



**Economic Impact
Analysis of Transportation Improvements and
Interstate Designation to Route
99 in the San Joaquin Valley Region**

Final Report

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For

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Executive Summary

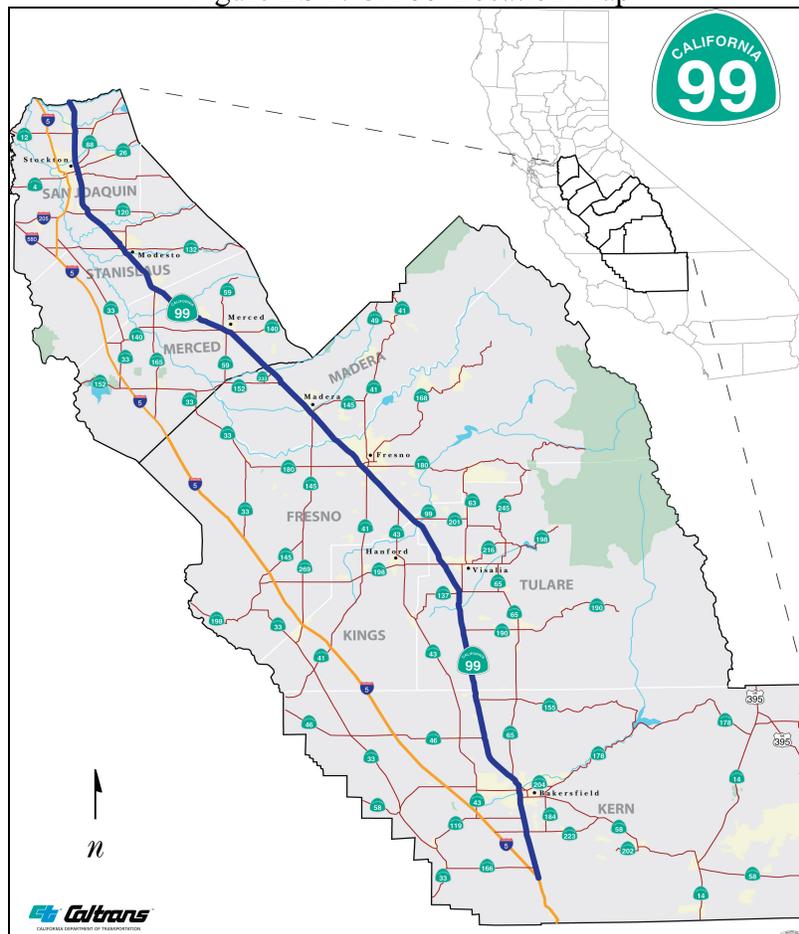
Study Purpose

CA-99 in the eight county San Joaquin Valley is the primary highway backbone serving the region. This 274 mile corridor is currently undergoing a series of significant access and highway capacity improvements based upon a corridor Business Plan created in 2005. As a result of enactment in 2005 of the federal Transportation Act known as SAFETEA-LU, this route has also been identified as a “future Interstate” route. Being designated a “future Interstate” route identifies intent, but it is not actually included in the Interstate system of highway routes and does not allow Interstate route signs to be placed along the route nor be identified as an Interstate route on any commercial road maps.

The purpose of this study is twofold: 1) to identify the economic benefits that could be expected as a result of building those transportation access and increased capacity improvements specified in the Business Plan; and, 2) identify any additional economic benefits that would accrue if CA-99 would be formally designated an Interstate route.

Various stakeholders along the corridor have expressed interest in knowing the benefit cost relationship to help them make investment decisions.

Figure ES 1: CA-99 Location Map



Study Approach

The California Department of Transportation (Caltrans), retained Regional Economic Models, Inc (REMI) to conduct this analysis. The analysis was completed using the REMI TranSight and Policy Insight model of the state of California and the eight counties of the San Joaquin Valley. Using data inputs provided by Caltrans, the REMI model is able to simulate economic interactions on a regional basis and determine the economic impact of the transportation improvements identified in the CA-99 Business Plan and from Interstate designation, on each county, the region, and the state.

Three levels of economic analysis scenarios were established. They are additive.

- Scenario 1: Current (2006) economic baseline scenario
- Scenario 2: Implemented Business Plan scenario
- Scenario 3: Interstate designation increment scenario

Scenario 1 established an economic baseline that represents the current (2006) economic profile for each of the eight counties and for the region as a whole. The economic impact on the eight counties, resulting from the implementation of Scenario's two and three, are measured against this baseline and represent the change above the baseline that is projected to occur.

Scenario 2 analyzed the economic change that would occur as a result of full implementation of the transportation improvements contained in the Route 99 Business Plan. The business plan consists of two phases, a construction phase and an access improvement phase. The construction phase encompasses 73 construction projects along CA-99, with a total cost of \$6.4 billion. The construction projects are spread across seven of the eight counties in the San Joaquin Valley region; CA-99 does not enter Kings County, although the county still benefits from access improvements. The construction time table runs from 2005 through 2029; the impacts are measured across the entire modeling period, 2006 through 2050. In modeling the economic impacts of the construction phase of the CA-99 Business Plan and Interstate designation required projects, REMI utilizes the Exogenous Final Demand variable in the model, as an input, to represent the demand on the construction industry that each project will encompass. The cost of each project is modeled as Exogenous Final Demand in the Construction industry in each county.

The Access Improvement phase of the Business Plan represents the long-term improvement in access that travelers will realize as a result of the upgrades made to the highway under the construction phase. The analysis begins in 2015, when a number of construction projects will have been completed, and extends to the end of the study period in 2050. All eight counties in the San Joaquin Valley are included. The economic impact of the Business Plan, scenario 2, was analyzed using the REMI TranSight model in conjunction with Policy Insight. In modeling this phase of impacts the relative cost of access policy variable is utilized within the REMI TranSight model. Values, consisting of ratios, are inputted to represent the relative cost savings of traveling within the San Joaquin Valley road system; resulting from the improved access made possible by the Business Plan for CA-99. Residents, businesses, and commercial travel, will benefit through a relative savings in cost (from time and fuel), as a result of the improved access,

to and from locations within the San Joaquin Valley. It is this relative savings in the cost of access that produces the long-term economic benefits of the Business Plan. The percent savings in the relative cost of access from one county to another in the San Joaquin Valley is calculated to be roughly 18.6% for all counties. In other words, the relative cost of access, resulting from the implementation of the Business Plan for CA-99, is 18.6% less than it would be under a no-build scenario (scenario 1).

Scenario 3 analyzed the additional increment of economic benefit that would accrue as a result of formal designation of CA-99 as part of the Interstate system of highways. Formally designating CA-99 will require an additional \$1 billion in investment to the highway, above the \$6.4 billion cost of the Business Plan (scenario 2). The projects required for Interstate designation do not significantly add to improvements in access beyond those addressed in the Business Plan. Since there are only very limited economic impacts associated with the access improvements from Interstate designation (scenario 3), they are considered to be so tenuous in validity that they are not aggregated with Business Plan access improvement impacts. Research has indicated, however, that there is likely to be some amount of induced economic benefits related to “improved competitive position” and “visitor/tourism attraction”. This is related to the fact that Interstate highways tend to be the favorable routes of travel for shipping goods and for tourism and visitor related travel. **For demonstration purposes, the study assumed that enhanced competitiveness and increased tourism from Interstate designation could bring about the same growth as the Business Plan, roughly 0.11% additional growth in Gross Regional Product. This is a very optimistic assumption and cannot be substantiated by data, but is used to compare the two scenarios.** To simulate this impact, employment by industry sector is used as a general growth variable, and is modeled as a 0.11% growth in all industry sectors in the eight county San Joaquin Valley region. The employment impact is assumed to begin in 2010 and is modeled for 40 years, ending in 2050. The number of years that it would take the State of California to recoup its \$ 1 billion investment in Interstate designation is also evaluated.

Using the REMI TranSight and Policy Insight model, the economic outcomes for each of the scenarios are measured using the following indicators.

- Population
- Employment
- Gross Regional Product
- Disposable Personal Income
- Output in terms of sales or supply
- Labor Productivity

Eight county regional output factor totals and statewide totals are presented to display the impact of the Region on the rest of California and to show how the region is doing economically compared to the State as a whole.

Regional Profile (Scenario 1 Economic Baseline)

The San Joaquin valley is roughly 250 miles long and about 50 miles wide. It is surrounded by the Diablo Range in the west, the Sierra Nevada Mountains to the east, and the Tehachapi Mountains to the south. CA-99 is one of two major highways that

runs the length of the San Joaquin Valley mostly handling intra-regional traffic. The other is I-5. The San Joaquin Valley, as defined by this study, is made up the following eight counties in California: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

The San Joaquin Valley's economy is heavily dependent on agriculture and it is said to have the most productive cropland in the world. Although agriculture is the most important economic function of the San Joaquin Valley, several larger cities in region also have important industrial sectors, particularly Fresno, Stockton, Bakersfield, and Modesto. The San Joaquin Valley is also experiencing substantial population growth and is among the fastest growing area in California. Much of this population growth, particularly at the northern and southern ends of the valley, is a result of the migration of residents from the major metropolitan centers of the San Francisco Bay area and from the north and east of the Los Angeles area.

Table ES 1 shows the economic profile of the eight county San Joaquin Valley region in 2006. The region's population in 2006 was roughly 3.8 million, about 10% of California's total. Total Employment in the San Joaquin Valley was about 1.7 million in 2006, 8% of the state's total. Gross regional product in the region reached \$122 billion in 2006 (in 2008 \$'s) roughly 6% of the state's total and output totaled \$166 billion, 5.1% of the state total. Real disposable personal income totaled \$94 billion in the eight county region, 7% of the state total in 2006. On a per capita basis disposable personal income was \$24,609 in the eight county region compared to \$36,965 in California as a whole. Although labor productivity in the San Joaquin Valley is high for a heavily agricultural region, \$123,418 per worker, it lags California at a whole where it is \$181,781 per worker. The disparity in labor productivity is due to the rest of California having a greater share of its workers in higher productivity industry sectors, such as manufacturing, professional services, and finance.

Table ES 1: Economic Profile of Eight County San Joaquin Valley Region 2006

County / Region	Population	Employment	Gross Regional Product (B 2008 \$'s)	Output (B 2008 \$'s)	Real Disposable Personal Income (B 2008 \$'s)	Per Capita Disposable Personal Income (2008 \$'s)	Labor Productivity (2008 \$'s)
Fresno County	888,977	442,812	31	42	23	25,614	118,747
Kern County	777,556	356,570	27	36	19	24,796	129,589
Kings County	144,739	57,404	4	4	3	20,796	112,865
Madera County	146,919	60,041	4	4	3	20,896	93,785
Merced County	246,456	92,264	6	9	5	22,073	127,553
San Joaquin County	681,160	292,690	22	31	17	25,515	127,740
Stanislaus County	515,260	230,092	17	27	13	25,967	143,767
Tulare County	418,667	188,135	11	13	10	22,906	90,035
Total 8 County Region	3,819,735	1,720,008	122	166	94	24,609	123,418

Conclusions

Business Plan (scenario 2)

Construction Phase

Empirical studies have shown that improving highways can significantly benefit a regions economy. The most common direct economic impacts associated with highway improvement projects are the employment created by the construction. The \$6.4 billion

in construction projects in the Business Plan for CA-99 will have significant impacts on the eight county San Joaquin Valley region, primarily during the 2005 through 2029 time period; when the projects are under construction. The total cumulative economic impact on the eight county region of the construction phase of the Business Plan, for the entire study period (2006 – 2050), include the generation of roughly \$6 billion in gross regional product, \$9.4 billion in total output, and \$4.8 billion in disposable personal income.

Table ES 2 below shows the average yearly economic impact of the construction phase of the Business Plan, scenario 2, for the eight county San Joaquin Valley regions. Overall, as a result of the construction phase of Business Plan the eight county region of the San Joaquin Valley is estimated to gain an average of 1,746 jobs over the 2006 to 2050 time period, a 0.1% gain above the 2006 baseline employment level. The construction phase of the Business Plan is also estimated to generate a yearly average gross regional product of \$135 million, total output of \$209 million, and real disposable personal income of \$106 million during the 2006 to 2050 time period, also all roughly 0.1% above the 2006 baseline levels. San Joaquin County receives the greatest impact from the construction phase of the Business Plan; roughly 25% of the region’s total impact. Stanislaus and Fresno Counties receive the next greatest share of economic impact from the construction phase of the Business Plan, each representing roughly 18% of the total regional impact.

Table ES 2: Average Yearly Economic Impact of Business Plan (Scenario 2) Construction Phase, by County, 2006 – 2050

County	Average Yearly Change in Employment	AVG Change in Gross Regional Product (GRP) (million's 2008 \$'s)	AVG Change in Real Disposable Personal Income (million's 2008 \$'s)	AVG Change in Output (million's 2008 \$'s)
Fresno	292	\$26	\$18	\$41
Kern	115	\$9	\$8	\$14
Madera	159	\$9	\$7	\$15
Merced	256	\$16	\$16	\$25
San Joaquin	420	\$35	\$27	\$54
Stanislaus	309	\$26	\$18	\$41
Tulare	194	\$14	\$12	\$20
TOTAL REGION	1,746	\$135	\$106	\$209

Access Improvements Phase

In addition to the economic benefits realized from the construction phase of the Business plan, there is a significant economic impact from the access improvements that will result from the implementation of the Business Plan. While the construction impacts are primarily experienced during the construction phase itself and mainly impact the construction sector, the impacts from the access improvements will be permanent and encompass all sectors of the region’s economy. The planned improvements in the Business Plan for CA-99 will improve access between the major markets along its route. Improved access will lead to a reduction in travel times between the San Joaquin Valley’s major cities, such as Stockton, Modesto, Fresno, and Bakersfield. This can lead to greater productivity, a reduction in transportation costs, and more competitive pricing for goods produced or shipped to or from the San Joaquin Valley. Businesses as well as consumers benefit from productivity gains, reduced transportation costs, and more competitive pricing of goods and services. Furthermore, as the competitiveness of a region increases, the region becomes more attractive for new business location and

existing businesses are also more likely to increase output as their products become more attractive to buyers. This can lead to employment growth and the creation of additional wealth.

Table ES 3 shows the average annual impact of the access improvement phase of the Business Plan for each county in the San Joaquin Valley region. As a result of the implementation of the Business Plan access improvements for CA-99, the eight county region of the San Joaquin Valley is estimated to gain an average of 25,495 jobs over the 2015 to 2050 time period, a 1.5% gain above the 2006 baseline level. The Business Plan access improvements phase is also estimated to generate an average annual GRP of \$3.6 billion, a 3% gain above the 2006 baseline level. In addition, output is estimated to increase by 3.5% above the 2006 baseline, with an average annual increase of \$5.8 billion. The average annual increase in disposable personal is estimated to total almost \$1.6 billion or \$391 for each resident of the eight county region; 1.6% above the 2006 baseline level. Finally, population is estimated to grow by 36,704 people in the eight county region, as a result of Business Plan access improvements; 1% above the 2006 level.

Fresno County, the largest and most economically diverse county in the San Joaquin Valley, experiences by far the greatest benefit from the access improvements of the Business Plan. Over half of all jobs created in the eight county region, from the access improvements, occur in Fresno County (13,147 jobs). Additionally, between 45% and 50% of the average annual change in gross regional product, output, and disposable personal income also occur in Fresno County. Two of the region's smallest counties, Kings and Merced, experience a small negative impact as a result of access improvements to CA-99, this is likely due to the displacement of jobs from these counties to the larger and more economically diversified counties in the San Joaquin Valley. The loss of jobs are very minor, however, averaging a loss of 345 in Kings County and 273 in Merced County.

Table ES 3: Average Yearly Economic Impact of Business Plan (Scenario 2) Access Improvement Phase, by County, 2006 – 2050

County / Region	Avg. Employ'm't Change (Jobs)	Avg Annual Change In Gross Reg'l Product (M 2008 \$)	Avg. Annual Change In Total Output (M 2008 \$)	Avg. Annual Change In Disposable Personal Income (M 2008 \$)	Avg. Annual Change In Disposable Personal Income Per Capita (2008 \$)	Avg. Annual Change In Labor Productivity (2008 \$)	Avg. Pop. Change
Fresno County	13,147	1,643	2,495	768	57	195	18,063
Kern County	2,584	402	619	168	2	445	4,709
Kings County	-345	28	80	-3	123	3,392	-755
Madera County	1,571	182	298	86	64	1,343	2,564
Merced County	-273	58	161	-6	68	2,455	-817
San Joaquin County	2,543	377	624	171	15	380	4,104
Stanislaus County	4,844	661	1,101	293	34	289	6,821
Tulare County	1,424	228	381	83	28	1,003	2,015
Total 8 County Regio	25,495	3,578	5,759	1,559	391	611	36,704

Interstate Designation (scenario 3)

While the quantitative impact of the Business Plan (scenario 2) for CA-99 is evident in this study, it is more difficult to measure the effects that an upgrade to Interstate designation will have on the region's economy. As explained earlier, Interstate designation access improvements are extremely small compared to Business Plan access improvements because these improvements are associated with meeting Interstate design standards and typically do not provide increased roadway capacity or improved access. The economic impact of access improvements from Interstate designation are, thus, considered negligible and were not modeled. To quantify the economic impact of Interstate designation, it is assumed that the growth rate would be about the same as in the Business Plan; this is done for comparative purposes only, and cannot be substantiated by data. This assumption is based on the theory that Interstate designation may result in economic growth through enhanced competitiveness and increased tourism.

Table ES 4 shows the economic impact of Interstate designation, scenario 3, resulting from improved competition and tourism attraction. Assuming a 0.11% growth rate in Gross Regional Product in the eight county region, it would take 21 years for the state government to recoup the \$1 billion in investment required to upgrade Route 99 to Interstate status. An average of 3,608 jobs would be created in the eight county region, an increase of 0.2% above the 2006 baseline level. The 0.11% growth rate assumption also results in the average yearly creation of \$399 million in Gross Regional Product and \$630 million in output, 0.3% and 0.4% above the 2006 baseline level for the eight county region, respectively. Additionally, an estimated \$196 million in average yearly disposable personal income would be generated, 0.2% above the 2006 baseline level for the eight county region. Finally, under the 0.11% growth rate assumption, the eight county region population is estimated to grow by 5,171 residents, a gain of 0.1% above the 2006 level.

Table ES 4: Average Economic Impact of Interstate Designation (Scenario 3) Improved Competition & Tourism Phase, Eight County Region

Level of Employment Growth Assumed	Avg. Annual State Revenue (M 2008 \$)	Years needed to recoup investment	Avg. Empl. Change (jobs)	Avg. Annual Change in Gross Regional Product (M 2008 \$)	Avg. Annual Change In Total Output (M 2008 \$)	Avg. Annual Change in Disp. Per. Income (M 2008 \$)	Avg. Pop. Change
0.11% Growth	69	21	3,608	399	630	196	5,171

Scenario Comparison / Benefit-Cost Analysis

Scenarios two and three show varying degrees of economic impact on the eight county San Joaquin Valley region and the State of California. The Business Plan (scenario 2) for CA-99 is easily quantifiable, the construction will provide a significant boost to the regional economy during the construction period while the access improvements will provide a significant permanent impact to the regional and state economy, as decreased travel times and increased capacity lead to productivity gains, reduced transportation costs, and enhanced competitiveness. As mentioned earlier, quantifying the impact of Interstate designation for CA-99 is much more problematic. The \$1 billion in additional

investment required to upgrade the highway to official Interstate designation would provide some short-term benefits to the construction industry, but the long-term benefits of Interstate designation are difficult to measure with any certainty. As explained earlier, this study attempts to quantify the impact of Interstate designation by assuming a degree of general economic growth across the San Joaquin Valley region. The assumptions are based on the theory that interstate designation may further enhance competitiveness and possibly increase tourism and visitor travel. The degree to which this will be the case is, however, debatable and difficult to measure with any confidence. Therefore, although there is no specific data to support this assumption the growth rate used for the Route 99 Business Plan has, thus, been used for comparative purposes.

Table ES 5 summarizes the impacts of an implemented scenario two and three on the eight county region. The yearly average impact for the construction phase of the Business Plan encompasses the 2006 to 2050 period while the access improvements phase of the Business Plan encompasses the 2015 to 2050 period. The yearly average impact for the assumptions under the Interstate designation phase encompass the 2010 to 2050 time period.

The yearly average employment impact of the construction and access improvement phase of the Business Plan, combined, is over 27,200 jobs gained and \$3.7 billion in gross regional product generated; this is 1.6% and 3.0% above the 2006 baseline level in the eight county region, respectively. To level of economic impact created by the Interstate designation scenario is only 13% of that of the Business Plan, when measured by employment, and 11% when measured by gross regional product; the Interstate designation scenario generates a yearly average of 3,608 jobs and an average gross regional product of \$399 million.

Table ES 5: Scenario Comparison of Average Economic Impact, Eight County Region

Scenario / Phase	AVG Employment Change (Jobs)	AVG Annual Change in Gross Reg'l Product (M 2008 \$'s)	AVG Annual Change in Output (M 2008 \$'s)	AVG Annual Change in Disposable Personal Income (M 2008 \$'s)	AVG Population Change
Business Plan (Scenario 2)					
Construction Phase	1,746	135	209	106	NA
Access Improvement Phase	25,495	3,578	5,759	1,559	36,704
Interstate Designation (Scenario 3)					
0.11% Growth	3,608	399	630	196	5,171

Scenario 3 data based on assumptions that cannot be substantiated by data.

Table ES 6 shows the Benefit / Cost ratios for the Business Plan and Interstate designation. The benefit / cost ratio is the average GRP change across 44 years, adjusted by a 44 year discount factor at 4% (20.55% of value), over cost. The construction and access improvement phase of the Business Plan, which costs \$6.4 billion and generates an average yearly GRP of \$3.7 billion, has a benefit / cost ratio of roughly 5.2 (0.2 for construction alone and 5 for access improvements alone). The interstate designation scenario costs an additional \$1 billion and is assumed to generate \$399 million in average yearly GRP, yielding a benefit / cost ratio of 3.6.

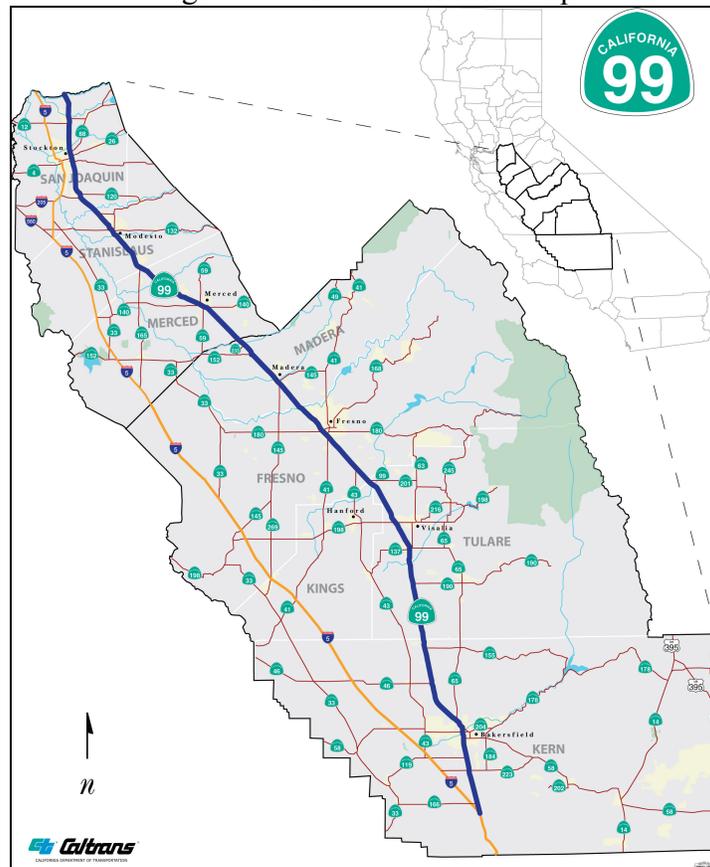
Table ES 6: Benefit / Cost Analysis for Scenario 2 and 3, Eight County Region

Scenario / Phase	Cost (Million's)	AVG Annual Change in Gross Reg'l Product (M 2008 \$'s)	44 year Benefit / Cost Ratio
<i>Business Plan (Scenario 2)</i>			
Construction & Access Improvement Phase	\$ 6,400	3,713	5.246
<i>Interstate Designation (Scenario 3)</i>			
0.11% Growth	\$ 1,000	399	3.608

1. Regional Overview and Major Findings

This study analyzes the economic impact of adding two additional lanes, and completing other upgrades, to California State Route 99 (CA-99) running through the San Joaquin Valley of California and Interstate designation. The study area includes the eight counties of the San Joaquin Valley and results are evaluated for each of the eight counties, the rest of California, and the entire state. The California Department of Transportation (Caltrans), retained Regional Economic Models, Inc (REMI) to conduct this analysis. The analysis was completed using the REMI TranSight and Policy Insight model of the state of California and the eight counties of the San Joaquin Valley. Using data inputs provided by Caltrans, the REMI model is able to simulate economic interactions on a regional basis and determine the economic impact of the transportation improvements identified in the Route 99 Business Plan on each county, the region, and the state. The report evaluates numerous metrics in analyzing the economic impact of this project, these include changes to employment levels, gross regional product, output, personal income levels, labor productivity, population, business growth, and the fiscal impact (tax revenue generation) on the State of California.

Figure 1A: CA-99 Location Map



In improving the CA-99 highway through the San Joaquin Valley, the California Department of Transportation's main objective is to improve access, transportation capacity, and the overall conditions of the highway. To achieve improved access,

transportation capacity, and conditions, the California DOT plans on converting all existing expressway segments to freeway status, widen the highway to a minimum of 6 lanes, improve the overall condition to the pavement and bridges, implement safety improvements, improve operational characteristics, and enhance the highway's overall appearance.

This report evaluates both the impact of the actual construction phase of the Business Plan (the proposed improvements) and the post construction benefits, resulting from improved access, that the projects will have on the regional economy. The construction phase of the Business Plan begins in 2005 and ends in 2029, during which time various construction projects are begun and completed. The analysis of the construction phase of the Business Plan begins in 2005 and runs through 2050, the end of the study period in this report. The post construction analysis of the Business Plan, in which access improvements are modeled, begins in 2015, when numerous projects have already been completed, and extends to the end of the study period in 2050.

The report also provides an assessment of the increment of economic benefits generated in the region as a result of State Route 99 being designated an Interstate route. The economic benefits result from the potential for improved competitiveness and increased tourism that interstate designation may bring. A literature review of past studies on the impacts of upgrading highways to interstate designation is also included in the analysis.

Improving the conditions and adding lanes to CA-99 will expand capacity, improve safety, and make commuters driving experience more pleasurable, thus, leading to an increase in users, positively affecting communities and business activity along the route. Businesses will also be positively impacted from the subsequent time savings in the movement of workers and goods through the region. This will have the effect of increasing productivity and lowering the cost of production. The construction phase itself will also have a significant impact on the economy through the creation of construction jobs and the increase in demand for construction materials and supplies.

Scenario 1: Current Economic Baseline

State Route 99 (CA-99) is the main highway in California's Central Valley (the San Joaquin Valley). Route 99 dates back to 1909; it was originally called Route 4 and then changed to the "Golden State Highway" and U. S.-99 in 1920 and finally to CA-99 in the 1960's. The highway was first paved as a two lane road in 1913-14. It was later widened to a 4 lane expressway over three decades in the 1930's, 40's and 50's. CA-99 was constructed to connect the cities of the San Joaquin Valley with each other and the rest of California. Because Route 99 passes through, or borders, most major cities in the San Joaquin Valley, it is referred to as the "Main Street" of the Central Valley. CA-99 stretches 274 miles in length; 131 miles are considered urban while 143 miles are rural. Today, CA-99 is a four or six lane highway depending on location, with a 5-mile stretch in Bakersfield consisting of eight lanes.

Caltrans has reported a huge increase in traffic on CA-99 since the highway was upgraded to 4-lanes of divided traffic through the San Joaquin Valley in 1960. Today, the highest traffic volume occurs in Bakersfield, the region's second largest city. The California Department of Transportation reported 137,000 vehicles per day on CA-99 between California Avenue and the CA-58 in Bakersfield.

The San Joaquin valley is roughly 250 miles long and about 50 miles wide. It is surrounded by the Diablo Range in the west, the Sierra Nevada Mountains to the east, and the Tehachapi Mountains to the south. CA-99 is one of two major highways that runs the length of the San Joaquin Valley mostly handling intra-regional traffic.

