in 2000 and 2010 for the state, the region, Kern County, the cities of Shafter and Bakersfield, and the community of Oildale. The annual average increase in population for Bakersfield was 4.1 percent, while in Shafter this annual average increase was 3.3 percent. In the community of Oildale, this annual average increase was 1.7 percent. As discussed above, some of the population increase in Shafter and Bakersfield is due to expansions of their incorporated boundaries. The population in the unincorporated area of Kern County increased at an annual average rate of 1.1 percent per year, similar to the rate experienced in California of 1.0 percent.

Table 3.18-2 Population Increase in the F-B LGA Study Area, 2000–2010

Area	Population in 2000	Population in 2010	Change from 2000 to 2010	Annual Average Increase
Kern County	661,645	839,631	26.9%	2.7%
City of Shafter	12,736	16,988	33.4%	3.3%
Community of Oildale	27,885	32,684	17.2%	1.7%
City of Bakersfield	247,057	347,483	40.6%	4.1%
Unincorporated[1]	267,411	297,932	11.4%	1.1%
Four-county Region	1,958,534	2,365,242	20.8%	2.1%
California	33,871,648	37,253,956	10.0%	1.0%

Sources: U.S. Census Bureau 2000 and 2010

[1] The Community of Oildale is unincorporated and is, therefore, taken into account in the "Unincorporated" population area.

Table 3.18-3 shows the population estimates for the years 2010 through 2035 for the state, the region, Kern County, the cities of Shafter and Bakersfield, and the community of Oildale. These estimates indicate that the populations of Kern County, the cities of Shafter and Bakersfield, and the community of Oildale, are projected to increase at a higher average annual rate than the population of the state of California. Over this 25-year period, population is projected to increase in Kern County by 55.1 percent, while the state's population is expected to increase by 22.8 percent. The cities of Shafter and Bakersfield are projected to have a 134.9 and 107.1 percent increase in their populations, respectively, over the same period. The KCOG found that the rate of inbound migration to Kern County from other counties in California was higher than the rate experienced statewide, thereby contributing to higher growth rates experienced in this county (KCOG 2015).

Table 3.18-3 Population Projections in the F-B LGA Study Area, 2010–2035

Area	Population in 2010[1]	Population in 2035	Change from 2010 to 2035	Annual Average Growth Rate
Kern County	839,631	1,302,000[2]	55.1%	2.2%
City of Shafter	16,988	39,900[3]	134.9%	5.4%
Community of Oildale	32,684	N/A	N/A	N/A
City of Bakersfield	347,483	639,400[3]	107.1%	4.3%
Four-county Region	2,365,242	3,389,000[4]	43.3%	1.7%
California	37,253,956	45,747,645[5]	22.8%	0.9%

Sources:

[1] *U.S. Census Bureau 2010*

[2] *Kern Council of Governments 2015*

[3] *Kern Council of Governments 2014*

[4] *Fresno Council of Governments 2012*

[5] *California Department of Finance 2014*

N/A = Not available. The Kern Council of Governments does not provide population projections for the community of Oildale.

The population projections for 2035 presented in Table 3.18-3 are slightly different from those shown in Table 3.18-2 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-14) because they have been updated to the most recently available information. The California Department of Finance (CDOF) has updated its population projections to use 2010 Census data as a benchmark. This update resulted in a reduction of the CDOF's long-range population forecasts for the state and counties because the actual 2010 figures were lower than

they were projected to be in the previous forecasts that were published in 2007 (Pitkin and Meyers 2012).

Employment

Table 3.18-4 provides information on employment by industry for the region and for Kern County, including both historical data and projections of future employment. Total industry employment counts the number of jobs by the place of work. This table compares 2000 and 2013 data from the U.S. Census Bureau to evaluate past trends, and 2012 baseline data and 2022 projections from the California Employment Development Department (CEDD) to evaluate anticipated future growth. The data sets are compared separately because they were obtained from different sources and contain some variances.

