The Economic Impacts of Senate Bill 1 on the San Francisco Bay Area

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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This research was conducted for a coalition of California transportation associations – The California Alliance for Jobs, The California Transit Association and Transportation California – by the economics & research team at the Washington, D.C.-based American Road & Transportation Builders Association (ARTBA). This analysis was led by Dr. Alison Premo Black, the association's senior vice president and chief economist. ARTBA Market Research Associate Lital Shair Nada made significant contributions to the research and analysis.

Since joining ARTBA in 2000, Dr. Black has led teams and authored over 80 studies examining state transportation funding and investment patterns. Dr. Black also leads the operation of the Transportation Investment Advocacy Center ™. She has a Ph.D. in economics from the George Washington University and a master's in international economics and Latin American Studies from the Johns Hopkins School of Advanced International Studies.

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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.

The Economic Impacts of Senate Bill 1 on the San Francisco Bay Area

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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 $34.5 billion in increased economic activity and benefits for all San Francisco Bay Area 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 Francisco Bay Area is estimated to be $1.1 billion per year[1], which represents 20 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 Francisco Bay Area over 10 Years	
User Benefits	$9.8 billion
Highway, Street & Bridge	$4.8 billion
Transit	$5.1 billion
Economic Impacts	$24.7 billion
Economic Output	$19.3 billion
Earnings	$5.4 billion
Employment	122,932 job-years
Total Impact	**$34.5 billion**

The San Francisco Bay Area, comprising Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties, is an integral part of California's economy, with 20 percent of the state's population and 24 percent of its labor force. 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 Francisco Bay Area 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 Francisco Bay Area 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.

As repairs and upgrades are made to the San Francisco Bay Area'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 Francisco Bay Area have been awarded $769.8 million in SB 1 funds, with almost all (88 percent) designated for highway or bridge projects. The remaining $92.0 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 $982 million per year in savings for San Francisco Bay Area drivers, transit riders and businesses, adding up to $9.8 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 $476 million per year, adding up to $4.8 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 $506.1 million per year. Over 10 years, this will add up to $5.1 billion.

"Economic impacts" as used in this 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 Francisco Bay Area 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 Francisco Bay Area.

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

- Sales and output by San Francisco Bay Area businesses in all sectors will increase by $1.9 billion each year, totaling $19.3 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 12,293 jobs on average each year, adding up to 122,932 job-years over 10 years.

- Those workers will earn an average of $537.4 million per year, resulting in $5.4 billion in additional earnings over 10 years.