The San Joaquin Valley's economy is heavily dependent on agriculture and it is said to have the most productive cropland in the world. Although agriculture is the most important economic function of the San Joaquin Valley, several larger cities in region also have important industrial sectors, particularly Fresno, Stockton, Bakersfield, and Modesto. The San Joaquin Valley is also experiencing substantial population growth and is among the fastest growing areas in California. Much of this population growth, particularly at the northern and southern ends of the valley, is a result of the migration of residents from the major metropolitan centers of the San Francisco Bay area and from the north and east of the Los Angeles area. The following is the overview for each of the eight counties:

Kern County: Kern County's estimated population in 2007 was 790,710, 19.5% higher than its 2000 population of 661,645. The county seat is Bakersfield, which had a 2000 population of 247,057 people. Total employment in 2006 equaled 356,570 jobs and GRP totaled \$27.3 billion (2008 \$'s). The major industries in Kern County are cotton production and oil extraction. Kern County has some of the largest concentrations of oil wells in the US. In 2002, one out of every eleven barrels of crude oil originated from Kern County. Kern County also contains one of the largest cotton cooperatives in the US and the largest carrot producing operation. The Kern County communities that are on CA-99 are Bakersfield, McFarland, and Delano.

Tulare County: Tulare County's population was estimated to be 421,553 in 2007; an increase of 14.5% above the 2000 figure of 368,021. The county seat is Visalia, which had a population of 91,565 in 2000. Total employment in Tulare county equaled 188,135 jobs in 2006 and its GRP was \$11.3 billion (2008 \$'s). Tulare County's main production is agriculture. Tulare's agricultural output has ranked second in the nation in past years, and totaled \$3.3 billion of production in 2003. Tulare County main agricultural products are milk, grapes, and stone fruits. The Tulare County communities that are located on CA-99 are Earlimont, Pixley, Tipton, Tulare, and Goshen.

Kings County: Kings County had an estimated population of 148,875 in 2007, compared to 129,461 in 2000; a 15% growth. The County seat is Hanford which had a population of 41,686 in 2000. Total employment in Kings County was 57,404 in 2006 and its GRP totaled \$4.1 billion (2008 \$'s). Kings County's economy is also heavily based in agriculture, mainly the production of milk and cotton, which has an average annual output of \$304 million and \$205 million, respectively. CA-99 does not run directly through Kings County but lies within close proximity.

Fresno County: Fresno County had an estimated population of 899,348 in 2007, growing by 12.5% since 2000 when the population was 799,407. The seat of the County is the City of Fresno which had a 2000 population of 427,652. Geographically, Fresno lies roughly in the middle of the state of California, and serves as the economic hub of Fresno County and California's Central Valley. The unincorporated area and rural cities surrounding Fresno remain predominately tied to large-scale agricultural production. Fresno County's employment totaled 442,812 jobs in 2006 and its GRP was roughly

\$30.8 billion (2008 \$'s). With a yield of more than \$4 billion dollars in 2003, Fresno County has the highest gross value of agricultural products in the country from its fields, forests, farms and ranches. Fresno County is a major producer of grapes, tomatoes, cattle/calves, poultry, and cotton. Fresno County is also a major producer of crude oil, however, not as significant as Kern County. The Fresno County economy is the most diversified of the eight counties in the San Joaquin Valley, containing significant employment in the service sectors as well. The communities on CA-99 in Fresno County include Kingsburg, Selma, Fowler, and Fresno.

Madera County: Madera County had an estimated population of 146,513 in 2007, an increase of 19% from the 2000 population of 123,109. The county seat is Madera, which had a 2000 population of 43,207. Madera County has the lowest population among the counties in the San Joaquin Valley and has the smallest agricultural output. Despite this, Madera County was ranked 25th for its agricultural output nationwide in 1997. Madera County's major crops are grapes, almonds, milk, and pistachios. Madera County's total employment equaled 60,041 in 2006 and its GRP was \$3.5 billion (2008 \$'s). CA-99 runs through the Madera County towns of Madera, Fairmead, and Chowchilla.

Merced County: Merced County had a total estimated population of 245,514 in 2007, growing by 16.6% from 2000 when its population was 210,554. The seat of Merced County is the City of Merced; population 63,893 in 2000. Merced County contained 92,264 jobs in 2006 and had a total GRP of \$6.2 billion (2008 \$'s). Merced County, also heavily reliant on agriculture, is most famous for its milk industry. Merced County is also a major producer of chickens and turkeys and has high values of production in almonds and sweet potatoes. CA-99 goes through the Merced County communities of Merced, Atwater, Livingston, and Delhi.

Stanislaus County: Stanislaus County had an estimated 2007 population of 511,263, compared to 446,997 in 2000; a 14.4% growth. The seat of Stanislaus County is Modesto, which had a 2000 population of 188,856. Modesto lies roughly 30 miles to the south of Stockton. The employment level in Stanislaus county totaled 230,092 in 2006 and its GRP measured \$17.2 billion (2008 \$'s). Total agricultural output for Stanislaus County was about \$1.37 billion in 2002. Stanislaus County's major products are milk, almonds, peaches, and wine. Stanislaus County is also a major grower of chickens, which valued \$139 million in 2002. The communities of Stanislaus County on CA-99 include Turlock, Keyes, Ceres, Modesto, and Salida.

San Joaquin County: San Joaquin County is the third largest county in the San Joaquin Valley behind Fresno County and Kern County. The county's 2007 estimated population is 670,990, up 19.1% from the 2000 population of 563,598. The seat of San Joaquin County is Stockton, which had a population of 243,771 in 2000. Stockton is situated at the northern end of the San Joaquin Valley, and is the closest major city in the Valley to Sacramento and the San Francisco Bay area. San Joaquin County contained 292,690 jobs in 2006 and had a total GRP of \$21.8 billion (2008 \$'s). San Joaquin Counties agricultural output includes milk, grapes, and tomatoes. The county also has significant trade and service sectors, centered in the Stockton area. The San Joaquin County community's that CA-99 runs through are Ripon, Manteca, Stockton, and Lodi.

Table 1 summarizes the population growth experienced in the eight counties of the San Joaquin Valley and in California as a whole for the 2000 to 2007 period. The fastest

growing county by population (between 2000 and 2007) has been Kern County, centered around the Bakersfield area. Kern County is in the southern section of the San Joaquin Valley closest to the Los Angeles Metropolitan Area. Other Counties experiencing significant growth include San Joaquin County and Fresno County. As mentioned above, Fresno County contains the largest city (Fresno) in the San Joaquin Valley and is the economic hub of the region. San Joaquin County is located in the northern section of the San Joaquin Valley, closest to the Sacramento and San Francisco Bay Metropolitan Areas. As a whole, the eight Counties of the San Joaquin Valley, grew by 16.1% in population since 2000 reaching an estimated 3.8 million people in 2007, 10.5% of California's total estimated population. The San Joaquin Valley also grew much faster than California as a whole, which grew by an estimated 7.9% between 2000 and 2007.

Table 1: Population by County and Region, 2000 and 2007 Estimate

County / Region	Population 2000	Estimated Population 2007	Estimated Change 2000 - 2007	Estimated % Change 2000 - 2007
Fresno County	799,407	899,348	99,941	12.5%
Kern County	661,645	790,710	129,065	19.5%
Kings County	129,461	148,875	19,414	15.0%
Madera County	123,109	146,513	23,404	19.0%
Merced County	210,554	245,514	34,960	16.6%
San Joaquin County	563,598	670,990	107,392	19.1%
Stanislaus County	446,997	511,263	64,266	14.4%
Tulare County	368,021	421,553	53,532	14.5%
8 County Region	3,302,792	3,834,766	531,974	16.1%
Rest of California	30,568,856	32,718,449	2,149,593	7.0%
California	33,871,648	36,553,215	2,681,567	7.9%

Source: US Census Bureau, 2000 census and July 1, 2007 estimates

Table 2 shows the employment and gross regional product of each county and region. Fresno County has the largest number of workers (442,812 in 2006) and the highest GRP (\$30.8 billion) among the eight counties. Kern County, San Joaquin County and Stanislaus County rank second, third, and fourth, respectively, in terms of employment and GRP. As a whole, the eight counties of the San Joaquin Valley contained 1.72 million jobs and had a total GRP of \$122.2 billion, 8.2% and 5.8% of California's total, respectively, in 2006. The eight counties of the San Joaquin valley had a GRP per worker of roughly \$71,000 in 2006 compared to California's \$101,000 per worker, as measured in 2008 \$'s.

Table 2: Employment and Gross Regional Product by County, Region, & California 2006

County / Region	Population	Employment	Gross Regional Product (B 2008 \$'s)	Output (B 2008 \$'s)	Real Disposable Personal Income (B 2008 \$'s)	Per Capita Disposable Personal Income (2008 \$'s)	Labor Productivity (2008 \$'s)
Fresno County	888,977	442,812	31	42	23	25,614	118,747
Kern County	777,556	356,570	27	36	19	24,796	129,589
Kings County	144,739	57,404	4	4	3	20,796	112,865
Madera County	146,919	60,041	4	4	3	20,896	93,785
Merced County	246,456	92,264	6	9	5	22,073	127,553
San Joaquin County	681,160	292,690	22	31	17	25,515	127,740
Stanislaus County	515,260	230,092	17	27	13	25,967	143,767
Tulare County	418,667	188,135	11	13	10	22,906	90,035
Total 8 County Region	3,819,735	1,720,008	122	166	94	24,609	123,418
California	36,386,961	20,880,863	2,110	3,265	1,345	36,964	181,334

Source: REMI Policy Insight Model, State of California, Version 9.5

Scenario 2: Business Plan

Construction Phase of Business Plan

The construction phase of the Business Plan for CA-99 consists of a total of \$6.4 billion in projects spread across seven of the eight counties in the San Joaquin Valley. Substantial economic impact is realized during the entire study period, as direct construction jobs are created and indirect and induced impacts are felt throughout the region's economy. Table 3 shows the economic impact of the construction phase to CA-99 for each county during the entire study period.

San Joaquin County experiences the greatest impact from the construction phase of the Business Plan for CA-99. In total, 24% of the employment impact and 26% of the GRP impact of CA-99 construction projects is experienced in San Joaquin County. The San Joaquin Valley, as a whole, will benefit from the addition of 1,746 jobs, on average each year, over the study period, from the construction phase of the Business Plan. In addition, roughly \$6.1 billion in GRP will be created over the time period. More detail on the economic impact of the construction phase of CA-99 for each county will be provided under the construction phase of the Business Plan section of this report.

Table 3: Economic Impact of Construction Phase of Business Plan by County, 2006-2029

County	Average Yearly Change in Employment	Total Change in Gross Regional Product (GRP) (million's 2008 \$'s)	Total Change in Real Disposable Personal Income (million's 2008 \$'s)	Total Change in Output (million's 2008 \$'s)
Fresno	292	\$1,192	\$828	\$1,823
Kern	115	\$412	\$339	\$613
Madera	159	\$411	\$313	\$654
Merced	256	\$734	\$728	\$1,115
San Joaquin	420	\$1,554	\$1,218	\$2,417
Stanislaus	309	\$1,172	\$826	\$1,862
Tulare	194	\$609	\$534	\$899
TOTAL REGION	1,746	\$6,085	\$4,786	\$9,383

Business Plan Access Improvements

The Business Plan for CA-99 (post construction) will have beneficial economic impacts throughout the San Joaquin Valley Region, due to improvements in access. The economic benefits to the region can be seen in the changes to employment levels, gross regional product (GRP), total output, disposable personal income, labor productivity, and population changes. These are all outputs from the REMI Policy Insight model. Furthermore, this report also projects the estimated fiscal impact of the highway improvements on the State of California, through an analysis of the changes in state revenue collections from the sales and income tax. The fiscal impact analysis is done only for the post construction phase of the Business Plan (access improvements). Table 4 shows a summary of the average economic impact of the CA-99 Business Plan by county and region. All Counties, except Kings and Merced, show strong positive growth. Fresno County, the largest and most industrialized of the eight counties, receives

the most economic benefit by far. As mentioned above, the City of Fresno is the largest city in the San Joaquin Valley and is the region’s economic hub. Fresno’s economy is the largest and most diversified in the region and, thus, benefits substantially more from the Business Plan for CA-99 than the other counties in the San Joaquin Valley. Fresno County’s average employment change over the study period is 13,147 jobs and its average annual change in GRP is roughly \$2.5 Billion. Fresno County also receives a large boost in population, as workers are attracted to the new job opportunities. The average population change for Fresno County over the time period is 18,063 residents.

Stanislaus, Kern, and San Joaquin Counties also experience significant economic growth as a result of the transportation improvements to CA-99. These counties also contain major cities in the region; Modesto in Stanislaus County, Bakersfield in Kern County, and Stockton in San Joaquin County.

As a whole, the eight counties of the San Joaquin Valley are estimated to gain an average of 25,495 jobs over the 2015 to 2050 time period, generate an average annual GRP of \$3.6 billion, and gain 36,704 residents, as a result of the Business Plan for CA-99. The economic impact to the region will be described in more detail in the result section of this report, under Business Plan.

Table 4: Average Economic Impact of the Business Plan for CA-99 by County and Region 2015-2050

County / Region	Average Employment Change (Jobs)	Average Annual Change in Gross Regional Product (M 2008 \$'s)	Average Annual Change in Total Output (M 2008 \$'s)	Average Annual Change in Disposable Personal Income (M 2008 \$'s)	Average Annual Change in Disposable Personal Income per Capita (2008 \$'s)	Average Annual Change in Labor Productivity (2008 \$'s)	Average Population Change
Fresno County	13,147	1,643	2,495	768	57	195	18,063
Kern County	2,584	402	619	168	2	445	4,709
Kings County	-345	28	80	-3	123	3392	-755
Madera County	1,571	182	298	86	64	1343	2,564
Merced County	-273	58	161	-6	68	2455	-817
San Joaquin County	2,543	377	624	171	15	380	4,104
Stanislaus County	4,844	661	1,101	293	34	289	6,821
Tulare County	1,424	228	381	83	28	1003	2,015
Total 8 County Region	25,495	3,579	5,759	1,559	391	611	36,704
Rest of California	-2,622	-346	-454	-101	3	-100	-3,824
Total California	22,874	3,233	5,305	1,458	-10	17	32,879

Scenario 3: Interstate Designation

The additional construction projects necessary to attain Interstate designation are estimated to cost nearly \$1 billion. These would be additional projects above those included in the Business Plan. They will be necessary because they would address Interstate design standards in roadway segments not already being covered by Business Plan projects.

Interstate designation access improvements are extremely small compared to Business Plan access improvements because these improvements are associated with meeting Interstate design standards and typically do not provide increased roadway capacity or improved access. The economic impact of access improvements from Interstate

designation are, thus, considered negligible and were not modeled. Research has shown, however, that there is the potential for improved competitiveness and increased tourism resulting from an upgrade to Interstate designation (described in more detail later). To simulate this potential impact on competitiveness and tourism, we assume that Interstate designation could bring about the same rate of growth as the Business Plan. **It is important to note that research did not find historical economic data regarding Interstate designation. Therefore, this growth rate is displayed for demonstration purposes only, and that the true impact is likely to be much less than this. As will be explained in more detail later, the impact of Interstate designation is difficult to quantify with any degree of accuracy.** To model roughly the same rate of economic impact as the Business Plan, the study increased employment by 0.11%, above the baseline, for the gross regional product sector in the eight county region for each year in the forecast period (2010 to 2050). The number of years that it would take the State of California to recoup its investment in Interstate designation is also evaluated.

Table 5 shows the projected economic impact of Interstate designation, based on the assumption noted above, for the eight county region as a whole. It is estimated that it will take 21 years for the State of California to recoup the \$1 billion investment required to upgrade Route 99 to Interstate status. The Interstate designation scenario also results in an average employment change of 3,608 jobs, almost \$400 million in average annual gross regional product, and \$630 million in average annual output. In addition, disposable personal income is projected to increase by \$196 million, on an average annual basis, and population in the eight county region would increase by just over 5,000 residents.

Table 5: Average Economic Impact of Interstate Designation (Scenario 3) Improved Competition & Tourism Phase, 0.11% Growth in Employment, Eight County Region

Avg. Annual State Revenue (M 2008 \$)	Years needed to recoup investment	Avg. Empl. Change (jobs)	Avg. Annual Change in Gross Regional Product (M 2008 \$)	Avg. Annual Change in Total Output (M 2008 \$)	Avg. Annual Change in Disp. Per. Income (M 2008 \$)	Avg. Pop. Change
69	21	3,608	399	630	196	5,171

Scenario 3 data based on assumptions that cannot be substantiated by data.

2. Approach, Modeling Methodology / Data Inputs

2.1 Construction Phase of Business Plan and Interstate Designation Projects

The construction phase of the Business Plan for CA-99 involves a total of \$6.4 billion in investments between 2005 and 2029 and the construction phase of Interstate designation required improvements involves an additional \$1.0 billion in investments between 2010 and 2020. The construction projects encompass seven of the eight counties in the San Joaquin Valley. There are no planned construction projects in Kings County (although, as shown in this report, Kings County still benefits economically from the Business Plan).

In modeling the economic impacts of the construction phase of the CA-99 Business Plan and Interstate designation required projects, REMI utilizes the Exogenous Final Demand variable in the model, as an input, to represent the demand on the construction industry that each project will encompass. The cost of each project is modeled as Exogenous Final Demand in the Construction industry in each county.

2.2 Business Plan and Interstate Designation Access Improvements

The Business Plan impacts represent the long-term or permanent impacts that the improved access will have, post construction. The analysis begins in 2015, when a number of construction projects will have been completed, and extends to the end of the study period in 2050. All eight counties in the San Joaquin Valley are included.

The economic impact of the Business Plan, scenario 2, was analyzed using the REMI TranSight model in conjunction with Policy Insight. In modeling this phase of impacts the relative cost of access policy variable is utilized within the REMI TranSight model. Values, consisting of ratios, are inputted to represent the relative cost savings of traveling within the San Joaquin Valley road system; resulting from the improved access made possible by the Business Plan for CA-99. Residents, businesses, and commercial travel, will benefit through a relative savings in cost (from time and fuel), as a result of the improved access, to and from locations within the San Joaquin Valley. It is this relative savings in the cost of access that produces the economic benefits described in this report for Business Plan improvements. The percent savings in the relative cost of access from one county to another in the San Joaquin Valley is calculated to be roughly 18.6% for all counties. In other words, the relative cost of access, resulting from the implementation of the Business Plan for CA-99, is 18.6% less than it would be under a no-build scenario.

Since there are only very limited economic impacts associated with the access improvements from Interstate designation (scenario 3), they are considered to be so tenuous in validity that they are not aggregated with Business Plan access improvement impacts. However, as will be discussed later, research has indicated that there is likely to be some amount of induced economic benefits related to “improved competitive position” and “visitor/tourism attraction”. This phenomenon has been described by one economic study¹ as the “blue-line” concept. Blue-Line refers to the color most maps use to depict Interstate highways.

As mentioned earlier, to measure the potential impact of enhanced competitiveness and increased tourism that Interstate designation may bring, an increase in employment of 0.11% in all industry sectors for each forecast year is simulated in the eight county region. This assumption is meant to roughly represent the same growth rate experienced in the Business Plan. As mentioned earlier, this assumption, however, cannot be substantiated with any degree of confidence and is, thus, only modeled for comparative purposes. The employment impact is assumed to begin in 2010 and is modeled for 40 years, ending in 2050. The number of years that it would take the State of California to recoup its \$ 1 billion investment in Interstate designation is also evaluated. The results are shown for each county, the eight county region as a whole, the rest of California (outside the eight county region), and for the entire state of California. Also included in the scenario 3 analysis is a review of literature from other studies done on the impacts of upgrading highways to Interstate designation.

2.3 Data Outputs

In analyzing the economic impact of the construction phase and the access and transportation improvements phase for both Business Plan and Interstate designation, several model output variables are used. Each output value represents the change in that variable over the projected base line no-build scenario. Several metrics are used in this report to best describe and analyze the economic impact of the planned construction projects for CA-99 and the post construction impacts for each county and the entire region. For the construction phase of the Business Plan and Interstate designation, only employment, gross regional product, real disposable personal income, and output are analyzed. For the Business Plan (post construction) all of the below output variables, except improved competitive position and tourism attraction, are included. These two variables are only used as data outputs for Interstate designation economic impact. The following is a brief description of each output variable used in this report:

- **Employment:** The REMI model uses the Bureau of Economic Analysis (BEA) concept of employment, which accounts for full-time, part-time, and self-employed workers. Simulation results capture the direct, indirect, and induced employment impact of the projects (number of jobs created).
- **Gross Regional Product (GRP):** GRP is an economic accounting method that measures economic activity as a value-added or final demand concept. The value-added concept equals the output of the region, excluding intermediate inputs, and represents the compensation and profits within the regional economy. The final demand concept is equal to regional consumption + investment + government + (exports-imports). GRP is affected by changes in demand.
- **Disposable Personal Income:** This is a measurement of after-tax income. This concept can be loosely interpreted as “take home” pay. Personal Income is primarily derived from wage and salary disbursements (paychecks), transfer payments from government to individuals, dividends, interest, rents, and proprietors’ income.

Contributions to social insurance programs and income taxes are subtracted from personal income with the end product being disposable personal income.

- **Output:** Output is defined as the amount of production, including all intermediate goods purchased as well as value added (compensation and profit). Output can also be described as sales or supply. The components of Output are Self Supply and Exports (Multi-regions, Rest of Nation, and Rest of World). Output is affected by changes in industry Demand in all regions in the nation, the home region's share of each market, and international exports from the region. For example, an increase in Output is caused by an increase in Demand, an increase in market share, or an increase in international exports.
- **Labor Productivity:** Labor Productivity is defined as output per employee, and is calculated as output divided by Employment. Labor Productivity is affected by changes in relative labor intensity, labor access index, and national labor productivity.
- **Population:** Population reflects mid-year estimates of the number of people, including survivors from the previous year, births, special populations, and three types of migrants (economic, international, and retired). Population is affected by changes in Total Migration, Special Populations, Birth Rates, and Survival Rates. For example, an increase in Population can result from an increase in one or more of the variables noted above.
- **Fiscal Impact:** Fiscal impact consists of the estimated state income tax revenue and state sales tax revenue only. State income tax revenue is projected by applying an estimated effective income tax rate to the personal income generated. The effective income tax rate for California was estimated at 8 percent. The state sales tax revenue is estimated by applying the state sales tax rate, 7.25 percent, to the consumption results (by taxable goods category) from the model. This output is only calculated for the access improvements phase (scenario 2).
- **State Revenue at State Average Rates:** State-specific state revenue average rates are calculated by dividing the state-specific state revenues (from State and Local Government Finance Estimates, by State, U.S. Census Bureau) by an appropriate base (base data comes from the REMI historical database for each individual state). This is only shown in the Interstate designation analysis (scenario 3) to determine the number of years needed to recoup the additional state investment.

3. Results

3.1 Scenario 2: Business Plan

3.1-1 Construction Phase of Business Plan

As mentioned above, a total of \$6.4 billion in construction projects are planned for CA-99 in the San Joaquin Valley. CA-99 travels through seven of the eight counties that make up the San Joaquin Valley; CA-99 does not enter Kings County. This report analyzes a total of 73 construction projects that are still planned in San Joaquin Valley, the majority of which have not been completed or started yet. The Business Plan for Stanislaus County contains the most planned projects, 15, while San Joaquin County contains the least, 6. The projects in Stanislaus County also represent the greatest total investment, among the counties, almost \$1.3 billion or 20.2% of the total. Kern County's 10 projects represent the smallest investment among the counties, \$337.8 million or 5.3% of the total. As mentioned above, the projects included in this study began in 2005 and ends in 2029. The economic impact of the planned construction projects are detailed for each county below.

Table 6: Summary of Planned Construction Projects for CA-99 by County

County	No. of Remaining Projects	Start Year of First Project	End Year of Final Project	Total Cost of Projects	Avg. Cost per Year	Percent of Total Cost
Kern	10	2007	2025	\$ 337,800,000	\$ 18,766,667	5.3%
Tulare	10	2010	2029	\$ 987,300,000	\$ 51,963,158	15.4%
Fresno	12	2012	2029	\$ 966,600,000	\$ 56,858,824	15.1%
Madera	11	2008	2026	\$ 901,400,000	\$ 50,077,778	14.1%
Merced	9	2005	2026	\$ 958,200,000	\$ 45,628,571	15.0%
Stanislaus	15	2009	2029	\$1,291,600,000	\$ 64,580,000	20.2%
San Joaquin	6	2011	2025	\$ 949,500,000	\$ 67,821,429	14.9%
TOTAL	73	2007	2029	\$6,392,400,000	\$290,563,636	100.0%

Fresno County

Project Description

The construction phase of the Business Plan for CA-99 in Fresno County begins in 2012 and extends to 2029. Construction cost will total \$966.6 million and include twelve total projects; one additional project was completed in 2007; the widening of CA-99 from SR 201 to Floral Avenue. Table 7 provides a description of each construction project for CA-99 in Fresno County. The projects range in cost from \$12.4 million to \$214.5 million; the most expensive being the widening of CA-99 from Jensen Avenue to Ashlan Avenue and the least expensive being the interchange improvements project from Toulumne Street to Stanislaus Street.

Table 7: Description of Construction Projects for CA-99 in Fresno County

FROM	TO	PROJECT DESCRIPTION	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousands \$'s)	Average Cost per year (thousands \$'s)
Floral Rd/SR 43 Interchange	Selma	Replace bridge structure and Floral Rd	3	2027	2029	\$28,700	\$9,567
Central Ave/Chestnut Ave Interchange		Interchange Improvements	3	2024	2025	\$72,500	\$36,250
Central Ave	Jensen Ave	Widen from 6F to 8F	2	2026	2028	\$47,100	\$15,700
Cedar Ave/North Ave Interchange		Interchange Improvements	3	2021	2022	\$72,500	\$36,250
Jensen Ave	Ashland Ave	Widen from 6F to 8F	2	2023	2026	\$214,500	\$53,625
Ventura Ave Interchange		Interchange Improvements	3	2014	2016	\$72,500	\$24,167
Fresno St	Clinton Ave	Add NB and SB auxiliary lanes	3	2025	2027	\$135,500	\$45,167
Toulumne St	Stanislaus St	Interchange Improvements	3	2016	2018	\$12,400	\$4,133
Ashlan Ave	Madera Co Line	Widen from 4F to 6F	2	2012	2015	\$127,300	\$31,825
Shaw Ave Interchange		Interchange Improvements	3	2018	2020	\$70,000	\$23,333
Grantland Diagonal (Veterans Blvd)		Construct New Interchange	4	2015	2018	\$86,800	\$21,700
SR 201	Floral Ave	4F to 6F	2	N/A	2007	\$67,000	N/A
American Ave		Modify I/C	3	2017	2019	\$26,800	\$8,933
TOTAL COST						\$966,600	

Note: Data in this table should not be used to make project programming decisions.

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

The twelve remaining construction projects in the Business Plan for CA-99 in Fresno County will have a significant economic impact on the county. The almost \$1 billion in construction spending over the time period will create a substantial number of direct construction jobs. Furthermore, the spending on construction material, equipment, and other goods and services will create additional indirect and induced jobs.

There are three major time periods when the construction phase of the Business Plan will produce peak economic impacts on the Fresno County economy. The first peak occurs during the 2014 to 2016 period, when two large projects are under construction and one additional project begins. The second peak period occurs in 2018, during a period when two projects are under construction and one is in its final year. The final and largest peak occurs in 2025, when the largest construction project planned in Fresno County (mentioned above) is in its mid-year of construction.

Figure 1 shows the impact on employment, on a yearly basis, as a result of the construction phase of the Business Plan. During the construction period (2012 – 2029) employment varies from just under 400 jobs, at the onset of construction, to over 1,400 during the final years; when several of the larger projects are under construction. After the final construction project is complete, employment drops off to a yearly average of roughly 100 jobs for the remainder of the time period.

Figure 1: Yearly Change in Employment from Construction Phase of Business Plan – Fresno County 2006-2050

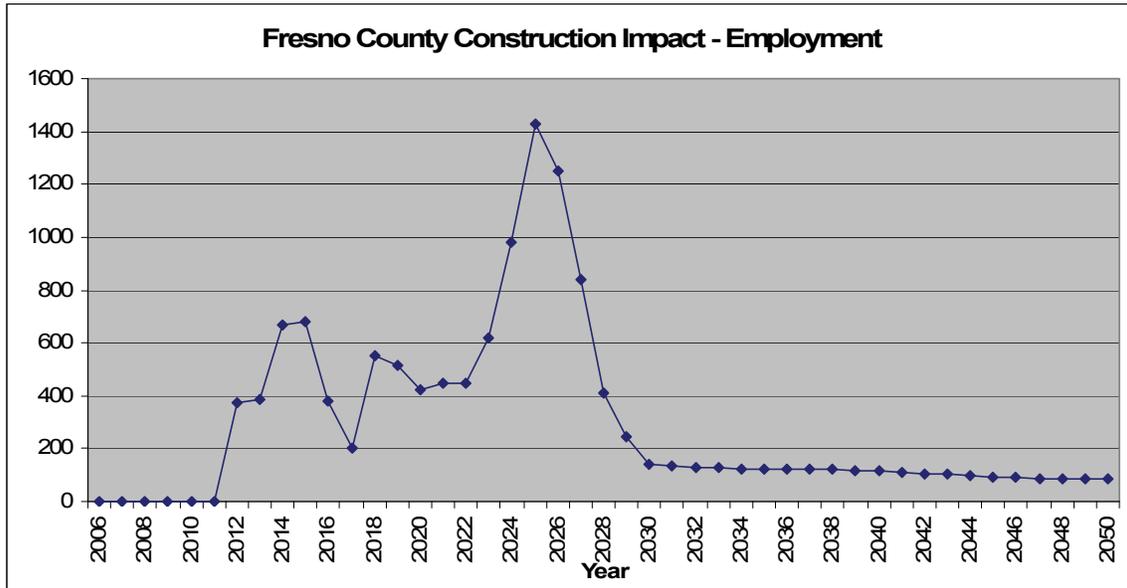


Figure 2 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan in Fresno County. As with employment, GRP peaks during the years of greatest construction investment. During the initial phase of construction, 2012 through 2018, GRP peaks at around \$50 million in 2016. GRP reaches its maximum peak in 2025, at roughly \$126 million, during the project that encompasses the widening of CA-99 between Jensen Avenue and Ashlan Avenue. After the end of the final construction project in 2029, GRP falls to an average of roughly \$15 million for the remainder of the study period (2030 - 2050).