In 2013, for both the region and Kern County, the largest employment sector was educational services, and health care and social assistance. The second largest sector was agriculture, forestry, fishing and hunting, and mining (Table 3.18-4). Between 2000 and 2013, total employment increased by 27.4 percent in the region and 28.8 percent in Kern County. In both the region and the county, the largest gain over this period was in the agriculture, forestry, fishing and hunting, and mining sector. This sector accounted for 46,895 new jobs in the region and 21,824 new jobs in the county. The region and county both experienced declines in the wholesale trade and information sectors.

Based on employment projections by the CEDD, between 2012 and 2022 the two sectors expected to contribute the most new jobs in both the region and Kern County are the (1) educational services, and health care and social assistance sector and the (2) agriculture, forestry, fishing and hunting, and mining sector (Table 3.18-4). These two sectors currently employ the most workers in the region and county, representing approximately 41 percent of jobs in the region and 42 percent of jobs in the county. The CEDD data indicate that these same sectors will continue to account for over 40 percent of the jobs in the region and county in the future. Other employment sectors with strong growth include the professional, scientific, and management, administrative, and waste management services sector, and the arts, entertainment, recreation, accommodation, and food services sector.

Table 3.18-4 Kern County and Regional Employment by Industry 2000–2022[1]

Industry	Four-county Region			Kern County		
	2000	2012	Projected 2022	2000	2012	Projected 2022
Agriculture, forestry, fishing and hunting, and mining	161,400	161,700[2]	184,400[2]	56,500	67,700	75,300
Construction	26,700	28,900[2]	35,900[2]	11,600	16,700	19,100
Manufacturing	53,700	52,700	62,200	10,800	13,400	16,400
Wholesale trade	22,100	25,500	28,800	5,700	8,400	9,900
Retail trade	72,700	81,400	91,700	23,400	27,900	31,300
Transportation and warehousing, and utilities	22,600	27,600	33,400	8,400	9,100	12,000
Information	8,900	7,600	7,900	2,500	2,700	2,900
Finance and insurance, and real estate and rental and leasing	26,000	26,300	31,200	7,600	8,700	10,100
Professional, scientific, and management, and administrative and waste management services	57,800	65,500	84,800	22,300	26,500	33,300

Industry	Four-county Region			Kern County		
	2000	2012	Projected 2022	2000	2012	Projected 2022
Educational services, and health care and social assistance	141,300	176,800[3]	212,300[3]	44,600	57,900[3]	68,500[3]
Arts, entertainment, and recreation, and accommodation and food services	50,400	61,900	75,700	16,500	21,600	26,500
Other services, except public administration	20,500	21,500	23,900	6,700	7,200	8,300
Public administration	84,500	90,400[3]	100,700[3]	27,800	31,700[3]	34,500[3]
Total employed civilian population 16 years and over	748,600	827,800	972,900	244,400	299,500	348,100

Sources: CEDD, 2016a and 2016b

[1] This data set represents the total employed civilian population over the age of 16 by industry. Any person with more than one occupation is classified into their primary occupation and counted only once.

[2] CEDD data for the construction industry in the counties of Kings and Tulare were combined with mining and logging, with total projected employment of 1,100 and 6,100, respectively. These jobs were included in the agriculture, forestry, fishing and hunting, and mining sector, and, therefore, construction jobs that are included in these totals have been included in this industry.

[3] Government jobs that were related to education were included in this category, while all other government jobs were assigned to the public administration sector.

As discussed in Section 3.18.2, Affected Environment, the economic recession of 2008 through 2009 affected employment in Kern County. Although average and median wages have recovered to pre-recession levels, the percentage of people below the poverty line has increased and remains above pre-recession levels, indicating a shift in the distribution of income. As discussed previously, this may indicate a long-term shift related to the increase in lower-paying, seasonal agricultural jobs.

Table 3.18-5 shows existing and projected 2035 total employment in Kern County, the region, and the state. The region is projected to experience an annual average job growth rate that is larger than the state as a whole. Between 2015 and 2035, employment is projected to grow by an annual average growth rate of 1.0 percent in the region and 1.1 percent in Kern County.

