

The Economic Impacts of Senate Bill 1 on the San Joaquin Valley



Commissioned by
The California Alliance for Jobs
The California Transit Association
Transportation California

Prepared by **ARTBA** American Road
& Transportation
Builders Association

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About the American Road & Transportation Builders Association

The Washington, D.C.-based American Road & Transportation Builders Association (ARTBA) is a federation whose primary goal is to aggressively grow and protect transportation infrastructure investment to meet the public and business demand for safe and efficient travel. In support of this mission, ARTBA also provides programs and services designed to give its more than 8,000 public and private sector members a global competitive edge.

ARTBA's Transportation Investment Advocacy Center™ (TIAC) is a first-of-its kind, dynamic education program and internet-based information resource designed to help private citizens, legislators, organizations and businesses successfully grow transportation investment at the state and local levels through the legislative and ballot initiative processes. It's powered by: www.transportationinvestment.org.

About The California Alliance for Jobs

The California Alliance for Jobs is a unique labor-management partnership that advocates for responsible investments in public infrastructure projects. Representing over 2,000 heavy construction companies and 80,000 union construction workers, the Alliance focuses on the core of what keeps California's people and economy moving as the state's population grows: transportation networks, water systems, and increasing the quality of infrastructure for all Californians.

About The California Transit Association

The California Transit Association is dedicated to advocating for the creation of transit-friendly policy, to protect and increase transit funding, and to support a balanced transportation system.

About Transportation California

Transportation California is a diversified, non-partisan, non-profit coalition representing a broad spectrum of business, labor, and local agencies which have united to create the state's leading transportation advocacy and public education group. Founded in 1990, today its member companies and groups account for more than 200,000 California jobs.

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I. Executive Summary

The transportation investment enacted under California Senate Bill 1 (SB 1)—signed into law on April 28, 2017—will support at least \$20.1 billion in increased economic activity and benefits for all San Joaquin Valley residents and businesses over the next 10 years. This report quantifies how the investments made under SB 1 will create benefits for users of the transportation system as well as stimulate economic activity across all sectors of the region's economy. Average annual SB 1 spending in the San Joaquin Valley is estimated to be \$700 million per year¹, which represents 13 percent of the total spending under SB 1; statewide, SB 1 will lead to over \$182.6 billion in economic activity and benefits over the next 10 years.

Total Impact of SB 1 on the San Joaquin Valley over 10 Years

User Benefits	\$4.9 billion
Highway, Street & Bridge	\$3.1 billion
Transit	\$1.8 billion
Economic Impacts	\$15.2 billion
Economic Output	\$11.9 billion
Earnings	\$3.2 billion
Employment	66,398 job-years
Total Impact	\$20.1 billion

The San Joaquin Valley, comprising Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare Counties, is an integral part of California's economy, with 11 percent of both the state's population labor force, and geographically connecting nearby population hubs. Not only will this region see significant benefits in terms of an improved transportation network, lower congestion, and higher economic activity and jobs, but these benefits will be felt in neighboring counties and cities, as well as by other California drivers who travel across San Joaquin Valley roads. Similarly, residents will benefit from improvements to the roadway network of neighboring counties and cities. Therefore, these projected effects of SB 1 in this region are conservative estimates of actual user benefits and economic impacts.

A sustained increase in San Joaquin Valley highway, street, bridge and transit investment will reduce costs for system users, provide broad economic benefits to communities across the region and improve the quality of infrastructure. "User benefits" as used in this report include savings and benefits from decreased congestion, less money spent on vehicle repairs, safer roads, and an improved infrastructure network.

As repairs and upgrades are made to the San Joaquin Valley's highway, street, bridge and transit networks, drivers, businesses and transit riders will save time and money.

¹ This represents average annual spending over time, but this amount can vary from year to year. For instance, so far this fiscal year, counties in the San Joaquin Valley have been awarded \$606.0 million in SB 1 funds, with almost all (94 percent) designated for highway or bridge projects. The remaining \$36.3 million is designated for transit and rail projects. SB 1 project data is from the Rebuilding California website (<http://rebuildingca.ca.gov>), accessed on Mar. 13, 2018.

- Total user benefits average \$493 million per year in savings for San Joaquin Valley drivers, transit riders and businesses, adding up to \$4.9 billion over 10 years.² Commuters will spend less on maintaining and operating their vehicles, truck drivers will spend less time idling on congested highways, and transit riders will take more trips and have greater access to goods and services.
 - Improvements to the region's road and bridge network will result in user benefits of \$311 million per year, adding up to \$3.1 billion over 10 years. These benefits include increased safety for the traveling public, as crash and injury rates from motor vehicle accidents decline, operating cost savings from drivers spending less money on fixing their cars and trucks, and the faster repair or replacement of bridges across the region.
 - Transit improvements will support cost savings and other benefits averaging \$182.0 million per year. Over 10 years, this will add up to \$1.8 billion.

"Economic impacts" as used the report captures a second type of benefit--the direct, indirect and induced economic impacts of SB 1, measured by increases in economic output, value-added, employment, earnings, and tax revenues. The direct economic impacts of SB 1 are a result of the increased investment in road, bridge and transit construction, project support activities and transit operations. This activity generates additional indirect and induced economic impacts that ripple throughout all sectors of the economy.

How does this ripple effect work? Highway, street, bridge and transit contractors purchase inputs, such as materials, from San Joaquin Valley businesses, in addition to other firms outside of the region and state, as they complete work on projects. These suppliers then purchase items from other firms, creating an indirect effect.

These employees of the construction firms and supplier industries spend their earnings by purchasing clothing, food and other goods and services, thereby creating induced demand in other sectors of the region's economy. As jobs are created or sustained, employees receive additional income and spend more, and businesses increase sales. Subsequently, taxes grow due to larger payroll and sales volumes, providing the state and local municipalities with additional revenues to reinvest in the San Joaquin Valley.

The combined direct, indirect and induced economic impacts from SB 1 include:

- Sales and output by San Joaquin Valley businesses in all sectors will increase by \$1.2 billion each year, totaling \$11.9 billion over 10 years.

² On a statewide basis, total user benefits from these improvements are estimated to total \$38.2 billion over the next 10 years, including: the repair, repaving and reconstruction of over 84,000 lane miles on nearly 19,000 miles of roadway across the state, driver savings of \$8.2 billion operating costs, safety benefits of \$584 million from better roads, \$800 million in safety benefits from lower crash and injury rates, \$23.6 benefits from transit improvements, and the replacement of an additional 556 state and local bridges in the first five years of the program. For more details, read the full California state report: American Road & Transportation Builders Association, "The Economic Impact of Senate Bill 1 on California," February 2018.

- This additional investment will support or create an additional 6,640 jobs on average each year, adding up to 66,398 job-years over 10 years.
- Those workers will earn an average of \$322.3 million per year, resulting in \$3.2 billion in additional earnings over 10 years.

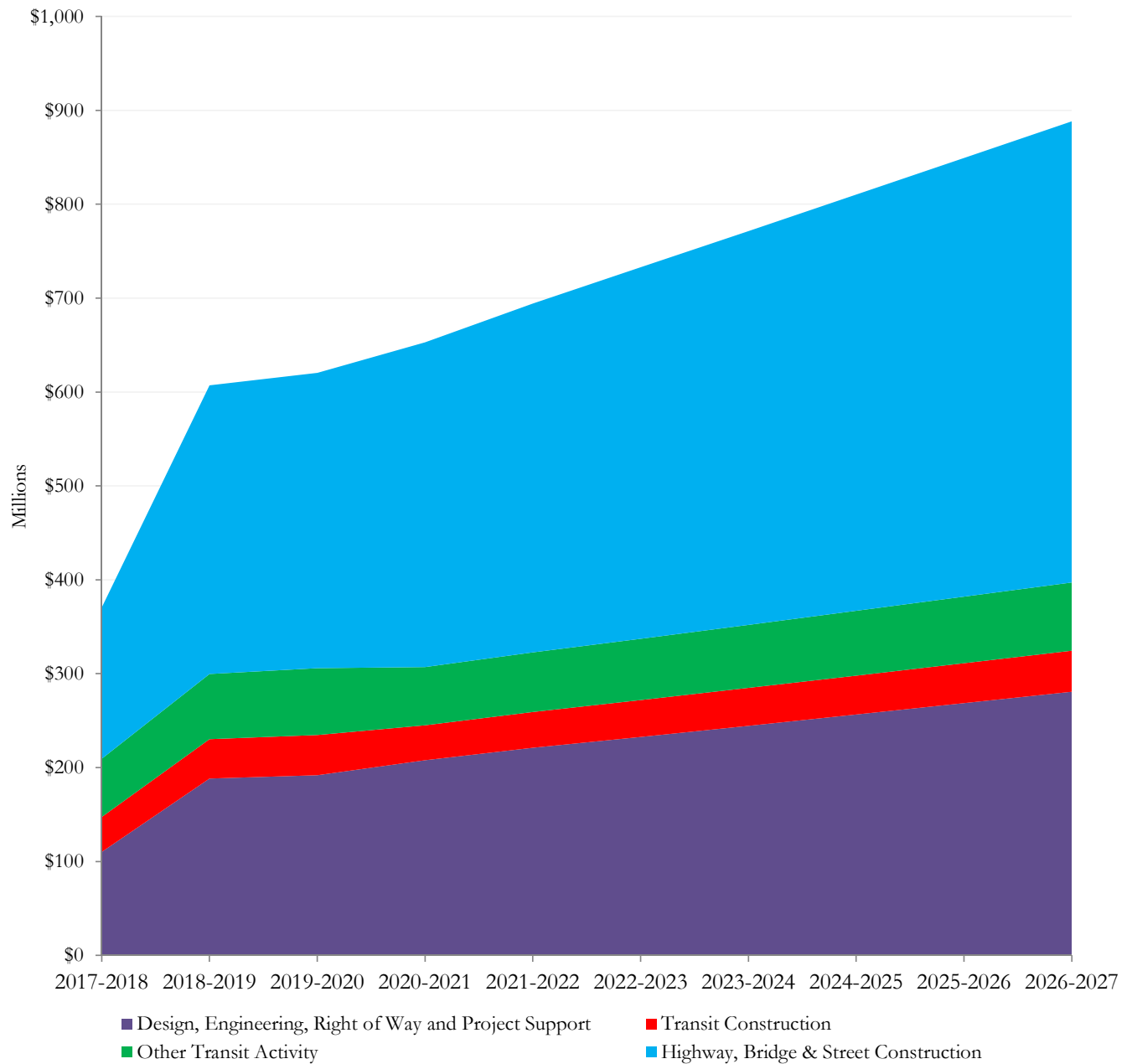
The economic activity from the implementation of SB 1 in this region is significant—over 10 years, this will add up to \$20.1 billion in output, earnings and user benefits, which will contribute \$5.9 billion to the state gross domestic product (GSP).³

There are other benefits for San Joaquin Valley residents and businesses that are harder to quantify (outlined in Section III of the report), suggesting that **the quantified benefits of \$20.1 billion in this report are conservative estimates.**

As investment levels continue to grow under SB 1 in the future, these benefits and economic impacts will continue to improve conditions and the quality of life for San Joaquin Valley residents for the next generation.

³ GSP is the value added by an industry to the overall economy. California's GSP was \$2.62 trillion in 2016, according to the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. California's gross output in 2016 is estimated to be \$4.52 trillion.

SB 1 Investment in the San Joaquin Valley over 10 Years, by Fiscal Year



II. The Economic Impacts of Transportation Investment in the San Joaquin Valley

This report uses a series of sophisticated models to quantify both the immediate economic activity from increased highway, street, bridge and transit program spending levels under SB 1 and the longer-term user benefits that accrue from improving the transportation system. Other impacts and benefits documented in economic literature and studied by the San Joaquin Valley Council of Governments (SJVCOG), as well as other California-specific studies, are used to evaluate further impacts on this specific region. A complete description of those models can be found at the end of this section, and with more detail in the Methodology and Sources section.

The Economic Impacts of SB 1

The sustained increase in San Joaquin Valley highway, street, bridge and transit investment provided by SB 1 will have a significant immediate effect on all sectors of the region's economy. Transportation capital investments trigger immediate economic activity that creates and sustains jobs and tax revenues while yielding long-lived capital assets that facilitate economic growth for the next generation by providing access to jobs, services, materials and markets.

As noted above, there is a ripple effect that is felt through all sectors of the region's economy—contractors purchase materials and workers spend their earnings while they work on projects, creating demand in other sectors of the region's economy. As jobs are created or sustained, these employees earn more and spend more, and businesses increase sales. This sequence results in larger payroll and sales volumes, providing the state and local municipalities with additional tax revenues to reinvest in the San Joaquin Valley.

The economic activity from a sustained \$700 million annual increase in San Joaquin Valley highway, street, bridge and transit investment will yield the following benefits:

- Generate nearly \$1.2 billion annually in additional economic output as businesses throughout the economy sell more goods and services to both other businesses and consumers, totaling \$11.9 billion over 10 years.
- Increase GSP by over \$593 million per year, adding up to \$5.9 billion over 10 years.
- Support or create an additional 6,640 jobs on average each year throughout the economy, with 70 percent of the employment outside of the construction industry, including an estimated 1,622 jobs in transportation and warehousing, 848 jobs in other services, 414 jobs in retail trade and 358 jobs in manufacturing. This will add up to a total of 66,398 job-years supported or created by additional SB 1 spending over the next 10 years.
- These workers will earn over \$322 million in wages annually, totaling \$3.2 billion over 10 years.
- \$71.9 million in additional tax revenues each year, adding up to \$718.5 billion over 10 years. This includes:
 - \$2.2 million in annual state payroll taxes, totaling \$21.9 million over 10 years
 - \$24.7 million in annual federal payroll taxes, totaling \$246.6 million over 10 years
 - \$28.8 million in annual state income taxes, totaling \$288.5 million over 10 years
 - \$16.2 million in annual state and local sales taxes, totaling \$161.6 million over 10 years

This economic activity is driven by construction spending as well as expenditures on transit operations, planning and design work, right-of-way purchases, construction support, administration and research. Of the \$7.0 billion in SB 1 spending in the San Joaquin Valley, \$3.7 billion is estimated to go

toward highway, street and bridge construction, \$405 million toward transit construction and \$672 million for other transit activity. The remaining \$2.2 billion of San Joaquin Valley SB 1 spending will go toward planning and design work, right of way purchases and other project support activities.

These county-level spending estimates are based on analyses of SB 1 revenues by county developed by the California State Association of Counties (CSAC) as well as Caltrans estimated new regional, county and city investments from the passage of SB 1. The actual mix of projects will be based on decisions made at the state and local level. A full explanation of how these spending estimates were calculated is provided in the Methodology and Sources section.

Average Annual Economic Impact of SB 1 on the San Joaquin Valley

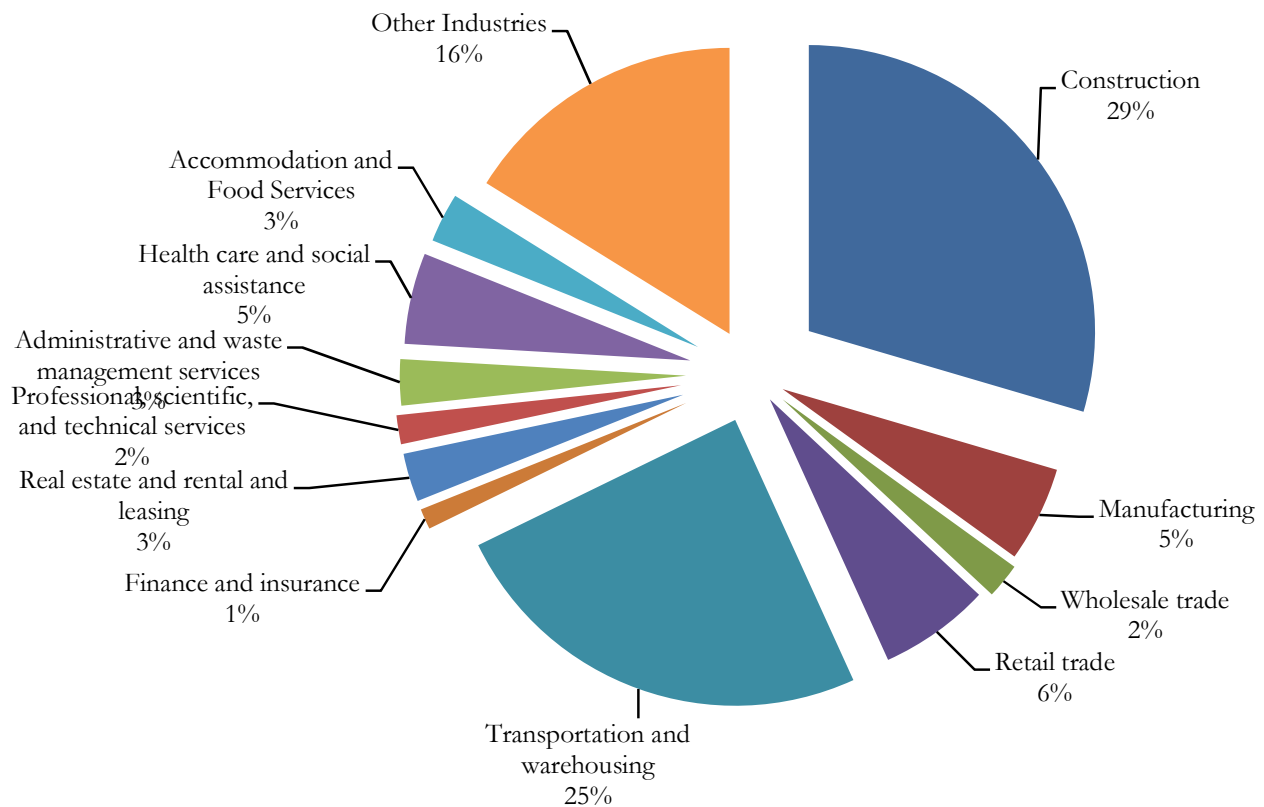
	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Design, Engineering, Right of Way and Project Support	Total Annual Impact
Total Output	\$625.0 million	\$68.5 million	\$122.3 million	\$378.1 million	\$1.2 billion
Total Value Added (GSP)	\$319.1 million	\$36.5 million	\$59.5 million	\$178.4 million	\$593.4 million
Earnings	\$164.1 million	\$21.9 million	\$43.0 million	\$93.3 million	\$322.3 million
Employment	2,842 jobs	408 jobs	1766 jobs	1624 jobs	6,640 jobs
Total Tax Revenues	\$34.7 million	\$4.6 million	\$12.9 million	\$19.7 million	\$71.9 million
State Payroll Tax	\$1.1 million	\$149.2 thousand	\$292.3 thousand	\$634.3 thousand	\$2.2 million
Federal Payroll Tax	\$12.6 million	\$1.7 million	\$3.3 million	\$7.1 million	\$24.7 million
State Income Tax	\$12.3 million	\$1.8 million	\$7.7 million	\$7.1 million	\$28.8 million
State & Local Sales Tax	\$8.7 million	\$992.5 thousand	\$1.6 million	\$4.9 million	\$16.2 million

Total Economic Impact of SB 1 on the San Joaquin Valley over 10 Years

	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Design, Engineering, Right of Way and Project Support	Total Impact over 10 Years
Total Output	\$6.2 billion	\$685.4 million	\$1.2 billion	\$3.8 billion	\$11.9 billion
Total Value Added (GSP)	\$3.2 billion	\$364.6 million	\$594.8 million	\$1.8 billion	\$5.9 billion
Earnings	\$1.6 billion	\$219.4 million	\$429.9 million	\$932.8 million	\$3.2 billion
Employment	28,419 job-years	4,076 job-years	17,662 job-years	16,241 job-years	66,398 job-years
Total Tax Revenues	\$347.0 million	\$45.9 million	\$128.7 million	\$196.8 million	\$718.5 million
State Payroll Tax	\$11.2 million	\$1.5 million	\$2.9 million	\$6.3 million	\$21.9 million
Federal Payroll Tax	\$125.5 million	\$16.8 million	\$32.9 million	\$71.4 million	\$246.6 million
State Income Tax	\$123.5 million	\$17.7 million	\$76.7 million	\$70.6 million	\$288.5 million
State & Local Sales Tax	\$86.9 million	\$9.9 million	\$16.2 million	\$48.6 million	\$161.6 million

Sources: ARTBA Analysis of the following data sources: U.S. Bureau of Economic Analysis, U.S. Census Bureau RIMS, U.S. Department of Labor, U.S. Census Bureau County Business Patterns, California State Comptroller's Office, California State Board of Equalization, State of California Franchise Tax Board, Caltrans, California State Association of Counties (CSAC).