Figure 2: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Fresno County, 2006 – 2050 (million's 2008 \$'s)

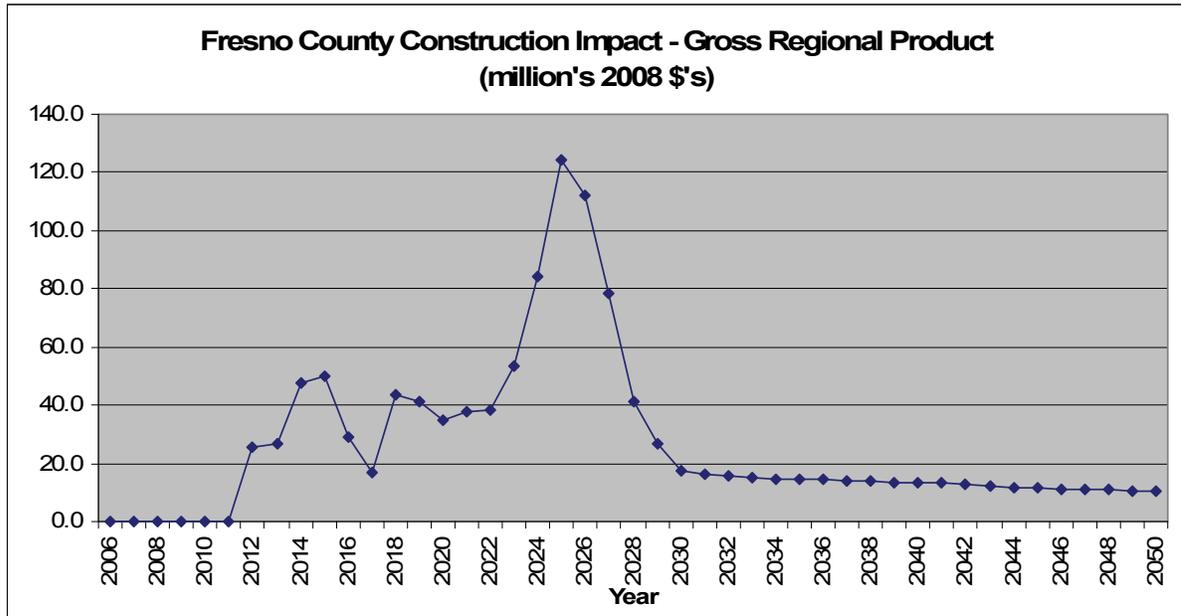


Figure 3 shows the yearly change in real disposable personal income from the construction phase of the Business Plan in Fresno County. The initial phase of construction produces a peak real disposable income level of roughly \$28 million in 2015. The largest peak period of construction produces a real disposable personal income level \$70 million in 2025. After the end of construction in 2029, changes in real disposable personal income levels fall to roughly \$13 million to \$15 million each year for the remaining study period.

Figure 3: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Fresno County, 2006 – 2050 (million's 2008 \$'s)

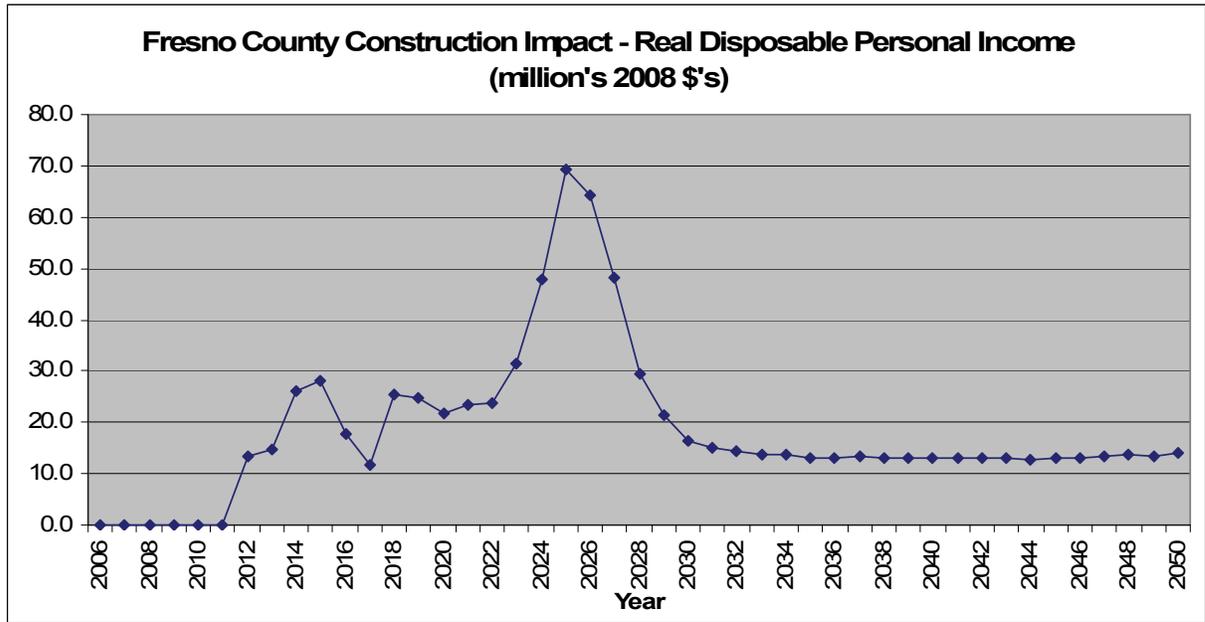


Figure 4 shows the yearly change in total output resulting from the construction phase of the Business Plan in Fresno County. The initial phases of construction produce a peak output level of \$85 million in 2016. The largest project, stated above, generates a peak output level of \$209 million in 2025. After the end of construction, changes in output levels fall to between \$15 million and \$17 million for the remainder of the study period.

Figure 4: Yearly Change in Total Output from Construction Phase of Business Plan in Fresno County, 2006 – 2050 (million's 2008 \$'s)

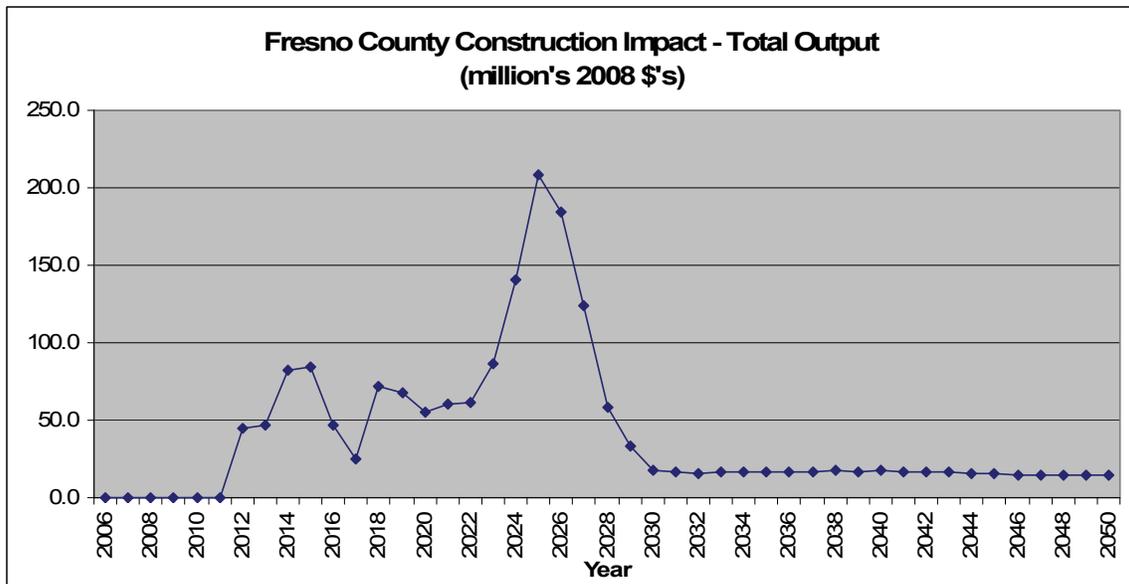


Table 8 shows the total and average annual economic impact of the construction phase of CA-99 in Fresno County. The entire study period produced an average annual employment impact of 292 jobs. These jobs include the actual construction workers and the indirect and induced jobs created by the increased demand for construction materials and goods and services and by the increase in spending generated from the earning of the construction workers. Total GRP generated by all the construction projects for CA-99 in Fresno County, over the entire study period equals roughly \$1.2 billion. Average annual change in GRP over the entire study period averages \$26.5 million. Total Change in real disposable personal income equals \$828 million; a yearly average of \$18.4 million over the entire study period. Change in total output reaches \$1.82 billion for the 2006-2050 period; equaling a yearly average of \$40.5 million over the entire study period.

Table 8: Fresno County Total and Average Annual Impact from the Construction Phase of Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		292
Gross Regional Product	\$1,192.3	\$26.5
Real Disposable Personal Income	\$ 828.4	\$18.4
Output	\$1,822.7	\$40.5

Kern County

Project Description

The construction phase of the Business Plan for CA-99 in Kern County begins in 2007 and extends to 2025. Construction cost will total \$337.8 million and include a total of ten projects. Table 9 provides a description of each construction project in the Business Plan for CA-99 in Kern County. The projects range in cost from \$7.3 million for the construction of an auxiliary lane on the south bound side of CA-99 between SR 204 and Olive Drive to \$69 million for the construction of a new interchange at Hoskings Avenue. The total construction cost, above, does not include the reconstruction of the interchange at Woolomes Avenue.

Table 9: Description of Construction Projects for CA-99 in Kern County

FROM	TO	PROJECT DESCRIPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	AVG Cost Per Year (thousand's)
SR 119	Wilson Rd O/C	Widen From 6F to 8F	2	2023	2025	\$53,700	\$17,900
At Hoskings Avenue		New Interchange	4	2010	2012	\$69,000	\$23,000
Ming Ave	SR58	Construct Auxilliary Lane	3	2008	2020	\$30,000	\$2,308
California Ave	SR58	Construct Auxilliary Lane	3	2016	2018	\$35,500	\$11,833
Olive Dr. Interchange		Reconstruct Interchange	3	2018	2020	\$39,300	\$13,100
SR 204	Olive Dr	Construct Auxillary Lane NB	3	2020	2022	37,000	\$12,333
SR 204	Olive Dr	Construct Auxillary Lane SB	3	2020	2022	7,300	\$2,433
SR 204	7Th Standard Road	6F to 8F Aux. Lane	2	2016	2018	48,200	\$16,067
	7Th Standard Road Widening	Modify Interchange	1	2007	2009	\$17,800	\$5,933
Woolomes Ave		Reconstruct I/C	3	2022	2024		
TOTAL						\$337,800	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

There are four major time periods when the construction phase of the Business Plan will produce peak economic impacts on the Kern County economy. The first peak occurs during the 2010 to 2012 period, when three projects are under construction; two of which are also completed during this period. The second peak occurs during the 2016 to 2018 period; this produces the greatest economic impact, as three of the larger construction projects planned are under construction. The third peak economic period occurs in 2020, as an additional two projects begin construction. The final peak in economic impact, during the 2023 to 2025 period, includes the completion of the final construction projects planned for Kern County.

Figure 5 shows the impact on employment from the construction phase of the Business Plan, on a yearly basis. During the first peak impact period, employment levels reach 326 jobs in 2012. The construction projects during the 2016 to 2018 period produce the greatest employment impacts, 513 jobs in 2018. The next peak period, encompassing projects under construction in 2020, create 375 jobs during that year. As the construction program ends in 2025, employment reaches roughly 230 for a three year period (2023-2025).

Figure 5: Yearly Change in Employment from Construction Phase of Business Plan – Kern County 2006-2050

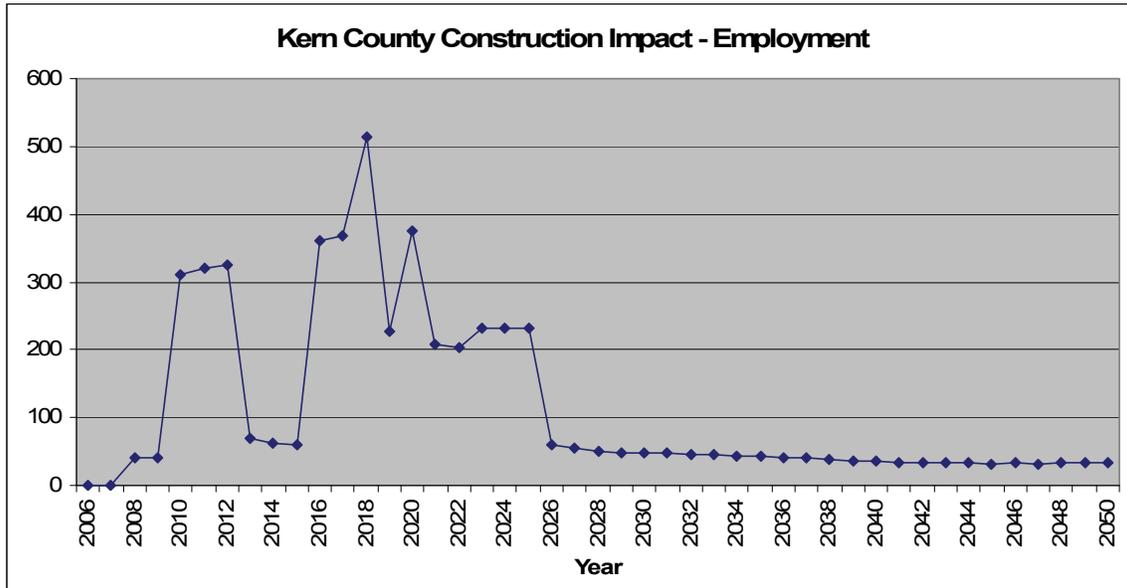


Figure 6 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in Kern County. During the first peak in construction investment, GRP reaches around \$21 million. This is followed by the greatest peak in construction investments, when GRP reaches \$37 million in 2018. The construction investment peak in 2020 produces a GRP of \$29 million and the final years of construction average a GRP change of \$19 million during the last three years of construction. After the end of the final construction project in 2025, GRP falls to between \$4 million and \$6 million each year during the remainder of the study period.

Figure 6: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Kern County, 2006 – 2050 (million's 2008's)

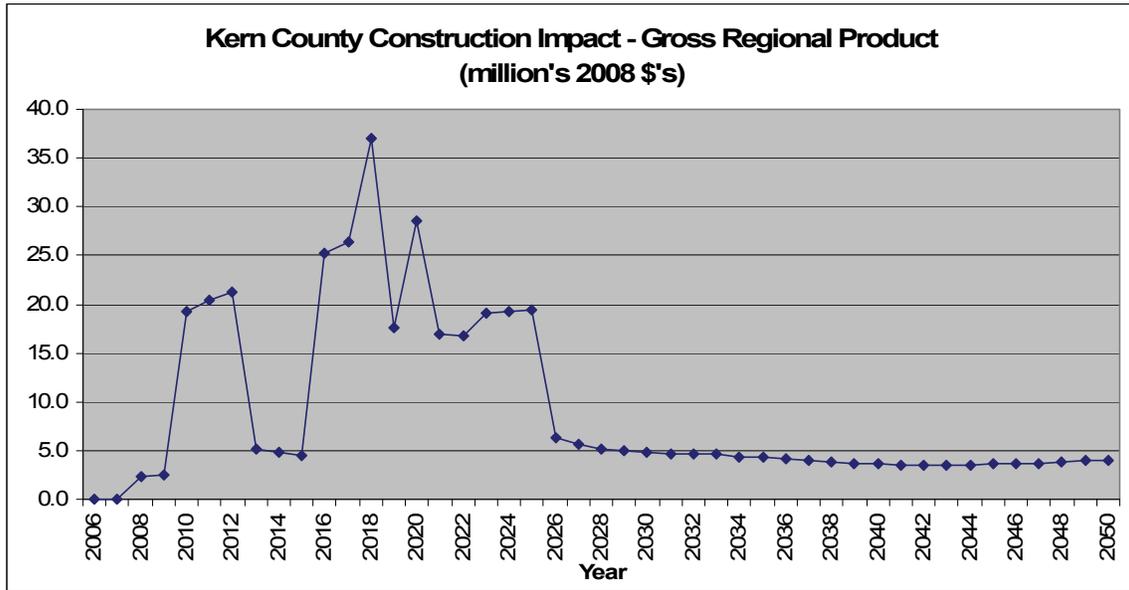


Figure 7 shows the yearly change in real disposable personal income from the construction phase of the Business Plan for CA-99 in Kern County. The initial phase of construction produces a peak real disposable income level of roughly \$14 million in 2012. The next major peak in construction impact produces a real disposable personal income level of roughly \$23 million in 2018; this is followed by a peak of \$18 million in 2020 and \$14 million in 2025. After the end of construction in 2025, changes in real disposable personal income levels fall to roughly \$5 million each year for the remaining study period.

Figure 7: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Kern County, 2006 – 2050 (million's 2008's)

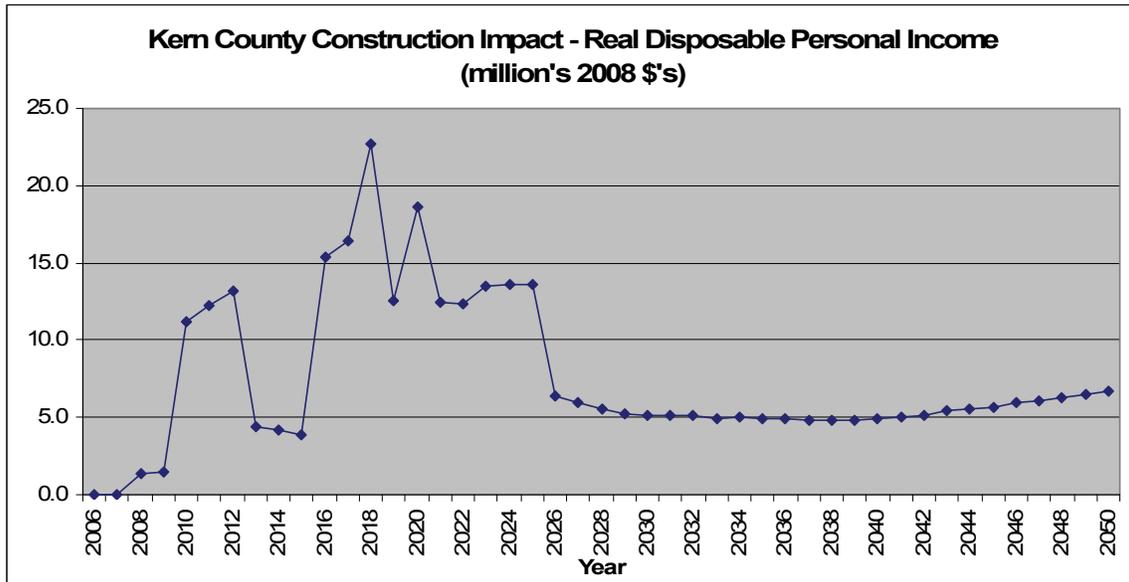


Figure 8 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in Kern County. The initial phases of construction produce a peak output level of \$36 million in 2012. The second peak level of construction investments, generate a peak output level of \$62 million in 2018, followed by peaks of \$46 million in 2020 and almost \$30 million in 2025. As construction is completed, changes in output levels fall to roughly \$5 million for the remainder of the study period.

Figure 8: Yearly Change in Total Output from Construction Phase of Business Plan in Kern County, 2006 – 2050 (million's 2008's)

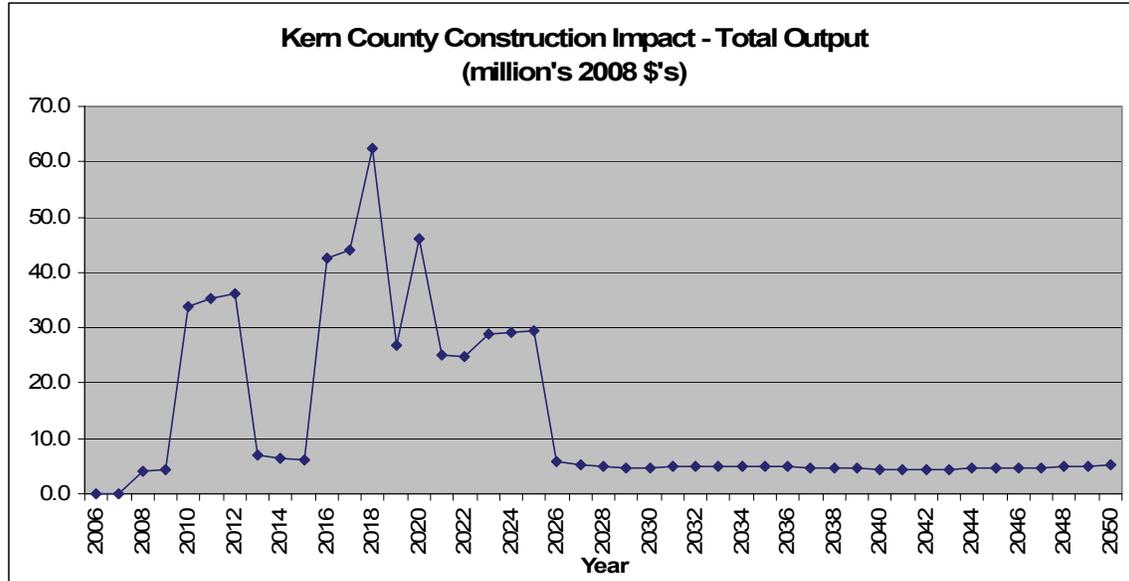


Table 10 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 in Kern County. The average annual employment impact during the study period is 115 jobs. As stated above, these jobs include the actual construction workers and the indirect and induced jobs created by the increased demand for construction materials and goods and services and by the increase in spending generated from the earning of the construction workers. Total GRP generated by all the construction projects to CA-99 in Kern County, over the entire study period equals roughly \$412 million. Average annual change in GRP over the entire study period averages \$9.2 million. Total change in real disposable personal income equals \$339 million; a yearly average of \$7.5. Change in total output reaches \$613.7 million for the 2006-2050 period; a yearly average of \$13.6 million.

Table 10: Kern County Total and Average Annual Impact from Construction Phase of Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		115
Gross Regional Product	\$ 411.9	\$9.2
Real Disposable Personal Income	\$ 339.1	\$7.5
Output	\$ 613.4	\$13.6

Madera County

Project Description

The construction phase of the Business Plan for CA-99 in Madera County begins in 2008 and extends to 2026. Construction cost will total \$901.4 million and include a total of 13 projects; two projects are not included in the total construction cost, the widening of the 4th Street Bridge and the modification to the interchange. Table 11 provides a description of each construction project in the Business Plan for CA-99 in Madera County. The projects range in cost from \$12 million for the construction of the Gateway Interchange to \$163 million for the widening of CA-99 from Avenue 12 to Avenue 16.

Table 11: Description of Construction Projects for CA-99 in Madera County

FROM	TO	PROJECT DESCRPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	Cost Per Year (thousand's)
Avenue 7	Avenue12	Widen from 4F to 6F	2	2018	2020	\$87,700	\$29,233
Avenue 12		Reconstruct Interchange	3	2012	2015	\$64,000	\$16,000
S. Madera OC	N of Rte 99/145	Gateway Interchange	1	2015	2017	\$12,000	\$4,000
Route 99/145		Reconstruct Interchange	3	2008	2010	\$46,700	\$15,567
Avenue 12	Avenue 16	Widen from 4F to 6F	2	2022	2025	\$163,000	\$40,750
Ellis Avenue Interchange		Remove existing Ave 16 interchange. Construct a new I/C	4	2023	2025	\$106,100	\$35,367
Avenue 16	Avenue 21 1/2	Widen from 4F to 6F	2	2024	2026	\$81,600	\$27,200
S. of Ave 21	S. of 99/152 Separation.	Fairmead Freeway	1	2008	2010	\$71,000	\$23,667
SR 152 Interchange		Reconstruct Interchange and rail crossing	3	2023	2026	\$101,000	\$25,250
Route 99/233		Reconstruct Interchange	3	2016	2018	\$70,100	\$23,367
SR 152 Interchange	Merced Co Line	Widen from 4F to 6F	2	2022	2024	\$98,200	\$32,733
4th St		Widen 4th St Bridge	3	2016	2015		
17th Ave		Modify I/C	3	2016	2018		
TOTAL COST						\$901,400	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

There are three major time periods when the construction phase of the Business Plan will produce peak economic impacts on the Madera County economy. The initial onset of construction projects produce a peak economic impact during the 2008 to 2010 period. Secondly, a gradual peak in economic impact is realized during an extended period of construction investment during the 2012 to 2020 period. Lastly, the largest peak in economic impact coincides with the midyear of construction (2024) of the three largest projects planned in Madera County.

Figure 9 shows the impact on employment, on a yearly basis, for the construction phase of the Business Plan in Madera County. During the first peak impact period, employment levels reach 319 jobs for a three year period, 2008 to 2010. The extended period of construction projects during 2012 to 2020 produce a peak of 388 jobs in 2018. The greatest peak period, reaching its maximum impact in 2024, creates 1,096 jobs. As the construction program ends in 2026, employment change drops to between 20 and 38 jobs for the remainder of the study period.

Figure 9: Yearly Change in Employment from Construction Phase of Business Plan – Madera County 2006-2050

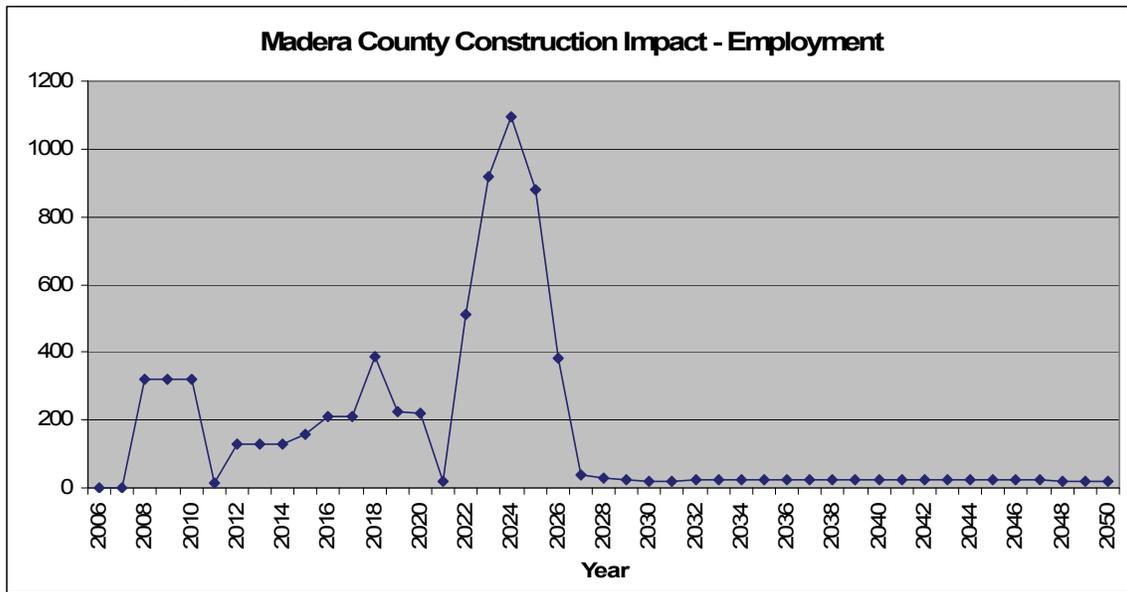


Figure 10 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in Madera County. During the first peak in construction investment, GRP reaches around \$14.4 million in 2010. This is followed by the gradual and extended peak in construction investments, when GRP reaches \$20 million in 2018. The final and greatest peak, which closes out the construction schedule, produces a change in GRP of \$60 in 2023. After the completion of the final construction projects in 2026, GRP falls to roughly between \$2 million and \$4 million each year for the remainder of the study period.