Table 3.18-5 Regional Long-Range Employment Projections, 2013 and 2035

Area	Employment		Change from 2015 to 2035	Annual Average Growth Rate
	2015	2035		
Kern	353,600[1]	433,000[2]	22.5%	1.1%
Four-County Region	984,400[1]	1,176,226[3]	19.5%	1.0%
State	17,798,600[1]	20,381,000[4]	14.5%	0.7%

Sources:

[1] *CEDD, 2016*

[2] *KCOG, 2015*

[3] *KCOG, 2015; Fresno Council of Governments, 2014; Tulare County Council of Governments, 2014; Authority and FRA, 2014*

[4] *Authority and FRA, 2014*

Unemployment Rates

Unemployment rates in the region have historically been higher than that of the rest of the state. As discussed in Section 3.18.2, Affected Environment, the economic recession of 2008 through 2009 resulted in increased unemployment in the following years. These rates have been declining since their peak in 2011, but as of 2014 had not yet reduced back to pre-recession levels. As indicated by these rates, Kern County's economy has been improving since the recession, and has largely recovered from the impact to unemployment rates (Authority and FRA 2016).

Table 3.18-6 shows the annual civilian labor force (the number of working people) and unemployment rates in 2010, 2014, and 2015 for the state, the region, Kern County, the cities of Shafter and Bakersfield, and the community of Oildale. County unemployment rates were higher than those at the state level, at 15.7 percent relative to the state's 12.2 percent in 2010, and 10.2 percent compared to the state's 6.2 percent in 2015. Unemployment rates were lower in Shafter and Bakersfield and higher in Oildale than for Kern County in 2010, 2014, and 2013, respectively.

Table 3.18-6 Regional Labor Force Characteristics

	2010	2014	2015
Kern County			
Civilian Labor Force	371,500	394,800	393,800
Percent Unemployment Rate	15.7%	10.4%	10.2%
City of Shafter			
Civilian Labor Force	6,800	7,300	7,300
Percent Unemployment Rate	13.5%	8.9%	8.7%
Community of Oildale			
Civilian Labor Force	15,300	15,000	15,000
Percent Unemployment Rate	21.2%	13.3%	13.1%
City of Bakersfield			
Civilian Labor Force	166,000	180,600	180,200
Percent Unemployment Rate	14.1%	9.3%	9.1%
Four-County Region			
Civilian Labor Force	1,073,500	1,092,700	1,099,800
Percent Unemployment Rate	16.4%	11.4%	10.5%
California			
Civilian Labor Force	18,336,300	18,827,900	18,981,800
Percent Unemployment Rate	12.2%	7.5%	6.2%

Source: CEDD, 2016c

Housing Demand

Table 3.18-7 shows the number of existing and projected housing units in Kern County, the region, and the state. In 2013, the predominant housing type in Kern County was the single-family home, and the average household size was 3.19 persons (U.S. Census Bureau 2013b, 2013c). Section 3.12, Socioeconomics and Communities provides more information on existing housing characteristics in the region. Based on population projections, housing needs will increase by 47.3 percent in Kern County between 2013 and 2035. In 2010, approximately 29,757 housing units were vacant in the county, which represents about 10.5 percent of the available housing stock (CDOF 2014).

Table 3.18-7 Existing and Projected Housing Units

Location	2010	2035	Change	Annual Average Growth Rate
Kern County	284,367[1]	421,000[2]	48.0%	1.9%
Four-County Region	785,461[1]	1,052,194[3]	34.0%	1.4%
California	13,670,304[1]	15,560,423[3]	13.8%	0.6%

Sources:
[1] *CDOF, 2015*
[2] *KCOG, 2015*
[3] *United States Census Bureau, 2013b*
The 2035 four-county region housing estimates are based on the population estimate contained in Table 3.18-2, divided by the 2013 average household size of 3.22 and 2.94 people per household in the region and state, respectively.

3.18.4 Environmental Consequences

This section describes construction and operation impacts associated with the May 2014 Project and the F-B LGA as they relate to regional growth.