Additional San Joaquin Valley Jobs Supported/Created by Increase in Highway, Bridge, Street and Transit Investment from SB 1



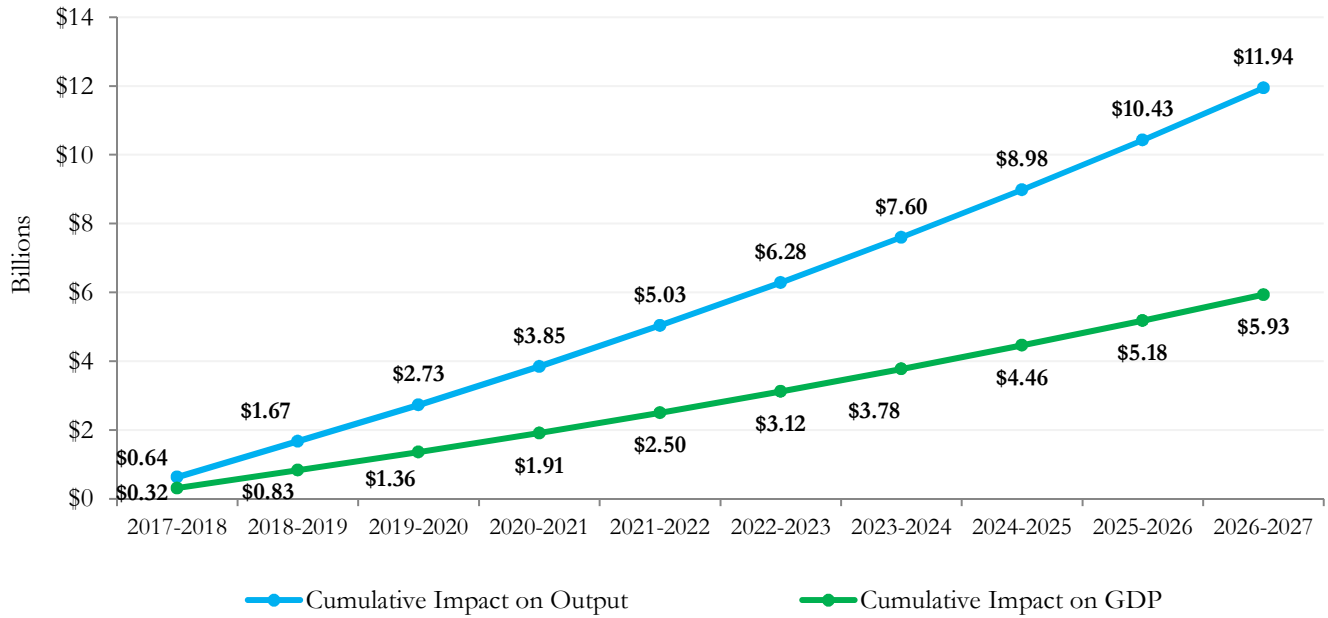
Average Annual Economic Impact of SB 1 in the San Joaquin Valley		
Industry	Impact on Industry Output (in millions)	Jobs Supported/Created
Agriculture, forestry, fishing, and hunting	\$5.2	32
Mining	\$27.6	67
Utilities	\$8.5	11
Construction	\$447.4	1,952
Manufacturing	\$144.7	358
Wholesale trade	\$29.4	131
Retail trade	\$36.9	414
Transportation and warehousing	\$93.6	1,622
Information	\$8.6	25
Finance and insurance	\$22.0	77
Real estate and rental and leasing	\$38.2	181
Professional, scientific, and technical services	\$18.8	109
Management of companies and enterprises	\$3.2	12
Administrative and waste management services	\$15.4	172
Educational services	\$3.4	50
Health care and social assistance	\$38.1	339
Arts, entertainment, and recreation	\$2.2	24
Accommodation and Food Services	\$12.4	184
Other services	\$238.2	848
Total industry impact*	\$1,193.9	6,640

*Does not include impact on government output.

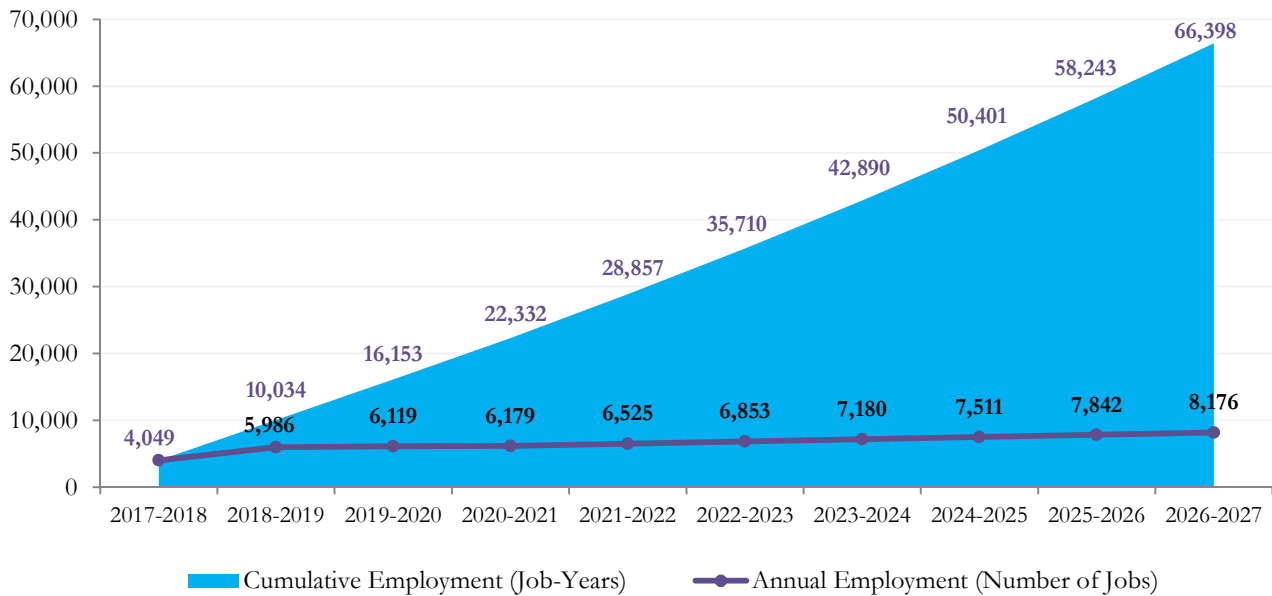
Total Economic Impact of SB 1 in the San Joaquin Valley over 10 Years		
Industry	Impact on Industry Output (in millions)	Job-Years Supported/Created
Agriculture, forestry, fishing, and hunting	\$52.0	316
Mining	\$276.4	671
Utilities	\$85.4	109
Construction	\$4,473.9	19,524
Manufacturing	\$1,447.3	3,579
Wholesale trade	\$294.2	1,314
Retail trade	\$368.7	4,144
Transportation and warehousing	\$935.5	16,221
Information	\$85.5	248
Finance and insurance	\$219.7	774
Real estate and rental and leasing	\$382.5	1,813
Professional, scientific, and technical services	\$187.8	1,086
Management of companies and enterprises	\$32.4	115
Administrative and waste management services	\$154.2	1,720
Educational services	\$33.8	498
Health care and social assistance	\$381.4	3,392
Arts, entertainment, and recreation	\$22.0	240
Accommodation and Food Services	\$124.2	1,845
Other services	\$2,381.9	8,477
Total industry impact*	\$11,939.1	66,398

*Does not include impact on government output.

Annual Impact of SB 1 on Output and GDP in the San Joaquin Valley



Annual Impact of SB 1 on Employment in the San Joaquin Valley Jobs vs. Job-Years



Additional User Benefits and Savings for San Joaquin Valley Drivers and Businesses

In addition to the immediate economic impacts from highway, street, bridge and transit investment and construction activity, San Joaquin Valley residents and businesses will gain additional savings from a safer and more efficient transportation system. The improvement in the region's transportation network will provide long term benefits for businesses and users, including improved safety, lower operating costs, reduced congestion and an increase in both mobility and efficiency.

Notably, this list does not include the additional benefits of improving access to critical facilities like schools and hospitals or increases in business productivity.

Businesses will have access to a larger pool of labor, supplies and customers. An improved highway, street and bridge network will also result in lower operating costs, allowing business to increase investment in other capital outlays.

Beyond the jobs supported by the immediate highway, street and bridge construction work, the economic activity and employment for many San Joaquin Valley companies relies on the mobility provided by the highway, street and bridge system.

Without the infrastructure built, maintained and managed by the San Joaquin Valley's transportation construction industry, virtually all major industry sectors that comprise the region's economy—and the local jobs they sustain—would not exist or could not function.

The higher investment levels under SB 1 will have significant user benefits for San Joaquin Valley residents and businesses over the next 10 years. Depending on the mix of projects, some of the potential benefits include:

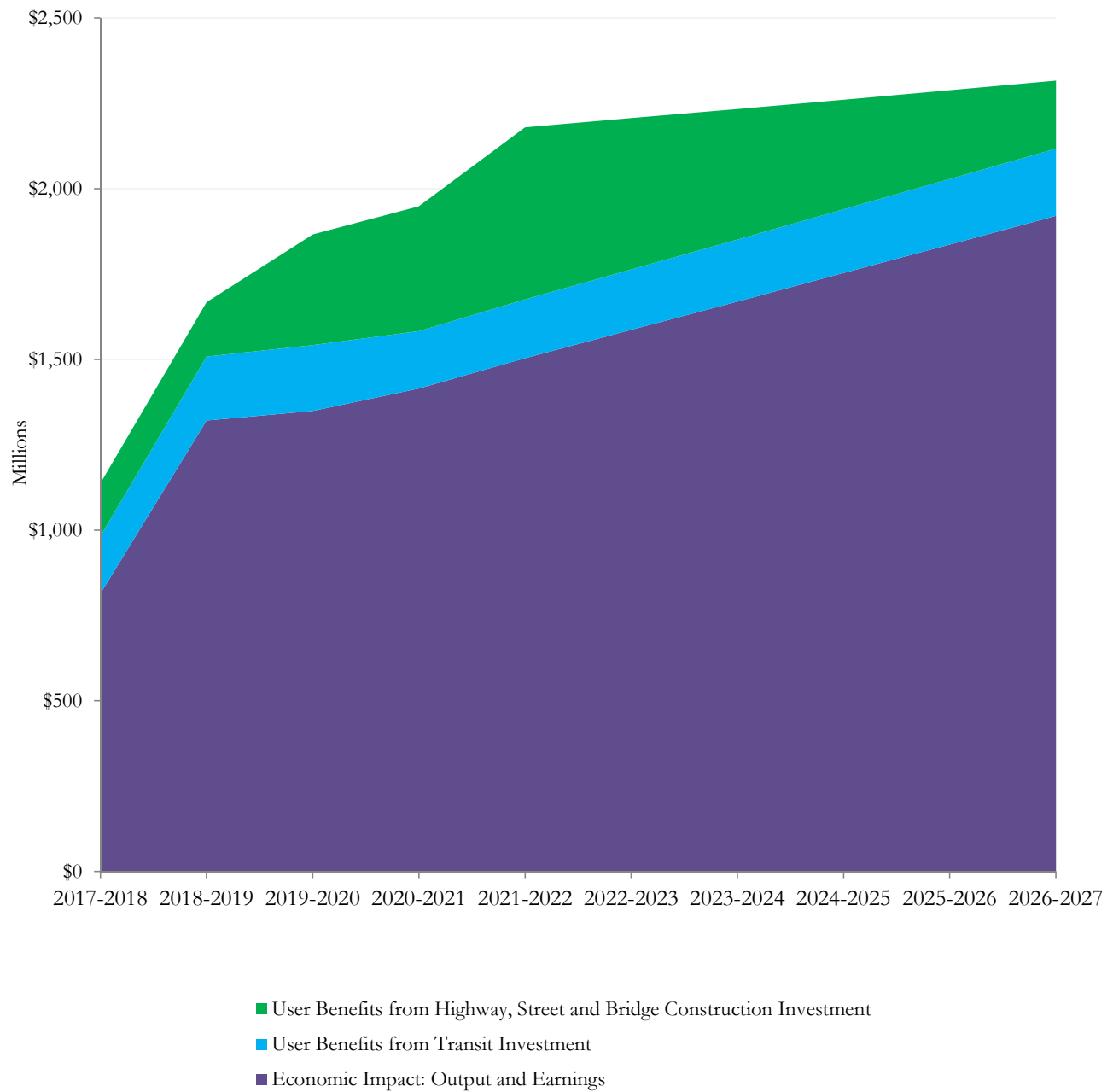
- San Joaquin Valley drivers, transit riders and businesses will save an estimated \$493 million per year. This includes lower operating costs for cars and trucks, less time spent idling

in traffic and congestion, safety benefits and lower maintenance costs for travel on improved roads. The benefits from transit investment include additional work and medical-related trips, transportation cost savings and greater mobility. Over 10 years, this adds up to \$4.9 billion in savings that can be used for other purposes.

- Improvements to the region's road and bridge network will result in user benefits of \$311 million per year, adding up to \$3.1 billion over 10 years. These benefits include increased safety for the traveling public, as crash and injury rates from motor vehicle accidents decline, operating cost savings from drivers spending less money on fixing their cars and trucks, and the faster repair or replacement of bridges across the region.
- Transit improvements will support cost savings and other benefits of an average of \$182.0 million per year. Over 10 years, this will add up to \$1.8 billion.

Other user benefits are more difficult to quantify; however, an improved transportation network has significant impacts on firm productivity and spurring economic activity by improving connectivity between and within industries. Firms will see an expanded market for their products, since fewer travel delays allow firms to increase their market area, thereby increasing economic competitiveness and stimulating regional job growth. Additionally, firms and industries benefit from "learning effects" from locating near each other, as they create an improved innovation environment that will attract workers and firms to the region. There have been documented benefits from these learning effects specifically in manufacturing, a major industry in the San Joaquin Valley. By reducing traffic congestion, people can more easily interact with a larger pool of like-minded experts. This means that local firms will be able to innovate in ways that lower their costs, improve their products and generate a larger market share. Over time, this improved innovation environment will attract more workers and firms, further increasing economic activity.

Total Benefits of SB 1 Investment in the San Joaquin Valley over 10 Years, by Fiscal Year



Models Used in This Report

A series of sophisticated input-output models make it possible to quantify both the immediate economic activity from increased highway, street, bridge and transit program spending levels under SB 1. Longer-term user benefits that accrue from improving the transportation system are estimated at the county level based on an analysis of California statewide user benefits from SB 1 using HERS-ST and the National Bridge Investment Analysis System (NBIAS). Additional long-term user benefits are discussed using economic literature and studies by SJVCOG.

The U.S. Department of Transportation's HERS-ST model analyzes the changes in highway conditions, user costs and other key variables for roads in California under different investment scenarios.

The National Bridge Investment Analysis System (NBIAS), developed by the U.S. Federal Highway Administration (FHWA), is a modeling tool to estimate bridge performance for various budget levels. NBIAS models all bridges in the FHWA's National Bridge Inventory, which comprises all bridges that carry traffic.

Using HERS-ST and NBIAS, we can not only examine the impacts of investing at baseline levels before the implementation of SB 1 on improvements to the road and bridge network in California, but we can also analyze the impacts of new investment levels including SB 1. The difference between these two scenarios is illustrative of the additional benefit of implementing SB 1.

Average annual SB 1 spending in the San Joaquin Valley is estimated to be \$700 million per year⁴, which represents 13 percent of the total transportation investment increase generated by SB 1. Therefore, to calculate the estimated user benefits to the San Joaquin Valley, we assume that 13 percent of California highway, street and bridge user benefits are concentrated in the San Joaquin Valley.

A number of academic studies have created multipliers for the long-run benefits of transit investment. For this study we use the California-specific state-wide multiplier from the National Center for Transit Research.⁵ They estimate that every \$1 in transit spending yields \$1.69 in user benefits. The authors' benefit-cost analysis includes quantifying savings from the cost of foregone medical and work trips, emissions, crashes, travel time and vehicle ownership and operation expenses.

The economic impacts of highway, street, bridge and transit investment are analyzed using the Regional Input-Output Modeling System (RIMS-II) from the U.S. Bureau of Economic Analysis (BEA).⁶ The models estimate the output, employment levels, earnings and value added (contribution to state GSP) specific to industry sectors in the region. Although construction and other related activity will require some inputs and materials from other regions and states, the model captures only the impacts on San Joaquin Valley businesses.

A more extensive discussion of these models and methodologies used in this report can be found in the Methodology and Sources section.

⁴ This represents average annual spending over time, but this amount can vary from year to year. For instance, so far this fiscal year, counties in the San Joaquin Valley have been awarded \$606.0 million in SB 1 funds, with almost all (94 percent) designated for highway or bridge projects. The remaining \$36.3 million is designated for transit and rail projects. SB 1 project data is from the Rebuilding California website (<http://rebuildingca.ca.gov>), accessed on Mar. 13, 2018.

⁵ Ranjit Doavarthy, Jeremy Mattson & Elvis Ndembe, "Cost-Benefit Analysis of Rural and Small Urban Transit," National Center for Transit Research, North Dakota State University. Prepared for the U.S. DOT, October 2014

⁶ A full explanation of the RIMS-II models is available from BEA: https://www.bea.gov/regional/pdf/rims/rimsii_user_guide.pdf.

III. Transportation Investment is Key to Business Success and Economic Growth

California's highway, street, bridge and transit network is integral to the success of the region's economy—facilitating the shipment of over \$1.5 trillion in goods produced by California businesses. The efficient and safe movement of goods and people is critical to the economic competitiveness of California and the quality of life for its citizens. Every employee, customer and business pays a price when the system is congested, unsafe or in poor condition.

In addition to spurring immediate economic growth, investment in California's infrastructure creates tangible assets that are long-lived and facilitates economic activity for many years to come by providing access to jobs, services, materials and markets. An improved transportation network results in reduced operating costs and increased market access for California businesses. Sustained investment in highways, bridges and transit is critical to making the best use of these capital assets.

The importance of a robust transportation network has been well documented by business analysts, economists and the research community.⁷ Overall estimates are that every \$1 increase in the highway, street and bridge capital stock generates a total of 30 cents in business savings.⁸

Some of these specific benefits include:

- **Staying Competitive:** The overall business environment in the United States is changing, and there is likely to be a greater importance placed on logistics and global transportation networks.⁹ The value of total truck freight shipments on California roads is expected increase from \$1.8 trillion in 2015 to \$3.9 trillion in 2045. Truck shipments of California goods for export alone are estimated to increase from \$127.5 billion in 2015 to \$720.3 billion—an increase of over 475 percent.¹⁰
- **Access to Labor:** A better transportation system means that it is easier for employees to get to work and businesses are able to recruit from a larger pool of potential workers. Investment in highway, street, bridge and transit allows businesses to benefit from an expanded labor pool of specialized workers, which means access to more productive employees. Decreasing congestion, and therefore travel time, means that firms can hire from a larger geographic area, effectively increasing their labor market. This expansion of the labor pool allows firms to hire employees who more closely align with their needs, meaning that employees need less training and are therefore more productive for the same cost. This increased productivity enables firms to be more competitive and increase their market share, which can result in additional hiring.¹¹

⁷ Glen Weisbrod, Don Very, & George Treyz, "Measuring Economic Costs of Urban Traffic Congestion to Business."