Figure 10: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Madera County, 2006 – 2050 (million's 2008's)

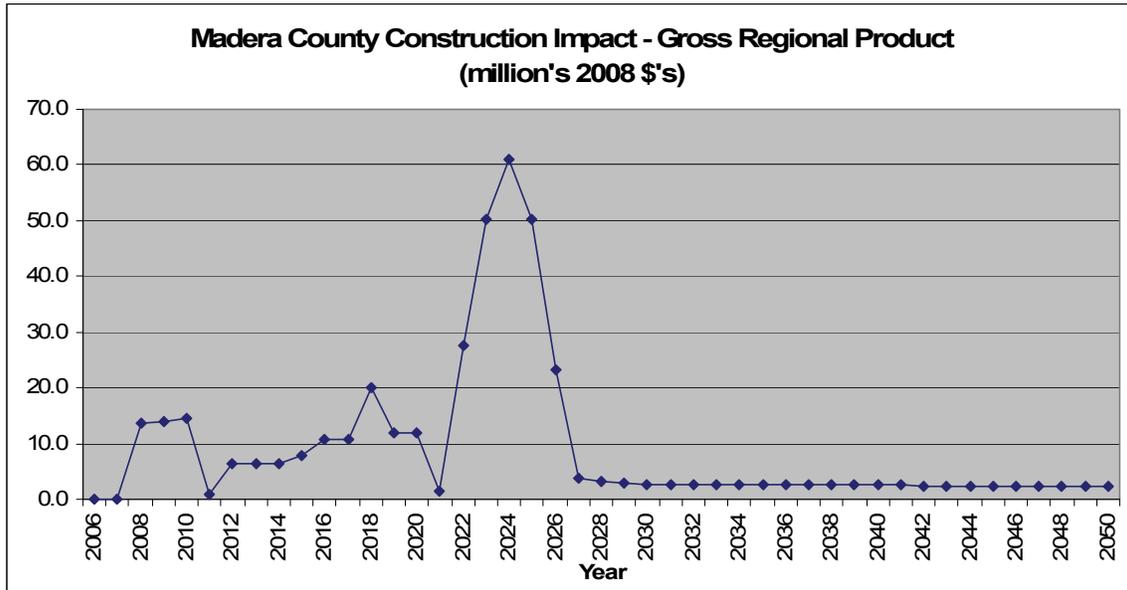


Figure 11 shows the yearly change in real disposable personal income from the construction phase of the Business Plan for CA-99 in Madera County. The initial phase of construction projects produces a peak real disposable income level of \$9 million in 2010. The second peak period in planned construction produces a maximum change in real disposable income of \$12.3 million in 2018. The final peak in planned construction, involving a few of the largest projects in Madera County, generates a change in real disposable personal income of \$36.5 million in 2024. After the end of construction in 2026, changes in real disposable personal income levels fall to an average of roughly \$4 million each year for the remaining study period.

Figure 11: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Madera County, 2006 – 2050 (million's 2008's)

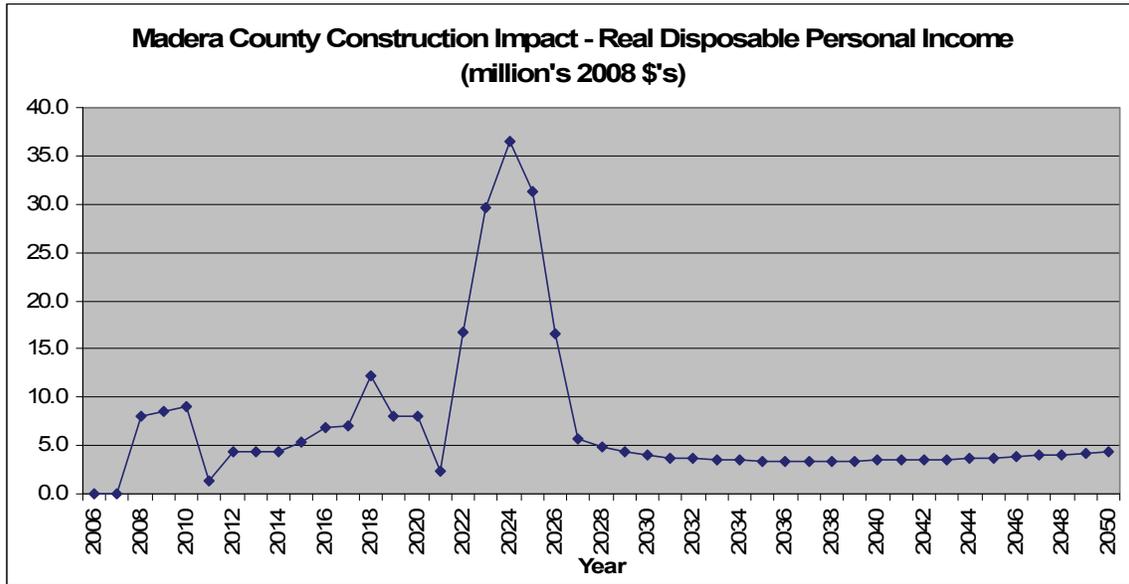


Figure 12 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in Madera County. The initial phases of construction produce a peak output level of \$25.6 million in 2010. The second peak level of construction investments, generate a peak output level of \$35 million in 2018, followed by \$108 million at the top of the peak period in 2024. Following the end of construction in 2026, changes in output levels fall to under \$1 million initially before rising to \$2.7 million in 2050.

Figure 12: Yearly Change in Total Output from Construction Phase of Business Plan in Madera County, 2006 – 2050 (million's 2008's)

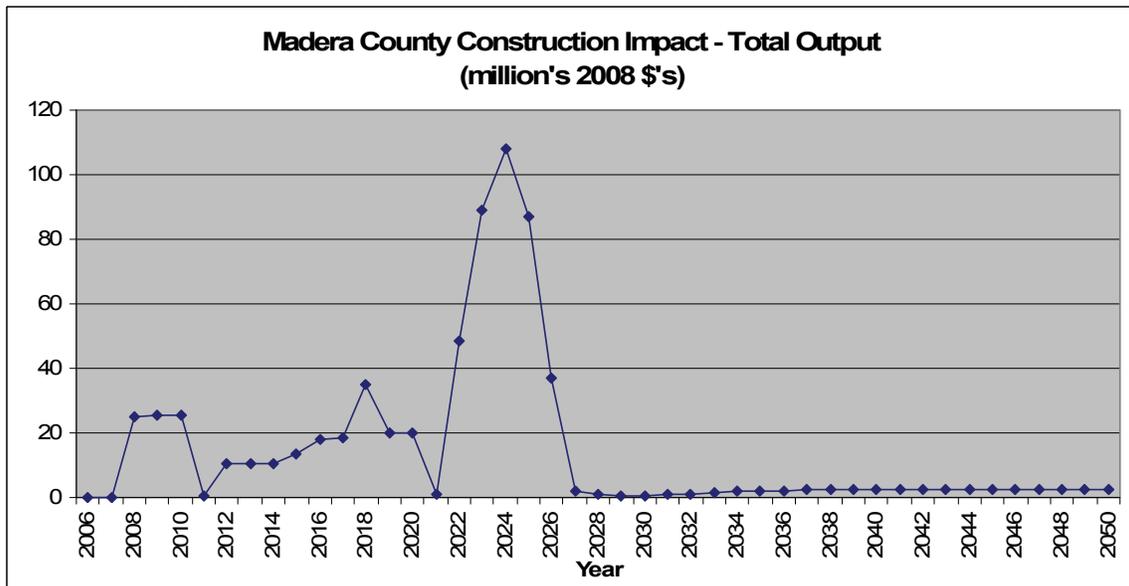


Table 12 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 in Madera County. The entire study period produced an average annual employment impact of 159 jobs. Total GRP generated by all the construction projects to CA-99 in Madera County, over the entire study period equals roughly \$411 million, an average annual change of \$9.1 million. Total Change in real disposable personal income equals \$312.9 million; a yearly average of \$7.0 million over the entire study period. Change in total output reaches \$654.2 million for the 2006-2050 period; equaling a yearly average of \$14.5 million over the entire study period.

Table 12: Madera County Total and Average Annual Impact of Construction Phase of Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		159
Gross Regional Product	\$411.0	\$9.1
Real Disposable Personal Income	\$312.9	\$7.0
Output	\$654.2	\$14.5

Merced County

Project Description

The construction phase of the Business Plan for CA-99 in Merced County begins in 2005 and extend to 2026. Total Construction cost are \$958.2 million and include 9 projects. Table 13 provides a description of each planned construction project for CA-99 in Merced County. The projects range in cost from \$41.6 million for the construction of 4E to 6F and new Arena Way interchange project between Arena Way and the Hammett over crossing to \$171 million for the construction of the Arboleda Drive Freeway project from Buchanan Hollow Road to 0.5 km north of McHenry Road.

Table 13: Description of Construction Projects for CA-99 in Merced County

FROM	TO	PROJECT DESCRIPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	Cost Per Year (thousand's)
Madera County Line.	Buchanan Hollow Rd.	Plainsburg Road Freeway	1	2011	2014	\$115,500	\$28,875
Buchanan Hollow Road.	0.5 Km N. of Mchenry Rd.	Arboleda Drive Freeway	1	2013	2016	\$171,000	\$42,750
S. of Childs Ave.	Black Rascal Creek	Widen from 4F to 6F	2	2015	2018	\$163,000	\$40,750
Black Rascal Creek	East Atwater OH	Widen from 4F to 6F	2	2019	2022	\$130,000	\$32,500
East Atwater OH	West Atwater OH	Widen from 4F to 6F	2	2020	2022	\$68,500	\$22,833
0.4 Km N. of Atwater OH.	0.4 Km S. of Arena Way.	Atwater Freeway	1	2008	2010	\$72,700	\$24,233
Hammett Avenue	South Turlock OC	Widen from 4F to 6F	2	2024	2026	\$87,000	\$29,000
McHenry Rd	Childs Ave Overcrossing	4E to 6F & New Mission Ave I/C	1	2005	2008	\$108,900	\$27,225
Arena Way	Hammett Ave Overcrossing	4E to 6F & New Arena Way I/C	1	2007	2009	\$41,600	\$13,867
TOTAL COST						\$958,200	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

There are four major time periods when the construction phase of the Business Plan will produce peak economic impacts on the Merced County economy. The initial set of construction projects produce a peak economic impact in 2008. The second, and largest, phase of construction projects produce an extended peak economic impact during the 2013 to 2016 period. Two smaller peaks in economic impact follow this, during the 2020 to 2022 and 2024 to 2026 periods.

Figure 11 shows the impact on employment on a yearly basis, beginning with the first year of construction (2006) and running through the end of the study period (2050). During the first peak impact period, employment levels reach 773 jobs in 2008. The extended period of construction projects during 2013 to 2016 produce a peak of 1080 jobs in 2016. The third and fourth peak construction periods produce a change in employment levels of 509 jobs in 2021 and 300 jobs in 2025. As the construction program ends in 2026, employment change drops to between 60 and 90 jobs for the remainder of the study period.

Figure 11: Yearly Change in Employment from Construction Phase of Business Plan – Merced County 2006-2050

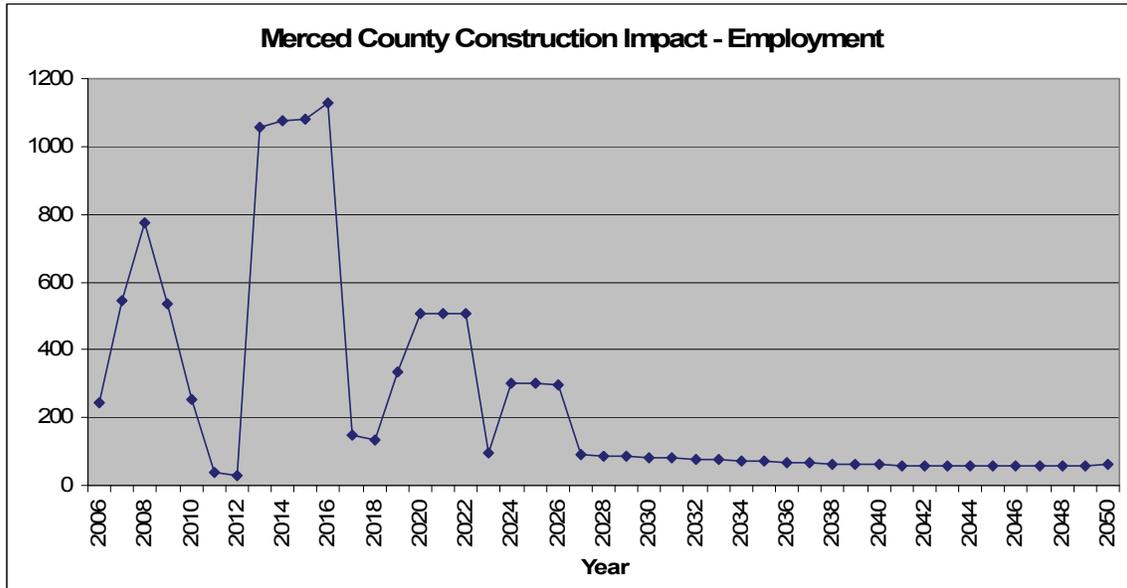


Figure 12 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in Merced County. During the first peak in construction investment, GRP reaches almost \$38 million in 2008. This is followed by the maximum peak in construction investments, when GRP reaches \$65.5 million in 2016. The third peak in construction investment culminates in 2022 when change in GRP totals \$33.3 million. Finally, the last and smallest peak construction period generates \$21.4 million in GRP in 2026. After the completion of the final construction projects in 2026, GRP falls to roughly \$7 million and for the remainder of the study period.

Figure 12: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Merced County, 2006 – 2050 (million's 2008's)

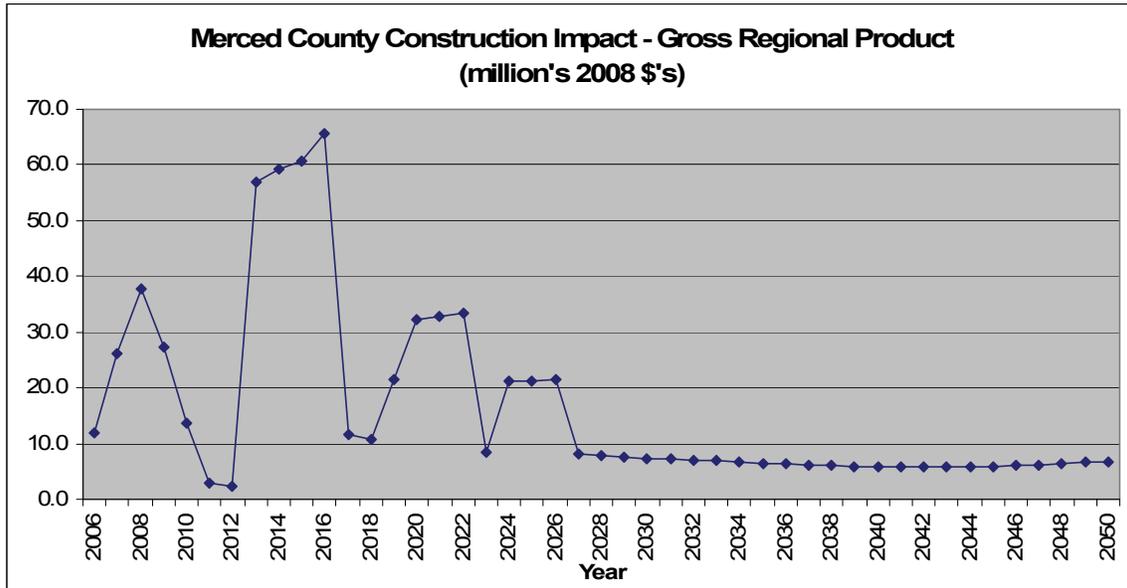


Figure 13 shows the yearly change in real disposable personal income resulting from the construction phase of the Business Plan for CA-99 in Merced County. The initial phase of construction projects produces a peak real disposable income level of \$27.6 million in 2008. The second peak period in planned construction produces a maximum change in real disposable income of \$49 million in 2016. The third peak construction period culminates in a change in real disposable personal of \$27.4 million in 2022. The final peak in planned construction generates a change in real disposable personal income of \$19.3 million in 2026. After the end of construction in 2026, changes in real disposable personal income levels fall to a low of \$9.4 million in 2035 before rising gradually to \$14.6 million in 2050.

Figure 13: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Merced County, 2006 – 2050 (million's 2008's)

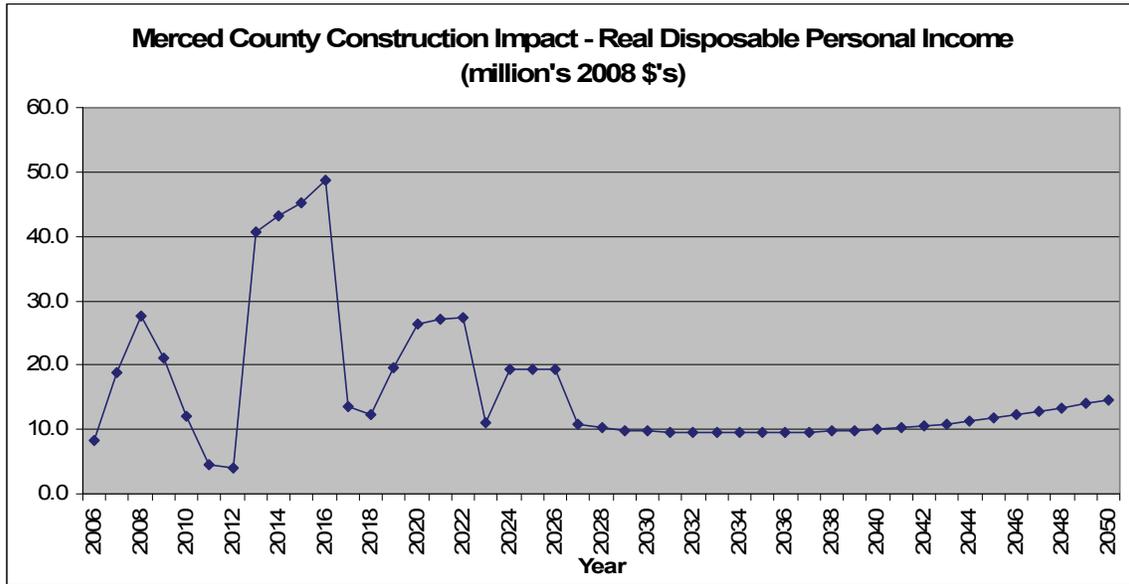


Figure 14 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in Merced County. The initial phases of construction projects produce a peak output level of \$67.1 million in 2008. The second, and largest, peak level of construction investments generates a change in output of \$111 million in 2016. This is followed by the final two peak construction impact periods when change in output levels reach \$52.2 million in 2022 and \$31.4 million in 2026. Following the end of construction in 2026, changes in output levels fall to an average of roughly \$7.5 million per year for the remainder of the study period.

Figure 14: Yearly Change in Total Output from Construction Phase of Business Plan in Merced County, 2006 – 2050 (million's 2008's)

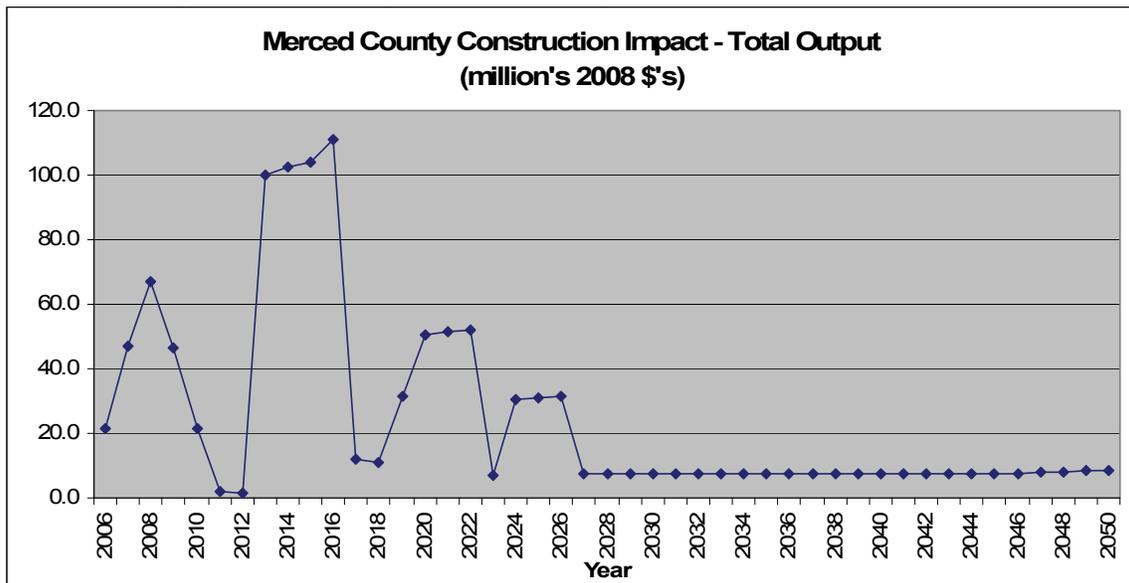


Table 14 shows the total and average annual economic impact of the planned construction projects for CA-99 in Merced County. The average annual employment impact during the study period equals 256 jobs. Total GRP generated by all the planned construction projects for CA-99 in Madera County, over the entire study period equals roughly \$734 million. The change in GRP over the entire study period averages \$16.3 million. Total Change in real disposable personal income equals \$728 million; a yearly average of \$16.2 million over the entire study period. Change in total output reaches \$1.1 billion for the 2006-2050 period; equaling a yearly average of \$24.8 million over the entire study period.

Table 14: Merced County Total and Average Annual Impact from the Construction Phase of Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual Period (2006-2050)
Employment		256
Gross Regional Product	\$734.1	\$16.3
Real Disposable Personal Income	\$727.9	\$16.2
Output	\$1,115.4	\$24.8

San Joaquin County

Project Description

The remaining construction projects in the Business Plan for CA-99 in San Joaquin County are scheduled to begin in 2011 and extend to 2025; three projects in San Joaquin County were completed in 2007 and are not included in this analysis. Total Construction cost for the remaining projects are \$949.5 million and includes a total of 6 projects. Table 15 provides a description of each construction project in the Business Plan for CA-99 in San Joaquin County. The planned projects range in cost from \$95 million to reconstruct and combine the interchanges at Mariposa and Farmington Roads to \$246 million for the widening of CA-99 from SR-120 in Manteca to Arch Road in S. Stockton.

Table 15: Description of Construction Projects for CA-99 in San Joaquin County

FROM	TO	PROJECT DESCRIPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	Cost Per Year (thousand's)
SR-120 in Manteca	Arch Rd. in S. Stockton	Widen 4F to 6F	2	2012	2015	\$246,000	\$61,500
N. of Arch Rd	SR 4	Widen 4F to 6F	2	2012	2015	\$234,500	\$58,625
Mariposa Rd. and Farmington		Reconstruct and combine interchanges (stages 1 & 2)	3	2013	2015	\$95,000	\$31,667
Morada Lane in Stockton		Reconstruct Interchange	3	2011	2013	\$95,000	\$31,667
Eight Mile Rd. in Stockton		Reconstruct Interchange	3	2011	2013	\$101,000	\$33,667
Harney Road	Sacramento County Line	Widen 4F to 6F	2	2022	2025	\$178,000	\$44,500
TOTAL COST						\$949,500	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

San Joaquin County experiences the greatest economic impact from the construction phase of the Business Plan for CA-99 among all counties in the region. There are two time periods when the construction phase of the Business Plan will produce peak economic impacts in the San Joaquin County economy. The initial set of construction projects, which include all projects except one, produce the greatest peak economic impact, reaching its highest point in 2013 (as several projects are under construction). The second, and much smaller peak time is between 2022 and 2025 when the final project is under construction.

Figure 14 shows the impact on employment as a result of the construction phase of the Business Plan for CA-99 in San Joaquin County. During the first peak impact period, when most projects are under construction, employment levels reach 3,249 jobs in 2013. The final construction project generates roughly 720 jobs over a four year period. As the construction program ends in 2025, employment change drops to roughly 120 jobs for the remainder of the study period.

Figure 14: Yearly Change in Employment from Construction Phase of Business Plan – San Joaquin County 2006-2050

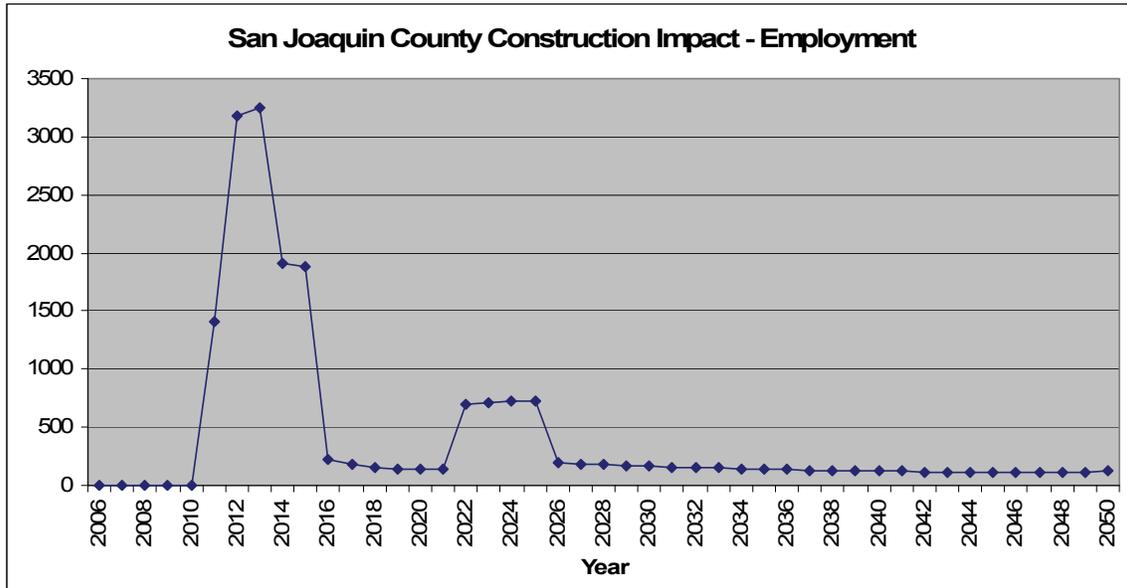


Figure 15 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in San Joaquin County. During the first peak in construction investment, GRP reaches almost \$241 million in 2013. This is followed by the second peak where GRP reaches \$64 million for a four year period, 2022 through 2025. After the completion of the final construction project in 2025, GRP falls to roughly between \$12 million and \$15 million each year for the remainder of the study period.

Figure 15: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in San Joaquin County, 2006 – 2050 (million's 2008's)

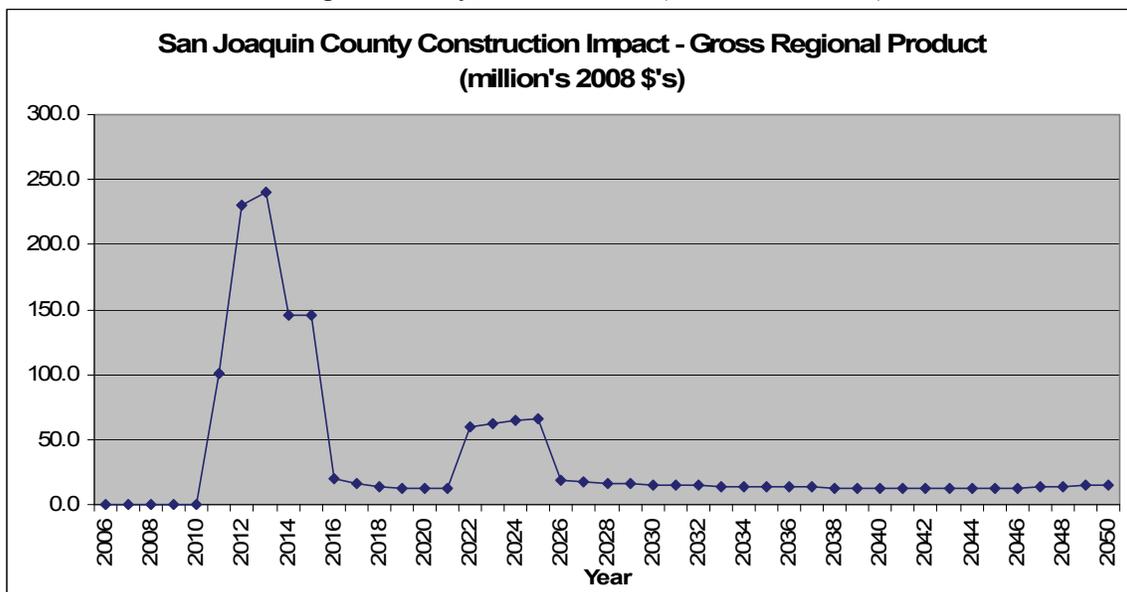


Figure 16 shows the yearly change in real disposable personal income resulting from the construction phase of the Business Plan for CA-99 in San Joaquin County. The planned construction projects produce a peak real disposable personal income level of \$131 million in 2013 and \$43 million in 2025. After the end of construction in 2025, changes in real disposable personal income levels fall to an average of roughly \$20 million for the remainder of the study period.