3.18.4.1 Summary of Analysis for the May 2014 Project

The Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014) analyzed potential regional growth impacts associated with implementation of the Fresno to Bakersfield Section of the HSR project, including the portion comprising the May 2014 Project. For short-term construction effects, the Fresno to Bakersfield Section Final EIR/EIS evaluated the number of short-term jobs that would be created in the region based on construction of the entire segment from Fresno to Bakersfield. These numbers are not comparable with the F-B LGA alignment, so an updated analysis was performed for the May 2014 Project, corresponding with the F-B LGA endpoints and construction schedule.

Long-term operations impacts, however, are regional in nature and relate directly to operating cost, which are similar for all HSR alternatives. Operation of any of the alternatives would, therefore, result in similar direct effects on employment and indirect effects on housing demand, farmland conversion, and urban development. Accordingly, the results of the analysis of long-term effects presented in the Fresno to Bakersfield Section Final EIR/EIS apply to both the May 2014 Project and F-B LGA.

The results of the updated short-term construction effects analysis and a summary of the long-term operations effects evaluated in the Fresno to Bakersfield Section Final EIR/EIS are presented here.

Construction Effects

The analysis in the Fresno to Bakersfield Section Final EIR/EIS (2014: pages 3.18-20 and 3.18-21) shows that construction of the Fresno to Bakersfield Section of the HSR project, including the portion comprising the May 2014 Project, would result in new, short-term construction-related employment and increases in sales tax revenues related to construction expenditures. Construction could temporarily disrupt agricultural activities, and acquisition of agricultural parcels prior to construction would remove land from production. The amount of agricultural land in the region that would be disturbed by construction, however, would be small in comparison to the agricultural base. Section 3.12.4.1, Summary of Analysis for the May 2014 Project, in Section 3.12, Socioeconomics and Communities of this Draft Supplemental EIR/EIS briefly describes the anticipated changes in tax revenues due to the May 2014 Project.

Short-term employment effects are related to the specific cost of constructing the May 2014 Project, and are therefore evaluated separately here. As the May 2014 Project would require approximately the same amount of time to construct as the F-B LGA, a six-year time horizon was used for this analysis, corresponding with the anticipated time horizon for the F-B LGA. Table 3.18-8 provides estimates of the number of jobs that would be created in Kern County if the May 2014 Project were to be constructed, including direct jobs related to construction of the rail, station, and maintenance facility; indirect jobs in existing businesses that provide goods and services to project construction; and induced jobs in new or existing businesses that supply goods and services to workers and their families.

Table 3.18-8 May 2014 Project Employment Impacts during Construction

	Direct Employment (annual job years)	Indirect and Induced Employment (annual job years)	Total New Employment (annual job years)
Year 1	350	317	667
Year 2	1,052	953	2,005
Year 3	1,713	1,552	3,265
Year 4	1,713	1,552	3,265
Year 5	1,052	953	2,005
Year 6	350	317	667
Total	6,230	5,644	11,874

Source: Authority and FRA, 2017

The total direct, indirect, and induced employment over the six-year construction period for the May 2014 Project would be 11,874 annual job years in Kern County.[3] This includes an increase of 6,230 direct annual job years in the construction sector and 5,644 indirect and induced annual job years in other economic sectors. During the peak period of construction, the May 2014 Project would create 1,713 direct construction jobs and 1,552 indirect and induced jobs. As concluded in the *Draft Fresno to Bakersfield Section Supplemental Community Impact Assessment Impact Report* (Authority and FRA 2017: pages 5-42 through 5-44), this increase would not be substantial enough to greatly attract workers to the region because the existing, underemployed construction work force would be expected to fill these jobs.

Operation Effects

Long-term growth impacts of the HSR project are regional in nature and relate directly to operating cost, which are similar for all HSR alternatives. Employment and population growth associated with the HSR project, as well as associated land use consumption, is therefore expected to be the same under all alternatives, including the May 2014 Project. Because operational effects relate to operation of the HSR system as a whole, the analysis of regional growth contained in the Fresno to Bakersfield Section Final EIR/EIS relates to how operation of the entire system affects the four-county region, including Kern County. This section provides a summary of the overall findings, which are discussed at the regional level. It also provides employment and population projections for the region and Kern County at the time of the 2010 Cambridge Systematics growth inducement study, which was used for the analysis in the Fresno to Bakersfield Section Final EIR/EIS.