⁸ Nadiri, M. Ishaq and Theofanis P. Mamuneas, "Contribution of Highway Capital to Output and Productivity Growth in the U.S. Economy and Industries," Federal Highway Administration, 1998.

⁹ Ronald McQuaid, Malcom Greig, Austin Smith, & James Cooper, "The Importance of Transport in Business' Location Decisions," January 2004, <http://stopstanstedexpansion.com/documents/sse10_appendix_9.pdf>.

¹⁰ Freight Analysis Framework

¹¹ Finney, Miles M., and Kohlhase, Janet E. (2008). The Effect of Urbanization on Labor Turnover. *Journal of Regional Science*, 48(2): 311–328.

Investing in a high-quality transit system specifically allows density to develop and business clusters to grow.¹² Downtown office district locations, which are often focused on financial services and related business sectors, usually coincide with the location of higher availability and usage of public transportation.¹³

- **Increased Market Share & More Customers:** A good transportation system means that San Joaquin Valley businesses can reach a greater pool of customers. For example, if a pharmaceutical company can count on better roads for its employees and key product delivery and supply routes, the company will be able to increase employment and its market access to hospitals and other linked industries. Local industries will benefit from these larger markets and reduced transaction costs.¹⁴
- **Business Expansion:** San Joaquin Valley businesses will increase their output of goods and services at higher levels of investment. An improved transportation system enables business growth, expansion, and increased hiring. Reducing congestion has a demonstrable impact on shipping volume and on prices, with a rate of return of about 10 percent a year, as a conservative estimate.¹⁵ Lower transport costs also have a quantifiable effect on firm choices with respect to suppliers and relatively improve firm hiring ability.
- **Increase in Demand for Inputs:** As the economy expands, businesses will purchase more goods from their suppliers and will increase their demand for private capital. This includes buying more vehicles, equipment, office supplies or even building new plants and factories.¹⁶
- **Reducing Production Costs:** Economic studies show that reduced costs for inputs is one of the main business benefits from an increase in transportation investment. Typically, businesses pay less for inputs when they have access to larger markets.¹⁷
- **Agglomeration Economies:** Firms benefit by locating near one another, even if they are competitors. This effect is known as the agglomeration of market activity. This happens because a group of firms will attract a greater number of suppliers and customers than one company alone. Lower transportation costs are a key factor for agglomeration, and will be important in attracting new firms to an area.¹⁸ These agglomeration benefits have been documented to operate in areas of five to ten miles.¹⁹ However, a good transportation network that allows for reliable travel time “shrinks distances” between businesses, suppliers

¹² Daniel Graham, “Agglomeration Economies and Transport Investments,” Imperial College, December 2007.

¹³ Weisbrod, 20.

¹⁴ McQuaid, 29.

¹⁵ Zhigang Li and Yu Chen, “Estimating the Social Return to Transport Infrastructure: A Price-Difference Approach Applied to a Quasi-Experiment,” 2013, *Journal of Comparative Economics*, Vol. 41 (3), pg. 669–683.

¹⁶ The magnitude of the effect of highway capital on output will differ by industry, with the largest difference observed between manufacturing and non-manufacturing industries.

¹⁷ It is an industry standard to use elasticities of supply and demand for materials as a measure of the impact of a change in transportation infrastructure investment. Based on a study conducted by the FHWA, the output elasticity of materials is usually the largest. The elasticity of labor and capital inputs is the second largest.

¹⁸ Jean-Paul Rodrigue, “Transport and Location,” *The Geography of Transport Systems*, 2017, <<https://people.hofstra.edu/geotrans/eng/ch2en/conc2en/ch2c4en.html>>.

¹⁹ Rosenthal, Stuart S., and Strange, William C. (2003). Geography, Industrial Organization, and Agglomeration. *Review of Economics and Statistics*, 85(2): 377–393.

and customers. Increasing returns to local industries can be anticipated in areas with intermodal linkages or intra-modally, as between major highways.

The San Joaquin Valley is becoming a major distribution and logistics center, with new and growing megadistribution centers, demonstrating the compounding benefits of these agglomeration economies.²⁰

Agglomeration effects are seen in public transportation as well, with clustering of economic activity around station stops. This clustering results in a smaller distance that San Joaquin Valley residents have to travel to access job opportunities. Subsequently, job seekers can expand the geographic area in which they can search for jobs, making a greater number of jobs available to them.²¹ Additionally, by locating near public transit, businesses save money since they can build less parking infrastructure. A Washington Metropolitan Area Transit Authority study estimates that building parking for the federal employees who take the Metro instead each day will cost the government \$2.4 billion.²²

- **More Efficient Operations:** With an efficient transportation system, businesses can make better decisions about their products, inputs and workforce without worrying about poor roadways or congestion. Businesses respond in a variety of ways to congestion. Some businesses may change their mix of labor and capital, reduce the daily deliveries made by a driver or serve a smaller, more specialized market. All of these adjustments can mean a loss for business productivity and market share.²³
- **Intra-Industry Linkages:** San Joaquin Valley industries are heavily interlinked, relying on other industries for the supply of inputs or for final processing. These linkages rely on an efficient network of well-maintained highways, roads, bridges and railways. Manufacturing and logistics, key industries in the region, are heavily dependent on a well-maintained transportation network; the San Joaquin Valley's transportation network is critical in distributing processed foods and energy products both domestically and internationally, with goods traveling to ports, nearby urban centers, or out of the state.²⁴
- **Fostering Innovation:** Transportation infrastructure investment is closely linked with economic competitiveness. Research suggests that highway investment results in industry growth and innovation.²⁵ Innovation results from infrastructure better supporting business activity. Infrastructure also attracts research and development firms for the large return on investment it offers.

²⁰ Cambridge Systematics, "The San Joaquin Valley Goods Movement Sustainable Implementation Plan", June 30, 2017. <http://sjvcogs.org/wp-content/uploads/2018/03/R2_SJV_SIP_Report_170914_revised-030918.pdf>

²¹ Anthony Venables, "Evaluating Urban Transport Improvements: Cost-Benefit Analysis in the Presence of Agglomeration and Income Taxation," September 2004.

²² "Making the Case for Transit: WMATA Regional Benefits of Transit," WMATA, November 2011: 4.

²³ Weisbrod, 4.

²⁴ SJVCOG, "Inter-Regional Goods Movement", <http://sjvcogs.org/valleywide_activities/good-movement/>

²⁵ Katherine Bell. "Investing in Infrastructure Means Investing in Innovation." Harvard Business Review, March 2012. In 2011, researchers at the University of Texas A&M found a critical link between the forecasted growth of the industry and investment in the transportation infrastructure system, using standard supply and demand analysis (Rosson 2011)

- **Access to Global Markets:** Many San Joaquin Valley firms depend on connections to global markets. In particular, the San Joaquin Valley's robust agricultural sector depends heavily on exports; with limited trade infrastructure in the region, connections to ports and airports are critical.²⁶ A robust and efficient transportation system makes San Joaquin Valley firms less vulnerable to economic shocks and less vulnerable to losing their competitive edge compared to other emerging industries. Industries also benefit from access to secondary markets, supported by a modern transportation infrastructure system.
- **Emergency Management Operations:** A well-invested transportation system will ensure that evacuation routes remain efficient and accessible during major disasters, including earthquakes and fires. In addition, the proper transportation investments will ensure that road networks are resilient to future super storms.
- **Spillover Savings:** In addition to the cost-lowering impact of reducing road roughness, increasing average speed, and reducing total user and travel time costs on firms, reducing congestion has a demonstrable impact on shipping volume and on prices, with a return of about 10 percent a year, as a conservative estimate.²⁷ Lower transport costs also have a quantifiable effect on firm choices with respect to suppliers and relatively improve firm hiring ability. Reducing transportation costs will have a significant spillover effect on all industries in the region and can be expected to be reflected in relatively lowering the cost of goods within the region, for both consumers and businesses.²⁸
- **Increased Regional Economic Competitiveness:** Improvements to the transportation network can increase regional economic competitiveness by: improving labor market matching, meaning that firms hire employees who more closely align with their needs; creating a draw for more firms and employees to move to the region; expanding firms' market area; and generating a "learning effect" among firms to spur innovation:²⁹
 - **Influx of firms to the region:** In response to this enhanced regional economic competitiveness, more firms will move to the region. With larger labor market pools supported by a more efficient transportation system, firms are able to hire better employees, creating an incentive for firms to move to the San Joaquin Valley to take advantage of this improved labor market matching. This effect is particularly important for firms that depend on a skilled workforce.

²⁶ Cambridge Systematics, "The San Joaquin Valley Goods Movement Sustainable Implementation Plan", June 30, 2017. <http://sjvcogs.org/wp-content/uploads/2018/03/R2_SJV_SIP_Report_170914_revised-030918.pdf>

²⁷ Li, 669–683.

²⁸ ICF Consulting, "Economic Effects of Transportation: The Freight Story," 2002.

²⁹ SCAG, "2016–2040 Regional Transportation Plan/ Sustainable Communities Strategy," April 7, 2016. <<http://scagtrpccs.net/pages/default.aspx>>.

- **Increasing labor supply:** Lower congestion levels draw workers to an area, allowing firms to hire qualified workers at reasonable wages. When choosing where to live, workers will evaluate metropolitan regions based on commute length and traffic congestion, in addition to other factors. Other factors being equal, regions with lower traffic congestion will have a greater draw for workers. With more workers moving to these lower-congestion areas, this increases the supply of available labor. In areas with higher traffic congestion and longer commutes, workers will need to be compensated by earning higher wages, paying lower house prices, or both.³⁰ This effect has already started to occur in the area, with warehousing and distribution jobs moving from the San Francisco Bay Area to the San Joaquin Valley due to lower costs and easier access to interstate highways.³¹
- **Increased market for firms' products:** Travel time reductions mean that firms can increase their market area, increasing economic competitiveness and stimulating regional job growth. Critical goods movement corridors in the San Joaquin Valley I-5 and SR99, as well as rural east-west highways, provide farm-to-market and farm-to-processor connections, of particular importance to the region's large agricultural and food processing sectors. In addition, these highways make up many of California's key rural corridors. With a growing population and economy, however, many of these east-west corridors are unable to keep up with growing trade volumes, and have been increasingly under-maintained and/or capacity constrained.³² Making needed improvements to San Joaquin Valley's highway network will allow for fast and efficient transport of agricultural and other goods across a broader market area.
- **Learning:** Learning effects from different firms and industries locating near each other in metropolitan areas create an improved innovation environment that will attract workers and firms to the region. Many economic studies have documented how the economic advantage enjoyed by cities is due in part to this learning that occurs when persons and firms are physically near one another^{33 34 35}. Industries that benefit from learning effects include manufacturing, which can improve processes to make them more efficient, and services, which increasingly depend on innovations in order to stay competitive.

Transportation investments can also spur learning and innovation in a regional economy; by reducing traffic congestion, people can more easily interact with a larger pool of like-minded experts. This means that local firms will be able to innovate in ways that lower their costs, improve their products and generate a larger market share. Over time, this improved innovation environment will attract more workers and firms, further increasing economic activity.

³⁰ Roback, Jennifer. (1982). Wages, Rents, and the Quality of Life. *Journal of Political Economy*, 90(6): 1257-1278.

³¹ MTC, "San Francisco Bay Area Goods Movement Plan," March 2016. <<https://mtc.ca.gov/our-work/plans-projects/economic-vitality/san-francisco-bay-area-goods-movement-plan>>

³² Cambridge Systematics, "The San Joaquin Valley Goods Movement Sustainable Implementation Plan", June 30, 2017. <http://sjvcogs.org/wp-content/uploads/2018/03/R2_SJV_SIP_Report_170914_revised-030918.pdf>

³³ Puga, Diego. (2010). The Magnitude and Causes of Agglomeration Economies. *Journal of Regional Science*, 50(1): 203-220.

³⁴ Glaeser, Edward L. (2011). *The Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. New York, NY: Penguin Press.

³⁵ Storper, Michael, and Venables, Anthony J. (2004). Buzz: Face-to-Face Contact and the Urban Economy. *Journal of Economic Geography*, 4(4): 351-370.

Consider the benefits to a business in the San Joaquin Valley when the region makes transportation improvements. The increase in construction activity will mean more demand for products and services in the area. A local business will sell more of its products and may even hire additional employees to increase output. With an improved transportation network, local businesses on the many main streets in the San Joaquin Valley will thrive.

The business will also have lower distribution costs because of the improved highways, bridges and transit in the area. More customers will be able to reach the business, and the owner may be able to hire more talented, educated and skilled workers that live further away.

The increase in demand may also lead the business to expand, opening another store, plant or business location. Finally, the business will demand more inputs and raw materials from their own suppliers, creating economic ripple effects throughout the economy. The business owner may also be able to purchase cheaper inputs because they have greater access to more markets.

In addition to business benefits, households also see significant benefits from transit investment:

- **Reducing Household Expenditures:** Research by the American Public Transportation Association (APTA) estimates that a two-car family living in a transit-rich area can eliminate one of its vehicles, saving over \$9,900 a year. These savings are significant to families, and will likely shift household spending to more productive uses, which will in turn stimulate the local economy.³⁶ The Center for Neighborhood Technology also found that households that have access to high quality public transit spend less on housing and transportation as a percentage of their income.³⁷

In addition, Weisbrod and Reno (2009) estimate that each person traveling by public transportation generates cost savings to both themselves and drivers of \$1,505 to \$2,455 per year. The average public transportation user who does not drive saves about \$905 per year in costs (in 2008 dollars). Additionally, non-transit users will see a benefit from reduced congestion of \$1.20 to \$3.10 per public transportation trip, or \$600 to \$1,550 per year.³⁸

- **Increasing Access to Jobs, Particularly for Disadvantaged Residents:** Investment in public transportation provides better and more consistent access to jobs, particularly for service and entry level employees with limited mobility options, as well as the more than 51 million Americans with disabilities. Eighty three percent of older Americans say public transit provides them with easy access to everyday necessities.³⁹

³⁶ APTA, "Commuters Who Resolve to Save Money in 2012 Take Note: Transit Riders Save More As Gas Prices Increase."

³⁷ "Penny Wise, Pound Foolish," [Center for Neighborhood Technology](#), March 2010.

³⁸ Glen Weisbrod and Arlee Reno, "Economic Impact of Public Transportation Investment," APTA, October 2009.

³⁹ APTA, "Economic Recovery: Promoting Growth."

- **Travel Time Savings for Transit Users:** Making improvements to transit networks will result in more direct or frequent service. This means that transit users will spend less time waiting for trains or buses, and benefit from faster travel times on their way to work or entertainment.
- **Benefits of Decreased Congestion:** Increased investment in public transportation will result in expanded service and increased utilization of transit systems. This will result in fewer cars on the roads, and therefore less congestion for households traveling by car and by bus. A reduction in congestion levels has a positive effect on air quality, the quality of life and household costs, as cars waste less gasoline by idling in traffic.
- **Improved Reliability:** With less congestion, workers benefit from a more reliable commute, which is particularly important to those whose jobs depend on getting to work on time. This holds true for both transit users and those who drive to work; transit users can get to work faster and more consistently using an improved transit network, while drivers can benefit from fewer delays since there are fewer cars on the road.

Transportation capital investments trigger immediate economic activity that creates and sustains jobs and tax revenue, yet yields long-lived capital assets that facilitate economic activity for many decades to come by providing access to jobs, services, materials and markets.

An improved highway, street, bridge and transit network results in lower operating costs, allowing businesses to increase investment in other capital

outlays and expand their operations. Commuters spend less time in traffic and congestion as mobility increases, and safety enhancements help save lives and reduce injuries.

The overall economic benefits of transportation investment to a region's economic activity are well documented in the economics literature. There are numerous studies that have found a positive correlation between transportation infrastructure investment and economic development. Although the exact impact of the investment has varied among studies, the fact that there is a positive relationship is widely accepted.⁴⁰

Some of the main findings include:

- A recent study commissioned by the U.S. Treasury Department found that for every **\$1 in capital spent on select projects, the net economic benefit ranged between \$3.50 and \$7.00.**⁴¹ Released in December 2016, "40 Proposed U.S. Transportation and Water Infrastructure Projects of Major Economic Significance" also explores some of the challenges of completing the work. The report found that a lack of public funding was "by far the most common factor hindering the completion" of the projects.
- A 2005 report by Dr. Robert Shapiro and Dr. Kevin Hassett found that the U.S. transportation network provides more than **\$4 in direct benefits for every \$1 in direct costs** that taxpayers pay to build, operate and maintain this system.⁴² These economic benefits include lower costs and higher productivity for businesses, and time savings and additional income for workers. The authors noted that the estimate

⁴⁰ Economic studies have found output elasticities ranging from as high as 0.56 (Aschauer 1989) to a low of 0.04 (Garcia-Mila and McGuire 1992). This means that a 1 percent increase in highway investment will result in between 0.04 to 0.56 percent increase in output. Most of this variation is because studies have a different focus—looking at different types of investment measures and output at either the national, state or county level.

⁴¹ Report available at <https://www.treasury.gov/connect/blog/Pages/Importance-of-Infrastructure-Investment-for-Spurring-Growth.aspx> as of February 2017.

⁴² R. Shapiro and K. Hassett, "Healthy Returns: The Economic Impact of Public Investment in Surface Transportation," 2005.

substantially understates the full net benefits of the U.S. transportation network and does not take into account the increased benefit from better access to schools and hospitals, or other ways these investments support economic growth and allow American workers and companies to compete successfully on the global stage.

- According to an analysis by TRIP, a national transportation research group, the average **return to every \$1 spent on highway, street and bridge investment is \$5.20**, which takes the form of lower maintenance costs, fewer delays, improved safety and less congestion. This analysis is based on the U.S. Department of Transportation's Conditions and Performance Report.
- A study by Dr. Alicia Munnell of the Federal Reserve Bank of Boston concluded that states that invested more in infrastructure tended to have greater output, more private investment and more employment growth.⁴³ Her work found that **a 1 percent increase in public capital will raise national output by 0.15 percent**.⁴⁴ She further notes that the major impact of public capital output is from investment in highways and water and sewer systems. Other public capital investments, such as school buildings and hospitals, had virtually no measureable impact on private production.⁴⁵ Munnell also concludes that public capital and infrastructure investment have a significant positive impact on a state's private employment growth and private sector output.
- Federal Highway Administration economist Theresa Smith reached similar conclusions, finding that **a 10 percent increase in highway capital stock will increase a state's gross state product by 1.2 to 1.3 percent**.⁴⁶ Therefore, a \$1 billion increase in the San Joaquin Valley's highway capital stock will increase the region's productivity between \$1.21 million to \$1.27 million.
- Additional studies have found that transportation infrastructure investments have an impact on the attractiveness of local communities, which helps determine local economic activity and land values. In general, most studies find that locations close to large transportation infrastructure investment have higher land values.⁴⁷

⁴³ Alicia Munnell, "How Does Public Infrastructure Affect Regional Economic Performance," *New England Economic Review*, September/October 1990.

⁴⁴ Munnell's elasticity for private capital is 0.31, so that a 1 percent increase in private capital will raise national output by 0.31 percent. This is in line with other studies of returns from private capital investment.

⁴⁵ Munnell says she is not implying that government-provided education and health services have no effect on productivity, but rather "the stock of buildings ... may not be the best indicator of the quality of education services; teachers' salaries, for example, might be a better measure."

⁴⁶ Theresa Smith, "The Impact of Highway Infrastructure on Economic Performance," *Public Roads* Vol. 57 – No. 4 (Spring 1994).