Figure 16: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in San Joaquin County, 2006 – 2050 (million's 2008's)

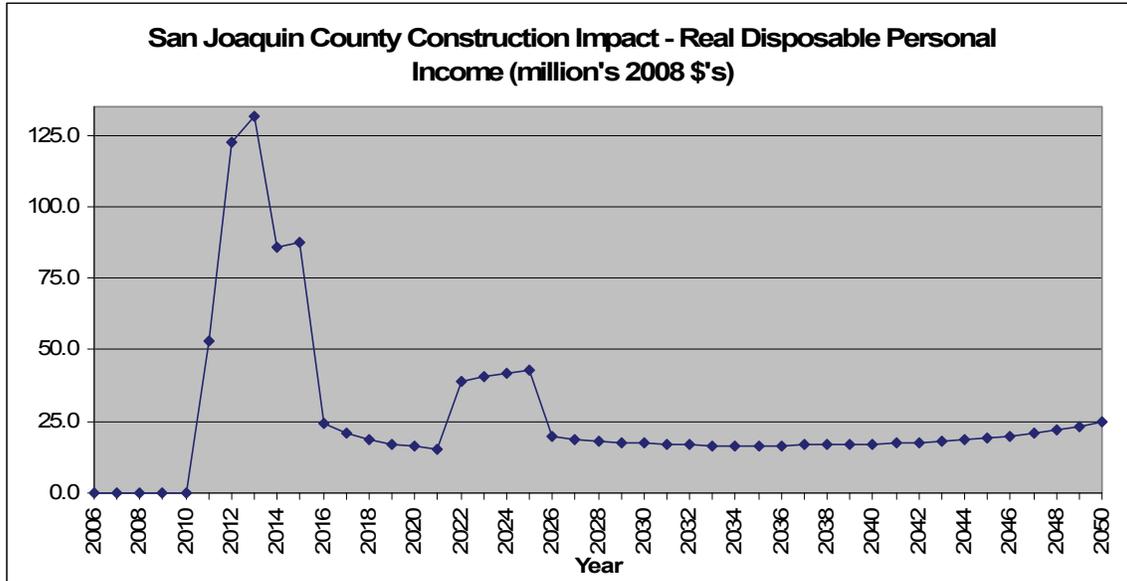


Figure 17 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in San Joaquin County. The first phases of construction projects produce a peak output level of \$246 million in 2015, followed by a peak of \$104 million in 2025. Following the end of construction in 2025, changes in output levels fall to between of \$17 million and \$21 million per year for the remainder of the study period.

Figure 17: Yearly Change in Total Output from Construction Phase of Business Plan in San Joaquin County, 2006 – 2050 (million's 2008's)

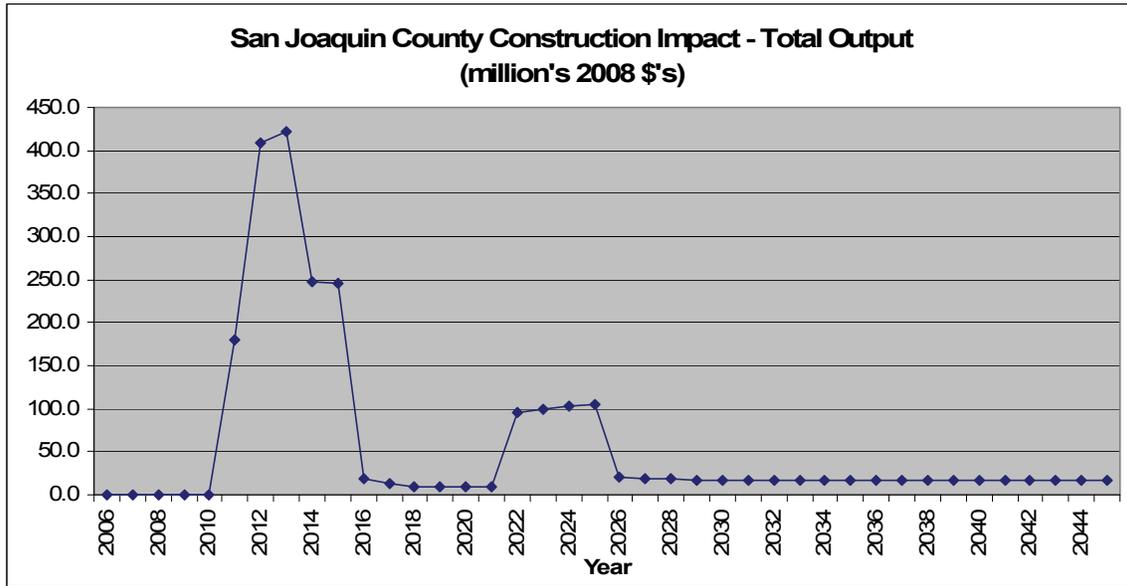


Table 16 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 in San Joaquin County. The average annual employment impact during the study period is 420 jobs, this is the greatest among all counties in the region. Total GRP generated by all the planned construction projects for CA-99 in San Joaquin County, over the entire study period equals roughly \$1.6 billion. Average annual change in GRP totals \$34.5 million per year over the entire study period. Total Change in real disposable personal income equals \$1.2 billion; a yearly average of \$27.1 million over the entire study period. Change in total output reaches \$2.4 billion for the 2006-2050 period; a yearly average of almost \$54 million.

Table 16: San Joaquin County Total and Average Annual Impact from the Construction Phase of Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		420
Gross Regional Product	\$1,554.5	\$34.5
Real Disposable Personal Income	\$1,218.0	\$27.1
Output	\$2,416.7	\$53.7

Stanislaus County

Project Description

The construction phase of the Business Plan for CA-99 in Stanislaus County begins in 2009 and extends to 2028. Total Construction costs are \$1.3 billion and include a total of 15 projects. Table 17 provides a description of each construction project for CA-99 in Stanislaus County. The projects range in cost from \$40 million to reconstruct the West

Main Street Interchange to \$155 million to widen CA-99 between Mitchell Road and Hatch Road.

Table 17: Description of Construction Projects for CA-99 in Stanislaus County

FROM	TO	PROJECT DESCRIPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	Cost Per Year (thousand's)
SR99 @ SR165 (Lander Ave)		Modify Interchange	3	2022	2023	\$55,000	\$27,500
West Main Street		Reconstruct Interchange	3	2018	2020	\$40,000	\$13,333
Mitchell Road		Reconstruct Interchange	2	2011	2014	\$85,000	\$21,250
Mitchell Road	Hatch Road	Widen 6F to 8F	2	2025	2028	\$155,000	\$38,750
Pine Street		Reconstruct Interchange	3	2024	2026	\$100,000	\$33,333
Whitmore Ave		Reconstruct Interchange	3	2009	2011	\$47,000	\$15,667
Hatch Road	Tuolumne Blvd	Widen 6F to 8F	2	2017	2019	\$78,000	\$26,000
SR99 @ SR132	Sr132 East	New Freeway to Freeway Interchange	3	2027	2029	\$100,000	\$33,333
Tuolumne Blvd	Kansas Avenue	Widen 6F to 8F	2	2023	2025	\$110,000	\$36,667
Kansas Avenue	Carpenter Road	Widen 6F to 8F	2	2025	2027	\$68,000	\$22,667
SR99 @ Standiford		Modify Interchange	3	2025	2026	\$113,000	\$56,500
Carpenter Road	San Joaquin County Line	Widen 6F to 8F	2	2026	2028	\$73,000	\$24,333
Pelandale Ave		Reconstruct Interchange	3	2011	2013	\$80,000	\$26,667
Kiernan Avenue/SR219		Reconstruct Interchange	3	2021	2024	\$92,600	\$23,150
Hammett Road		Reconstruct Interchange	3	2023	2026	\$95,000	\$23,750
TOTAL COST						\$1,291,600	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

The largest construction investment program for CA-99 occurs in Stanislaus County. As stated above, there is a total of almost \$1.3 billion of planned construction projects in Stanislaus County. There are three time periods when the construction phase of the Business Plan will produce peak economic impacts on the Stanislaus County economy. The initial set of construction projects produce a peak economic impact in 2009. The second peak impact period occurs in 2017. The third, and largest, peak period, when many projects are under construction, reaches its maximum impact in 2023.

Figure 18 shows the impact on employment on a yearly basis, resulting from the construction phase of the Business Plan for CA-99 in Stanislaus County. During the first peak impact period, employment levels reach 685 jobs in 2011. The second peak impact period produces a peak change in employment of 414 jobs in 2019. The final peak period of construction, when the majority of projects are under way, produces a peak change in

employment of 1,473 jobs in 2025. As the construction program ends in 2027, employment change drops to roughly 90 jobs for the remainder of the study period.

Figure 18: Yearly Change in Employment from Construction Phase of Business Plan – Stanislaus County 2006-2050

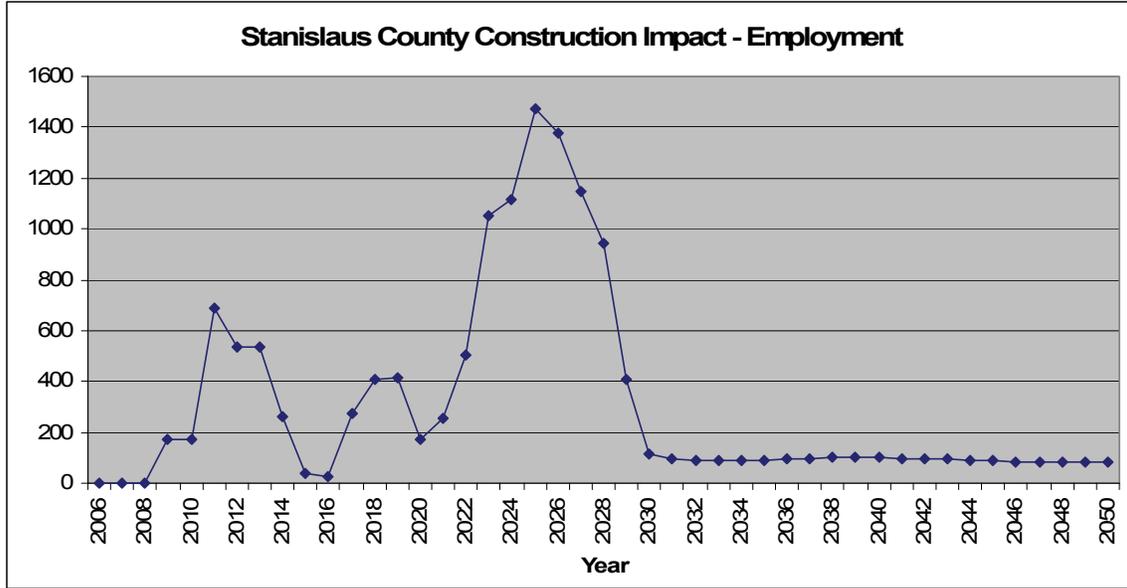


Figure 19 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in Stanislaus County. During the first peak in construction investment, GRP reaches almost \$45 million in 2011. The second peak in construction impact generates \$31 million in GRP in 2019. This is followed by the final and maximum peak in construction investments, when GRP reaches \$124 million in 2026. After the completion of the final construction projects in 2028, GRP falls gradually to roughly \$9 million at the end of the study period.

Figure 19: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Stanislaus County, 2006 – 2050 (million's 2008's)

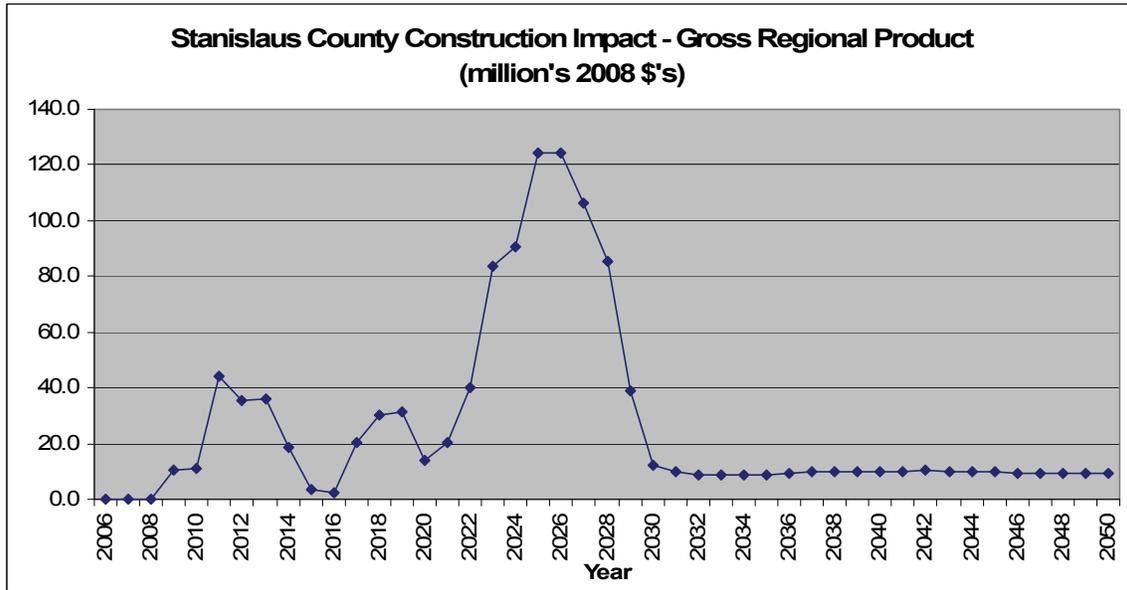


Figure 20 shows the yearly change in real disposable personal income resulting from the construction phase of the Business Plan for CA-99 in Stanislaus County. The initial phase of construction projects produces a peak real disposable income level of almost \$23 million in 2011. The second peak period in planned construction produces a maximum change in real disposable income of \$18 million in 2019. The final peak construction period, when many of the planned projects are under construction, produces a change in real disposable personal of almost \$65 million in 2025. After the end of construction in 2028, changes in real disposable personal income levels drop to about \$13 million for the remainder of the study period.

Figure 20: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Stanislaus County, 2006 – 2050 (million's 2008's)

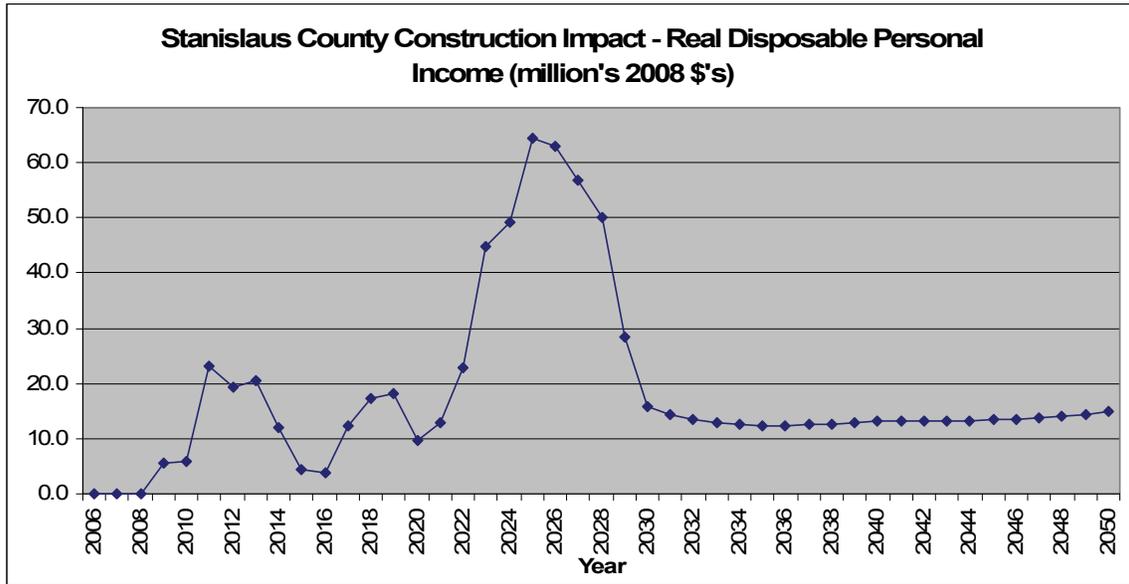


Figure 21 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in Stanislaus County. The initial phases of construction produce a peak output level of \$79 million in 2011. The second peak level of construction investments generates a peak output level of roughly \$53 million in 2019. The several large projects that close out the construction schedule for Stanislaus County produce a peak change in output of almost \$206 million in 2025. Following the end of construction in 2029, changes in output levels fall to an average of roughly \$14 million for the remainder of the study period.

Figure 21: Yearly Change in Total Output from Construction Phase of Business Plan in Stanislaus County, 2006 – 2050 (million's 2008's)

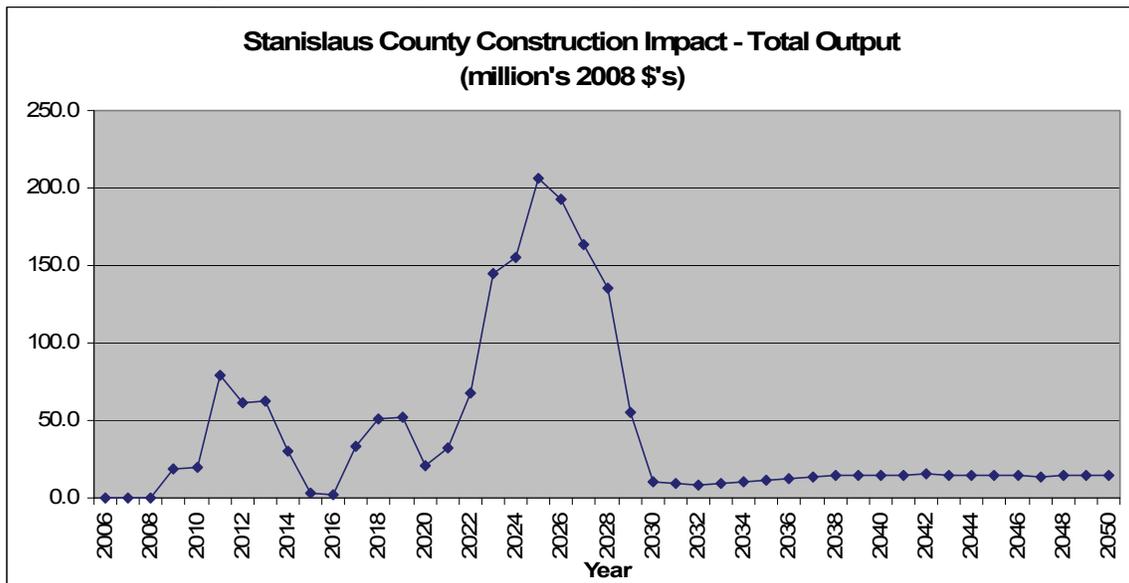


Table 18 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 in Stanislaus County. The average annual employment impact over the study period is 309 jobs. Total GRP generated by all the planned construction projects for CA-99 in Stanislaus County, over the entire study period, equals almost \$1.2 billion. Average annual change in GRP over the study period equals \$26 million. Total Change in real disposable personal income equals \$826 million; a yearly average of \$18.4. Change in total output reaches almost \$1.9 billion for the 2006-2050 period; a yearly average of \$41.4 million over the entire study period.

Table 18: Stanislaus County Total and Average Annual Impact of the Construction Phase of the Business Plan, (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		309
Gross Regional Product	\$1,172.3	\$26.1
Real Disposable Personal Income	\$826.3	\$18.4
Output	\$1,861.6	\$41.4

Tulare County

Project Description

The construction phase of the Business Plan for CA-99 in Tulare County begins in 2010 and extends to 2029. Total Construction costs are \$987.3 million and include a total of 10 projects. Table 19 provides a description of each construction project for CA-99 in Tulare County. The projects range in cost from \$46 million to construct a new interchange at Commercial Avenue (at the Agri-Center) to \$187.6 million for the final project; the widening of CA-99 from the Kern County line to South of Tipton.

Table 19: Description of Construction Projects for CA-99 in Tulare County

FROM	TO	PROJECT DESCRPT.	PRIOR CAT	Begin Construction Year	End Construction Year	Total Cost (thousand's)	Costs Per Year (thousand's)
Kern Co Line	South of Tipton	Widen From 4F to 6F	2	2026	2029	\$187,800	\$46,950
South of Tipton	Avenue 200	Widen From 4F to 6F	2	2025	2027	\$137,000	\$45,667
at Commercial Avenue	at Agri-Center	Construct New Interchange	4	2018	2020	\$46,700	\$15,567
Paige Ave Interchange		Reconstruct Interchange	3	2016	2018	\$53,500	\$17,833
Avenue 200	Prosperity Ave	Widen from 4F to 6F	2	2016	2018	\$90,500	\$30,167
Cartmill Ave Interchange		Reconstruct Interchange	3	2010	2012	\$48,500	\$16,167
Caldwell Interchange		Reconstruct Interchange	3	2018	2020	\$36,800	\$12,267
Prosperity Avenue OC	N. Goshen OH	Widen from 4 F to 6 F	2	2011	2014	\$173,200	\$43,300
Betty Dr Interchange		Reconstruct Interchange	3	2015	2017	\$40,100	\$13,367
N. Goshen OH.	Conejo Avenue	Widen From 4F to 6F	2	2011	2014	\$173,200	\$43,300
TOTAL COST						\$987,300	

Note: Data in this table should not be used to make project programming decisions

LEGEND	
Fully Funded (Not to const)	Not Funded - 4F to 6F
Partially Funded	Not Funded - 6F to 8F & Ops Projs
Rte 99 Bonds-Funded	In Construction
Other-Meas. Funds Eligible	Constructed

Economic Impact Results

There are three major time periods when the construction phase of the Business Plan will produce peak economic impacts in the Tulare County economy. The initial set of construction projects produce a peak economic impact in 2012. The second phase of construction projects produce a peak economic impact in 2018, while the final period of construction projects peak in 2027.

Figure 22 shows the impact on employment on a yearly basis, resulting from the construction phase of the Business Plan for Tulare County. During the first peak impact period, employment levels reach 675 jobs in 2012. The second peak impact period of construction projects result in 787 jobs in 2018. The final peak period, closing out the construction schedule, produces 504 in 2027. As the construction program ends in 2029, employment change drops to 49 jobs by 2050.

Figure 22: Yearly Change in Employment from Construction Phase of Business Plan – Tulare County 2006-2050

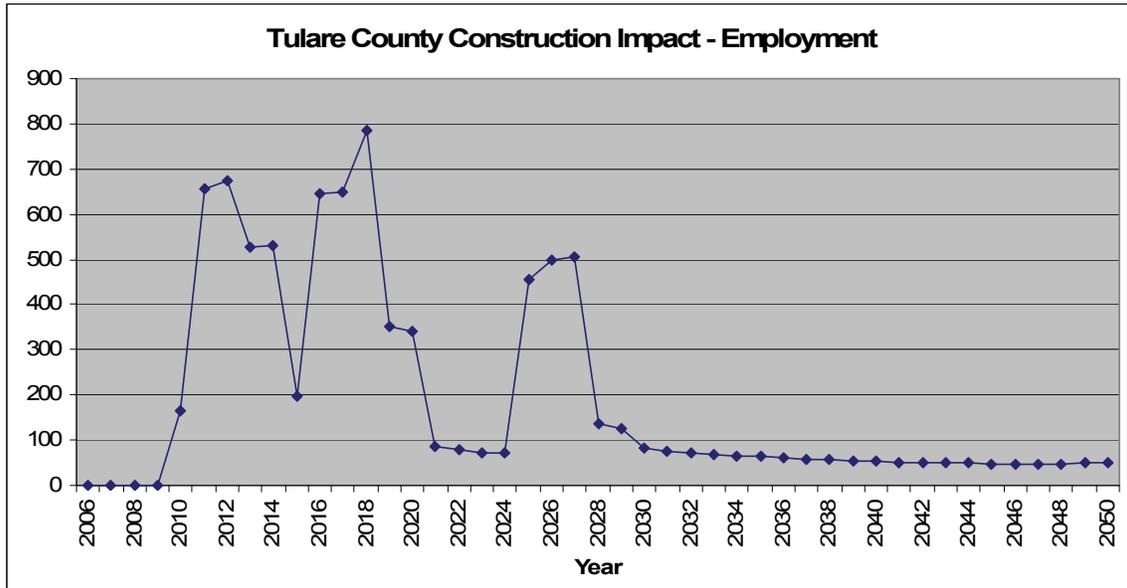


Figure 23 shows the yearly change in gross regional product (GRP) during the study period, resulting from the construction phase of the Business Plan for CA-99 in Tulare County. During the first peak in construction investment, GRP reaches almost \$33 million in 2014. The second peak in construction impact generates \$50 million in GRP in 2018. This is followed by the final peak in construction investments, when GRP reaches \$37 million in 2027. After the completion of the final construction projects in 2029, GRP averages around \$5 million for the remainder of the study period.

Figure 23: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Tulare County, 2006 – 2050 (million's 2008's)

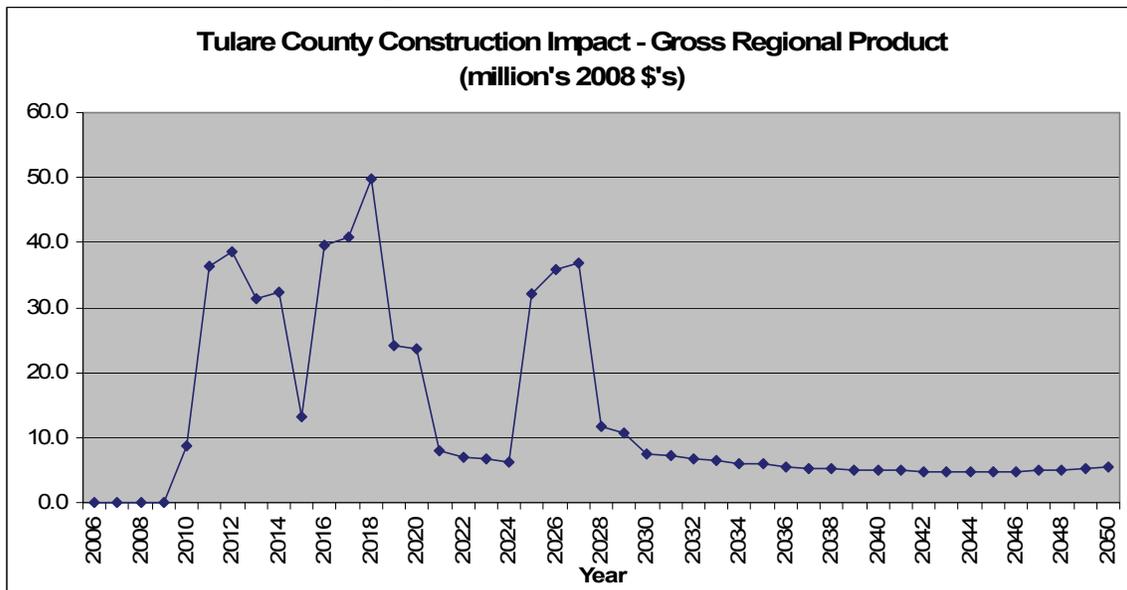


Figure 24 shows the yearly change in real disposable personal income resulting from the construction phase of the Business Plan for CA-99 in Tulare County. The initial phase of construction projects produces a peak real disposable income level of \$23 million in 2014. The second peak period in planned construction produces a maximum change in real disposable income of \$34 million in 2018. The final peak construction period, produces a change in real disposable personal of \$26 million in 2027. After the end of construction in 2029, changes in real disposable personal income levels fall to \$10 million in 2050.