[3] An “annual job year” is equivalent to one person fully employed for one year.

Employment

As discussed in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: pages 3.18-30 through 3.18-31), operation of the HSR system is estimated to generate approximately 47,400 jobs by 2035 in the region, approximately 17,200 of which would be in Kern County (Table 3.18-9). This total would include the direct jobs to operate and maintain the HSR system, the indirect and induced jobs created to support new operations workers, and the additional jobs created as a result of the improved connectivity of the region to the rest of the state, which is anticipated to increase the competitiveness of the region's industries and overall growth in the regional economy.

Table 3.18-9 Regional Projected and Induced Population and Employment Growth

County	2035 No Project Projections	HSR Project Induced Growth	Total 2035 HSR Project Projections	Growth Inducement
Population				
Kern	1,529,933	45,978	1,575,911	3.0%
Four-County Region	4,166,186	110,649	4,276,385	2.7%
Jobs				
Kern	513,055	17,171	530,226	3.3%
Four-County Region	1,473,274	47,436	1,520,710	3.2%

Source: Cambridge Systematics, Inc., 2010

The total projected increase in jobs related to HSR system operation was compared to the 2035 employment projections that were available at the time of the 2010 Cambridge Systematics growth inducement study, which represent the number of jobs anticipated under the No Project Alternative. In the region, the new jobs associated with operation of the HSR system would represent a 3.2 percent increase above the 2035 projection of 1.47 million total jobs, and in Kern County they would represent a 3.3 percent increase above the 2035 projection (Cambridge Systematics, Inc. 2010). Given that unemployment rates in the region and Kern County have historically been higher than those of the state (Table 3.18-6), the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: pages 3.18-30 through 3.18-31) concluded that jobs created directly and indirectly by operation of the HSR system, including the May 2014 Project, would provide employment opportunities for residents in the area and would not be growth-inducing.

Population Growth

Operation of the HSR system, including the May 2014 Project, would contribute a 2.7 percent population increase in the region compared to the 2035 population projection of 4.17 million for the region that was available at the time of the 2010 Cambridge Systematics growth inducement study. This increase would be small relative to the total growth projected to occur in the region by 2035 under the No Project Alternative, which amounted to 76.1 percent between 2010 and 2035. Similarly, in Kern County operation of the HSR system would contribute a 3.0 percent population increase compared to the 2035 projection of 1.53 million, a small percentage relative to the projected 82.2 percent increase under the No Project Alternative between 2010 and 2035.

The percentage increase in population in Kern County related to operation of the HSR system is expected to be slower than the percentage increase in employment in the county (Table 3.18-9). This trend is based on the likelihood that a number of the jobs generated by operation of the HSR system would be filled by area residents. Meanwhile, population increases are driven by the growth in indirect employment, which is spread out over time. Although operation of the HSR system would attract some new residents to the region, it would not lead to a wholesale shift in residential locations from the Bay Area and Los Angeles into the Central Valley, and any

interregional shifts in residential locations are expected to be a small portion of the growth expected in the region (Cambridge Systematics, Inc. 2003). Therefore, operation of the HSR system, including the portion comprising the May 2014 Project, would not induce growth.

Land Use Consumption

As shown in Table 3.18-9, operation of the HSR system, including the May 2014 Project, would increase the population in the region by approximately 2.7 percent, or approximately 110,647 people over the 2035 population forecasted for the county in the 2010 Cambridge Systematics study. Based on typical population density for the San Joaquin Valley, the May 2014 Project would require an additional 11,065 acres of land to support housing and necessary accompanying infrastructure, including commercial, office, transportation, parks, and schools, for the increased population associated with operation of the HSR system. As concluded in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: pages 3.18-32 through 3.18-36), under current city and county general plans in the region, communities in the region have adequate space to accommodate both planned growth by 2035 and induced growth associated with operation of the HSR system in their current spheres of influence.