⁴⁷ A synopsis of these studies are available in the Transportation Research Board's *Expanding Metropolitan Highways: Implications for Air Quality and Energy Use – Special Report 245*, 1995

- M. Ishaq Nadiri of New York University and the National Bureau of Economics Research and Theofanis P. Mamuneas of New York University find significant cost structure and productivity performance impacts on the U.S. manufacturing industry as a result of highway investment. Their work shows that the rate of return on highway investment can be greater than private investment.

Some major findings include:⁴⁸

- Over the period 1950 to 1989, U.S. industries realized production cost savings averaging 18 cents annually for each \$1 invested in the road system.
- Investments in non-local roads yield even higher production cost savings – estimated at 24 cents for each \$1 of investment.
- Although the impact of highway investment on productivity has declined since the early 1970s and the initial construction of the Interstate, evidence suggests that highway infrastructure investments more than pay for themselves in terms of industry cost savings.
- The U.S. highway network’s contribution to economic productivity growth was between 7 and 8 percent over the time period 1980 to 1989.
- The net social rate of return on investment in the non-local road system during the 1980s was 16 percent, and the rate of return for the entire road network was 10 percent.⁴⁹
- This rate of return was significantly higher than the prevailing rate of return on private capital and the long-term interest rate during this time period.
- The higher return to highway capital is due to its network feature, since the benefits are shared by all industries.

- Investment in public transportation provides better and more consistent access to jobs, particularly for service and entry level employees with limited mobility options, as well as the more than 51 million Americans with disabilities. Eighty three percent of older Americans say public transit provides them with easy access to everyday necessities.⁵⁰

Overall, the benefits from investing to maintain and improve a region’s transportation network are greater than the cost, and can help support economic growth throughout the economy for years to come.

⁴⁸ Summary provided by U.S. Department of Transportation, *Productivity and the Highway Network: A Look at the Economic Benefits to Industry from Investment in the Highway Network*.

⁴⁹ The net social rate of return is an estimate of the benefits to private industries derived from the shared use of public highways.

⁵⁰ APTA, “Economic Recovery: Promoting Growth.”

IV. Challenges Facing the San Joaquin Valley Transportation Network

California faces some of the most challenging road and bridge conditions in the country. Increasing investment to improve the safety, efficiency and conditions of the San Joaquin Valley highway, street and bridge network will help all system users.

- **Road Conditions**—According to FHWA, California has 180,800 miles of roadway.⁵¹ Of the state's 56,758 miles of roadway eligible for federal aid, 50 percent are rated "not acceptable" and need major repairs or replacement. This is the fourth highest percentage in all 50 states.

According to the American Society of Civil Engineers, driving on California roads in need of repair costs each driver \$844 per year.⁵²

A 2016 study commissioned jointly by the League of California Cities and the California State Association of Counties uses the Pavement Condition Index (PCI) to evaluate the grade or condition of roads across the state. The PCI ranges from 0 to 100, with a score of 100 for new roads, a score over 70 for good to excellent roads, and a score of 25 or less for failed roads. This study, which captured data from over 99 percent of the California's local roads, found that Madera County had a PCI of 46, in the "poor" category, and all other counties in the region were in the "at risk" category: Stanislaus County had a PCI of 55; Merced County had a PCI of 56; Kings County had a PCI of 59; Tulare County had a PCI of 60; Kern County had a PCI of 63; Fresno County had a PCI of 64; and San Joaquin County had a PCI of 70. San Joaquin Valley pavement needs over 10 years were estimated at \$13.92 billion, including \$3.09 billion in pavement needs for Kern County, \$2.96 billion for Fresno County, \$1.84 billion for Stanislaus County, \$1.78 billion for Tulare County, \$1.39 billion for San Joaquin County, \$1.27 billion for Merced County, \$964 million for Madera County, and \$626 million for Kings County. If there are delays repairing roads, the cost of repair may rise substantially. Overall, just over half (54.8 percent) of local streets and roads are in good condition across the state.⁵³ The state of San Joaquin Valley and other local roads highlights the need for this additional investment provided by SB 1.

- **Deficient Bridges**—The San Joaquin Valley has 4,116 roadway bridges, captured by the FHWA National Bridge Inventory (NBI) data. FHWA reports 18.7 percent of these bridges are either "structurally deficient" (323 bridges) or "functionally obsolete"

⁵¹ FHWA Highway Statistics 2016 Table HM-10, <<https://www.fhwa.dot.gov/policyinformation/statistics/2016/hm10.cfm>>.

⁵² American Society of Civil Engineers, "2017 Infrastructure Report Card," <<https://www.infrastructurereportcard.org/state-item/california/>>.

⁵³ Save California Streets, "Final Report: California Statewide Local Streets and Roads Needs Assessment," October 2016. This study was managed by the Metropolitan Transportation Commission, and other members of the Oversight Committee included: the League of California Cities; the California State Association of Counties; the County Engineers Association of California; California Regional Transportation Planning Agencies; the California Rural Counties Task Force; and the County of Los Angeles Department of Public Works.

(446 bridges). This is below the national average of 22 percent. Bridge owners estimate it will cost at least \$846.10 million to make needed bridge repairs in the region.

The Save California Streets Coalition estimates the total number of non-NBI bridges in California at 4,000, with needs ranging from \$80 to \$100 million.⁵⁴

- **Road Safety**—The National Highway Traffic Safety Administration reports there were 592 fatal motor vehicle crashes, resulting in 656 fatalities, in the San Joaquin Valley during 2016. Of these, 65 percent of fatalities occurred on rural roads and 25 percent occurred on the National Highway System. Motor vehicle crashes are the number one cause of death and permanently disabling injuries for young Americans under age 21.
- **Freight Traffic**—Inter-state truck shipments along California's highway, street and bridge network are vital to the economic growth of the state. California businesses shipped a total of \$2.22 trillion in freight in 2015. Of this total, 67 percent was shipped via truck. Truck traffic alone is expected to increase by 127 percent by 2045, reaching \$3.39 trillion in value.
- **Transit Needs**—Trains, buses, tracks and transit stations across California are growing older; many are approaching the end of their useful life, while transit needs are expected to continue growing. According to a report by the California Transit Association, which performed a detailed analysis of transit asset conditions in 2013, the average age of the state's bus fleet (which makes up almost half of total transit vehicles) is 11 years, just shy of the 12 year replacement age recommended

by the Federal Transit Administration. Additionally, 46 percent of buses are 12 years old or older, meaning that many will need to be replaced in the near term. The rail fleet, while older than the bus fleet, has a longer useful life, so only 13 percent of rail vehicles are older than 25 years. Additionally, components of some transit stations are in need of replacement; transit station buildings on average are slightly older than their useful lives, and station escalators are almost six years older than their useful lives, on average.⁵⁵

Additionally, at 2013 funding levels, there would be more transit assets beyond their useful life in 2020 than in 2010, growing the backlog of transit capital needs. In this analysis, the California Transit Association estimates that capital projects, including preservation, service expansion and major new service (such as extending a rail line) projects, would only see 49 percent of needed funding across Southern California.⁵⁶

- **Congestion**—Traffic congestion occurs when the number of vehicles on a roadway is greater than the road was designed to handle. Traffic is not able to move at speed, and the resulting slowdowns have a ripple effect along the roadway. Traffic congestion has adverse impacts on air quality, the quality of life and business activity, and inhibits job growth. In the San Joaquin Valley, this can cost urban drivers anywhere from \$31 to \$516 per year.⁵⁷ Air quality is affected due to increased vehicle emissions from cars and trucks stuck in traffic. Poor air quality has an impact on the health of at-risk populations, including the elderly and small children.

⁵⁴ Ibid.

⁵⁵ California Transit Association, "California's Unmet Transit Funding Needs: Fiscal Years 2011–2020," Jul. 13, 2013.

⁵⁶ Ibid.

⁵⁷ Texas Transportation Institute 2015 Urban Mobility Scorecard

Personal time delays mean that commuters and other system users are behind the wheel longer, rather than spending more time at work or at leisure, impacting their quality of life. This increased traffic congestion means additional costs, which are associated with a reduced service area for business suppliers, customer markets and workforces.

A survey of business owners found that typical ways businesses deal with congestion include:⁵⁸

- Costs for additional drivers and trucks due to longer travel times
- "Rescue drivers" to avoid missed deliveries due to unexpected delays
- Loss of productivity due to missed deliveries
- Shift changes to allow earlier production cut off
- Reduced market areas
- Increased inventories
- Costs for additional crews and decentralized operations to serve the same market area
- Businesses that are local can absorb the cost or pass it on
- Trade-oriented businesses can respond by moving their operations

⁵⁸ Economic Development Research Group, "The Cost of Congestion to the Economy of the Portland Region," November 2005, <https://www.edrgroup.com/pdf/trade_trans_studies_cocreport1128final.pdf>.

Annual Cost of Congestion in San Joaquin Valley Cities

Urban Area	Cost Per Commuter		Total Cost	
	Annual Hours of Delay Per Commuter	Annual Cost of Congestion Per Commuter	Total Annual Hours of Delay (in thousands)	Total Annual Cost of Congestion (in millions)
Stockton CA	18	\$516	8,001	\$148
Bakersfield CA	19	\$512	6,656	\$215
Fresno CA	23	\$495	5,115	\$251
Modesto CA	18	\$421	4,448	\$159
Merced CA	9	\$218	1,212	\$33
Visalia CA	8	\$190	1,118	\$46
Lodi CA	8	\$179	822	\$13
Manteca CA	7	\$177	623	\$16
Madera CA	4	\$87	314	\$8
Porterville CA	3	\$73	360	\$6
Tracy CA	1	\$38	106	\$3
Hanford CA	1	\$37	111	\$4
Turlock CA	1	\$31	126	\$3
Total San Joaquin Valley Cities			29,012	\$905

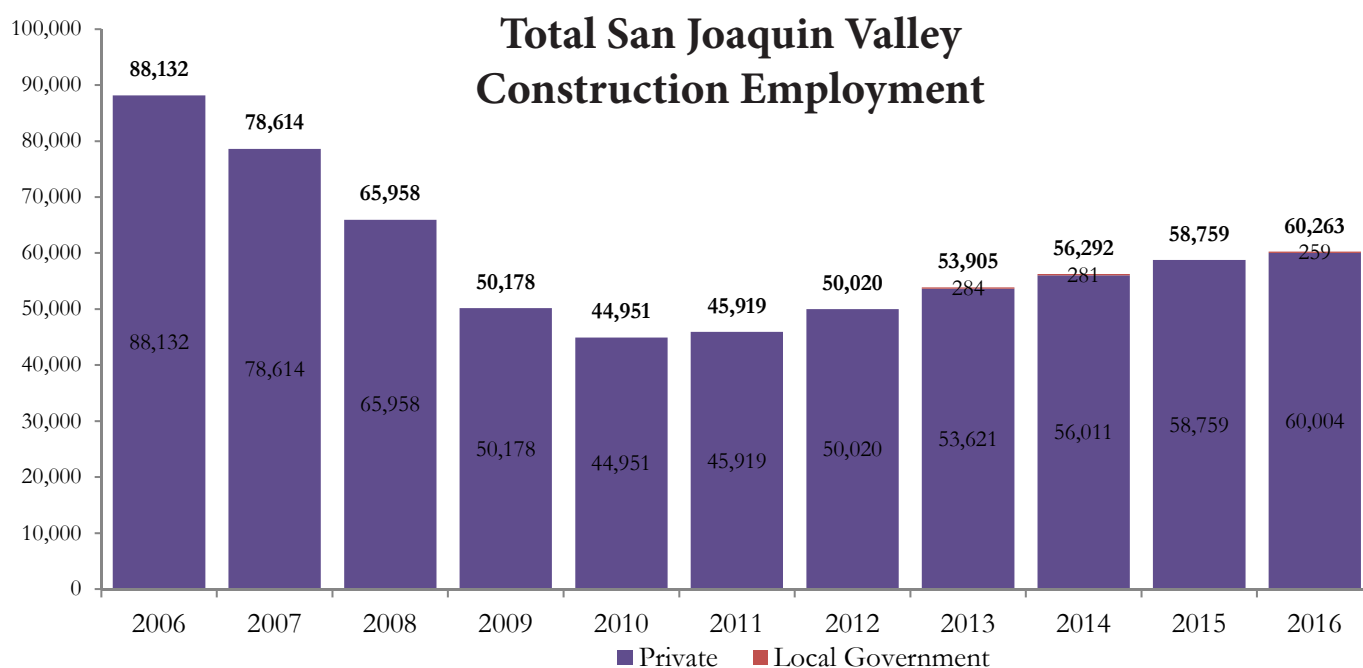
Source: Texas Transportation Institute 2015 Urban Mobility Scorecard

V. Broader Economic Challenges

Increasing transportation investment will stimulate economic growth and lead to more job opportunities for San Joaquin Valley residents. This will help the region's construction sector recover from the downturn of the Great Recession in 2008.

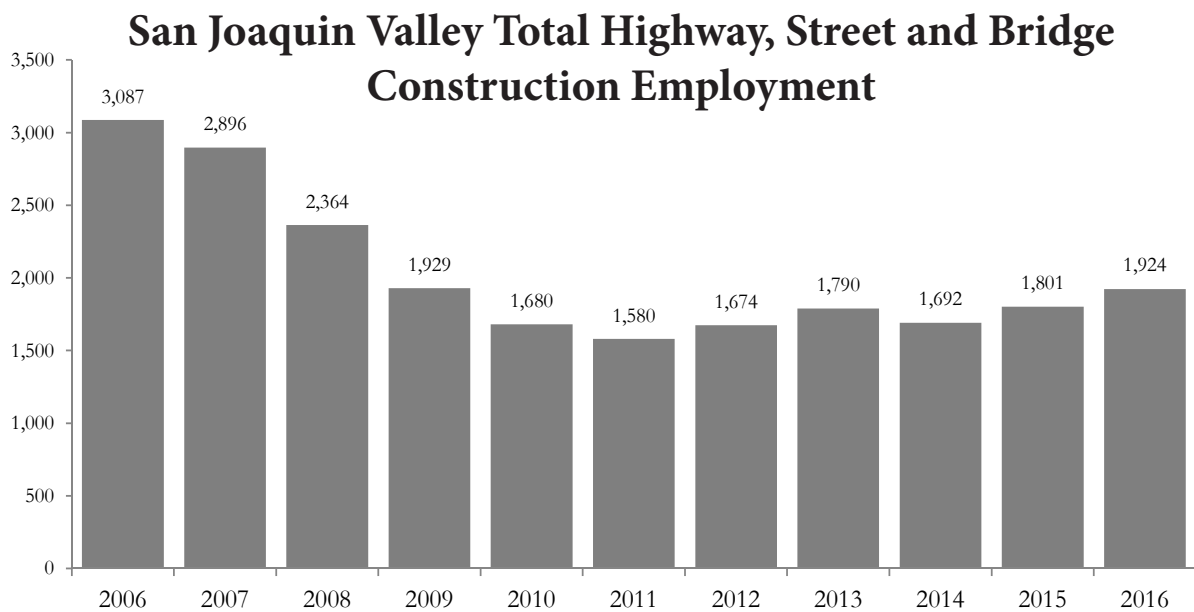
The San Joaquin Valley construction sector continues to fall behind other parts of the economy. San Joaquin Valley construction employment has seen slow growth over the past six years, however annual employment levels are still well below pre-recession levels. San Joaquin Valley construction employment is estimated at 60,263 people in 2016 (the latest year data is available), 23 percent below 2007 levels.⁵⁹ Highway, street and bridge construction employment follows a similar trend as overall construction employment. However, other heavy and civil engineering construction employment, which comprises transit employment, saw high levels of growth in 2011 and 2012, but has fallen in recent years, driven primarily by the utility system construction sector.

⁵⁹ U.S. Department of Labor Bureau of Labor Statistics Local Area Unemployment Statistics



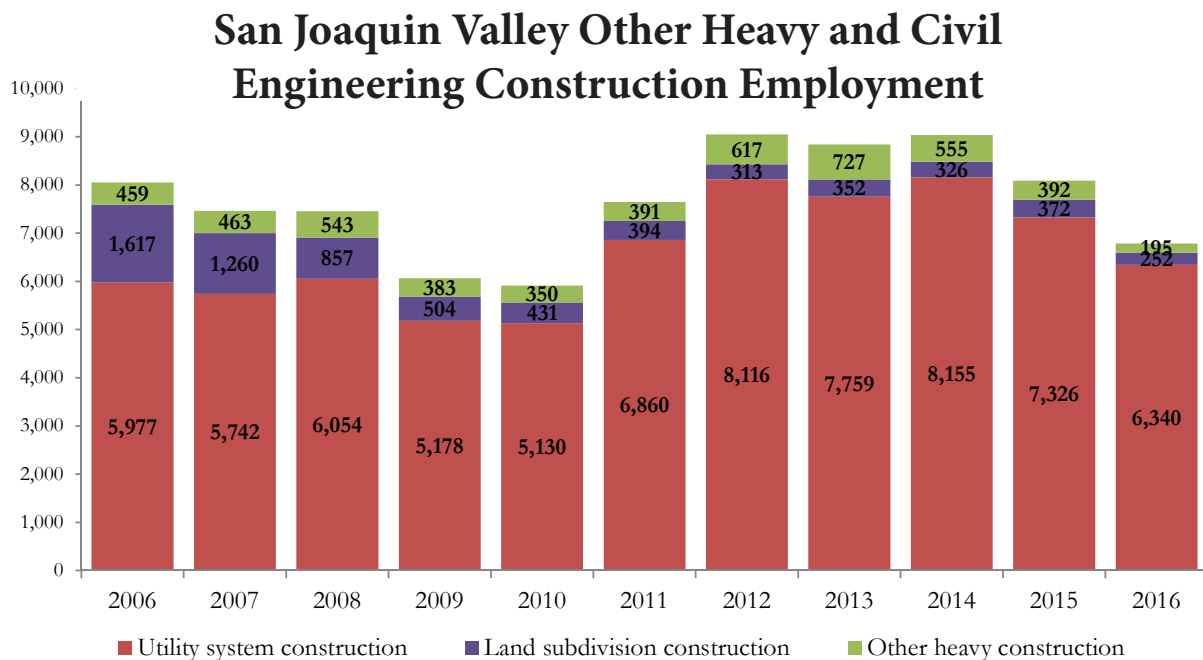
Source: U.S. Department of Labor Bureau of Labor Statistics

Note that local government construction employment data was only available for San Joaquin County, for 2013, 2014, and 2016.



Source: U.S. Department of Labor Bureau of Labor Statistics

Note that private construction data was unavailable for: Kings County; Madera County in 2010, 2011, 2014, 2015, and 2016; and Merced County in 2010 through 2016. Additionally, local government construction employment data was unavailable for San Joaquin Valley counties.