Figure 24: Yearly Change in Real Disposable Personal Income from Construction Phase of the Business Plan in Tulare County, 2006 – 2050 (million's 2008's)

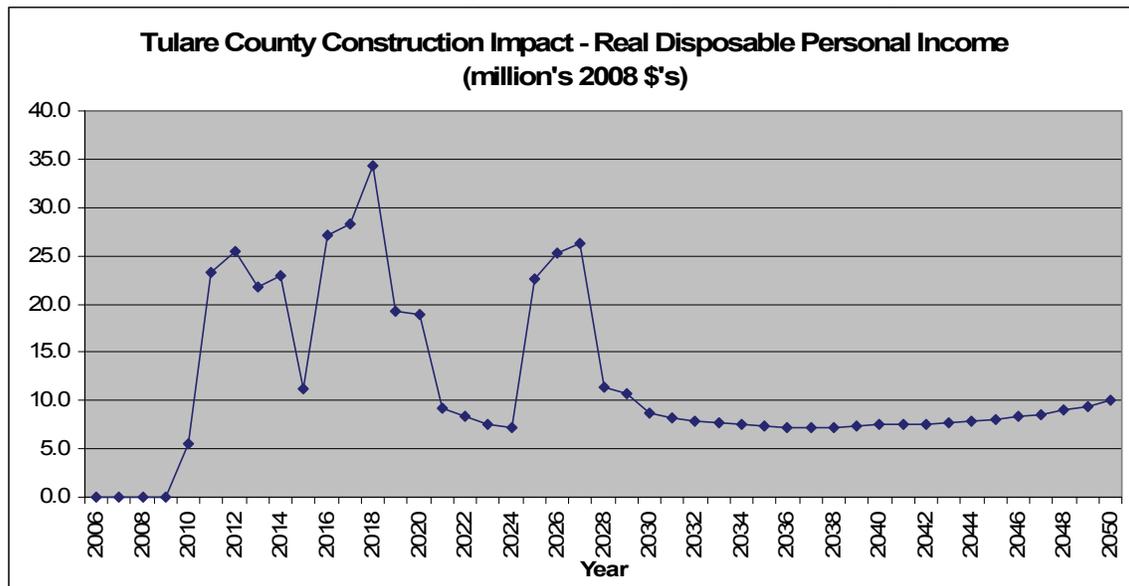


Figure 25 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 in Tulare County. The initial phases of construction produce a peak output level of \$67 million in 2012. The second peak level of construction investments, generate a peak output level of roughly \$82 million in 2018. The projects that close out the construction phase of the Business Plan for Tulare County, produce a peak change in output of \$59 million in 2027. Following the end of construction in 2029, changes in output levels fall to \$7 million in 2050.

Figure 25: Yearly Change in Total Output from Construction Phase of the Business Plan in Tulare County, 2006 – 2050 (million's 2008's)

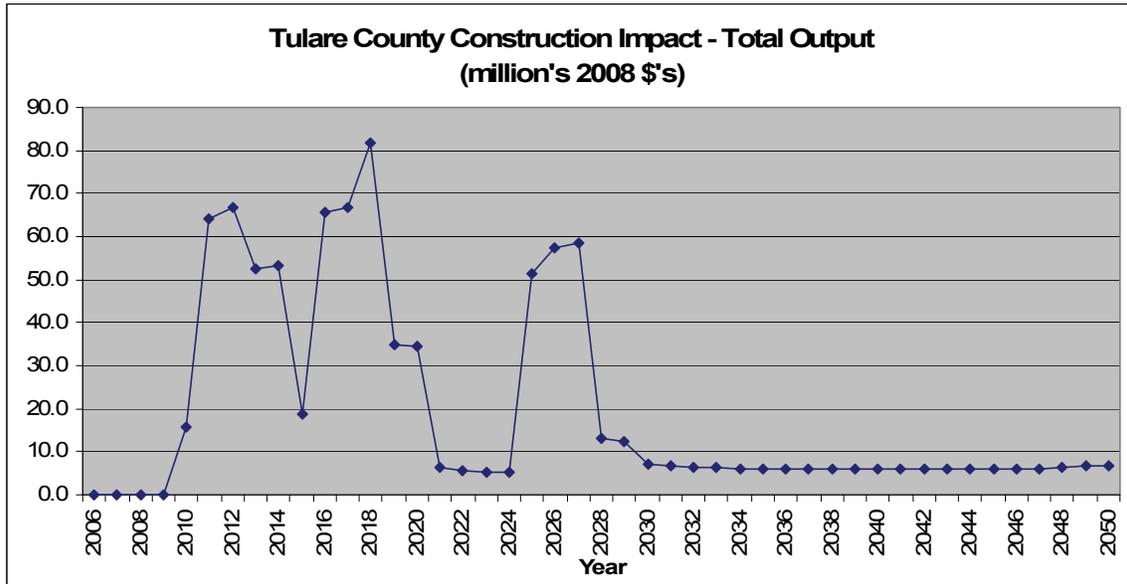


Table 20 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 in Tulare County. The entire study period produces an average annual employment impact of 194 jobs. Total GRP generated by all the planned construction projects for CA-99 in Tulare County, over the entire study period equals roughly \$609 million. Average annual change in GRP over the entire study period equals \$13.5 million. Total change in real disposable personal income equals \$534 million; a yearly average of \$12 million over the entire study period. Change in total output reaches almost \$900 million for the 2006-2050 period; a yearly average of \$20 million.

Table 20: Tulare County Total and Average Annual Impact from the Construction Phase of the Business Plan (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		194
Gross Regional Product	\$609.1	\$13.5
Real Disposable Personal Income	\$533.9	\$11.9
Output	\$898.6	\$20.0

Total Region (Construction Phase)

Economic Impact Results

When all planned construction projects in the Business Plan for the entire study region are considered, there are three major time periods that will produce peak economic impacts in the regional economy. The first peak impact year is 2013, followed by 2018, and finally 2025, which produces the largest peak in economic impact.

Figure 26 shows the total impact on employment on a yearly basis, resulting from the construction phase of the Business Plan for the entire region. During the first peak impact period, employment levels reach 6,000 jobs in 2013. The second peak impact period of construction projects result in 2,931 jobs in 2018. The final peak period, when all planned construction projects are accounted for, produces 5,500 jobs in 2025. As the entire construction phase of the Business Plan for CA-99 ends in 2029, employment change drops to 448 jobs by 2050.

Figure 26: Yearly Change in Employment from Construction Phase of Business Plan – Total Region 2006-2050

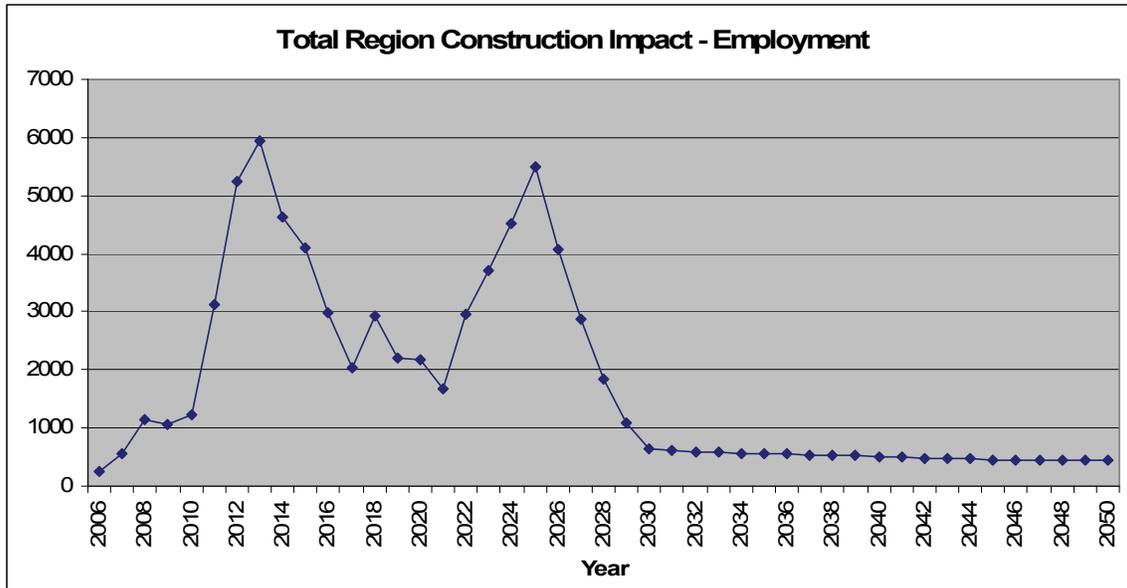


Figure 27 shows the yearly change in gross regional product (GRP) during the study period, resulting from the total construction phase of the Business Plan for CA-99 in seven County region. During the first peak in construction investment, GRP reaches almost \$404 million in 2013. The second peak in construction impact generates \$205 million in GRP in 2018. As the final phases of construction culminate across the region, the greatest peak economic impact is reached, resulting in a change in GRP of \$422 million in 2026. After the completion of the final construction projects in 2029, GRP falls to roughly \$53.5 million in 2050.

Figure 27: Yearly Change in Gross Regional Product from Construction Phase of Business Plan in Total Region Area, 2006 – 2050 (million's 2008's)

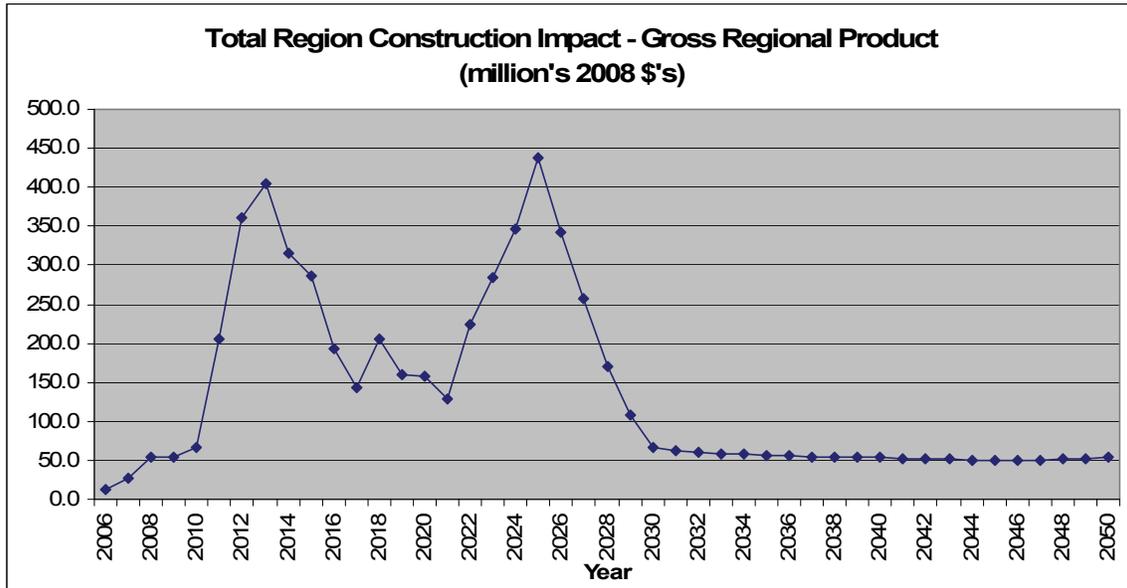


Figure 28 shows the yearly change in real disposable personal income resulting from the construction phase of the Business Plan for CA-99 across the seven County region. The initial phase of planned construction projects produces a peak real disposable income level of \$238 million in 2013. The second peak period in planned construction across the region produces a maximum change in real disposable income of \$143 million in 2018. The final peak construction period, when many of the planned projects are under construction, produces in a change in real disposable personal of over \$254 million in 2025. After the completion of the total construction phase of the Business Plan, changes in real disposable personal income levels remain at the \$67 million to \$90 million range for the remainder of the study period.

Figure 28: Yearly Change in Real Disposable Personal Income from Construction Phase of Business Plan in Total Area Region, 2006 – 2050 (million's 2008's)

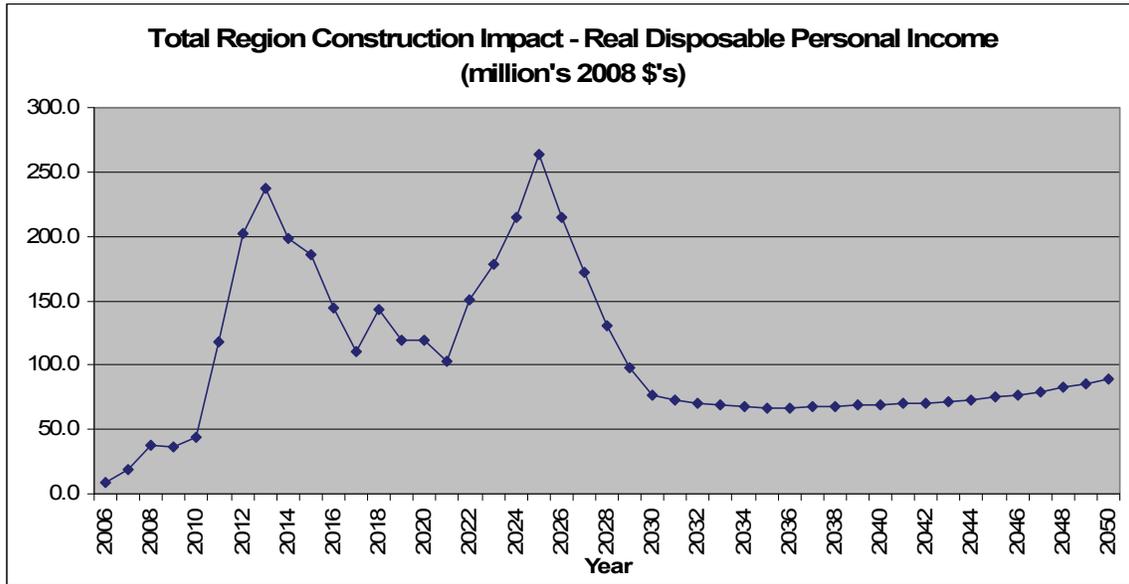
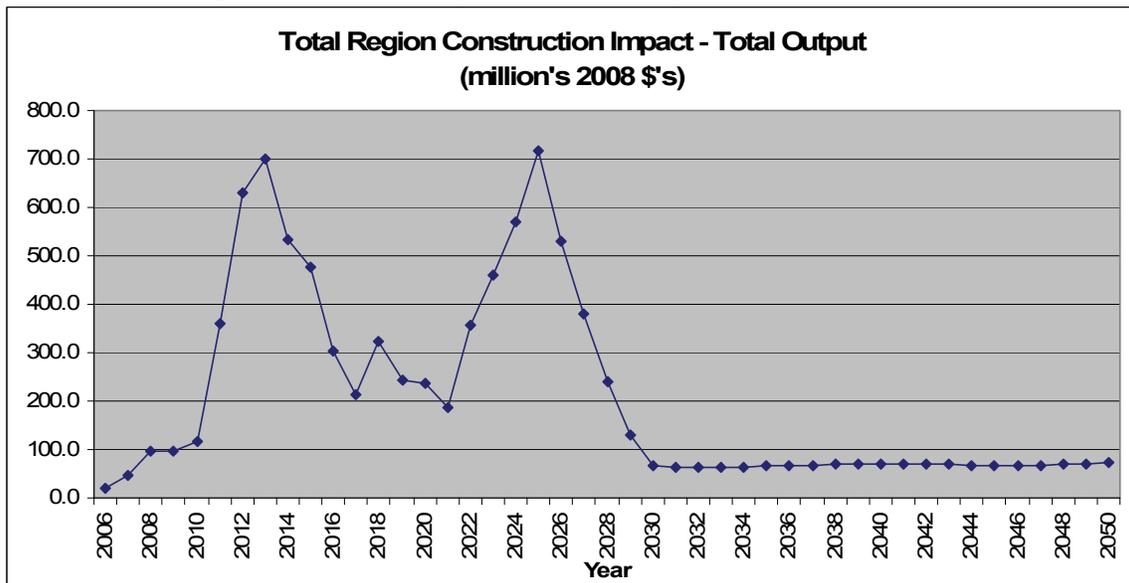


Figure 29 shows the yearly change in total output resulting from the construction phase of the Business Plan for CA-99 across the entire seven County region. The initial phases of construction produce a peak output level of \$701 million in 2013. The second peak level of construction investments, across the region, generates a peak output level of roughly \$322 million in 2018. The projects that close out the construction phase of the Business Plan for the region produce the greatest economic impact, reaching \$718 million in 2025. Following the end of construction in 2029, output levels remain above \$65 million for the remainder of the study period.

Figure 29: Yearly Change in Total Output from Construction Phase of the Business Plan in Total Area Region, 2006 – 2050 (million's 2008's)



As mentioned above, San Joaquin County benefits from the greatest economic impact resulting from the construction phase of the Business Plan for CA-99, among all counties. Table 21 shows the percent of total economic impact, by county, of the construction phase of CA-99. Of all jobs created by the construction phase of the Business Plan for CA-99, 24% are in San Joaquin County. Stanislaus County ranks next, in terms of job creation, representing 18% of the total. A total of 26% of the GRP created occurs in San Joaquin County and 25% of the total real disposable personal income is also generated there. Kern County receives the smallest economic impact from the construction phase of the Business Plan, among all counties, 7% of the total in all economic indicators.

Table 21: Percent of Total Economic Impact of Construction Phase of Business Plan for CA-99 by County

County	Percent of Total Employment Impact	Percent of Total GRP Impact	Percent of Total Real Disposable Personal Income Impact	Percent of Total Output Impact
Fresno	17%	20%	17%	19%
Kern	7%	7%	7%	7%
Madera	9%	7%	7%	7%
Merced	15%	12%	15%	12%
San Joaquin	24%	26%	25%	26%
Stanislaus	18%	19%	17%	20%
Tulare	11%	10%	11%	10%

Table 22 shows the total and average annual economic impact of the construction phase of the Business Plan for CA-99 for the entire study region. The average annual employment impact during the study period, 2006 to 2050, is 1,746 jobs. Total GRP generated by all the planned construction projects for CA-99 in the region, over the entire study period, equals roughly \$6.1 billion, an average annual change of \$135 million. Total Change in real disposable personal income equals \$4.8 billion; a yearly average of \$106 million over the entire study period. Change in total output reaches \$9.4 billion for the 2006-2050 period; a yearly average of \$209 million.

Table 22: Total Region Total and Average Annual Impact from the Construction Phase of the Business Plan, 2006 - 2050 (Fixed Million's 2008 \$'s)

	Total 2006-2050	AVG Annual 2006-2050
Employment		1,746
Gross Regional Product	\$6,085	\$135
Real Disposable Personal Income	\$4,786	\$106
Output	\$9,383	\$209

3.1-2 Business Plan Access Improvements

In this report the business plan access improvements phase represents the long-term (or permanent) impacts that the construction projects will have on the San Joaquin Valley during the post construction time period. As noted earlier, the post construction time period extends from 2015 (when a number of construction projects will have been completed) to 2050, the end of the study period. Even though many projects will not have been completed by 2015, the completed projects will have begun to impact the region economically.

Several economic impact metrics are used to measure the effects on the regions economy during the post construction period. All the metrics used in the construction analysis will also be used here, and a few additional impact metrics will also be included (described below). Also for the business plan access improvements phase, the entire State of California and the rest of California region (outside the San Joaquin Valley) are included in the results.

Employment

As described in the approach and methodology section of this paper, employment can be defined as a measure of jobs held in the economy's of the counties and regions studied. The REMI model uses the Bureau of Economic Analysis (BEA) concept of employment, which accounts for full-time, part-time, and self-employed workers. Simulation results capture the direct, indirect, and induced employment impact of the project.

Figure 30 represents the net incremental change to employment in the eight counties of the San Joaquin Valley, resulting from the access improvements of the Access Improvement phase of the Business Plan for CA-99. Fresno County experiences the largest gain and fastest growth in employment over the 2015 to 2025 time period. Fresno County is followed by Stanislaus County, Kern County, and San Joaquin County in employment growth. As mentioned earlier Fresno County, the economic hub of the San Joaquin Valley, contains the regions largest city, Fresno, and Stanislaus, Kern, and San Joaquin Counties also contain the major cities that make up the region.

Figure 30: Net Employment Impact of Access Improvement phase by County 2015 - 2025

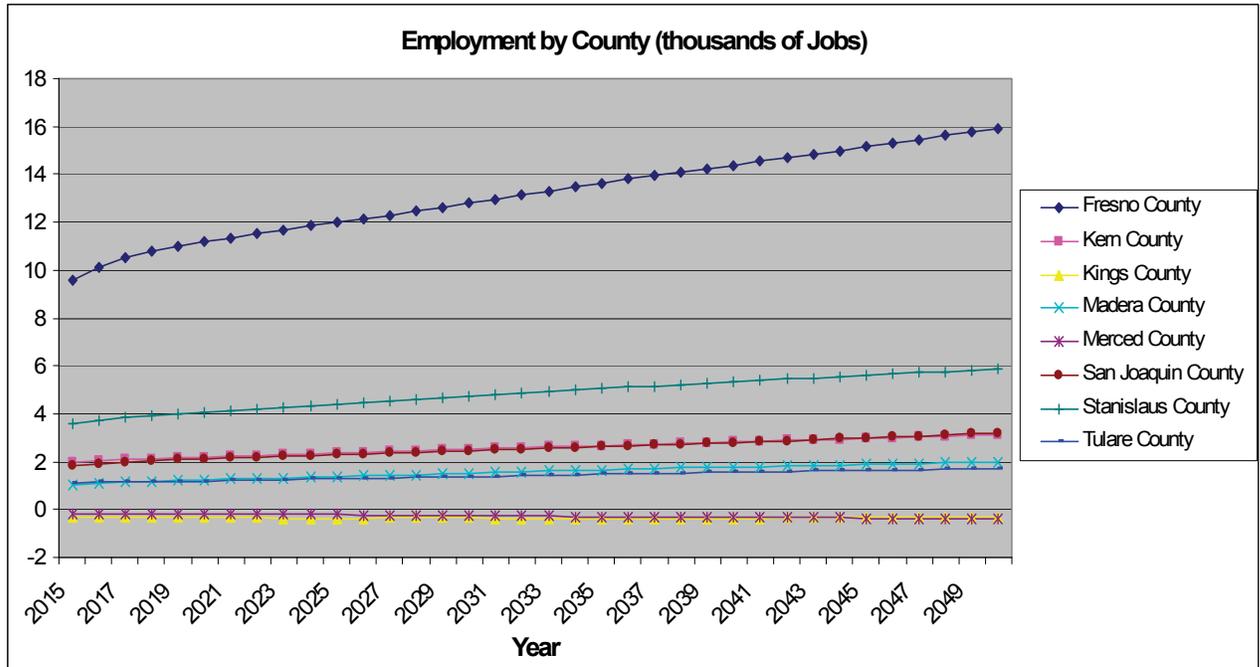


Figure 31 shows the net incremental change to employment for the eight counties of the San Joaquin Valley, as a whole, and for the State of California. The eight county region gains a greater number of jobs than California as a whole, indicating a reduction of job potential for the rest of California region outside of the San Joaquin Valley. As the attractiveness of the San Joaquin Valley grows (as a location for business), due to the access improvements made to CA-99, jobs from the surrounding regions of California will relocate to the Valley, leading to a loss of jobs in the rest of California. The net impact, however, is still strong job growth for the state as a whole as the Valley becomes a growth center for the state.

Figure 31: Net Employment Impact of Access Improvement phase of the Business Plan by Region 2015 - 2050

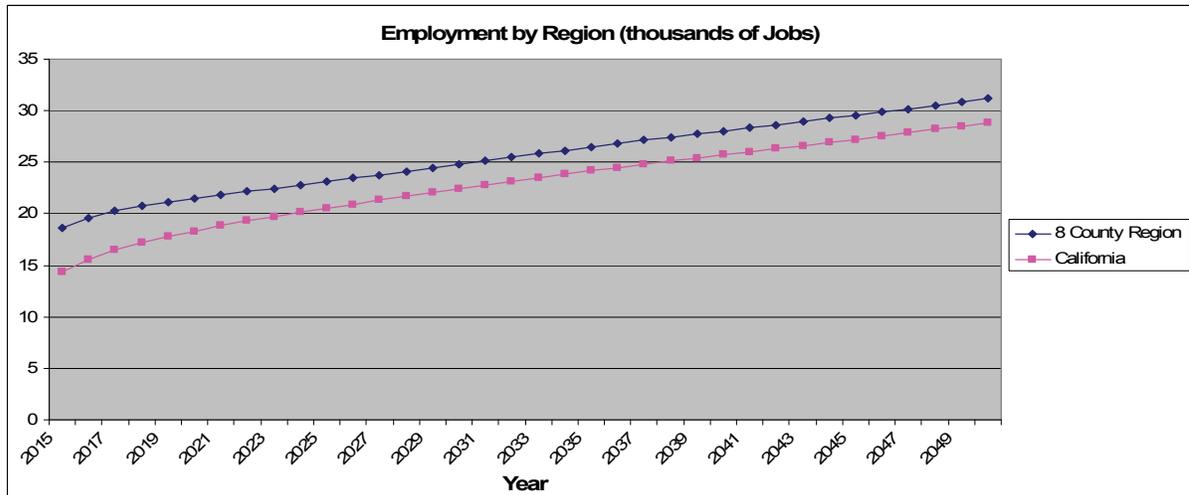


Table 23 provides details on the average change in employment for the eight counties separately, as a region, and for the rest of California and the state as a whole. As indicated above, Fresno County, by far, experiences the greatest employment growth as a result of the access improvements of the Business Plan for CA-99. Across the 2015 to 2050 period, Fresno County is estimated to have an average employment gain of 13,147 jobs. Fresno County is followed by Stanislaus County (4,844 jobs), Kern County (2,584 jobs), and San Joaquin County (2,543 jobs). Two Counties, Kings and Merced, are projected to have very slight decreases in employment levels across the time period, -345 and -273 jobs, respectively. Kings and Merced County are among the two smallest counties in the San Joaquin Valley area (the other being Madera County) in both population and number of jobs. The loss of jobs in Kings and Merced County's are primarily in retail trade, natural resources, construction and in the case of Merced County, health care. Almost all other industry sectors in Kings and Merced County's show increases in employment. The loss of employment in these two small counties may be a result of employment shifts from Kings and Merced County's into the other larger and higher growth areas of the San Joaquin Valley, particularly Fresno County which lies in between these two counties. It should also be noted that CA-99 does not run directly through Kings County, thus, the benefits of direct highway access are absent.

The loss of jobs in the two counties mentioned above are, however, extremely minor when measured in the context of the entire region. The eight county, San Joaquin Valley, region as a whole is projected to gain an average of 25,495 jobs across the 2015 -2050 time period, while the rest of California is expected to lose an average of 2,622 jobs; the net gain for the State of California equals 22,874 jobs.

Table 23: Average Employment Impact from Access Improvement phase of the Business Plan by County and Region 2015–2050

County / Region	Average Employment Change 2015 - 2050
Fresno County	13,147
Kern County	2,584
Kings County	-345
Madera County	1,571
Merced County	-273
San Joaquin County	2,543
Stanislaus County	4,844
Tulare County	1,424
8 County Region	25,495
Rest of California	-2,622
California	22,874

Table 24 shows the average employment impact by industry sector for the San Joaquin Valley as whole, over the 2015 to 2050 time period. The largest percent gain in employment can be found in industries that supply services (health care, professional and

technical services, and administrative services). These employment gains are a secondary effect of the reduced operating costs, and from an increase in labor productivity for businesses that export, namely manufacturing, oil extraction, and agriculture. As export based industries sell more to out-of-state buyers, the employment and disposable income increases, thereby placing demands on the Valley's service sectors. This impact is classified as an induced employment impact (an impact that is derived from increased consumption). The increase in labor productivity, discussed in more detail later in this section, is a direct result of the improvement in transportation access and travel time savings, from the upgrades to CA-99.