Current land use trends would likely change with the presence of the HSR system, which is expected to result in additional population and employment near stations and to indirectly influence the regional development pattern. The research conducted for the Bay Area Program EIR/EIS found that market forces and complementary, regulatory-style efforts by other cities to encourage increased density and a mix of land uses near rail stations have been effective in attracting higher-density development (Cambridge Systematics, Inc. 2007). Operation of the HSR system would encourage increased densities that would result in compact urban development around the HSR stations, including the Truxtun Avenue station, and would tend to consolidate currently projected growth (under the No Project Alternative) and new regional employment and population around these stations.

Although much of the population and employment growth in the station areas is a result of market forces, government involvement through a number of strategies can help to speed up the process, including higher-density mixed-use zoning. Given the dramatic population and employment growth projected in the Central Valley compared to the rest of the state under the No Project condition, the presence of the Truxtun Avenue station would help direct a portion of this growth and the additional HSR-induced growth into higher-density and more sustainable development patterns, and help achieve the goals of the 2014 Regional Transportation Plan/Sustainable Communities Strategy adopted by the Kern Council of Governments pursuant to Senate Bill 375, the San Joaquin Valley Blueprint, and the Metropolitan Bakersfield General Plan (KCOG 2014; San Joaquin Valley Councils of Governments, San Joaquin Valley Air Pollution Control District, and Great Valley Center 2016; City of Bakersfield and Kern County 2007).

Compared to the No Project Alternative examined in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-33), operation of the HSR system, including the May 2014 Project, would encourage more compact, efficient land use in the region by serving as an economic driver for higher-density infill development around downtown HSR stations. These effects would support anticipated regional land use policies consistent with the Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375), which aims to reduce greenhouse gas emissions from automobiles and light trucks through transit-oriented design, and would assist communities in realizing goals set out in the regional transportation plans developed under Senate Bill 375.

Consistency with Regional Growth Management Plans

The projected increase in population growth of 2.7 percent and jobs growth of 3.2 percent in the region would be consistent with regional growth management plans. The economic growth study conducted for the Bay Area Program EIR/EIS found that additional population growth would be driven by regional job growth (i.e., job growth internal to Fresno, Kings, Tulare, and Kern counties) induced by the presence of the HSR system, rather than by population shifts from the Bay Area and Southern California. In general, HSR station areas would offer a more attractive

market for commercial and office development than the same areas under the No Project Alternative examined in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-37). Research of urban rail systems elsewhere in the world found that industries needing large numbers of highly skilled and specialized employees are most attracted to rail station areas, and that a noticeable densification pattern is likely to emerge in the vicinity of HSR stations under regular market forces (Cambridge Systematics, Inc. 2007). Such development patterns would be consistent with the Metropolitan Bakersfield General Plan and the KCOG's RTP/SGS (City of Bakersfield and Kern County 2007, KCOG 2014). As concluded in the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014: page 3.18-37), population growth in the San Joaquin Valley would, therefore, occur without the HSR system, and the HSR system alone would not meaningfully induce substantial population growth beyond that already projected for the region.

3.18.4.2 Fresno to Bakersfield Locally Generated Alternative

The following sections evaluate direct and indirect impacts of the F-B LGA, including short-term construction effects and long-term operation effects.

Construction Effects

As discussed above for the May 2014 Project, construction impacts were evaluated for each year of the construction period. The resulting estimate includes the number of direct jobs created to construct the rail, station, and maintenance of infrastructure facility, as well as the indirect and induced employment. Table 3.18-10 shows the annual direct and the indirect plus induced employment estimates for the F-B LGA.