Source: U.S. Department of Labor Bureau of Labor Statistics

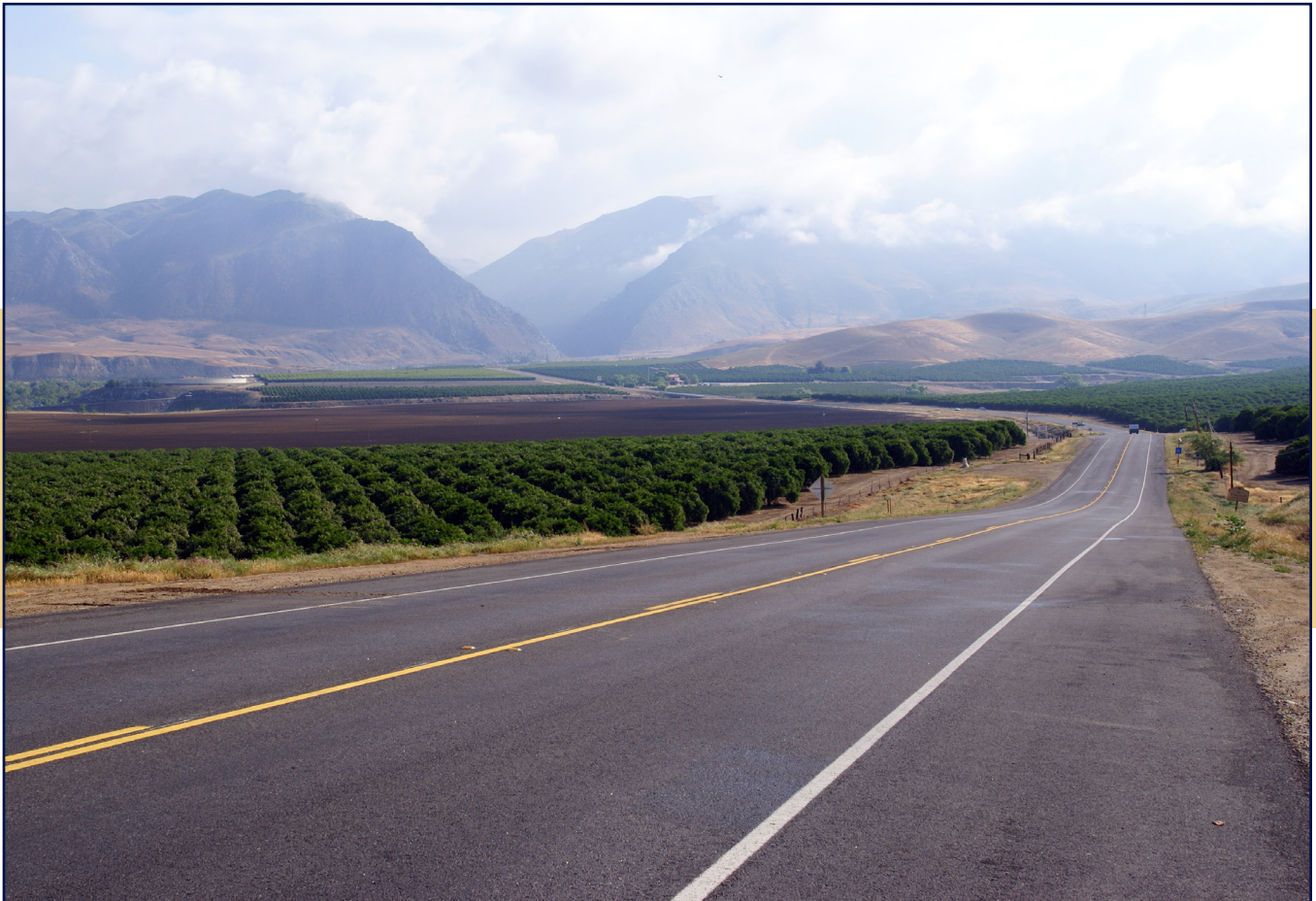
Note that utility system construction data was unavailable for Kings County in 2009, 2010, and 2013 through 2015, and for Merced County in 2015 and 2016. Land Subdivision construction data was unavailable for: Kings County; Merced County; Kern County in 2016; Madera County in 2007 through 2009 and 2011 through 2016; Stanislaus County in 2006 through 2010, 2012, 2014, and 2016; and Tulare County in 2016. Other heavy construction data was unavailable for: Kings County; Madera County; Merced County; Kern County in 2016; Stanislaus County in 2006 through 2010, 2012, 2014, and 2016; and Tulare County in 2016.

VI. The Economic Impacts of SB 1 on Major Industry Sectors

SB 1 will increase San Joaquin Valley highway, street, bridge and transit investment each year, resulting in a significant immediate effect on all sectors of the county economy. This investment comprises highway, street and bridge construction, transit construction, other transit spending, and the remainder of SB 1 annual spending which goes toward construction support activities, right-of-way, planning, design, research, and administration.

The economic ripple effect of spending on construction, transit and support activities will create additional demand in every sector of the region's economy.

In this section, the economic impact for each component of SB 1 spending is calculated for each of the 19 major industry sectors in the San Joaquin Valley.



Average Annual Economic Impact of SB 1 on the San Joaquin Valley Industry Output (in thousands)					
Industry	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Other SB 1 Spending	Total Annual Impact
Agriculture, forestry, fishing, and hunting	\$2,565	\$397	\$605	\$1,628	\$5,195
Mining	\$13,605	\$850	\$3,523	\$9,661	\$27,639
Utilities	\$4,386	\$506	\$1,136	\$2,509	\$8,537
Construction	\$373,516	\$40,700	\$1,197	\$31,975	\$447,388
Manufacturing	\$97,617	\$8,919	\$14,078	\$24,119	\$144,732
Wholesale trade	\$17,917	\$1,951	\$3,496	\$6,052	\$29,416
Retail trade	\$18,549	\$3,757	\$3,886	\$10,673	\$36,865
Transportation and warehousing	\$15,055	\$1,478	\$69,690	\$7,328	\$93,550
Information	\$3,978	\$530	\$1,203	\$2,839	\$8,550
Finance and insurance	\$6,989	\$866	\$3,597	\$10,519	\$21,971
Real estate and rental and leasing	\$21,114	\$2,267	\$4,632	\$10,233	\$38,246
Professional, scientific, and technical services	\$6,171	\$798	\$2,084	\$9,727	\$18,779
Management of companies and enterprises	\$1,933	\$206	\$350	\$748	\$3,237
Administrative and waste management services	\$4,498	\$530	\$2,891	\$7,504	\$15,423
Educational services	\$1,710	\$231	\$450	\$990	\$3,381
Health care and social assistance	\$19,516	\$2,607	\$5,062	\$10,959	\$38,145
Arts, entertainment, and recreation	\$1,078	\$146	\$276	\$704	\$2,204
Accommodation and Food Services	\$6,282	\$810	\$1,566	\$3,763	\$12,421
Other services	\$8,513	\$988	\$2,582	\$226,112	\$238,194
Total industry impact*	\$624,992	\$68,538	\$122,316	\$378,064	\$1,193,911

*Does not include impact on government output.

Average Annual Economic Impact of SB 1 on the San Joaquin Valley Jobs Supported/Created					
Industry	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Other SB 1 Spending	Total Annual Impact
Agriculture, forestry, fishing, and hunting	14	3	5	9	32
Mining	38	2	7	20	67
Utilities	6	1	1	3	11
Construction	1,544	236	7	164	1,952
Manufacturing	243	27	23	64	358
Wholesale trade	80	9	16	27	131
Retail trade	208	42	44	120	414
Transportation and warehousing	88	9	1,481	43	1,622
Information	11	2	4	9	25
Finance and insurance	25	3	13	37	77
Real estate and rental and leasing	93	12	23	54	181
Professional, scientific, and technical services	36	5	12	56	109
Management of companies and enterprises	7	1	1	3	12
Administrative and waste management services	59	6	27	80	172
Educational services	26	3	6	15	50
Health care and social assistance	173	23	45	98	339
Arts, entertainment, and recreation	12	2	3	7	24
Accommodation and Food Services	95	11	22	56	184
Other services	68	8	22	749	848
Total industry impact*	2,842	408	1,766	1,624	6,640

*Does not include impact on government output.

Total Economic Impact of SB 1 on the San Joaquin Valley over 10 Years Industry Output (in millions)					
Industry	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Other SB 1 Spending	Total Annual Impact
Agriculture, forestry, fishing, and hunting	\$26	\$4	\$6	\$16	\$52
Mining	\$136	\$9	\$35	\$97	\$276
Utilities	\$44	\$5	\$11	\$25	\$85
Construction	\$3,735	\$407	\$12	\$320	\$4,474
Manufacturing	\$976	\$89	\$141	\$241	\$1,447
Wholesale trade	\$179	\$20	\$35	\$61	\$294
Retail trade	\$185	\$38	\$39	\$107	\$369
Transportation and warehousing	\$151	\$15	\$697	\$73	\$936
Information	\$40	\$5	\$12	\$28	\$86
Finance and insurance	\$70	\$9	\$36	\$105	\$220
Real estate and rental and leasing	\$211	\$23	\$46	\$102	\$382
Professional, scientific, and technical services	\$62	\$8	\$21	\$97	\$188
Management of companies and enterprises	\$19	\$2	\$3	\$7	\$32
Administrative and waste management services	\$45	\$5	\$29	\$75	\$154
Educational services	\$17	\$2	\$5	\$10	\$34
Health care and social assistance	\$195	\$26	\$51	\$110	\$381
Arts, entertainment, and recreation	\$11	\$1	\$3	\$7	\$22
Accommodation and Food Services	\$63	\$8	\$16	\$38	\$124
Other services	\$85	\$10	\$26	\$2,261	\$2,382
Total industry impact*	\$6,250	\$685	\$1,223	\$3,781	\$11,939

*Does not include impact on government output.

Total Economic Impact of SB 1 on the San Joaquin Valley over 10 Years Job-Years Supported/Created					
Industry	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Other SB 1 Spending	Total Annual Impact
Agriculture, forestry, fishing, and hunting	143	33	47	92	316
Mining	377	20	71	202	671
Utilities	55	6	14	33	109
Construction	15,445	2,364	70	1,645	19,524
Manufacturing	2,432	271	233	643	3,579
Wholesale trade	801	87	156	270	1,314
Retail trade	2,079	424	439	1,202	4,144
Transportation and warehousing	884	91	14,814	433	16,221
Information	112	15	35	85	248
Finance and insurance	246	32	126	370	774
Real estate and rental and leasing	927	115	231	539	1,813
Professional, scientific, and technical services	360	46	121	559	1,086
Management of companies and enterprises	69	7	13	27	115
Administrative and waste management services	586	63	269	802	1,720
Educational services	256	32	62	147	498
Health care and social assistance	1,734	232	451	975	3,392
Arts, entertainment, and recreation	119	17	31	73	240
Accommodation and Food Services	948	114	220	563	1,845
Other services	685	84	218	7,490	8,477
Total industry impact*	28,419	4,076	17,662	16,241	66,398

*Does not include impact on government output.

The Economic Benefits of SB 1 on ...

Agriculture, forestry, fishing, and hunting

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$52 million in output in the Agriculture, Forestry, Fishing, and Hunting sector over 10 years, supporting nearly 320 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$5 million in additional economic output
- A \$2.2 million increase in gross state product (GSP)
- Supporting or creating an additional 32 jobs. These workers will earn over \$1 million in wages
- \$192.4 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$5.2 million	\$52.0 million
Value Added (contribution to GSP)	\$2.2 million	\$21.6 million
Employment	32 people	316 job-years
Total Payroll	\$1.3 million	\$12.7 million
Total Tax Revenues	\$192.4 thousand	\$1.9 million
State Payroll Tax Contribution	\$8.6 thousand	\$86.0 thousand
Federal Payroll Tax Contribution	\$96.8 thousand	\$967.8 thousand
State Income Tax Contribution	\$86.2 thousand	\$861.9 thousand
State & Local Sales Tax Contribution	\$794.0	\$7.9 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Agriculture, forestry, fishing, and hunting in the San Joaquin Valley contributed \$15.5 billion to county economic activity in 2016, accounting for 9.1% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$26.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 5,601 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$5.4 billion. These businesses contribute an estimated \$448.5 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$29,425 each year. The Agriculture, Forestry, Fishing and Hunting sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$26.7 billion	3	9.1%
Value Added (contribution to GSP)	\$15.5 billion	3	9.1%
Establishments	5,601 businesses	6	9.0%
Employment	182,997 people	1	19.2%
Average Annual Salary	\$29,425	14	
Total Payroll	\$5.4 billion	3	12.0%
Total Tax Revenues	\$954.2 million	5	7.9%
State Payroll Tax Contribution	\$36.6 million	3	13.3%
Federal Payroll Tax Contribution	\$411.9 million	3	13.3%
State Income Tax Contribution	\$499.9 million	3	12.1%
State & Local Sales Tax Contribution	\$5.7 million	16	0.1%

The Economic Benefits of SB 1 on ...

Mining

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$276 million in output in the Mining sector over 10 years, supporting over 670 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$28 million in additional economic output
- A \$18.7 million increase in gross state product (GSP)
- Supporting or creating an additional 67 jobs. These workers will earn nearly \$5 million in wages
- \$1.2 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$27.6 million	\$276.4 million
Value Added (contribution to GSP)	\$18.7 million	\$187.0 million
Employment	67 people	671 job-years
Total Payroll	\$4.8 million	\$48.0 million
Total Tax Revenues	\$1.2 million	\$11.7 million
State Payroll Tax Contribution	\$32.7 thousand	\$326.7 thousand
Federal Payroll Tax Contribution	\$367.6 thousand	\$3.7 million
State Income Tax Contribution	\$749.6 thousand	\$7.5 million
State & Local Sales Tax Contribution	\$19.9 thousand	\$199.1 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Mining in the San Joaquin Valley contributed \$3.3 billion to county economic activity in 2016, accounting for 1.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$5.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 233 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$821.7 million. These businesses contribute an estimated \$68.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$99,238 each year. The Mining, Quarrying, and Oil and Gas Extraction sector comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$5.7 billion	14	1.9%
Value Added (contribution to GSP)	\$3.3 billion	14	1.9%
Establishments	233 businesses	18	0.4%
Employment	8,280 people	18	0.9%
Average Annual Salary	\$99,238	2	
Total Payroll	\$821.7 million	13	1.8%
Total Tax Revenues	\$164.5 million	15	1.4%
State Payroll Tax Contribution	\$5.6 million	13	2.0%
Federal Payroll Tax Contribution	\$62.9 million	13	2.0%
State Income Tax Contribution	\$92.6 million	13	2.2%
State & Local Sales Tax Contribution	\$3.5 million	18	0.1%

The Economic Benefits of SB 1 on ...

Utilities

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$85 million in output in the Utilities sector over 10 years, supporting nearly 110 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$9 million in additional economic output
- A \$4.3 million increase in gross state product (GSP)
- Supporting or creating an additional 11 jobs. These workers will earn over \$1 million in wages
- \$233.8 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$8.5 million	\$85.4 million
Value Added (contribution to GSP)	\$4.3 million	\$43.0 million
Employment	11 people	109 job-years
Total Payroll	\$1.3 million	\$12.9 million
Total Tax Revenues	\$233.8 thousand	\$2.3 million
State Payroll Tax Contribution	\$8.8 thousand	\$87.6 thousand
Federal Payroll Tax Contribution	\$98.5 thousand	\$985.5 thousand
State Income Tax Contribution	\$107.8 thousand	\$1.1 million
State & Local Sales Tax Contribution	\$18.7 thousand	\$186.8 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Utilities in the San Joaquin Valley contributed \$1.3 billion to county economic activity in 2016, accounting for 0.7% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$2.2 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 165 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$273.2 million. These businesses contribute an estimated \$22.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$103,563 each year. The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$2.2 billion	17	0.7%
Value Added (contribution to GSP)	\$1.3 billion	17	0.7%
Establishments	165 businesses	19	0.3%
Employment	2,638 people	19	0.3%
Average Annual Salary	\$103,563	1	
Total Payroll	\$273.2 million	19	0.6%
Total Tax Revenues	\$54.3 million	19	0.4%
State Payroll Tax Contribution	\$1.9 million	19	0.7%
Federal Payroll Tax Contribution	\$20.9 million	19	0.7%
State Income Tax Contribution	\$26.1 million	19	0.6%
State & Local Sales Tax Contribution	\$5.5 million	17	0.1%

The Economic Benefits of SB 1 on ...

Construction

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$4 billion in output in the Construction sector over 10 years, supporting over 19,520 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$447 million in additional economic output
- A \$233.8 million increase in gross state product (GSP)
- Supporting or creating an additional 1,952 jobs. These workers will earn nearly \$126 million in wages
- \$21.9 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$447.4 million	\$4.5 billion
Value Added (contribution to GSP)	\$233.8 million	\$2.3 billion
Employment	1,952 people	19,524 job-years
Total Payroll	\$125.6 million	\$1.3 billion
Total Tax Revenues	\$21.9 million	\$218.9 million
State Payroll Tax Contribution	\$854.2 thousand	\$8.5 million
Federal Payroll Tax Contribution	\$9.6 million	\$96.1 million
State Income Tax Contribution	\$9.0 million	\$90.1 million
State & Local Sales Tax Contribution	\$2.4 million	\$24.1 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Construction in the San Joaquin Valley contributed \$7.5 billion to county economic activity in 2016, accounting for 4.4% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$12.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 5,728 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$2.8 billion. These businesses contribute an estimated \$236.7 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$53,238 each year. The Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems).

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$12.9 billion	7	4.4%
Value Added (contribution to GSP)	\$7.5 billion	7	4.4%
Establishments	5,728 businesses	4	9.2%
Employment	53,385 people	8	5.6%
Average Annual Salary	\$53,238	6	
Total Payroll	\$2.8 billion	6	6.3%
Total Tax Revenues	\$560.6 million	7	4.6%
State Payroll Tax Contribution	\$19.3 million	6	7.0%
Federal Payroll Tax Contribution	\$217.4 million	6	7.0%
State Income Tax Contribution	\$246.5 million	6	6.0%
State & Local Sales Tax Contribution	\$77.4 million	6	1.7%

The Economic Benefits of SB 1 on ...

Manufacturing

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$1 billion in output in the Manufacturing sector over 10 years, supporting nearly 3,580 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$145 million in additional economic output
- A \$44.8 million increase in gross state product (GSP)
- Supporting or creating an additional 358 jobs. These workers will earn over \$24 million in wages
- \$4.2 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$144.7 million	\$1.4 billion
Value Added (contribution to GSP)	\$44.8 million	\$447.9 million
Employment	358 people	3,579 job-years
Total Payroll	\$24.1 million	\$240.7 million
Total Tax Revenues	\$4.2 million	\$42.5 million
State Payroll Tax Contribution	\$163.7 thousand	\$1.6 million
Federal Payroll Tax Contribution	\$1.8 million	\$18.4 million
State Income Tax Contribution	\$1.7 million	\$17.4 million
State & Local Sales Tax Contribution	\$504.8 thousand	\$5.0 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Manufacturing in the San Joaquin Valley contributed \$26.3 billion to county economic activity in 2016, accounting for 15.4% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$45.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 2,386 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$5.5 billion. These businesses contribute an estimated \$461.1 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$53,196 each year. The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$45.3 billion	1	15.4%
Value Added (contribution to GSP)	\$26.3 billion	1	15.4%
Establishments	2,386 businesses	13	3.8%
Employment	104,066 people	5	10.9%
Average Annual Salary	\$53,196	8	
Total Payroll	\$5.5 billion	2	12.4%
Total Tax Revenues	\$1.3 billion	3	10.4%
State Payroll Tax Contribution	\$37.6 million	2	13.7%
Federal Payroll Tax Contribution	\$423.5 million	2	13.7%
State Income Tax Contribution	\$504.7 million	2	12.2%
State & Local Sales Tax Contribution	\$296.3 million	4	6.4%

The Economic Benefits of SB 1 on ...

Wholesale trade

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$294 million in output in the Wholesale Trade sector over 10 years, supporting over 1,310 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$29 million in additional economic output
- A \$19.9 million increase in gross state product (GSP)
- Supporting or creating an additional 131 jobs. These workers will earn over \$9 million in wages
- \$2.6 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$29.4 million	\$294.2 million
Value Added (contribution to GSP)	\$19.9 million	\$199.5 million
Employment	131 people	1,314 job-years
Total Payroll	\$9.1 million	\$90.9 million
Total Tax Revenues	\$2.6 million	\$26.3 million
State Payroll Tax Contribution	\$61.8 thousand	\$618.5 thousand
Federal Payroll Tax Contribution	\$695.8 thousand	\$7.0 million
State Income Tax Contribution	\$754.8 thousand	\$7.5 million
State & Local Sales Tax Contribution	\$1.1 million	\$11.2 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Wholesale trade in the San Joaquin Valley contributed \$9.2 billion to county economic activity in 2016, accounting for 5.4% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$15.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,175 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$3.2 billion. These businesses contribute an estimated \$269.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$59,300 each year. The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$15.9 billion	6	5.4%
Value Added (contribution to GSP)	\$9.2 billion	6	5.4%
Establishments	3,175 businesses	9	5.1%
Employment	54,537 people	7	5.7%
Average Annual Salary	\$59,300	5	
Total Payroll	\$3.2 billion	5	7.2%
Total Tax Revenues	\$1.1 billion	4	9.1%
State Payroll Tax Contribution	\$22.0 million	5	8.0%
Federal Payroll Tax Contribution	\$247.4 million	5	8.0%
State Income Tax Contribution	\$313.2 million	5	7.6%
State & Local Sales Tax Contribution	\$516.4 million	3	11.1%

The Economic Benefits of SB 1 on ...