Table 24: Average Employment Impact of Access Improvement phase of the Business Plan by Industry Sector for 8 County San Joaquin Valley Region, 2015 – 2050

Industry Sector	% of Employment Impact
Health Care, Social Asst	14.1%
Profess, Tech Services	11.1%
Admin, Waste Services	8.6%
State & Local Gov	8.5%
Real Estate, Rental, Leasing	8.0%
Retail Trade	7.6%
Manufacturing	7.3%
Accom, Food Services	6.9%
Construction	6.3%
Finance, Insurance	6.1%
Other Services (excl Gov)	5.3%
Educational Services	4.2%
Wholesale Trade	3.8%
Transp, Warehousing	3.6%
Arts, Enter, Rec	3.0%
Information	1.7%
Mngmt of Co, Enter	1.0%
Utilities	0.4%
Mining	0.2%
Forestry, Fishing, Other	-7.6%

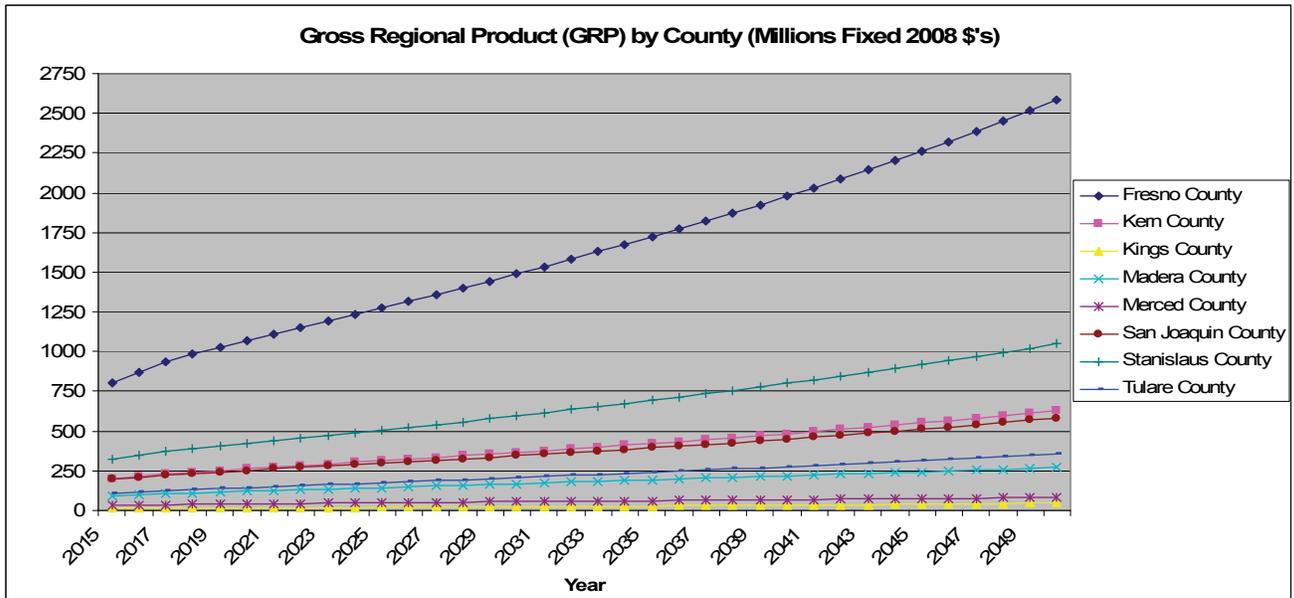
Gross Regional Product (GRP)

As also described in the approach and methodology section, gross regional product (GRP) is an economic accounting method that measures economic activity as a value-added or final demand concept. The value-added concept equals the output of the region, excluding intermediate inputs, and represents the compensation and profits within the regional economy. The final demand concept is equal to regional consumption + investment + government + (exports-imports). GRP is affected by changes in demand. As noted above, the access improvements from the Business Plan for CA-99 result in a reduction of operating cost to businesses in the San Joaquin Valley from increased productivity. Increased productivity in-turn leads to increased production levels and cost

saving in the production of goods and services. The long-term effect of this is that goods and services produced in the San Joaquin Valley become more attractive to buyers and an increase in demand for the Valley’s goods and services boosts GRP in the region.

Figure 32 and 33 show the incremental change to GRP by County and by region, respectively, over the study period. As with employment, Fresno County experiences the greatest growth in GRP, followed by Stanislaus, Kern, and San Joaquin Counties. The counties experiencing the greatest growth in GRP contain the largest and most diversified economies in the San Joaquin region. These counties contain the largest export based economies in the Valley and, thus, show the greatest growth in GRP.

Figure 32: Gross Regional Product Impact of Access Improvement phase of the Business Plan by County 2015 – 2050 (Millions Fixed 2008 \$’s)



The San Joaquin Valley as a whole shows strong growth in GRP across the study period, reaching just over \$5.6 billion in 2050. Since there is a small decrease in GRP in the rest

of California region, as jobs from the surrounding regions of California are drawn to the San Joaquin Valley, the state as a whole experiences slightly smaller growth in GRP, roughly \$5.4 billion in 2050.

Figure 33: Gross Regional Product Impact of Access Improvement phase of the Business Plan by Region 2015 – 2050 (millions Fixed 2008 \$'s)

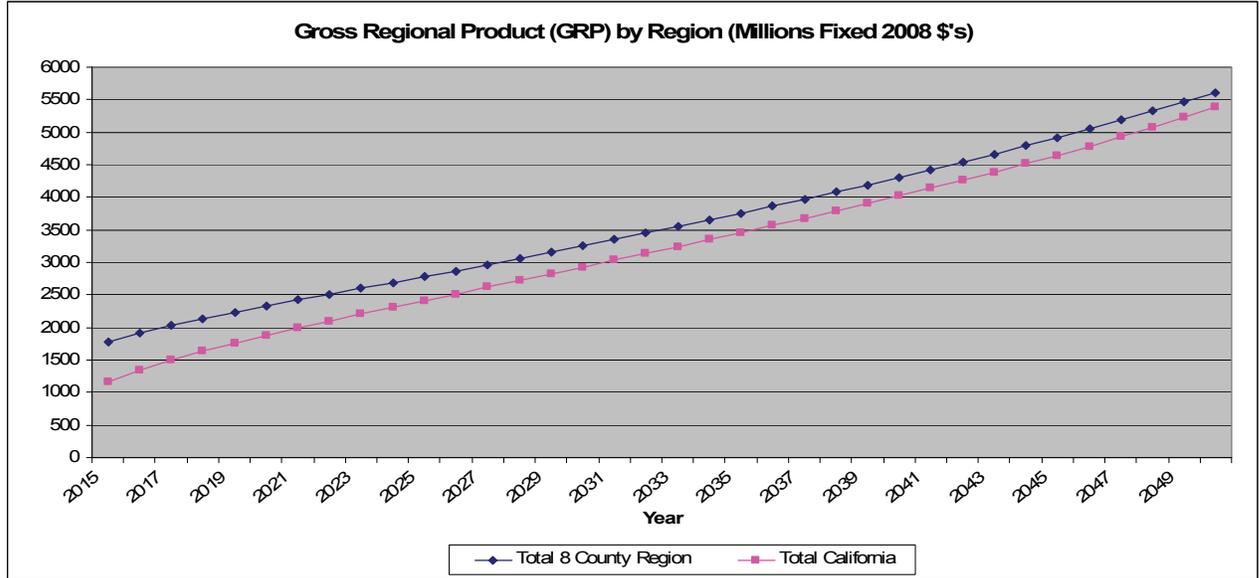


Table 25 shows the total and average yearly GRP change by county and region as a result of the access improvements from the Business Plan for CA-99. The total cumulative GRP change for Fresno County during the 2015 to 2050 time period is \$59.1 billion; an average yearly change of \$1.6 billion. Fresno County is followed by Stanislaus County where GRP growth will total a projected \$23.8 billion; a yearly average of \$661 million over the 2015 to 2050 period. The San Joaquin Valley as a whole, is projected to gain a total of \$128.8 billion in GRP from 2015 to 2050; a yearly average of \$3.6 billion. The net impact on the State of California is \$116.4 billion in GRP across the entire study period; a yearly average of \$3.2 billion. It should be noted that even though employment is projected to decrease slightly in Kings and Merced County's, GRP change is still positive for both counties. The reason for this is that the industry sectors that experienced drops in employment in Kings and Merced County were primarily lower wage and lower productivity sectors, such as retail trade, natural resources and some service sector industries, while employment gains were experienced in higher GRP yielding industries such as manufacturing, professional services, and finance. When measured by GRP, the gains in these higher productivity industries out-weighted the losses in the lower productivity sectors.

Table 25: Total and Average Yearly Gross Regional Product (GRP) Change from Access Improvement phase of the Business Plan, by County and Region 2015 – 2050 (Millions 2008 \$'s)

County / Region	Total GRP Change 2015 - 2050 (Millions 2008 \$'s)	Yearly AVG GRP Change 2015 - 2050 (Millions 2008 \$'s)
Fresno County	59,148	1,643
Kern County	14,475	402
Kings County	990	28
Madera County	6,539	182
Merced County	2,099	58
San Joaquin County	13,580	377
Stanislaus County	23,803	661
Tulare County	8,193	228
8 County Region	128,827	3,579
Rest of California	-12,447	-346
California	116,381	3,233

The varying links between employment and GRP, as seen in the example of Kings and Merced County (discussed above), can be further witnessed by comparing Table 26 and Table 24. Table 26 (below) reports average percent changes to GRP-Value Added by major industry sector. Although employment and GRP are linked, the percent change in one category is not always equivalent in the other category. For instance, Table 26 shows that the manufacturing sector receives over 12% of the benefits as measured by GRP-value added, while its employment impact is just 7.3% of total employment (see Table 24).

This distinction calls our attention to how each sector of the economy has different output per worker rates (commonly called labor productivity rates). Highly productive sectors, such as the manufacturing, require fewer units of labor to produce a dollar equivalent amount of product versus a lower productivity sector. It is this connection between output and labor that determines total employment needs. Conversely, the health care and social assistance industry receives only 8.6% of the GRP-value added but receives the highest share (14.1%) of employment gains. The reason for this can be traced to the lower productivity rates within the industry and induced employment gains due to consumer spending. Kings and Merced County's provide perfect examples of this distinction; GRP change is positive while employment change is negative.

Table 26: Average Gross Regional Product (GRP) Impact from Access Improvement phase of the Business Plan, by Industry Sector, 8 County Region, 2015 – 2050

Industry Sector	% or GRP Impact
Real Estate, Rental, Leasing	14.9%
Manufacturing	12.1%
Wholesale Trade	11.5%
Retail Trade	10.4%
Health Care, Social Asst	8.6%
Finance, Insurance	7.6%
Profess, Tech Services	6.8%
Information	5.5%
Construction	4.6%
Admin, Waste Services	3.8%
Transp, Warehousing	3.6%
Mngmt of Co, Enter	2.6%
Other Services (excl Gov)	2.6%
Utilities	2.0%
Accom, Food Services	1.7%
Arts, Enter, Rec	0.9%
Educational Services	0.7%
Mining	0.5%
Forestry, Fishing, Other	-0.4%
Total	100.0%

Output

Output, again defined earlier, is the amount of production, including all intermediate goods purchased as well as value added (compensation and profit). Output can also be described as sales or supply. The components of Output are Self Supply and Exports (Multi-regions, Rest of Nation, and Rest of World). Output is affected by changes in industry Demand in all regions in the nation, the home region’s share of each market, and international exports from the region. For example, an increase in Output is caused by an increase in Demand, an increase in market share, or an increase in international exports.

Figure 34 shows the incremental change in output by county for the study period as a result of the access improvements in the Business Plan for CA-99. Again, Fresno County by far experiences the largest change in Output and the fastest growth, year to year. This is a directly related to the change in GRP, in which Fresno County also led, among the eight counties, in terms of absolute growth and the rate of growth. GRP is the value added component of Output, thus, a change in value added will directly affect Output. Stanislaus County ranks second in terms of change in Output on a yearly basis, followed by San Joaquin County and Kern County, which experience virtually the same change in Output.

Figure 34: Total Output Change from Access Improvement phase of the Business Plan, by County 2015 – 2050 (Millions Fixed 2008 \$'s)

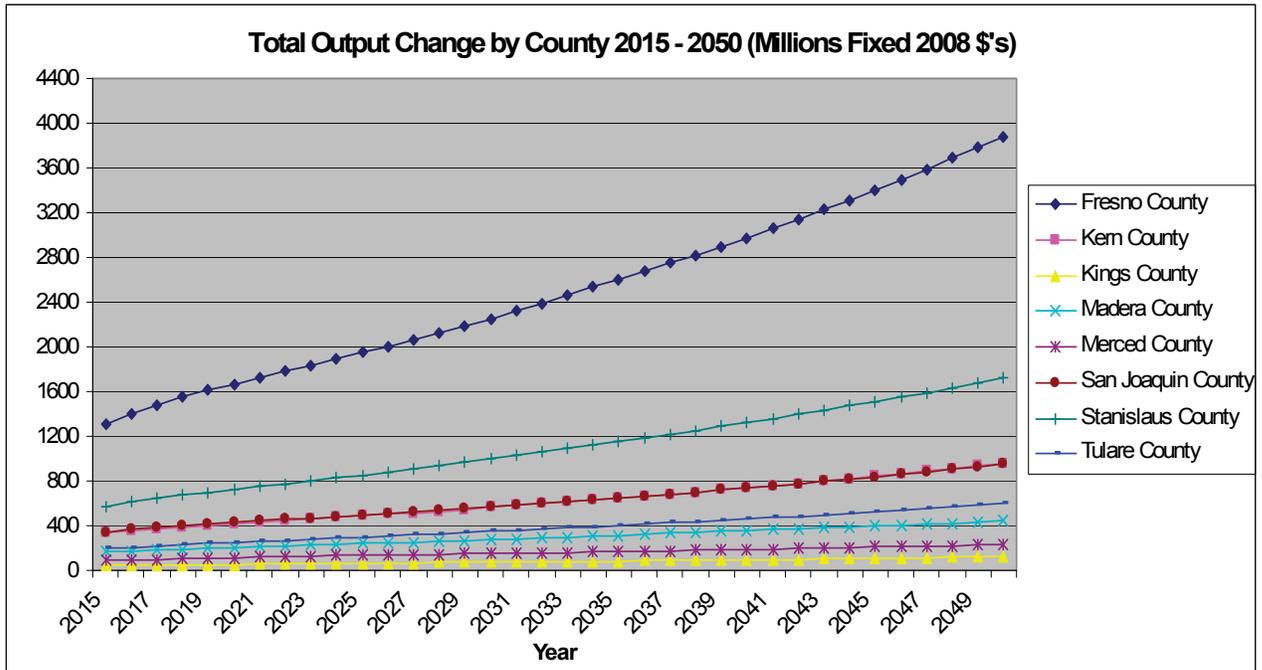


Figure 35 shows the change in Output by region, the San Joaquin Valley as a whole, and California. As with the other economic indicators shown in the Business Plan Access Improvements section of this report, California as a whole experiences a slightly smaller change in Output than the San Joaquin Valley, indicating a small drop in the rest of California region.

Figure 35: Total Output Change from Access Improvement phase of the Business Plan, by Region 2015 -2050 (Millions Fixed 2008 \$'s)

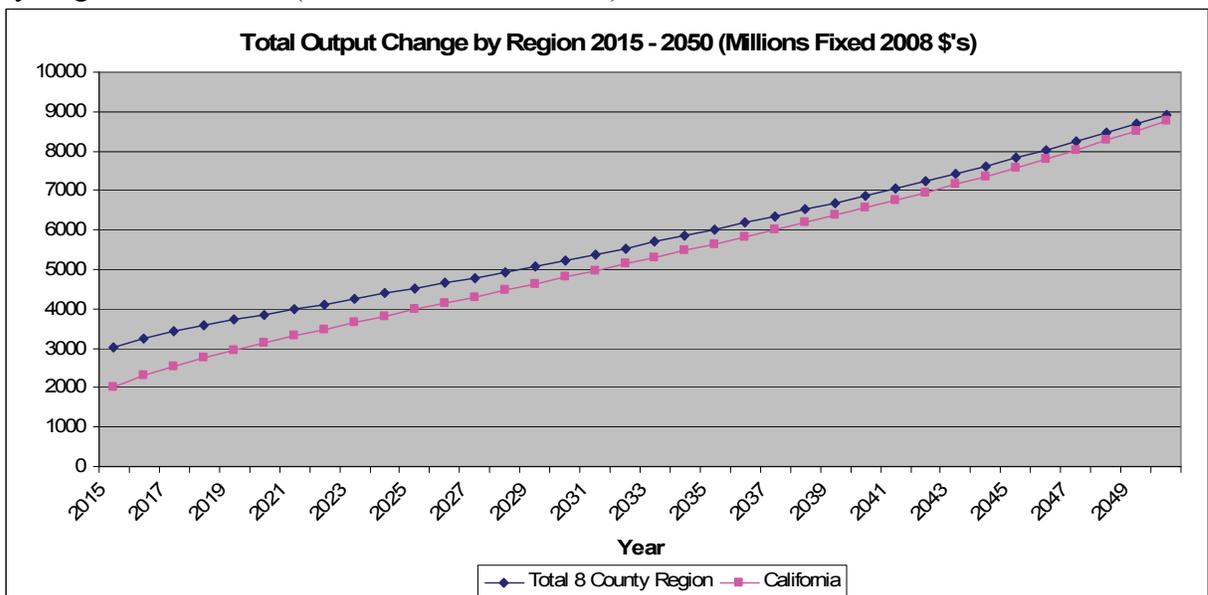


Table 27 displays the total Output change and yearly average change for each county and region during the 2015 to 2050 time period. As mentioned above, Fresno County benefits from the greatest change in Output, totaling almost \$90 billion during the time period; a yearly increase of almost \$2.5 billion. Stanislaus County is the only other county to have a average yearly change in Output over \$1 billion. The San Joaquin Valley as a whole experiences an increase in Output of \$207 billion during the time period and California’s output grows by \$191 billion; a yearly average of \$5.8 billion and \$5.3 billion, respectively.

Table 27: Total and Yearly Average Output Change from Access Improvement phase of the Business Plan, by County and Region 2015 – 2050 (Millions Fixed 2008 \$’s)

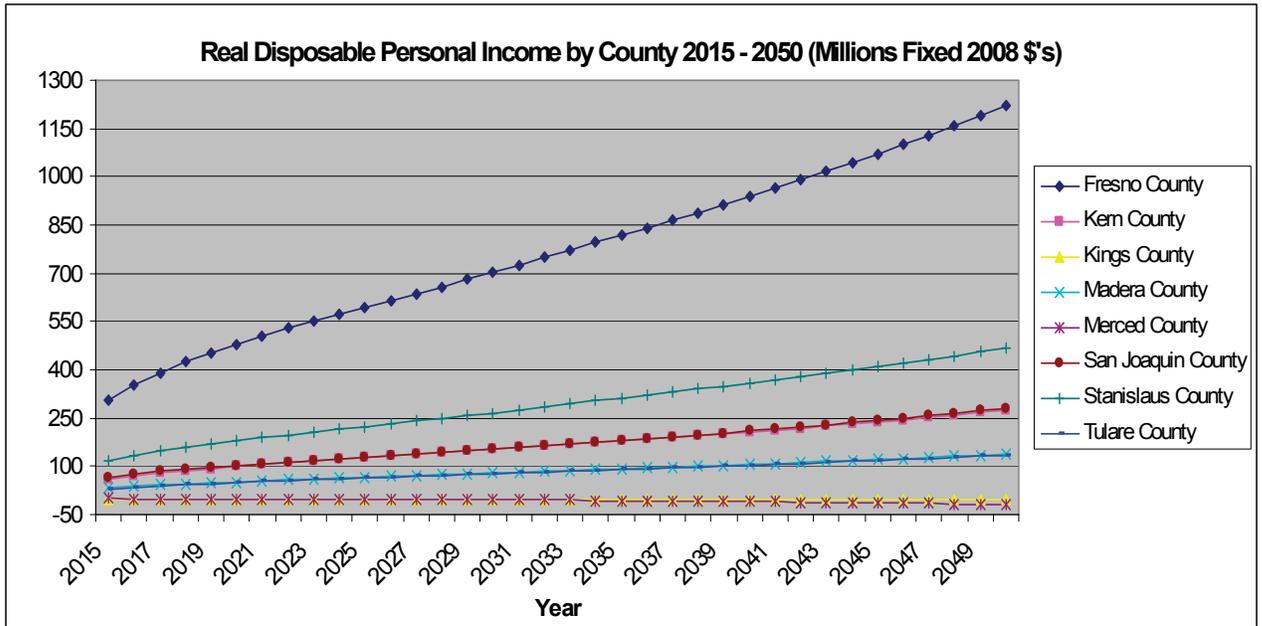
County / Region	Total Output Change 2015 - 2050 (Millions 2008 \$’s)	Yearly AVG Output Change 2015 - 2050 (Millions 2008 \$’s)
Fresno County	89,824	2,495
Kern County	22,277	619
Kings County	2,876	80
Madera County	10,725	298
Merced County	5,790	161
San Joaquin County	22,449	624
Stanislaus County	39,654	1,101
Tulare County	13,731	381
8 County Region	207,327	5,759
Rest of California	-16,358	-454
California	190,973	5,305

Real Disposable Personal Income

Real Disposable Personal Income, also explained earlier, is a measurement of after-tax income, a large portion of which is spent in the regional economy. This concept can be loosely interpreted as “take home” pay. Personal Income is primarily derived from wage and salary disbursements (paychecks), transfer payments from government to individuals, dividends, interest, rents, and proprietors’ income. Contributions to social insurance programs and income taxes are subtracted from personal income with the end product being disposable personal income.

Figures 36 and 37 provide information on the annual change in real disposable personal income in the eight counties of the San Joaquin Valley and the region and California as a whole. All Counties, except two (Kings and Merced), show moderate to strong growth in real disposable personal income growth. The slight drop in real disposable personal income in Kings and Merced County’s are a direct relation to the small drop in employment experienced by these counties during the 2015 to 2050 period (described above in the employment section) and a drop in population.

Figure 36: Real Disposable Personal Income Change from Access Improvement phase of the Business Plan, by County 2015 – 2050 (Millions Fixed 2008 \$'s)



Real disposable personal income drives regional consumption, and as the economy reacts to the increase in demand for labor, employment increases in most sectors. In addition, average annual compensation rates (wage and salary plus benefits) also increase as a result the increase in demand for labor. The combined effect of increased employment and a higher compensation rate provides the San Joaquin Valley region with more discretionary income.

Figure 37: Real Disposable Personal Income Change from Access Improvement phase of the Business Plan, by Region 2015 – 2050 (Millions Fixed 2008 \$'s)

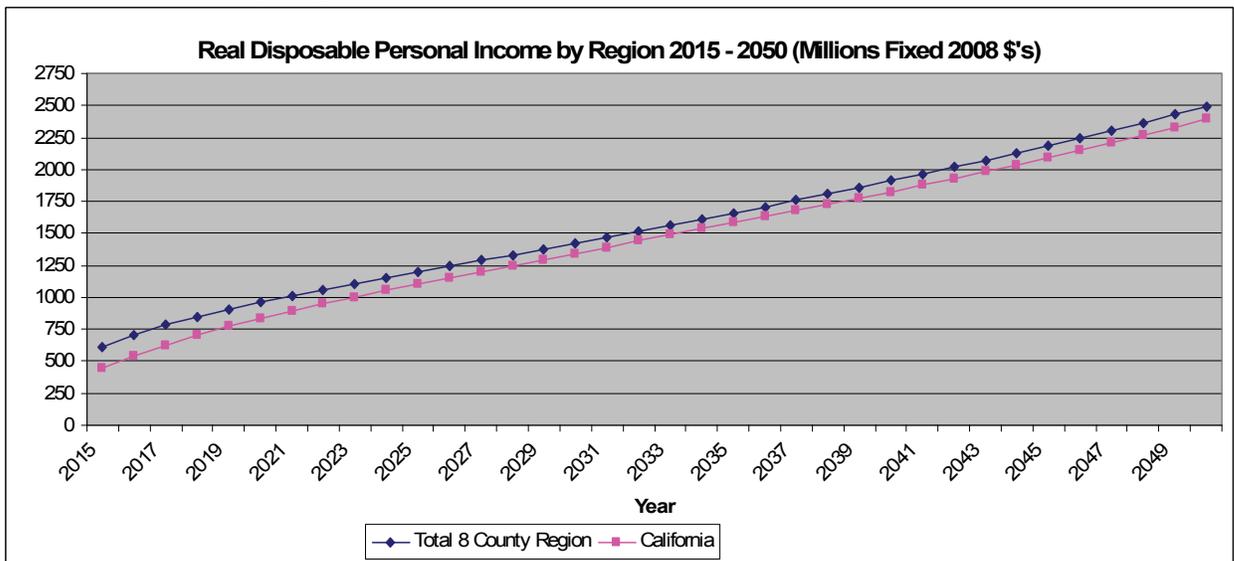


Table 28 shows the total and average yearly disposable income change for the counties and regions. The access improvements resulting from the Business Plan for CA-99 will generate \$27.7 billion in total disposable income in Fresno County alone, during the 2015 to 2050 time period, a yearly average of \$768 million. As a whole San Joaquin Valley residents will benefit from \$56 billion in additional disposable income over the time period, an average of \$1.6 billion per year. The majority of this disposable income will be spent locally by the residents of the San Joaquin Valley leading to job growth in various industries throughout the economy.

Table 28: Total and Average Yearly Real Disposable Income Change from Access Improvement phase of the Business Plan, by County and Region 2015 – 2050 (Millions Fixed 2008 \$'s)

County / Region	Total Disposable Personal Income Change 2015 - 2050 (Millions 2008 \$'s)	Yearly AVG Disposable Personal Income Change 2015 - 2050 (Millions 2008 \$'s)
Fresno County	27,651	768
Kern County	6,030	168
Kings County	-110	-3
Madera County	3,098	86
Merced County	-227	-6
San Joaquin County	6,145	171
Stanislaus County	10,540	293
Tulare County	2,997	83
8 County Region	56,126	1,559
Rest of California	-3,633	-101
California	52,494	1,458

Often total disposable personal income changes are reported in per capita units since this format allows for easier interpretation of macroeconomic changes by the reader. Table 29 provides information on average annual per capita disposable income increases. Kings County, leads all counties of the San Joaquin Valley in average annual disposable income, even though its total disposable income declined. This can be explained by the changes in population in the county over the time period. As will be shown later, the population in Kings County is projected to decrease slightly over the 2015 to 2050 time period, as employment opportunities shift to higher growth areas in the San Joaquin Valley, discussed earlier. Although there is a decline in total disposable personal income in Kings County, the proportionally greater decline in population produces a positive per capita disposable personal income. The effect, that changes in population have on per capita disposable income, is also evident for Merced County which also has a negative change in total disposable personal income while on a per capita basis it is positive; Merced County is projected to lose population over the time period as well.

Table 29: Average Annual Real Disposable Income Per Capita Change from Access Improvement phase of the Business Plan, by County and Region 2015 – 2050 (Fixed 2008 \$'s)

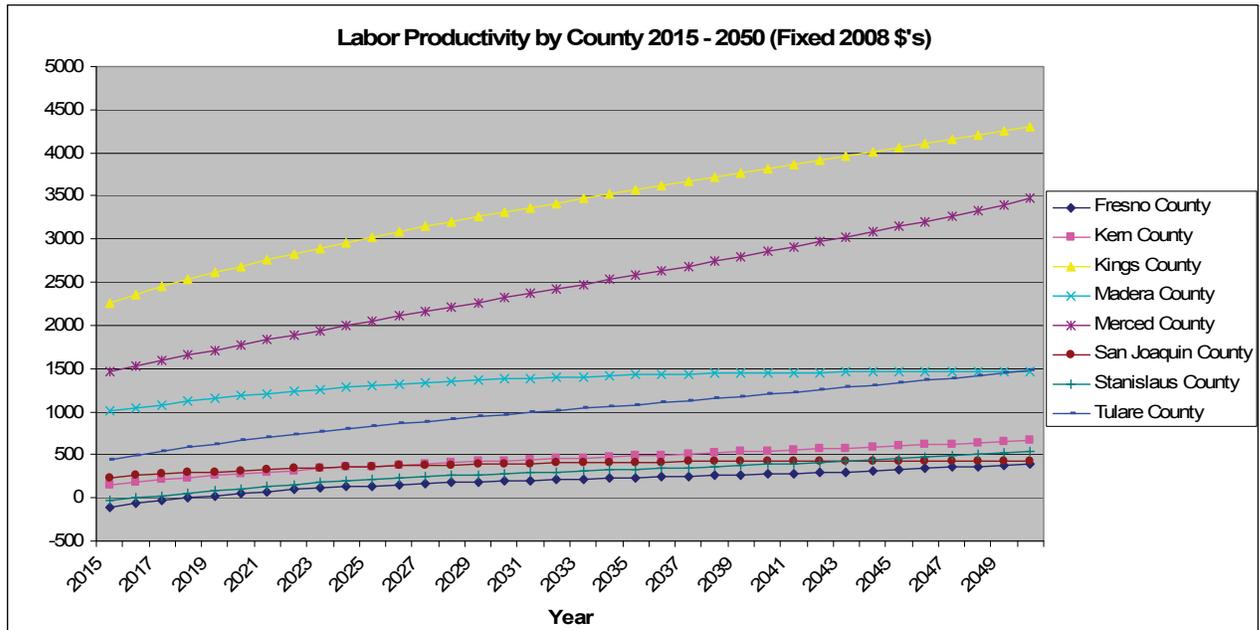
County / Region	Per Capita Change (\$'s)
Fresno County	57
Kern County	2
Kings County	123
Madera County	64
Merced County	68
San Joaquin County	15
Stanislaus County	34
Tulare County	28
Total 8 County Region	391
California	-10
Rest of California	3

Labor Productivity

Figures 38 and 39 show the incremental change in labor productivity for the counties and regions analyzed in this study for the 2015 to 2050 time period. Labor Productivity is defined as output per employee, and is calculated as output divided by Employment. Labor Productivity is affected by changes in relative labor intensity, labor access index, and national labor productivity. The improvements to CA-99 will increase the San Joaquin Valley's accessibility to the labor force, resulting in increased labor productivity. In addition, the changes in industry mix, as measured by the varying increases (or decreases) in employment levels by industry sector, also play a large role in the changes in labor productivity. In this case, it is these changes in industry mix that seem to be the dominant factor effecting labor productivity for the counties in the San Joaquin Valley.