Table 3.18-10 Employment Impacts during Construction

Year	Direct Employment (annual job years)	Indirect and Induced Employment (annual job years)	Total New Employment (annual job years)
Year 1	325	294	619
Year 2	977	885	1,862
Year 3	1,591	1,442	3,033
Year 4	1,591	1,442	3,033
Year 5	977	885	1,862
Year 6	325	294	619
Total	5,786	5,242	11,028

Source: Authority and FRA, 2017

Over the entire construction period, project expenditures under the F-B LGA would result in the creation of 5,786 direct and 5,242 indirect and induced annual job years, for a total of 11,028 annual job years that would be created by the F-B LGA in Kern County over these six years. It is likely that some of these jobs created over the entire construction period would be held by the same person for more than a year. During the peak period of construction, the 1,591 direct construction jobs created by the project would contribute an additional 9.5 percent to the 16,700 construction jobs documented in Kern County in 2012 (Table 3.18-4; United States Census Bureau 2013a).

Based on Kern County's 2015 unemployment rate of 10.2 percent and civilian labor force of 393,800, there are approximately 40,200 unemployed workers in the county (Table 3.18-6). As with any large construction project, some influx of population is expected as workers arrive in the area seeking jobs. However, given the high level of unemployment in the communities overlain by the study area and the large number of construction workers currently on the job market, the majority of these new construction jobs would be filled by current residents of the area who possess the necessary construction skills. As a result, these new jobs would not attract a

substantial number of new workers to the region, and therefore construction of additional community facilities would not be required to support this workforce.

Operations Effects

Regional growth associated with the operation of the HSR system would be similar for all HSR alternatives, including the portion of the Fresno to Bakersfield Section made up of either the May 2014 Project or the F-B LGA, because these effects are a result of the operation of the entire HSR system as a whole and are not dependent on the alignment of the HSR in the region. The employment and population growth and associated land use consumption that would occur as a result of the F-B LGA would, therefore, be the same as for the May 2014 Project. See Section 3.18.4.1 for a discussion of the number of jobs and population growth that would result from operation of the HSR system, including the F-B LGA, as well as potential impacts to land use consumption and consistency with regional growth management plans.

Since publication of the of the 2010 Cambridge Systematics study, the KCOG and other regional transportation planning agencies have updated their population and employment projections, which are used as the basis for the 2035 projections under the No Project Alternative. This section, therefore, provides updated analysis of impacts in the region and Kern County related to operation of the HSR system based on these updated projections, which incorporate 2010 Census data. As discussed in Section 3.18.3.2, Population, these updated projections are lower than previous forecasts because the actual 2010 figures were lower than projected in the previous forecasts (Pitkin and Meyers 2012).

Employment

The May 2014 Project and F-B LGA would both result in approximately the same length of railroad tracks that would require maintenance, and one train station and one maintenance of infrastructure facility that would require operation and maintenance. The number of direct jobs generated by operation of the HSR system and associated indirect and induced jobs would, therefore, be the same for the May 2014 Project and F-B LGA. Although the total number of new jobs would be the same, the percentage of total jobs in the region and Kern County in 2035 represented would be smaller than previously presented. This is because the total projected employment in 2035 under the No Project Alternative is lower than projected in the 2010 Cambridge Systematics growth inducement study. This applies to both the May 2014 Project and the F-B LGA.

Based on the updated 2035 projections, the 47,400 jobs that would be created in the region and 17,200 jobs that would be created in Kern County as a result of operation of the HSR system would represent a 4.0 percent increase above the 2035 projections under the No Project Alternative in each of these areas (Table 3.18-11). Given that unemployment rates in the region and Kern County have historically been higher than those of the state (Table 3.18-6), operation of the HSR system, including the portion comprising the F-B LGA, would provide employment opportunities for residents in the area and would not induce substantial growth beyond that already projected for the region and Kern County. Overall, it is expected that employment growth from operation of the HSR system would be a net benefit for the region, as it would provide jobs in areas that currently experience higher unemployment rates than those experienced in the state.

Population Growth

Although the population projections for 2035 are lower than previously projected, general characteristics have remained the same and additional population growth attributable to operation of the HSR system would make up a small percentage of the total population increase. Based on current projections, the estimated HSR-induced population increase would contribute a 3.3 percent increase in the region and 3.5 percent increase in Kern County compared to 2035 population projections under the No Project Alternative (Table 3.18-11). This increase would remain small relative to the total growth projected to occur in the region between 2010 and 2035 under the No Project Alternative, which amounts to 43.3 percent in the region and 55.1 percent in Kern County.