Retail trade

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$369 million in output in the Retail Trade sector over 10 years, supporting over 4,140 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$37 million in additional economic output
- A \$24.5 million increase in gross state product (GSP)
- Supporting or creating an additional 414 jobs. These workers will earn nearly \$13 million in wages
- \$7.1 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$36.9 million	\$368.7 million
Value Added (contribution to GSP)	\$24.5 million	\$244.8 million
Employment	414 people	4,144 job-years
Total Payroll	\$12.9 million	\$128.8 million
Total Tax Revenues	\$7.1 million	\$71.0 million
State Payroll Tax Contribution	\$87.6 thousand	\$876.2 thousand
Federal Payroll Tax Contribution	\$985.7 thousand	\$9.9 million
State Income Tax Contribution	\$1.0 million	\$10.3 million
State & Local Sales Tax Contribution	\$5.0 million	\$49.9 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Retail trade in the San Joaquin Valley contributed \$13.1 billion to county economic activity in 2016, accounting for 7.7% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$22.6 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 9,804 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$4.2 billion. These businesses contribute an estimated \$348.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$27,209 each year. The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$22.6 billion	5	7.7%
Value Added (contribution to GSP)	\$13.1 billion	5	7.7%
Establishments	9,804 businesses	1	15.7%
Employment	153,701 people	3	16.2%
Average Annual Salary	\$27,209	16	
Total Payroll	\$4.2 billion	4	9.3%
Total Tax Revenues	\$3.4 billion	1	28.1%
State Payroll Tax Contribution	\$28.4 million	4	10.4%
Federal Payroll Tax Contribution	\$319.9 million	4	10.4%
State Income Tax Contribution	\$383.8 million	4	9.3%
State & Local Sales Tax Contribution	\$2.7 billion	1	57.7%

The Economic Benefits of SB 1 on ...

Transportation and warehousing

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$936 million in output in the Transportation and Warehousing sector over 10 years, supporting over 16,220 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$94 million in additional economic output
- A \$43.6 million increase in gross state product (GSP)
- Supporting or creating an additional 1,622 jobs. These workers will earn nearly \$37 million in wages
- \$9.8 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$93.6 million	\$935.5 million
Value Added (contribution to GSP)	\$43.6 million	\$435.6 million
Employment	1,622 people	16,221 job-years
Total Payroll	\$36.6 million	\$365.9 million
Total Tax Revenues	\$9.8 million	\$98.5 million
State Payroll Tax Contribution	\$248.8 thousand	\$2.5 million
Federal Payroll Tax Contribution	\$2.8 million	\$28.0 million
State Income Tax Contribution	\$6.7 million	\$67.1 million
State & Local Sales Tax Contribution	\$94.0 thousand	\$940.3 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Transportation and warehousing in the San Joaquin Valley contributed \$6.6 billion to county economic activity in 2016, accounting for 3.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$11.4 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 2,843 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$2.5 billion. These businesses contribute an estimated \$204.7 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$47,246 each year. The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$11.4 billion	9	3.9%
Value Added (contribution to GSP)	\$6.6 billion	9	3.9%
Establishments	2,843 businesses	12	4.6%
Employment	52,011 people	9	5.5%
Average Annual Salary	\$47,246	11	
Total Payroll	\$2.5 billion	7	5.5%
Total Tax Revenues	\$434.0 million	8	3.6%
State Payroll Tax Contribution	\$16.7 million	7	6.1%
Federal Payroll Tax Contribution	\$188.0 million	7	6.1%
State Income Tax Contribution	\$215.0 million	7	5.2%
State & Local Sales Tax Contribution	\$14.3 million	12	0.3%

The Economic Benefits of SB 1 on ...

Information

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$86 million in output in the Information sector over 10 years, supporting nearly 250 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$9 million in additional economic output
- A \$5.0 million increase in gross state product (GSP)
- Supporting or creating an additional 25 jobs. These workers will earn nearly \$2 million in wages
- \$361.3 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$8.6 million	\$85.5 million
Value Added (contribution to GSP)	\$5.0 million	\$49.6 million
Employment	25 people	248 job-years
Total Payroll	\$1.9 million	\$19.3 million
Total Tax Revenues	\$361.3 thousand	\$3.6 million
State Payroll Tax Contribution	\$13.1 thousand	\$131.2 thousand
Federal Payroll Tax Contribution	\$147.6 thousand	\$1.5 million
State Income Tax Contribution	\$117.2 thousand	\$1.2 million
State & Local Sales Tax Contribution	\$83.4 thousand	\$833.5 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Information in the San Joaquin Valley contributed \$3.8 billion to county economic activity in 2016, accounting for 2.2% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$6.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 729 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$645.6 million. These businesses contribute an estimated \$53.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$53,203 each year. The Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$6.5 billion	13	2.2%
Value Added (contribution to GSP)	\$3.8 billion	13	2.2%
Establishments	729 businesses	14	1.2%
Employment	12,135 people	16	1.3%
Average Annual Salary	\$53,203	7	
Total Payroll	\$645.6 million	16	1.4%
Total Tax Revenues	\$175.0 million	14	1.4%
State Payroll Tax Contribution	\$4.4 million	16	1.6%
Federal Payroll Tax Contribution	\$49.4 million	16	1.6%
State Income Tax Contribution	\$57.4 million	16	1.4%
State & Local Sales Tax Contribution	\$63.8 million	8	1.4%

The Economic Benefits of SB 1 on ...

Finance and insurance

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$220 million in output in the Finance and Insurance sector over 10 years, supporting over 770 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$22 million in additional economic output
- A \$12.2 million increase in gross state product (GSP)
- Supporting or creating an additional 77 jobs. These workers will earn over \$5 million in wages
- \$923.5 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$22.0 million	\$219.7 million
Value Added (contribution to GSP)	\$12.2 million	\$121.6 million
Employment	77 people	774 job-years
Total Payroll	\$5.4 million	\$53.6 million
Total Tax Revenues	\$923.5 thousand	\$9.2 million
State Payroll Tax Contribution	\$36.4 thousand	\$364.2 thousand
Federal Payroll Tax Contribution	\$409.8 thousand	\$4.1 million
State Income Tax Contribution	\$455.4 thousand	\$4.6 million
State & Local Sales Tax Contribution	\$21.9 thousand	\$218.6 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Finance and insurance in the San Joaquin Valley contributed \$6.3 billion to county economic activity in 2016, accounting for 3.7% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$10.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,440 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$1.9 billion. These businesses contribute an estimated \$161.9 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$65,407 each year. The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$10.9 billion	10	3.7%
Value Added (contribution to GSP)	\$6.3 billion	10	3.7%
Establishments	3,440 businesses	8	5.5%
Employment	29,712 people	12	3.1%
Average Annual Salary	\$65,407	4	
Total Payroll	\$1.9 billion	8	4.3%
Total Tax Revenues	\$348.0 million	10	2.9%
State Payroll Tax Contribution	\$13.2 million	8	4.8%
Federal Payroll Tax Contribution	\$148.7 million	8	4.8%
State Income Tax Contribution	\$174.8 million	9	4.2%
State & Local Sales Tax Contribution	\$11.4 million	13	0.2%

The Economic Benefits of SB 1 on ...

Real estate and rental and leasing

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$382 million in output in the Real Estate and Rental and Leasing sector over 10 years, supporting over 1,810 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$38 million in additional economic output
- A \$27.1 million increase in gross state product (GSP)
- Supporting or creating an additional 181 jobs. These workers will earn over \$6 million in wages
- \$1.4 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$38.2 million	\$382.5 million
Value Added (contribution to GSP)	\$27.1 million	\$270.5 million
Employment	181 people	1,813 job-years
Total Payroll	\$6.5 million	\$64.8 million
Total Tax Revenues	\$1.4 million	\$13.8 million
State Payroll Tax Contribution	\$44.1 thousand	\$440.8 thousand
Federal Payroll Tax Contribution	\$495.9 thousand	\$5.0 million
State Income Tax Contribution	\$652.0 thousand	\$6.5 million
State & Local Sales Tax Contribution	\$187.6 thousand	\$1.9 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Real estate and rental and leasing in the San Joaquin Valley contributed \$24.6 billion to county economic activity in 2016, accounting for 14.4% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$42.4 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,138 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$651.7 million. These businesses contribute an estimated \$54.3 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$39,972 each year. The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$42.4 billion	2	14.4%
Value Added (contribution to GSP)	\$24.6 billion	2	14.4%
Establishments	3,138 businesses	10	5.0%
Employment	16,305 people	14	1.7%
Average Annual Salary	\$39,972	12	
Total Payroll	\$651.7 million	15	1.5%
Total Tax Revenues	\$283.5 million	12	2.3%
State Payroll Tax Contribution	\$4.4 million	15	1.6%
Federal Payroll Tax Contribution	\$49.9 million	15	1.6%
State Income Tax Contribution	\$58.6 million	15	1.4%
State & Local Sales Tax Contribution	\$170.6 million	5	3.7%

The Economic Benefits of SB 1 on ...

Professional, scientific, and technical services

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$188 million in output in the Professional, Scientific, and Technical Services sector over 10 years, supporting nearly 1,090 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Nearly \$19 million in additional economic output
- A \$11.3 million increase in gross state product (GSP)
- Supporting or creating an additional 109 jobs. These workers will earn nearly \$8 million in wages
- \$1.3 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$18.8 million	\$187.8 million
Value Added (contribution to GSP)	\$11.3 million	\$113.1 million
Employment	109 people	1,086 job-years
Total Payroll	\$7.9 million	\$78.7 million
Total Tax Revenues	\$1.3 million	\$12.6 million
State Payroll Tax Contribution	\$53.5 thousand	\$535.0 thousand
Federal Payroll Tax Contribution	\$601.9 thousand	\$6.0 million
State Income Tax Contribution	\$536.7 thousand	\$5.4 million
State & Local Sales Tax Contribution	\$71.4 thousand	\$713.7 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Professional, scientific, and technical services in the San Joaquin Valley contributed \$6.8 billion to county economic activity in 2016, accounting for 4.0% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$11.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 5,004 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$1.9 billion. These businesses contribute an estimated \$161.2 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$52,350 each year. The Professional, Scientific, and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$11.7 billion	8	4.0%
Value Added (contribution to GSP)	\$6.8 billion	8	4.0%
Establishments	5,004 businesses	7	8.0%
Employment	36,969 people	11	3.9%
Average Annual Salary	\$52,350	10	
Total Payroll	\$1.9 billion	9	4.3%
Total Tax Revenues	\$386.8 million	9	3.2%
State Payroll Tax Contribution	\$13.2 million	9	4.8%
Federal Payroll Tax Contribution	\$148.1 million	9	4.8%
State Income Tax Contribution	\$182.8 million	8	4.4%
State & Local Sales Tax Contribution	\$42.8 million	9	0.9%

The Economic Benefits of SB 1 on ...

Management of companies and enterprises

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$32 million in output in the Management of Companies and Enterprises sector over 10 years, supporting nearly 120 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$3 million in additional economic output
- A \$1.9 million increase in gross state product (GSP)
- Supporting or creating an additional 12 jobs. These workers will earn over \$1 million in wages
- \$193.1 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$3.2 million	\$32.4 million
Value Added (contribution to GSP)	\$1.9 million	\$19.3 million
Employment	12 people	115 job-years
Total Payroll	\$1.3 million	\$13.2 million
Total Tax Revenues	\$193.1 thousand	\$1.9 million
State Payroll Tax Contribution	\$9.0 thousand	\$89.9 thousand
Federal Payroll Tax Contribution	\$101.1 thousand	\$1.0 million
State Income Tax Contribution	\$82.3 thousand	\$822.7 thousand
State & Local Sales Tax Contribution	\$769.3	\$7.7 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Management of companies and enterprises in the San Joaquin Valley contributed \$1.1 billion to county economic activity in 2016, accounting for 0.6% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$1.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 294 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$750.3 million. These businesses contribute an estimated \$62.5 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$79,857 each year. The Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$1.8 billion	18	0.6%
Value Added (contribution to GSP)	\$1.1 billion	18	0.6%
Establishments	294 businesses	17	0.5%
Employment	9,396 people	17	1.0%
Average Annual Salary	\$79,857	3	
Total Payroll	\$750.3 million	14	1.7%
Total Tax Revenues	\$129.9 million	16	1.1%
State Payroll Tax Contribution	\$5.1 million	14	1.9%
Federal Payroll Tax Contribution	\$57.4 million	14	1.9%
State Income Tax Contribution	\$67.0 million	14	1.6%
State & Local Sales Tax Contribution	\$425.8 thousand	19	0.01%

The Economic Benefits of SB 1 on ...

Administrative and waste management services

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$154 million in output in the Administrative and Waste Management Services sector over 10 years, supporting over 1,720 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$15 million in additional economic output
- A \$9.2 million increase in gross state product (GSP)
- Supporting or creating an additional 172 jobs. These workers will earn nearly \$6 million in wages
- \$1.0 million in additional tax revenues

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$15.4 million	\$154.2 million
Value Added (contribution to GSP)	\$9.2 million	\$92.3 million
Employment	172 people	1,720 job-years
Total Payroll	\$5.6 million	\$56.0 million
Total Tax Revenues	\$1.0 million	\$10.4 million
State Payroll Tax Contribution	\$38.1 thousand	\$380.5 thousand
Federal Payroll Tax Contribution	\$428.1 thousand	\$4.3 million
State Income Tax Contribution	\$506.2 thousand	\$5.1 million
State & Local Sales Tax Contribution	\$70.6 thousand	\$705.8 thousand

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Administrative and waste management services in the San Joaquin Valley contributed \$2.9 billion to county economic activity in 2016, accounting for 1.7% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$5.0 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,016 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$1.8 billion. These businesses contribute an estimated \$149.2 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$32,633 each year. The Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$5.0 billion	15	1.7%
Value Added (contribution to GSP)	\$2.9 billion	15	1.7%
Establishments	3,016 businesses	11	4.8%
Employment	54,898 people	6	5.8%
Average Annual Salary	\$32,633	13	
Total Payroll	\$1.8 billion	11	4.0%
Total Tax Revenues	\$332.8 million	11	2.7%
State Payroll Tax Contribution	\$12.2 million	11	4.4%
Federal Payroll Tax Contribution	\$137.0 million	11	4.4%
State Income Tax Contribution	\$161.5 million	11	3.9%
State & Local Sales Tax Contribution	\$22.1 million	11	0.5%

The Economic Benefits of SB 1 on ...

Educational services

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate nearly \$34 million in output in the Educational Services sector over 10 years, supporting nearly 500 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$3 million in additional economic output
- A \$2.1 million increase in gross state product (GSP)
- Supporting or creating an additional 50 jobs. These workers will earn nearly \$2 million in wages
- \$268.6 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$3.4 million	\$33.8 million
Value Added (contribution to GSP)	\$2.1 million	\$21.1 million
Employment	50 people	498 job-years
Total Payroll	\$1.6 million	\$16.0 million
Total Tax Revenues	\$268.6 thousand	\$2.7 million
State Payroll Tax Contribution	\$10.9 thousand	\$108.6 thousand
Federal Payroll Tax Contribution	\$122.2 thousand	\$1.2 million
State Income Tax Contribution	\$120.4 thousand	\$1.2 million
State & Local Sales Tax Contribution	\$15.1 thousand	\$150.9 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Educational services in the San Joaquin Valley contributed \$1.0 billion to county economic activity in 2016, accounting for 0.6% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$1.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 664 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$467.0 million. These businesses contribute an estimated \$38.9 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$26,610 each year. The Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$1.8 billion	19	0.6%
Value Added (contribution to GSP)	\$1.0 billion	19	0.6%
Establishments	664 businesses	16	1.1%
Employment	17,550 people	13	1.8%
Average Annual Salary	\$26,610	17	
Total Payroll	\$467.0 million	17	1.0%
Total Tax Revenues	\$88.9 million	17	0.7%
State Payroll Tax Contribution	\$3.2 million	17	1.2%
Federal Payroll Tax Contribution	\$35.7 million	17	1.2%
State Income Tax Contribution	\$42.5 million	17	1.0%
State & Local Sales Tax Contribution	\$7.5 million	15	0.2%

The Economic Benefits of SB 1 on ...

Health care and social assistance

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$381 million in output in the Health Care and Social Assistance sector over 10 years, supporting over 3,390 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$38 million in additional economic output
- A \$22.7 million increase in gross state product (GSP)
- Supporting or creating an additional 339 jobs. These workers will earn nearly \$17 million in wages
- \$3.0 million in additional tax revenues

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$38.1 million	\$381.4 million
Value Added (contribution to GSP)	\$22.7 million	\$227.4 million
Employment	339 people	3,392 job-years
Total Payroll	\$16.8 million	\$167.9 million
Total Tax Revenues	\$3.0 million	\$30.2 million
State Payroll Tax Contribution	\$114.2 thousand	\$1.1 million
Federal Payroll Tax Contribution	\$1.3 million	\$12.8 million
State Income Tax Contribution	\$1.6 million	\$16.0 million
State & Local Sales Tax Contribution	\$16.3 thousand	\$163.0 thousand

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Health care and social assistance in the San Joaquin Valley contributed \$13.5 billion to county economic activity in 2016, accounting for 7.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$23.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 8,338 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$8.5 billion. These businesses contribute an estimated \$708.6 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$52,751 each year. The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$23.3 billion	4	7.9%
Value Added (contribution to GSP)	\$13.5 billion	4	7.9%
Establishments	8,338 businesses	2	13.4%
Employment	161,259 people	2	17.0%
Average Annual Salary	\$52,751	9	
Total Payroll	\$8.5 billion	1	19.0%
Total Tax Revenues	\$1.5 billion	2	12.2%
State Payroll Tax Contribution	\$57.8 million	1	21.1%
Federal Payroll Tax Contribution	\$650.8 million	1	21.1%
State Income Tax Contribution	\$760.9 million	1	18.4%
State & Local Sales Tax Contribution	\$9.7 million	14	0.2%

Arts, entertainment, and recreation

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$22 million in output in the Arts, Entertainment, and Recreation sector over 10 years, supporting nearly 240 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$2 million in additional economic output
- A \$1.2 million increase in gross state product (GSP)
- Supporting or creating an additional 24 jobs. These workers will earn nearly \$588 thousand in wages
- \$113.1 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$2.2 million	\$22.0 million
Value Added (contribution to GSP)	\$1.2 million	\$12.0 million
Employment	24 people	240 job-years
Total Payroll	\$587.9 thousand	\$5.9 million
Total Tax Revenues	\$113.1 thousand	\$1.1 million
State Payroll Tax Contribution	\$4.0 thousand	\$40.0 thousand
Federal Payroll Tax Contribution	\$45.0 thousand	\$449.7 thousand
State Income Tax Contribution	\$46.5 thousand	\$465.3 thousand
State & Local Sales Tax Contribution	\$17.6 thousand	\$176.2 thousand

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Arts, entertainment, and recreation in the San Joaquin Valley contributed \$1.7 billion to county economic activity in 2016, accounting for 1.0% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$2.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 690 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$333.2 million. These businesses contribute an estimated \$27.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$21,375 each year. The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$2.9 billion	16	1.0%
Value Added (contribution to GSP)	\$1.7 billion	16	1.0%
Establishments	690 businesses	15	1.1%
Employment	15,588 people	15	1.6%
Average Annual Salary	\$21,375	18	
Total Payroll	\$333.2 million	18	0.7%
Total Tax Revenues	\$82.4 million	18	0.7%
State Payroll Tax Contribution	\$2.3 million	18	0.8%
Federal Payroll Tax Contribution	\$25.5 million	18	0.8%
State Income Tax Contribution	\$30.3 million	18	0.7%
State & Local Sales Tax Contribution	\$24.4 million	10	0.5%

The Economic Benefits of SB 1 on ...