In contrast to most of the other economic indicators analyzed for the post construction phase, Kings County and Merced County lead all counties in labor productivity increases while Fresno County, Stanislaus County, and San Joaquin County experience's the smallest increases. The varying changes in labor productivity, among the counties in the San Joaquin Valley, is predominantly a result of the changes in the industry mix (or employment levels by industry sector) in those counties. As mentioned earlier, Kings and Merced County's experience decreases of employment in lower productivity sectors, such as retail trade and some service sectors and experience increases of employment in high productivity sectors, such as manufacturing, finance, and professional services. The net result of this shift in employment levels by industry sector's, is a substantial increase in labor productivity for Kings and Merced County's. On a proportional basis, Fresno, Stanislaus, and San Joaquin Counties experience greater rates of employment gains in lower productivity sectors (such as retail) versus the employment gains in the higher productivity industry sectors; resulting in smaller labor productivity gains overall.

Figure 38: Labor Productivity Change from Access Improvement phase of the Business Plan, by County 2015 –2050 (Fixed 2008 \$'s)



Although the counties of the San Joaquin Valley experience varying degrees of Labor productivity change, the changes are all positive (except for Fresno County during the first four years of the study and Stanislaus County during the first two years of the study; beyond this all counties show positive increases in labor productivity for the remainder of the study period). As shown in figure 39, the net impact on the San Joaquin Valley as a whole is strong growth in labor productivity. California, in contrast, shows a decline in labor productivity. This can be a result of the shift in higher productivity industry sectors from other regions of California into the San Joaquin Valley, as the access improvements from the Business Plan make the valley more attractive to these types of businesses.

Figure 39: Labor Productivity Change from Access Improvement phase of the Business Plan, by Region 2015 – 2050 (Fixed 2008 \$'s)

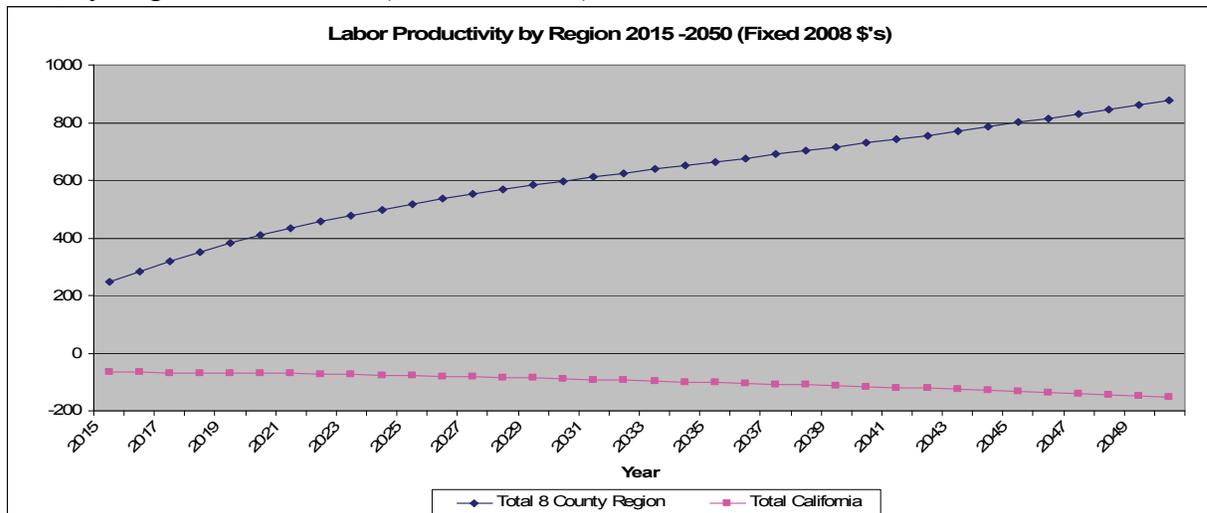


Table 30 shows the yearly average change in labor productivity for each county and region across the 2015 to 2050 time period, as a result of the Business Plan access improvements. Kings County and Merced County experience an average yearly gain of \$3,392 and \$2,455 in output per employee, respectively. Fresno County and Stanislaus County experience much more modest gains in labor productivity; a yearly average of \$195 and \$289, respectively. The San Joaquin Valley as a whole experiences a yearly average gain in labor productivity of \$611, while the rest of California changes by \$17.

Table 30: Average Yearly Labor Productivity Change from Access Improvement phase of the Business Plan, by County and Region 2015 – 2050 (Fixed 2008 \$'s)

County / Region	Average Labor Productivity Per Year 2015-2050 2008 \$'s
Fresno County	195
Kern County	445
Kings County	3,392
Madera County	1,343
Merced County	2,455
San Joaquin County	380
Stanislaus County	289
Tulare County	1,003
Total 8 County Region	611
Total California	-100
Rest of California	17

Table 31 shows the average yearly change in labor productivity by industry sector for the San Joaquin Valley as a whole. The utilities sector by far experiences the largest gains in labor productivity, a yearly average of \$2,659. All other industry sectors that experience gains in labor productivity do so at much more modest rates, between \$5 and \$382 (yearly averages). The utilities sector experiences among the smallest gains in employment of all industry sectors in the San Joaquin Valley, but experiences a far greater increase, proportionally, in output; resulting in the large increase in labor productivity. In contrast, the industry sectors that experience smaller increases in labor productivity experienced far greater gains in employment and a less proportionate gain in total output.

Five industry sectors are projected to experience declines in average labor productivity for the 2015 to 2050 time period, led by real estate, rental and leasing sector. Real estate rental and leasing is projected to have moderate growth in employment but smaller output growth, on a proportionate basis; resulting in a negative labor productivity change.

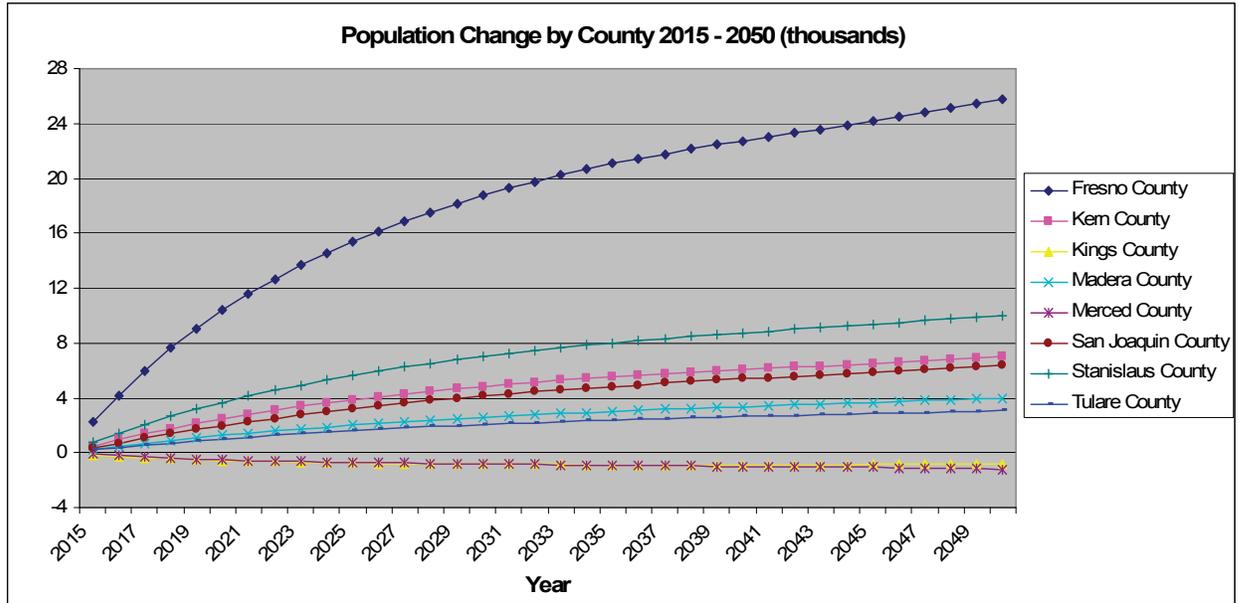
Table 31: Average Yearly Labor Productivity Change from Access Improvement phase of the Business Plan, by Industry Sector 2015 -2050, 8 County San Joaquin Valley Region (Fixed 2008 \$'s)

Industry Sector	Average Yearly Labor Productivity Change 2015-2050 2008 \$'s
Utilities	2,659
Construction	382
Mngmt of Co, Enter	347
Retail Trade	270
Other Services (excl Gov)	253
Wholesale Trade	250
Health Care, Social Asst	170
Forestry, Fishing, Other	158
Manufacturing	105
Admin, Waste Services	72
Accom, Food Services	52
Transp, Warehousing	16
Educational Services	14
Finance, Insurance	5
Arts, Enter, Rec	-150
Profess, Tech Services	-169
Information	-227
Mining	-258
Real Estate, Rental, Leasing	-602

Population

Figures 40 and 41 show the incremental population change projected for the counties and regions of the study area, as a result of the Business Plan access improvements. The trends in population change follow a similar pattern as that of the change in employment. Fresno County experiences the greatest gain and fastest rate of gain in population. Fresno County is followed by Stanislaus, Kern, and San Joaquin County's in population growth. As employment opportunities grow in these counties, as a result of the Business Plan access improvement for CA-99, population follows. As discussed above, large employment gains are projected for the hubs of the San Joaquin Valley economy, particularly Fresno County and to a lesser degree Stanislaus, Kern, and San Joaquin County's. The gains in employment are experienced in industries across the entire economy, in both highly productive sectors and less productive sectors. These employment opportunities are attractive to all segments of the labor force, both highly skilled and educated segments and less skilled and educated. The varied employment opportunities draw additional labor force into the region, increasing overall population. Two counties, Kings and Merced, show small population losses. As shown earlier, Kings and Merced County's are projected to experienced minor losses in employment as labor force is drawn out of the area and into the larger counties experiencing more overall growth.

Figure 40: Population Change from Access Improvement phase of the Business Plan, by County 2015 – 2050 (Thousands)



California as a whole experiences population growth at a rate smaller than that of the San Joaquin Valley, as the rest of California region experiences a small population decline. The growth in employment opportunities in the San Joaquin Valley, draw California residents to the Valley. The Business Plan access improvements for CA-99 lead to greater rates of growth in the San Joaquin Valley then in California as a whole. Consequently, population growth in the San Joaquin Valley also outpaces that of the state, as the Valley becomes a growth center in California.

Figure 41: Population Change from Access Improvement phase of the Business Plan, by Region 2015 -2050 (Thousands)

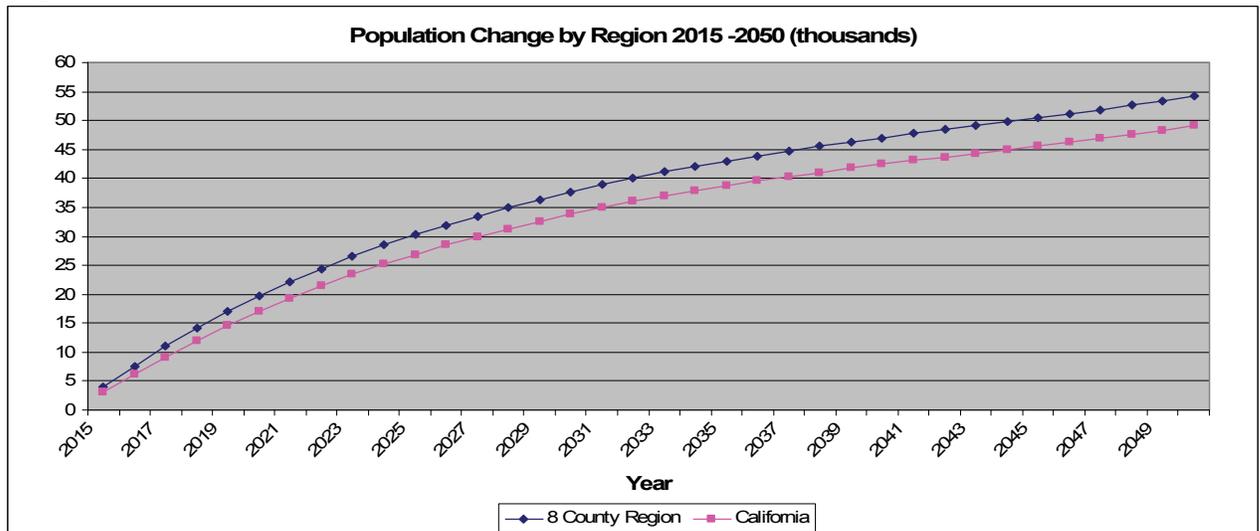


Table 32 shows the projected average population change by county and region for the study period, as a result of the Business Plan access improvements. Fresno County, the hub of economic growth in the San Joaquin Valley, is projected to grow by an average of 18,063 residents over the 2015 to 2050 time period. The population growth in Fresno County is roughly equal to the combined growth in the other seven counties of the San Joaquin Valley. The San Joaquin Valley as a whole is projected to grow by an average 36,704 residents and California by 32,879.

Table 32: Average Population Change from Business Plan, by County and Region 2015 – 2050

County / Region	Average Population Change 2015 - 2050
Fresno County	18,063
Kern County	4,709
Kings County	-755
Madera County	2,564
Merced County	-817
San Joaquin County	4,104
Stanislaus County	6,821
Tulare County	2,015
8 County Region	36,704
Rest of California	-3,824
California	32,879

Fiscal Impact

As the San Joaquin Valley economy expands due to the Business Plan access improvements for CA-99, additional tax revenue for the State of California is generated. The new jobs that are created generate additional income tax revenue for the state and the subsequent increase in consumption generates sales tax revenue. Table 33 estimates the total and annual average income and sales tax revenue generated for the State of California during the 2015 to 2050 study period. Additional tax revenue will also be generated from corporate profits, licenses, and other fees; these are not included in the estimates below. Furthermore, there will also be significant local taxes collected by the municipalities of the San Joaquin Valley, such as property taxes, local sales taxes, and other local licenses and fees; these are also not included in the table below.

State income tax revenue is projected by applying an estimated effective income tax rate to the personal income generated. The effective income tax rate for California was estimated at 8 percent. The state sales tax revenue is estimated by applying the state sales tax rate, 7.25 percent, to the consumption results (by taxable goods category) from the model.

The state income tax generated is projected to total \$8.7 billion for the entire 2015 to 2050 time period, in combined nominal dollars, an annual average of \$243 million. Total state sales tax revenue is projected to be \$1.9 billion, in fixed 2008 dollars, an annual average of \$53 million.

Table 33: Total & Annual Average Estimated Income & Sales Tax Revenue from Access Improvement phase of the Business Plan, California 2015-2050

California	Total 2015-2050	Annual Average
Income Tax Revenue (Nominal \$'s)	\$8,748,280,000	\$243,007,778
Sales Tax Revenue (Fixed 2008 \$'s)	\$1,902,504,217	\$52,847,339

3.2 Scenario 3: Interstate Designation

As mentioned above, the additional construction projects necessary to attain Interstate designation are estimated to cost \$1 billion. These would be additional projects above those included in the Business Plan. They will be necessary because they would address Interstate design standards in roadway segments not already being covered by Business Plan projects.

While the quantitative impact of the Business Plan (scenario 2) for CA-99 is evident in this study, it is more difficult to measure the effects that an upgrade to Interstate designation will have on the region's economy. There is currently very little information or studies done on the quantitative impacts of improving a US highway that is already an access controlled freeway to Interstate status. Most of the studies done are similar to this one, in that they focus on the construction and access improvements of upgrading highways to freeway status and its impacts on the economy. As explained earlier, Interstate designation access improvements are extremely small compared to Business Plan access improvements because these improvements are associated with meeting Interstate design standards and typically do not provide increased roadway capacity or improved access. **The economic impact of access improvements from Interstate designation are, thus, considered negligible and were not modeled. The economic impact of Interstate designation is quantified for comparative purposes only and is based on the unsubstantiated assumption that its implementation could bring about the same rate of growth as the Business Plan. This assumption is based on the theory that Interstate designation may result in economic growth through enhanced competitiveness and increased tourism.**

Although there are very few quantitative studies measuring the impact of Interstate designation, as stated above, a review of literature revealed a few studies that do analyze the impact of upgrading a highway to interstate status that focus, in part, on the increased competitiveness and potential tourism that the upgrade can bring.

One such study done by Wilbur Smith Associates analyzes the impacts of converting Route 17 to Interstate 86 along the Southern Tier of New York State. It was estimated that the upgraded interstate will bring \$3.2 billion in economic benefits to the Southern Tier region of New York State. It is unclear, however, how much of this impact is related to the conversion to Interstate status alone; much of this impact may result from construction spending and access improvements, similar to the impact of the Business Plan for CA-99. The study does note that there is a potential impact related to the increased profile that an Interstate may bring to a region. In summing up the potential impact of the upgrade to Interstate 86, as to the benefits of the increased profile and visibility that the interstate will bring, the study notes that, “The elevation of the Southern Tier and Hudson Valley in the minds of tourists, transportation companies, and others from outside the area may be dramatic. This impact includes not only a psychological element but also a practical one well-known to industrial recruiters and other economic development professionals. Organizations such as travel agencies and associations, transportation companies, and industrial recruiters consider the proximity to an Interstate as a major criterion in choosing travel plans and in selecting locations for businesses. This results from the fact that when people look at a map of the U.S.—or some region of the country—for the purpose of planning a trip or locating a business the most noticeable roads are part of the Interstate System. The reasoning is that Interstate quality is consistent virtually throughout the nation, so these roads are most often chosen for travel.”¹ In summarizing the study’s findings the author concludes that, “The residents and businesses of the corridor area will benefit economically as the upgrade from New York State Route 17 to Interstate 86 is completed. There will be greater travel efficiency, and the area will be better able to attract tourists and business investors both within New York and nationally once the upgrade is complete. The enhanced competitive position, along with the improvement of the area’s profile and visibility, will provide a significant boost to the economy. Businesses will find that production costs will be lower, the labor pool will be expanded, and the location will be more accessible to suppliers and consumers. In particular, the tourism industry will enjoy greater exposure to national and international travelers.”²

Another plan for converting a US highway to interstate status, that is currently being studied, involves the conversion of US 71 to Interstate 49 in Missouri. Local officials in Missouri also note that the conversion to Interstate status can bring increased economic development from improved competitiveness and tourism. In describing how the name change alone, from US highway to interstate, can have an impact on a region, a local news paper quotes Lynn Calton, a city administrator of Lamar (a city in an agricultural region of Missouri impacted by the planned interstate) as saying, “I think it means more when we’re trying to recruit new industry if we can say I-49 comes through here. If you say U.S. 71 comes through here and you are not from around here, it doesn’t mean anything, but if you say interstate, it means more to them.”³ The news paper story also quotes a Missouri Department of Transportation official as saying “.....all the

¹ The New York I-86 Economic Benefits Study, Wilbur Smith Associates, January 2000.

² The New York I-86 Economic Benefits Study, Wilbur Smith Associates, January 2000.

³ John Hacker, The Carthage Press, Carthage, MO, October 17, 2008.

communities along the corridor will have a competitive advantage because of the interstate and the prestige and notoriety that that brings.”⁴

Another study, that analyzed the economic impact of interstate highways in the Delta Region of the southern US, also discusses the impacts of upgrading highways, particularly from a competitiveness standpoint. The study notes that “transportation improvements lead to increased efficiency and thus, often bolster a region’s economic competitiveness. Improved freight movements, better regional connectivity and mitigated congestion reduce transportation costs and frees up resources for other productive uses. This can lead to productivity increases and more competitive pricing”.⁵ The study’s author goes on to explain that the above impacts are ongoing and can potentially change the competitive nature of the region.

As discussed above, improvements to CA-99 can certainly carry the potential for improved productivity in the San Joaquin Valley, from “better regional connectivity”, given the large markets that lie along the length of the route. As pointed out above, this can have the long-term effect of an improved competitive environment for the San Joaquin Valley. The increased competitiveness, however, would be realized through improvements in access, as the Business Plan for CA-99 (scenario 2) currently addresses. Although there is anecdotal evidence as to the positive economic impacts of Interstate designation, such as the studies described above, there is very little (if any) quantitative evidence that upgrading to Interstate status will further enhance competitiveness.

Since there is some anecdotal evidence that indicates that there may be some economic benefit to upgrading highways to Interstate designation, resulting from improved competitiveness and increased tourism, such as the studies described above suggest, this study focused on these variables in measuring the impact of interstate designation for CA-99 in the San Joaquin Valley. As is shown below, however, the quantitative impact is relatively minor, and may not justify the additional funding that would be needed to bring CA-99 to Interstate designation.

As mentioned above, the economic impact of Interstate designation is calculated for comparative purposes only, and is based on the assumption that the impact could lead to the same rate of economic growth as the Business Plan. To measure the potential impact of enhanced competitiveness and increased tourism that Interstate designation may bring, a 0.11% growth rate is modeled for each industry sector in the eight county region, for each year of the forecast period. The 0.11% growth rate is applied to the baseline level of employment for each year from 2010 to 2050. The number of years that it would take the State of California to recoup its \$ 1 billion investment in Interstate designation is also evaluated.

It is important to note that the Interstate designation impact analysis, shown below, assumes a constant level of growth in the San Joaquin Valley economy, resulting from

⁴ John Hacker, The Carthage Press, Carthage, MO, October 17, 2008.

⁵ Delta Regional Authority, “Delta Development Highway System” Plan, 2006.

improved competitiveness and tourism, for the entire study period. Although the level of growth would vary, on a year-to-year basis, depending on general economic conditions in the San Joaquin Valley and the state, the levels are meant to represent the potential average increase in growth as a result of Interstate designation on a year-to-year basis. The results shown below are a direct result of the increase in jobs simulated in the San Joaquin Valley economy; assumed to result from the potential improvement in competitiveness and increases in tourism that Interstate designation may bring.

As shown in Table 34, under the 0.11% employment growth assumption, the average annual state revenue during the study period equals \$69 million; state revenue in the first year, 2010, totals \$21 million and increases each year, reaching \$46 million in the 10th year and \$124 million in the final year. Under this growth rate assumption, the State of California would recoup its \$1 billion investment required for Interstate designation after 21 years.

The average employment impact, for the Interstate designation scenario, equals 3,608 jobs in the eight county region and 4,978 in all of California. Fresno County (977 average yearly jobs) and Kern County (732 average jobs) experience the greatest impact among the eight counties in the San Joaquin Valley. Fresno and Kern Counties contain two of the largest cities in the San Joaquin Valley, Fresno and Bakersfield, respectively. Fresno and Bakersfield have relatively diverse economy's, with significant service and retail trade sectors, thus, would likely benefit the most from an increase in tourism and travel related activity.

The impact on the Gross Regional Product, for the Interstate designation scenario, averages roughly \$400 million per year in the eight county region and \$684 million in all of California. Again, Fresno County and Kern County experience the greatest impact in GRP among the eight counties of the San Joaquin Valley. The change in real disposable personal income averages \$196 million per year in the eight county region and \$304 million in California as a whole. Output increases by an average of \$630 million in the eight county region and almost \$1.1 billion in the State of California as a whole. The general growth in the number of jobs also leads to growth in population as workers are attracted to San Joaquin Valley labor markets; the eight county region population is projected to grow by an average of 5,171 people as a result of Interstate designation and the State of California population is projected to grow by an average of 6,733 people over the 40 year period.

The growth rates associated with the Interstate designation scenario are extremely minor when the total size of the San Joaquin Valley and the California economy are considered. The average increase in employment is only 0.2% of the total employment in the eight county San Joaquin Valley region, when measured against the 2006 baseline level, and the average increase in gross regional product is only 0.3%. The increase in population, resulting from the impact of Interstate designation, is only 0.1% of the total 2006 population of the eight county San Joaquin Valley region.

Table 34: Average Economic Impact of the Interstate Designation Growth Rate Assumption

County / Region	Avg. Annual State Revenue (M 2008 \$)	Years needed to recoup investment	Avg. Empl. Change (jobs)	Avg. Annual Change in Gross Regional Product (M 2008 \$)	Avg. Annual Change in Disp. Per. Income (M 2008 \$)	Avg. Annual Change In Total Output (M 2008 \$)	Avg. Pop. Change
Fresno	-	-	977	113	54	176	1,288
Kern	-	-	732	80	40	125	1,109
Kings	-	-	73	7	4	11	127
Madera	-	-	121	11	7	16	215
Merced	-	-	165	17	10	29	291
San Joaquin	-	-	668	79	34	123	891
Stanislaus	-	-	526	62	29	101	736
Tulare	-	-	347	32	18	49	515
Total 8 County Region	-	-	3,609	401	196	630	5,172
Rest of CA	-	-	1,370	285	108	468	1,562
TOTAL CA	-	-	4,979	686	304	1,098	6,734

4.0 Conclusion

Transportation networks that allow for the efficient movements of goods and passengers are vital to a regions economy. Empirical studies have shown that improving highways can significantly benefit a regions economy. The most common direct economic impacts associated with highway improvement projects are the employment created by the construction. As this study shows, the construction industry is most certainly impacted by the Business Plan for CA-99, however, it also shows that there are significant long term economic benefits as well, primarily from increased access between the markets along the route.

The planned improvements in the Business Plan for CA-99 will improve access between the major markets along its route. Improved access will lead to a reduction in travel times between the San Joaquin Valley's major cities, such as Stockton, Modesto, Fresno, and Bakersfield. This can lead to greater productivity, a reduction in transportation costs, and more competitive pricing for goods produced or shipped to or from the San Joaquin Valley. Businesses as well as consumers benefit from productivity gains, reduced transportation costs, and more competitive pricing of goods and services. Furthermore, as the competitiveness of a region increases, the region becomes more attractive for new business location and existing businesses are also more likely to increase output as there products become more attractive to buyers. This can lead to employment growth and the creation of additional wealth.

This study shows that, in fact, there is significant long term growth expected in the San Joaquin Valley as a result of the Business Plan access improvements for CA-99. Employment gains in the San Joaquin Valley between 2015 and 2050, resulting from improved access, are estimated to average over 25,000 jobs across the time period. Additionally, gross regional product is estimated to rise by a total of \$129 billion collectively between 2015 and 2050 in the San Joaquin Valley, a yearly average of \$3.6 billion. Similarly, real disposable personal income, a measure of the wealth of San Joaquin Valley residents, is estimated to rise by \$56 billion across the 2015 to 2050 time period, a yearly average of over \$1.5 billion. As noted above, labor productivity is a primary measure of competitiveness among businesses and can lead to higher output levels in the production of goods and services. This study estimates that the improvements in access resulting from the Business Plan for CA-99 will lead to an average increase in output per employee (labor productivity) of \$611 across the 2015 to 2050 period. Finally, total output levels are estimated to increase by \$207 billion, collectively, between 2015 and 2050, an average of almost \$5.8 billion per year.

As mentioned above, there is also the obvious direct benefit to the construction industry, resulting from the construction phase of the Business Plan for CA-99. This study estimates that average annual employment, over the study period (2006 -2050), will grow by 1,746 jobs as a result of the construction phase of the Business Plan. In addition, the average annual increase in gross regional product, over the study period, is estimated at \$135 million, real disposable personal income is estimated to grow by an average annual amount of \$106 million, and output is estimated to grow by almost \$210 million per year during the 2006 to 2050 period.

As described above, this study shows clear evidence of the significant economic impact that the Business Plan for CA-99 will have on the San Joaquin Valley, both from construction and access improvements. The benefits from Interstate designation, however, are not as clearly evident. Much of the impact of Interstate designation results from the construction spending involved in the upgrade. In this case, an additional \$1 billion in construction cost is required to upgrade Route 99 to Interstate designation. This will create additional construction jobs, in the short term; however, these jobs are temporary and will not significantly add to the number of construction jobs created in the business plan, where \$6.4 billion is spent on transportation and access improvements. As explained in this report, quantifying the long-term permanent economic impacts of Interstate designation is more problematic, as the impacts are not as readily justified as the impacts of access improvement are. Since there would be very few, if any, additional improvements in access with Interstate designation (beyond those already addressed in the business plan), the impacts of Interstate designation in this report are calculated for comparative purposes only and cannot be substantiated with any degree of confidence. As summarized in this report, a few past studies have suggested that there is the potential for economic growth from Interstate designation resulting from the prospect for enhanced competitiveness and increased tourism. This study attempts to quantify this potential impact by applying a general growth rate, roughly equal to that of the Business Plan (again, for comparative purposes only). The growth scenario, 0.11% growth in employment across all industry sectors in the eight county region, is intended to represent the economic growth that can potentially occur as a result of Interstate designation. It should be stressed, however (as noted above), that the impact of Interstate designation is not as clear cut and obvious as the impacts of access improvements and the results in this study (for Interstate designation) should be viewed with that caveat.

Under the Interstate designation growth rate scenario, it will take 21 years for the State of California to recoup its \$1 billion investment required to upgrade Route 99 to Interstate status. The number of jobs created under this scenario in the eight county region, over the 40 year period, averages 3,608 per year and the gross regional product averages \$399 million. Also, under this growth scenario, population change would average 5,171 in the San Joaquin Valley, over the entire study period.