Table 3.18-11 Regional Projected and Induced Population and Employment Growth

County	2035 No Project Projections	HSR Project Induced Growth	Total 2035 HSR Project Projections	Growth Inducement
Population				
Kern	1,302,000	45,978	1,347,978	3.5%
Four-County Region	3,389,000	110,649	3,499,649	3.3%
Jobs				
Kern	513,055	17,171	450,171	4.0%
Four-County Region	1,473,274	47,436	1,223,662	4.0%

Sources: Cambridge Systematics, Inc. 2010; Kern Council of Governments 2015; Fresno Council of Governments 2012
HSR = high-speed rail

As previously projected, the forecast population growth in the region and Kern County will occur at a higher rate than the rest of the state. According to the CDOF population projections released in 2014, California's population is expected to increase by 22.5 percent between 2010 and 2035, far less than the 43.3 percent increase projected in the region and less than half the increase projected for Kern County (CDOF 2014). When compared to the No Project Alternative, the additional 4.0 percent population increase in the region and Kern County would be small relative to the total growth projected to occur in these areas by 2035.

As described for the May 2014 Project, the percentage increase in population in Kern County related to operation of the HSR system is expected to be slower than the percentage increase in employment in the county associated with the project (Table 3.18-9). This trend is based on the likelihood that a number of the jobs generated by operation of the HSR system would be filled by area residents. Additionally, this growth would be spread out over time and any interregional shifts in residential locations are expected to be a small portion of the growth expected in the region (Cambridge Systematics, Inc. 2003). Therefore, the F-B LGA, like the May 2014 Project, would not induce substantial population growth beyond that already projected for the region and Kern County.

Land Use Consumption

Operation of the HSR system, including the F-B LGA would induce growth, but not substantially beyond what is projected in city and county general plans. Compared to the No Project Alternative, the F-B LGA, like the May 2014 Project, would encourage compact, efficient land use in the region by providing an economic driver for higher-density infill development around downtown HSR stations, including the F Street Station. This higher-density development would increase opportunities for transit-oriented design, which could reduce greenhouse gas emissions related to transportation. These effects would be consistent with regional land use plans and policies consistent with Senate Bill 375, and would assist communities in realizing goals in these regional transportation plans. For a detailed discussion of land use consumption effects associated with operation of the HSR system, refer to the Land Use Consumption subsection in Section 3.18.4.1, Summary of Analysis for the May 2014 Project.

Consistency with Regional Growth Management Plans

The projected increase in population growth of 3.3 percent and jobs growth of 4.0 percent in the region and 3.5 percent (population) and 4.0 percent (jobs) in Kern County would be consistent with regional growth management plans. The densification pattern is likely to emerge in the vicinity of HSR stations under regular market forces and would be consistent with the Metropolitan Bakersfield General Plan and KCOG RTP/SCS (City of Bakersfield and Kern County 2007, KCOG 2014). As under the May 2014 Project, the F-B LGA would not meaningfully induce substantial population growth beyond that already projected for the region, and would, therefore, be consistent with regional growth management plans. For a detailed discussion of consistency with regional growth management plans, refer to the Consistency with Regional Growth

Management Plans subsection in Section 3.18.4.1, Summary of Analysis for the May 2014 Project.

Summary

The F-B LGA, like the May 2014 Project, would result in new short-term jobs associated with construction. Many of these jobs would be filled by local residents and, therefore, would not induce substantial growth resulting in the need for additional community facilities. Operation of the HSR system, including the F-B LGA, would also result in additional long-term jobs and population growth in Kern County, but not substantially beyond existing 2035 growth projections. The anticipated densification pattern projected to occur in the vicinity of HSR stations, including the F Street Station, would help reduce land use consumption as the population grows and support opportunities for transit-oriented development, which could reduce greenhouse gas emissions related to transportation. These changes are consistent with goals of regional transportation plans and regional growth management plans.