Accommodation and food services

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$124 million in output in the Accommodation and Food Services sector over 10 years, supporting over 1,840 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$12 million in additional economic output
- A \$6.8 million increase in gross state product (GSP)
- Supporting or creating an additional 184 jobs. These workers will earn nearly \$4 million in wages
- \$1.4 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$12.4 million	\$124.2 million
Value Added (contribution to GSP)	\$6.8 million	\$67.5 million
Employment	184 people	1,845 job-years
Total Payroll	\$4.0 million	\$39.6 million
Total Tax Revenues	\$1.4 million	\$13.9 million
State Payroll Tax Contribution	\$27.0 thousand	\$269.5 thousand
Federal Payroll Tax Contribution	\$303.2 thousand	\$3.0 million
State Income Tax Contribution	\$277.8 thousand	\$2.8 million
State & Local Sales Tax Contribution	\$786.0 thousand	\$7.9 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Accommodation and Food Services in the San Joaquin Valley contributed \$4.9 billion to county economic activity in 2016, accounting for 2.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$8.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 6,367 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$1.9 billion. These businesses contribute an estimated \$156.1 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$17,348 each year. The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$8.5 billion	11	2.9%
Value Added (contribution to GSP)	\$4.9 billion	11	2.9%
Establishments	6,367 businesses	3	10.2%
Employment	107,987 people	4	11.4%
Average Annual Salary	\$17,348	19	
Total Payroll	\$1.9 billion	10	4.2%
Total Tax Revenues	\$890.6 million	6	7.3%
State Payroll Tax Contribution	\$12.7 million	10	4.6%
Federal Payroll Tax Contribution	\$143.3 million	10	4.6%
State Income Tax Contribution	\$162.6 million	10	3.9%
State & Local Sales Tax Contribution	\$571.9 million	2	12.3%

The Economic Benefits of SB 1 on ...

Other services

Increased spending on the San Joaquin Valley's highways, bridges and transit as a result of SB 1 will generate over \$2 billion in output in the Other Services sector over 10 years, supporting nearly 8,480 job-years.*

The average annual economic benefits of SB 1 spending on this sector include:

- Over \$238 million in additional economic output
- A \$101.8 million increase in gross state product (GSP)
- Supporting or creating an additional 848 jobs. These workers will earn nearly \$55 million in wages
- \$8.5 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	\$238.2 million	\$2.4 billion
Value Added (contribution to GSP)	\$101.8 million	\$1.0 billion
Employment	848 people	8,477 job-years
Total Payroll	\$54.8 million	\$548.2 million
Total Tax Revenues	\$8.5 million	\$85.0 million
State Payroll Tax Contribution	\$372.8 thousand	\$3.7 million
Federal Payroll Tax Contribution	\$4.2 million	\$41.9 million
State Income Tax Contribution	\$2.2 million	\$22.0 million
State & Local Sales Tax Contribution	\$1.7 million	\$17.3 million

Increasing transportation spending from SB 1 will have a positive economic impact on this sector in two ways. The first is through direct purchases from transportation construction firms and suppliers involved in building, maintaining and operating the San Joaquin Valley's highways, bridges and transit systems. The second effect is when employees of transportation firms spend their wages and make purchases throughout the economy.

* A job-year of employment is defined as employment for one person during one year. Thus, this number will include people whose jobs are created/supported by SB 1 over multiple years. For example, if a person is hired in this sector and remains in her position for five years, this is counted as five job-years.

** GSP is the value added by an industry to the overall economy. The San Joaquin Valley's GSP was estimated at \$170.8 billion in 2016, based on state-level data from the U.S. Bureau of Economic Analysis. That is the difference between total sales and the intermediate goods. Gross output is the measure of total industry sales for both intermediate and final goods. The region's gross output in 2016 is estimated to be \$294.2 billion.

SECTOR OVERVIEW

Other services in the San Joaquin Valley contributed \$3.9 billion to county economic activity in 2016, accounting for 2.3% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated \$6.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 5,641 establishments and sole proprietorships in the San Joaquin Valley with an existing payroll valued at \$1.2 billion. These businesses contribute an estimated \$97.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of \$28,711 each year. The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system, including equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, drycleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	\$6.7 billion	12	2.3%
Value Added (contribution to GSP)	\$3.9 billion	12	2.3%
Establishments	5,641 businesses	5	9.0%
Employment	40,739 people	10	4.3%
Average Annual Salary	\$28,711	15	
Total Payroll	\$1.2 billion	12	2.6%
Total Tax Revenues	\$269.6 million	13	2.2%
State Payroll Tax Contribution	\$8.0 million	12	2.9%
Federal Payroll Tax Contribution	\$89.5 million	12	2.9%
State Income Tax Contribution	\$105.8 million	12	2.6%
State & Local Sales Tax Contribution	\$66.3 million	7	1.4%

Methodology and Sources

The investment levels used in this report are from the California Department of Finance's forecast of SB 1 revenues and expenditures from the Governor's 2017–2018 Enacted Budget (included in Appendix 2). California SB 1 spending estimates by program area and type of work, as well as the methodology used, were developed with input from the California Department of Finance.

Both California and regional SB 1 spending on highways, bridges and transit was estimated based on the line items included in the SB 1 revenue and expenditure forecast. Highway, street and bridge spending comprises the following line items: Total Local Streets and Roads; Local Partnership; STIP (Local Share); Total State SHOPP/Maintenance; Bridges and Culverts; STIP (State Share); and a portion of Trade Corridor Enhancement and Congested Corridors spending. Transit spending comprises the following line items: State Transit Assistance; Transit and Intercity Rail Capital Program; Commuter Rail and Intercity Rail; and a portion of Trade Corridor Enhancement and Congested Corridors spending. There are two line items (Trade Corridor Enhancement and Congested Corridors) that can be used for either highways, bridges or transit, so those items were split among highway, street and bridge spending and transit spending based on the average split between highway, street and bridge versus transit spending in the SB 1 forecast; eighty three percent of Trade Corridor Enhancement and Congested Corridors spending is expected to go toward highways and bridges, and the remaining 17 percent is expected to go toward transit.

SB 1 spending estimates by county were developed using a similar methodology as in the California state report released by ARTBA in February 2018. SB 1 spending in the San Joaquin Valley was calculated using analyses of SB 1 revenues by county developed by the California State Association of Counties (CSAC) in May 2017 and estimated new regional, county and city investments from the passage of SB 1 from Caltrans. CSAC calculates SB 1 revenues by county by year over 10 years, with separate

estimates for Road Maintenance and Rehabilitation Account (RMRA) county revenues and for all new county revenues from SB 1. Caltrans calculates expected SB 1 investment on SHOPP, maintenance, State Transit Assistance, Commuter Rail and Intercity Rail, Active Transportation, as well as STIP spending at the county, city, regional and regional entity level, over the 10-year period. To calculate expected spending on these categories by county using Caltrans spending estimates, spending by city was summed by county, and spending by region was divided across the counties in each region, weighted by each region's population share. State Transit Assistance spending was provided at the county and regional operator level. State Transit Assistance spending is broken down into two categories: PUC 99313 and PUC 99314. To calculate expected spending on State Transit Assistance by county, regional entity spending was divided across the counties within the regional entity, assuming an equal share for each county. Two regional entity operators included a more specific breakdown of PUC 99314 State Transit Assistance spending. PUC 99313 State Transit Assistance spending for those two regional entity operators is estimated to be split among those counties within those regional entity operators based on the same distribution as PUC 99314. San Joaquin Valley County values were then summed to view the region's spending. For each line item in the SB 1 revenue and expenditure forecast, California state totals were multiplied by the calculated share of the region's revenues or investment of the state total, using: CSAC summed county shares for the two RMRA line items; Caltrans summed county shares for all line items corresponding to SHOPP, State Transit Assistance, Active Transportation, Transit and Intercity Rail Capital Program, Commuter Rail and Intercity Rail, Local Partnership, Bridge and Culverts (expected to follow the county distribution of STIP spending), and the two STIP line item; and CSAC total SB 1 summed county shares for all other line items.

Statewide highway, street and bridge user benefits are calculated using the HERS-ST and the NBIAS models.

The FHWA HERS-ST model is used to estimate the investment needs for California on the National Highway System, using the same modeling techniques as those employed by FHWA when preparing the federal Needs and Conditions report on the nation's transportation infrastructure.

HERS-ST selects a set of optimal improvements based on funding constraints, or can determine the cost of making all cost-beneficial improvements over a given time period to the state roads that are part of the federal aid system. Both approaches were used for the purposes of this study. All data used in the model is submitted by Caltrans to FHWA as part of the Highway Performance Monitoring System.

The FHWA NBIAS model is used to estimate the investment needs for bridges in California, also using the same modeling techniques as those employed by FHWA when preparing the federal Needs and Conditions report on the nation's transportation infrastructure. Similar to HERS-ST, NBIAS selects a set of optimal improvements based on funding constraints, or can determine the cost of making all cost-beneficial improvements over a given time period to roadway bridges across the state. The funding constraint approach was used for the purposes of this study, utilizing the NBIAS model which maximizes benefits. All data used in this model was submitted by Caltrans to FHWA as its' National Bridge Inventory data, which is collected by FHWA annually from all states.

Statewide investment levels used in the HERS-ST and NBIAS models are from the February 2018 ARTBA Report "The Economic Impact of Senate Bill 1 on California."

Average annual SB 1 spending in the San Joaquin Valley is estimated to be 13 percent of the total transportation investment increase generated by SB 1. Therefore, to calculate the estimated user benefits to the San Joaquin Valley, we assume that 13 percent of California highway, street and bridge user benefits are concentrated in the San Joaquin Valley.

The split between highway, street and bridge SB 1 spending is estimated using the split between the value of state highway, street and bridge

projects funded by SB 1 available at the Rebuilding California website (<http://rebuildingca.ca.gov>) and accessed on Dec. 4, 2017. Highway spending is estimated to be 68 percent of total highway, street and bridge spending each year, with bridge spending estimated at 32 percent. This is the same methodology used in the state-level analysis.

SB 1 highway, street and bridge construction spending is estimated based on construction and non-construction spending levels in the revised California 2016 SHOPP for 2015-16 through 2021-22. This document was revised after October 2017, so numbers reflect the implementation of SB 1. This document details spending breakdowns for capital outlays for right of way, planning and actual construction work. Highway, street and bridge construction spending are estimated to be 67 percent of highway, street and bridge spending each year, respectively.

Transit construction spending is estimated based on National Transit Database data from 2016 that includes spending by California transit agencies on capital and operations. Transit capital investment includes spending on rolling stock such as train cars and buses in addition to stations, buildings and rail. Thirty eight percent of spending by California transit agencies in 2016 is capital spending, therefore 38 percent of transit investment each year is estimated to be transit construction spending. Though capital investment is not analogous to construction spending, comprising construction support activities in addition to construction activities, in the absence of a more precise estimate for transit construction spending, the capital spending percentage is used as a conservative estimate (since it is much lower than the highway, street and bridge construction percentage) of the percent of transit construction spending.

The immediate impacts of an increase in transportation construction spending are calculated using the U.S. Department of Commerce Regional Input-Output Modeling System (RIMS II). RIMS II is based on input output (I-O) tables. For a given industry, the I-O tables show the industrial distribution of inputs purchased and outputs sold. In this analysis, four separate multipliers specific to the region, comprising Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and

Tulare Counties, were used to estimate the impacts of highway, street and bridge construction, transit construction, transit non-construction activity, and remaining spending from SB 1. The total immediate impacts were calculated by adding up the impact values for each of the four multipliers, for each type of impact and for each industry.

Research shows that RIMS II multipliers are similar to other regional I-O models based on in-depth and often expensive surveys. According to the U.S. Department of Commerce, RIMS multipliers have been used to estimate such things as the regional impact of military base closings, tourist expenditures, new energy facilities, offshore drilling and the opening or closing of manufacturing plants and other facilities. These multipliers are also used frequently to analyze the impact of new construction projects, including transportation construction.

Industry value added (contribution to GSP) for California is the most recent data from the U.S. Bureau of Economic Analysis GSP estimates for the state, broken out by industry, for 2016. The value added for each industry in the San Joaquin Valley was estimated by taking the region's percent share of employment for each industry and multiplying it by California gross output by industry. Industry output for California was estimated by taking California's percent share of national GSP for each industry and multiplying it by national gross output by industry. Industry output for the San Joaquin Valley was estimated by taking the region's percent share of employment for each industry and multiplying it by California gross output by industry.

The state payroll tax rate is calculated using the 2016 California average employer tax rate as a percent of total wages. The source for this information is the National Association of State Workforce Agencies (NASWA) and the U.S. Department of Labor Employment Training Administration (ETA) Financial Handbook 394. The federal payroll tax rate is estimated to be 7.65 percent.

State income tax contributions are calculated by adding up the California State Comptroller's Office Monthly Statements of General Fund

Cash Receipts and Disbursements for January through December 2016. The amount of income tax contributions attributable to each industry was estimated by multiplying the total income tax contributions amount by the percentage of total wages for each industry. Total estimated income tax collections using this method are \$81.7 billion. The value of actual income tax collections reported by California in the 2015 U.S. Census of State and Local Government Finance, published by the U.S. Census Bureau, was \$77.9 billion. This difference is in part attributable to inflation, an expanded workforce and income taxes paid by government workers. Employment and economic impact of the public sector is not included in the 19 sector analysis. San Joaquin Valley income tax contributions for each industry were estimated by taking the region's percent share of earnings for each industry and multiplying it by California income tax contributions by industry.

Total state sales tax revenues are based on the actual collections of sales tax in 2016 as recorded in the California State Comptroller's Office Monthly Statements of General Fund Cash Receipts and Disbursements for January through December 2016. In 2016, California had a 7.5 percent combined sales and use tax rate that includes both the state rate of 6.5 percent and the minimum local rate of 1.0 percent. The 2016 local sales and use tax in San Joaquin Valley Counties averaged 1.3 percent, adding up to an average 7.8 percent total combined sales and use tax rate for the region's residents. The county rates were: 7.5 percent for Kern, Kings, and Merced Counties; 7.625 percent for Stanislaus County; 8.0 percent for Madera, San Joaquin, and Tulare Counties; and 8.225 percent for Fresno County. There are additional local sales taxes levied in the cities of: Reedley and Selma (an additional 0.5 percent), Sanger (an additional 0.75 percent), and Huron (an additional 1.0 percent) within Fresno County; Ridgecrest (an additional 0.75 percent), and Alvin and Delano (an additional 1.0 percent) within Kern County; Atwater, Gustine, Los Banos, and Merced (an additional 0.5 percent) within Merced County; Manteca and Tracy (an additional 0.5 percent) and Lathrop and Stockton (an additional 1.0 percent) within San Joaquin County; Ceres and Oakdale (an additional 0.5 percent) within Stanislaus County; and Visalia (an additional 0.25

percent), Farmersville, Porterville, and Tulare (an additional 0.5 percent), and Dinuba (an additional 0.75 percent) within Tulare County. The total value of state sales tax receipts is \$38.5 billion, the same as the amount reported in the 2015 Census of State and Local Government Finance for state sales tax revenues. The total state and local sales tax revenues amount reported in the 2015 Census of State and Local Government Finance was \$49.9 billion, with 77 percent from state sales tax revenues and the remaining 23 percent from local sales tax revenues. Therefore, to calculate the total state and local sales tax value, 2016 collected California state sales tax receipts were estimated to equal 77 percent of total state and local sales tax revenues. Using this methodology, the value of total state and local sales tax revenues in California is estimated at \$50.0 billion. The distribution of state and local sales tax revenues by county was calculated by using the distribution of taxable sales by county. Taxable sales by county were calculated by adding up the California State Board of Equalization's Taxable Sales in California Counties by Type of Business tables for all four quarters of 2016. Since the region's 2016 taxable sales comprise 9.3 percent of California taxable sales, total San Joaquin Valley sales tax revenues are calculated as 9.3 percent of California total sales tax revenues.

The amount of California state and local sales tax revenues attributable to each industry was estimated by multiplying the total state and local sales tax revenue amount by the percentage of taxable sales for each industry, calculated by adding up the California State Board of Equalization's Statewide Taxable Sales, By Type of Business tables for the first three quarters of 2016. On the county level, taxable sales values are only categorized by Retail Trade, Food Services and Drinking Places and other categories. Retail Trade comprises the largest component of taxable sales values, and is the only category comprising an entire NAICS category, so the distribution of Retail Trade state and local sales tax revenues by county was calculated by using the distribution of Retail Trade taxable sales by county. San Joaquin Valley County values were then summed to view the region's taxable sales. Since the region's 2016 taxable Retail Trade sales comprise 9.4 percent of California taxable sales, San Joaquin Valley

Retail Trade sales tax revenues are calculated as 9.4 percent of California Retail Trade sales tax revenues. For the remaining NAICS industries, the amount of state and local sales tax revenues attributable to each industry was estimated by using the percentage of taxable sales (excluding Retail Sales taxable sales) for all industries.

Employment and establishment data was calculated using 2016 data, the latest year available, from the U.S. Census Bureau's County Business Patterns. Since County Business Patterns data underestimates employment in the Agriculture, Forestry, Fishing and Hunting sector, employment and establishment data for that sector was calculated using the U.S. Department of Labor's Quarterly Census of Employment and Wages. However, Quarterly Census of Employment and Wages data was not available for Kings, Madera, Merced, Marin and Napa Counties for that sector, so County Business Patterns employment and establishment data was used for those counties.

All bridge information, including conditions, is from FHWA's National Bridge Inventory and is for 2017 (data released in January 2018), the latest year that data is available.

Fatality and crash information is from the National Highway Traffic Safety Administration for 2016, the latest year that data is available.

State data on freight shipments is from the FHWA Freight Analysis Framework and is for 2015, the latest year that data is available.

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Appendix 1: California SB 1 Revenue and Expenditure 10-Year Forecast

California SB 1 Revenue and Expenditure 10-Year Forecast (in millions)												
	Year 1 2017- 2018	Year 2 2018- 2019	Year 3 2019- 2020	Year 4 2020- 2021	Year 5 2021- 2022	Year 6 2022- 2023	Year 7 2023- 2024	Year 8 2024- 2025	Year 9 2025- 2026	Year 10 2026- 2027	10-Year Total	Annual Average
Revenues												
Gasoline Excise Tax	\$1,252	\$1,866	\$1,911	\$2,270	\$2,474	\$2,651	\$2,830	\$3,009	\$3,189	\$3,370	\$24,823	\$2,482
Diesel Excise Tax	\$401	\$656	\$651	\$702	\$724	\$746	\$768	\$790	\$813	\$836	\$7,086	\$709
Diesel Sales Tax	\$200	\$313	\$326	\$339	\$353	\$368	\$384	\$400	\$417	\$434	\$3,533	\$353
Transportation Improvement Fee	\$726	\$1,453	\$1,503	\$1,598	\$1,686	\$1,774	\$1,862	\$1,950	\$2,038	\$2,126	\$16,716	\$1,672
Zero Emission Vehicle Fee (with CPI)	\$0	\$0	\$0	\$18	\$21	\$24	\$27	\$30	\$34	\$38	\$191	\$19
Loan Repayment	\$235	\$235	\$236	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$706	\$71
Caltrans Efficiencies (not allocated)	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$1,000	\$100
Total New Revenue	\$2,913	\$4,623	\$4,726	\$5,027	\$5,357	\$5,663	\$5,971	\$6,280	\$6,591	\$6,903	\$54,054	\$5,405
Expenditures												
Local												
Local Streets and Roads												
Local Streets and Roads (2104-2107)	\$0	\$21	\$21	\$85	\$118	\$150	\$182	\$214	\$246	\$278	\$1,316	\$132
Local Streets and Roads (2103)	\$75	\$75	\$102	\$87	\$122	\$154	\$186	\$218	\$250	\$282	\$1,549	\$155
RMRA – Local Streets and Roads	\$371	\$1,069	\$1,080	\$1,172	\$1,236	\$1,296	\$1,353	\$1,411	\$1,468	\$1,526	\$11,980	\$1,198
Total Local Streets and Roads	\$446	\$1,165	\$1,204	\$1,344	\$1,476	\$1,599	\$1,721	\$1,842	\$1,964	\$2,086	\$14,846	\$1,485
State Transit Assistance	\$280	\$380	\$394	\$409	\$424	\$440	\$456	\$473	\$491	\$509	\$4,255	\$426
Transit and Intercity Rail Capital Program	\$330	\$333	\$340	\$261	\$267	\$274	\$281	\$288	\$295	\$302	\$2,970	\$297
Local Partnership	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$2,000	\$200
Active Transportation	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$1,000	\$100
STIP (Local Share)	\$0	\$0	\$20	\$65	\$91	\$115	\$139	\$163	\$187	\$211	\$993	\$99
Commuter Rail and Intercity Rail	\$25	\$39	\$41	\$42	\$44	\$46	\$48	\$50	\$52	\$54	\$442	\$44
Local Planning Grants	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$250	\$25
RMRA – Administration (DMV, SCO, CTC)	\$2	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$38	\$4
Total Local Expenditures	\$1,408	\$2,246	\$2,328	\$2,450	\$2,632	\$2,803	\$2,973	\$3,145	\$3,318	\$3,492	\$26,794	\$2,679
State												
SHOPP/Maintenance												
SHOPP (44/44/12)	\$0	\$0	\$7	\$24	\$33	\$42	\$51	\$59	\$68	\$77	\$361	\$36
SHOPP (2108)	\$75	\$113	\$113	\$151	\$210	\$267	\$323	\$380	\$437	\$494	\$2,565	\$257
RMRA – SHOPP/Maintenance	\$371	\$1,069	\$1,080	\$1,172	\$1,236	\$1,296	\$1,353	\$1,411	\$1,468	\$1,526	\$11,980	\$1,198
Total SHOPP/Maintenance	\$446	\$1,182	\$1,200	\$1,347	\$1,479	\$1,604	\$1,727	\$1,850	\$1,973	\$2,097	\$14,906	\$1,491
Bridges and Culverts	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$4,000	\$400
Trade Corridor Enhancement	\$200	\$298	\$296	\$309	\$314	\$318	\$323	\$328	\$333	\$338	\$3,059	\$306
Congested Corridors	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$2,500	\$250
Parks (excise tax on vehicle used off-highway)	\$54	\$80	\$80	\$83	\$85	\$86	\$87	\$88	\$90	\$91	\$823	\$82
Agriculture (excise tax on farm vehicle use)	\$17	\$25	\$25	\$26	\$27	\$27	\$27	\$28	\$28	\$29	\$258	\$26
STIP (State Share)	\$0	\$0	\$7	\$22	\$30	\$38	\$46	\$54	\$62	\$70	\$331	\$33
Freeway Service Program	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$250	\$25
RMRA – Administration (DMV, SCO, CTC)	\$2	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$38	\$4
Transportation Workforce Training	\$5	\$5	\$5	\$5	\$5	\$0	\$0	\$0	\$0	\$0	\$25	\$3
UC and CSU Transportation Research	\$7	\$7	\$7	\$7	\$7	\$7	\$7	\$7	\$7	\$7	\$70	\$7
Total State Expenditures	\$1,406	\$2,277	\$2,299	\$2,477	\$2,625	\$2,760	\$2,897	\$3,035	\$3,173	\$3,311	\$26,260	\$2,626
Total Expenditures from SB 1	\$2,814	\$4,523	\$4,627	\$4,927	\$5,257	\$5,563	\$5,870	\$6,180	\$6,491	\$6,803	\$53,054	\$5,305

Source: SB 1 Revenue and Expenditures Forecast from the Governor's 2017-2018 Enacted Budget

Appendix 2: San Joaquin Valley SB 1 Expenditure 10-Year Forecast

San Joaquin Valley SB 1 Expenditures 10-Year Forecast (in millions)												
	Year 1 2017- 2018	Year 2 2018- 2019	Year 3 2019- 2020	Year 4 2020- 2021	Year 5 2021- 2022	Year 6 2022- 2023	Year 7 2023- 2024	Year 8 2024- 2025	Year 9 2025- 2026	Year 10 2026- 2027	10-Year Total	Annual Average
Local												
Local Streets and Roads												
Local Streets and Roads (2104-2107)	\$0	\$2	\$2	\$9	\$13	\$16	\$20	\$23	\$27	\$30	\$142	\$14
Local Streets and Roads (2103)	\$8	\$8	\$11	\$9	\$13	\$17	\$20	\$23	\$27	\$30	\$167	\$17
RMRA - Local Streets and Roads	\$54	\$155	\$156	\$170	\$179	\$187	\$196	\$204	\$212	\$221	\$1,733	\$173
Total Local Streets and Roads	\$62	\$165	\$169	\$188	\$205	\$220	\$235	\$251	\$266	\$281	\$2,041	\$204
State Transit Assistance	\$17	\$23	\$24	\$24	\$25	\$26	\$27	\$28	\$29	\$30	\$255	\$25
Transit and Intercity Rail Capital Program	\$66	\$67	\$68	\$53	\$54	\$55	\$57	\$58	\$59	\$61	\$598	\$60
Local Partnership	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$122	\$12
Active Transportation	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$100	\$10
STIP (Local Share)	\$0	\$0	\$3	\$8	\$12	\$15	\$18	\$21	\$24	\$27	\$126	\$13
Commuter Rail and Intercity Rail	\$5	\$8	\$8	\$8	\$9	\$9	\$10	\$10	\$10	\$11	\$89	\$9
Local Planning Grants	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$35	\$4
RMRA - Administration (DMV, SCO, CTC)	\$0	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$5	\$1
Total Local Expenditures	\$176	\$289	\$299	\$308	\$330	\$352	\$373	\$394	\$415	\$436	\$3,372	\$337
State												
SHOPP/Maintenance												
SHOPP (44/44/12)	\$0	\$0	\$1	\$3	\$4	\$5	\$6	\$7	\$8	\$9	\$42	\$4
SHOPP (2108)	\$9	\$13	\$13	\$18	\$25	\$31	\$38	\$45	\$51	\$58	\$301	\$30
RMRA - SHOPP/Maintenance	\$54	\$155	\$156	\$170	\$179	\$187	\$196	\$204	\$212	\$221	\$1,733	\$173
Total SHOPP/Maintenance	\$62	\$168	\$170	\$190	\$207	\$224	\$240	\$256	\$272	\$288	\$2,076	\$208
Bridges and Culverts	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$51	\$509	\$51
Trade Corridor Enhancement	\$29	\$43	\$43	\$44	\$45	\$45	\$46	\$46	\$47	\$48	\$434	\$43
Congested Corridors	\$36	\$36	\$36	\$36	\$35	\$35	\$35	\$35	\$35	\$35	\$355	\$35
Parks (excise tax on vehicle used off-highway)	\$8	\$11	\$12	\$12	\$12	\$12	\$12	\$12	\$13	\$13	\$117	\$12
Agriculture (excise tax on farm vehicle use)	\$2	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$37	\$4
STIP (State Share)	\$0	\$0	\$1	\$3	\$4	\$5	\$6	\$7	\$8	\$9	\$42	\$4
Freeway Service Program	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$35	\$4
RMRA - Administration (DMV, SCO, CTC)	\$0	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$5	\$1
Transportation Workforce Training	\$1	\$1	\$1	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$4	\$0
UC and CSU Transportation Research	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$10	\$1
Total State Expenditures	\$194	\$318	\$322	\$345	\$364	\$381	\$399	\$416	\$434	\$452	\$3,623	\$362
Total Expenditures from SB 1												
Total Expenditures from SB 1	\$370	\$607	\$620	\$653	\$694	\$733	\$771	\$810	\$849	\$888	\$6,995	\$700

Source: SB 1 Revenue and Expenditures Forecast from the Governor's 2017-2018 Enacted Budget. San Joaquin Valley expenditures were estimated using projected SB 1 expenditures by county from California Department of Transportation (Caltrans) and the California State Association of Counties (CSAC). The full explanation of how these expenditures were calculated is included in the Methodology.

Appendix 3: California SB 1 Spending by Type

California SB 1 Spending by Type over 10 Years (in millions)												
	Year 1 2017– 2018	Year 2 2018– 2019	Year 3 2019– 2020	Year 4 2020– 2021	Year 5 2021– 2022	Year 6 2022– 2023	Year 7 2023– 2024	Year 8 2024– 2025	Year 9 2025– 2026	Year 10 2026– 2027	10– Year Total	Annual Average
Highway, Bridge, Street & Transit	\$2,577	\$4,247	\$4,352	\$4,649	\$4,975	\$5,284	\$5,591	\$5,898	\$6,207	\$6,517	\$50,302	\$5,030
Highway, Bridge & Street	\$1,865	\$3,401	\$3,483	\$3,841	\$4,143	\$4,427	\$4,708	\$4,988	\$5,269	\$5,551	\$41,682	\$4,168
Construction	\$1,245	\$2,270	\$2,325	\$2,564	\$2,765	\$2,955	\$3,142	\$3,329	\$3,517	\$3,705	\$27,821	\$2,782
Other Highway, Bridge & Street Activity	\$620	\$1,131	\$1,158	\$1,277	\$1,378	\$1,472	\$1,566	\$1,659	\$1,752	\$1,846	\$13,862	\$1,386
Transit	\$712	\$846	\$869	\$808	\$832	\$857	\$883	\$910	\$938	\$966	\$8,620	\$862
Construction	\$268	\$318	\$326	\$304	\$313	\$322	\$332	\$342	\$353	\$363	\$3,240	\$324
Other Transit Activity	\$444	\$528	\$542	\$504	\$519	\$535	\$551	\$568	\$585	\$603	\$5,380	\$538
Other SB 1 Spending	\$237	\$276	\$275	\$278	\$282	\$279	\$279	\$282	\$284	\$286	\$2,752	\$275
Total Spending	\$2,814	\$4,523	\$4,627	\$4,927	\$5,257	\$5,563	\$5,870	\$6,180	\$6,491	\$6,803	\$53,054	\$5,305

Appendix 4: San Joaquin Valley SB 1 Spending by Type

San Joaquin Valley SB 1 Spending by Type over 10 Years (in millions)												
	Year 1 2017– 2018	Year 2 2018– 2019	Year 3 2019– 2020	Year 4 2020– 2021	Year 5 2021– 2022	Year 6 2022– 2023	Year 7 2023– 2024	Year 8 2024– 2025	Year 9 2025– 2026	Year 10 2026– 2027	10– Year Total	Annual Average
Highway, Bridge, Street & Transit	\$341	\$572	\$585	\$617	\$658	\$698	\$736	\$775	\$813	\$852	\$6,647	\$665
Highway, Bridge & Street	\$241	\$461	\$471	\$518	\$557	\$593	\$629	\$664	\$700	\$736	\$5,569	\$557
Construction	\$161	\$308	\$315	\$346	\$372	\$396	\$420	\$443	\$467	\$491	\$3,717	\$372
Other Highway, Bridge & Street Activity	\$80	\$153	\$157	\$172	\$185	\$197	\$209	\$221	\$233	\$245	\$1,852	\$185
Transit	\$99	\$111	\$114	\$99	\$102	\$105	\$107	\$110	\$113	\$116	\$1,077	\$108
Construction	\$37	\$42	\$43	\$37	\$38	\$39	\$40	\$41	\$43	\$44	\$405	\$40
Other Transit Activity	\$62	\$69	\$71	\$62	\$64	\$65	\$67	\$69	\$71	\$73	\$672	\$67
Other SB 1 Spending	\$30	\$35	\$35	\$35	\$36	\$35	\$35	\$36	\$36	\$36	\$348	\$35
Total Spending	\$370	\$607	\$620	\$653	\$694	\$733	\$771	\$810	\$849	\$888	\$6,995	\$700

Appendix 5: Total Economic Impacts of SB 1 on California over 10 Years

Total Economic Impacts of SB 1 on California over 10 Years (in millions)												
	Year 1 2017- 2018	Year 2 2018- 2019	Year 3 2019- 2020	Year 4 2020- 2021	Year 5 2021- 2022	Year 6 2022- 2023	Year 7 2023- 2024	Year 8 2024- 2025	Year 9 2025- 2026	Year 10 2026- 2027	10-Year Total	Annual Average
User Benefits	\$2,384	\$2,634	\$3,925	\$4,140	\$5,224	\$4,807	\$4,389	\$3,973	\$3,558	\$3,143	\$38,176	\$3,818
Highway, Street & Bridge	\$1,181	\$1,205	\$2,457	\$2,775	\$3,819	\$3,358	\$2,896	\$2,435	\$1,973	\$1,511	\$23,609	\$2,361
Transit	\$1,203	\$1,430	\$1,468	\$1,365	\$1,405	\$1,449	\$1,493	\$1,538	\$1,585	\$1,632	\$14,567	\$1,457
Economic Impacts	\$7,785	\$12,368	\$12,652	\$13,420	\$14,304	\$15,123	\$15,946	\$16,777	\$17,612	\$18,449	\$144,433	\$14,443
Economic Output	\$5,999	\$9,562	\$9,782	\$10,389	\$11,076	\$11,713	\$12,352	\$12,998	\$13,647	\$14,297	\$111,812	\$11,181
Earnings	\$1,786	\$2,806	\$2,871	\$3,032	\$3,228	\$3,410	\$3,594	\$3,779	\$3,965	\$4,152	\$32,621	\$3,262
Total Impacts	\$10,169	\$15,002	\$16,577	\$17,561	\$19,528	\$19,930	\$20,335	\$20,750	\$21,170	\$21,592	\$182,609	\$18,261
Other Economic Impacts												
Value Added (GSP)	\$3,106	\$4,952	\$5,066	\$5,380	\$5,736	\$6,066	\$6,398	\$6,733	\$7,069	\$7,406	\$57,911	\$5,791
Employment	39,834	59,740	61,154	63,456	67,269	70,852	74,449	78,094	81,763	85,442	682,029	68,203

Appendix 6: Total Economic Impacts of SB 1 on the San Joaquin Valley over 10 Years

Total Economic Impacts of SB 1 on the San Joaquin Valley over 10 Years (in millions)												
	Year 1 2017- 2018	Year 2 2018- 2019	Year 3 2019- 2020	Year 4 2020- 2021	Year 5 2021- 2022	Year 6 2022- 2023	Year 7 2023- 2024	Year 8 2024- 2025	Year 9 2025- 2026	Year 10 2026- 2027	10-Year Total	Annual Average
User Benefits	\$324	\$347	\$516	\$533	\$675	\$620	\$563	\$508	\$452	\$396	\$4,933	\$493
Highway, Street & Bridge	\$156	\$159	\$324	\$366	\$503	\$443	\$382	\$321	\$260	\$199	\$3,113	\$311
Transit	\$168	\$188	\$192	\$168	\$172	\$177	\$182	\$187	\$192	\$197	\$1,820	\$182
Economic Impacts	\$813	\$1,321	\$1,349	\$1,415	\$1,504	\$1,587	\$1,669	\$1,753	\$1,836	\$1,920	\$15,162	\$1,516
Economic Output	\$636	\$1,038	\$1,060	\$1,114	\$1,185	\$1,250	\$1,316	\$1,382	\$1,448	\$1,514	\$11,939	\$1,194
Earnings	\$178	\$283	\$289	\$301	\$319	\$336	\$354	\$371	\$388	\$406	\$3,223	\$322
Total Impact	\$1,137	\$1,667	\$1,866	\$1,948	\$2,179	\$2,206	\$2,233	\$2,260	\$2,288	\$2,316	\$20,095	\$2,010
Other Economic Impacts												
Value Added (GSP)	\$316	\$516	\$527	\$554	\$589	\$621	\$654	\$687	\$720	\$753	\$5,934	\$593
Employment	4,049	5,986	6,119	6,179	6,525	6,853	7,180	7,511	7,842	8,176	66,398	6,640

Appendix 7: What is SB 1?

What is SB 1?

California's Senate Bill 1 (SB 1), which was signed in to law on April 28, 2017, will boost transportation funding through a combination of motor fuel and vehicle registration increases. The bill is projected to raise \$53.1 billion over the first 10 years, which will be used to fund road and bridge maintenance and improvements, as well as transit and rail infrastructure.

The key components of SB 1 include:

- Increase the state gas tax by 12 cents per gallon and the diesel tax by 20 cents per gallon, with an additional 4 percent increase in the diesel sales tax (beginning Nov. 1, 2017).
- Create a Transportation Improvement Fee based on the market value of the vehicle (beginning Jan. 1, 2018).
- Eliminate the current Board of Equalization "Gas Tax Swap" formula for a variable-rate motor fuel tax based on annual changes to the Consumer Price Index (beginning July 1, 2019).
- Index the state gas tax to inflation (beginning Jan. 1, 2020).
- Implement a Zero-Emission Vehicle Fee of \$100 for electric vehicles for model year 2020 or later (beginning Jan. 1, 2020).
- Require the California Department of Transportation (Caltrans) to generate up to \$100 million in department efficiencies, overseen by the newly-created Transportation Inspector General.

Appendix 8: How is Transportation Investment Funded in California?

How is Transportation Investment Funded in California?

California's highway, street bridge and transit network is funded from a combination of three sources: federal, state and local funding. Federal and state revenues account for about half of highway and transit funding, with local funds comprising the remaining half.

State Funds. State revenues are generated from multiple sources, including:

- **Gas Tax:** Prior to the passage of SB 1, the California state gas tax was comprised of two parts— a flat excise tax of 18 cents per gallon, and an additional variable-rate component.
 - The “Gas Tax Swap” of 2010 resulted in an “adjustable” gas tax that added a 2.25 percent sales tax on motor fuel purchases (reduced from the state’s 6 percent general sales tax). To ensure the sales tax percentage on motor fuel does not affect overall cost of taxes paid at the pump when compared to the previous tax structure, the state’s excise tax on fuel is adjusted annually so that any change in the variable-rate percentage is revenue neutral.
 - Prior to SB 1, the combined state gas tax was being charged at 27.8 cents per gallon.
- **Sales Tax on Diesel:** 6.5 percent of the state sales and use tax on diesel fuel is applied to transportation funding.
- **Truck Weight Fees:** A fee is assessed on commercial vehicles based on gross weight of the vehicle. The nearly \$1 billion generated by this fee is used to pay for transportation bond debt (below).
 - **2006 Proposition 1B Bond:** The 2006 Bond Act approved \$19.9 billion to be used for “congestion relief, goods movement facilitation, air quality improvement, and safety and security enhancements to the transportation network.”
 - **Vehicle License, Registration, and Driver License Fees:** Revenue from these fees is allocated to the California Highway Patrol and the Department of Motor Vehicles for traffic law enforcement and regulations.

Local Funds. Cities and counties are given the ability to implement a local sales tax for transportation purposes through an initiative, which must receive two-thirds support from voters to be enacted. The Transportation Development Act of 1971 initiated a statewide 0.25 percent sales tax for local transportation funding. Additional local revenue sources include bonds, property-related charges (including property taxes, benefits assessment districts, and developer fees), and local General Fund revenue.