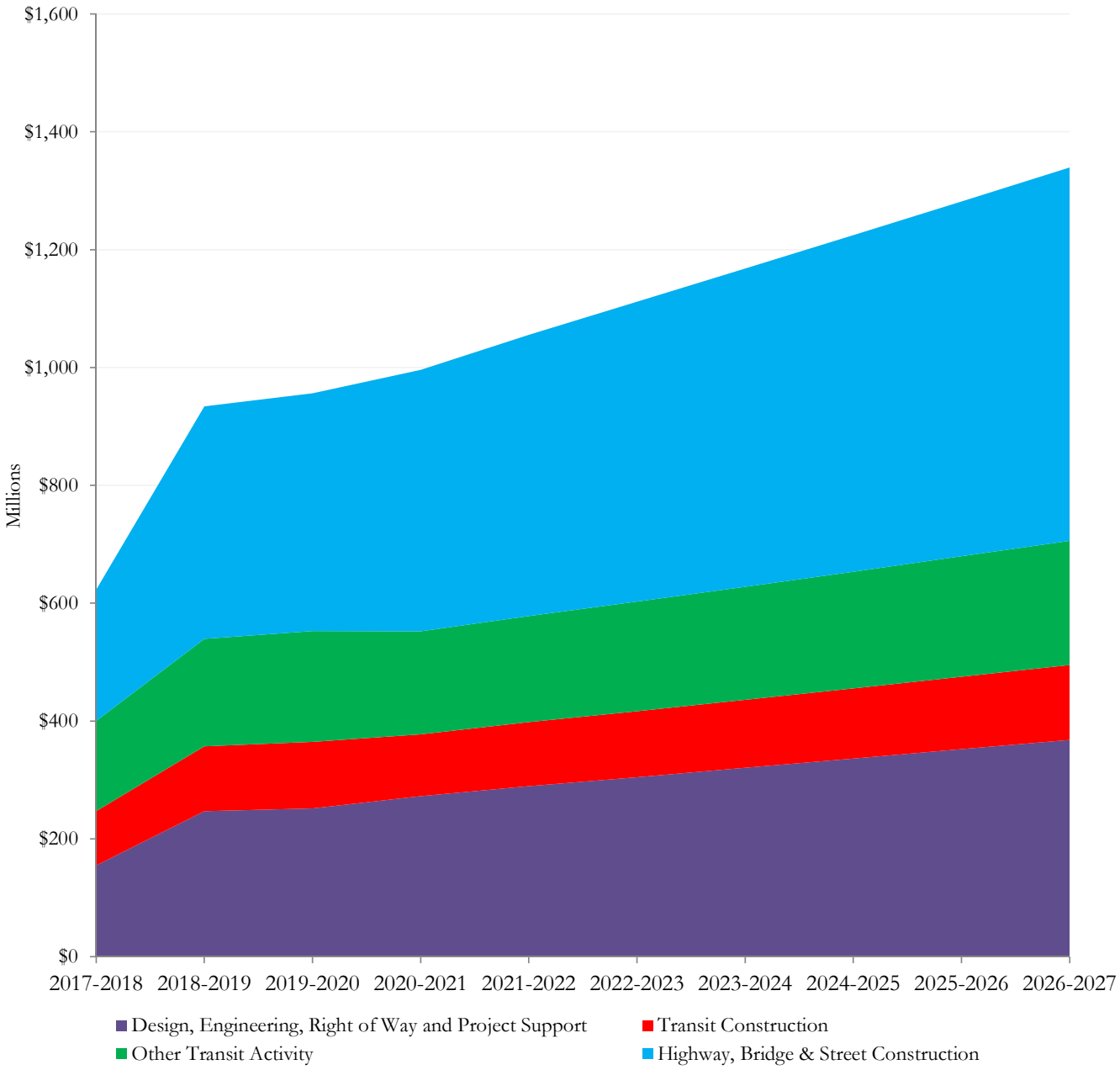
The economic activity from the implementation of SB 1 in this region is significant—over 10 years, this will add up to $34.5 billion in output, earnings and user benefits, which will contribute $9.9 billion to the state gross domestic product (GSP).[3]

There are other benefits for San Francisco Bay Area residents and businesses that are harder to quantify (outlined in Section III of the report), suggesting that **the quantified benefits of $34.5 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 Francisco Bay Area 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 Francisco Bay Area over 10 Years, by Fiscal Year



II. The Economic Impacts of Transportation Investment in the San Francisco Bay Area

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 Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), 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 Francisco Bay Area 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 Francisco Bay Area.

The economic activity from a sustained $1.1 billion annual increase in San Francisco Bay Area highway, street, bridge and transit investment will yield the following benefits:

- Generate nearly $1.9 billion annually in additional economic output as businesses throughout the economy sell more goods and services to both other businesses and consumers, totaling $19.3 billion over 10 years.
- Increase GSP by over $989 million per year, adding up to $9.9 billion over 10 years.
- Support or create an additional 12,293 jobs on average each year throughout the economy, with 78 percent of the employment outside of the construction industry, including an estimated 4,011 jobs in transportation and warehousing, 1,185 jobs in other services, 632 jobs in retail trade and 609 jobs in real estate and rental and leasing. This will add up to a total of 122,932 job-years supported or created by additional SB 1 spending over the next 10 years.
- These workers will earn over $537 million in wages annually, totaling $5.4 billion over 10 years.
- $163.7 million in additional tax revenues each year, adding up to $1.6 billion over 10 years. This includes:
  - $3.7 million in annual state payroll taxes, totaling $36.5 million over 10 years
  - $41.1 million in annual federal payroll taxes, totaling $411.1 million over 10 years
  - $100.6 million in annual state income taxes, totaling $1.0 billion over 10 years
  - $18.2 million in annual state and local sales taxes, totaling $182.4 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 $10.7 billion in SB 1 spending in the San Francisco Bay Area, $4.8 billion is estimated to go toward highway,

street and bridge construction, $1.1 billion toward transit construction and $1.9 billion for other transit activity. The remaining $2.9 billion of San Francisco Bay Area 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 Francisco Bay Area

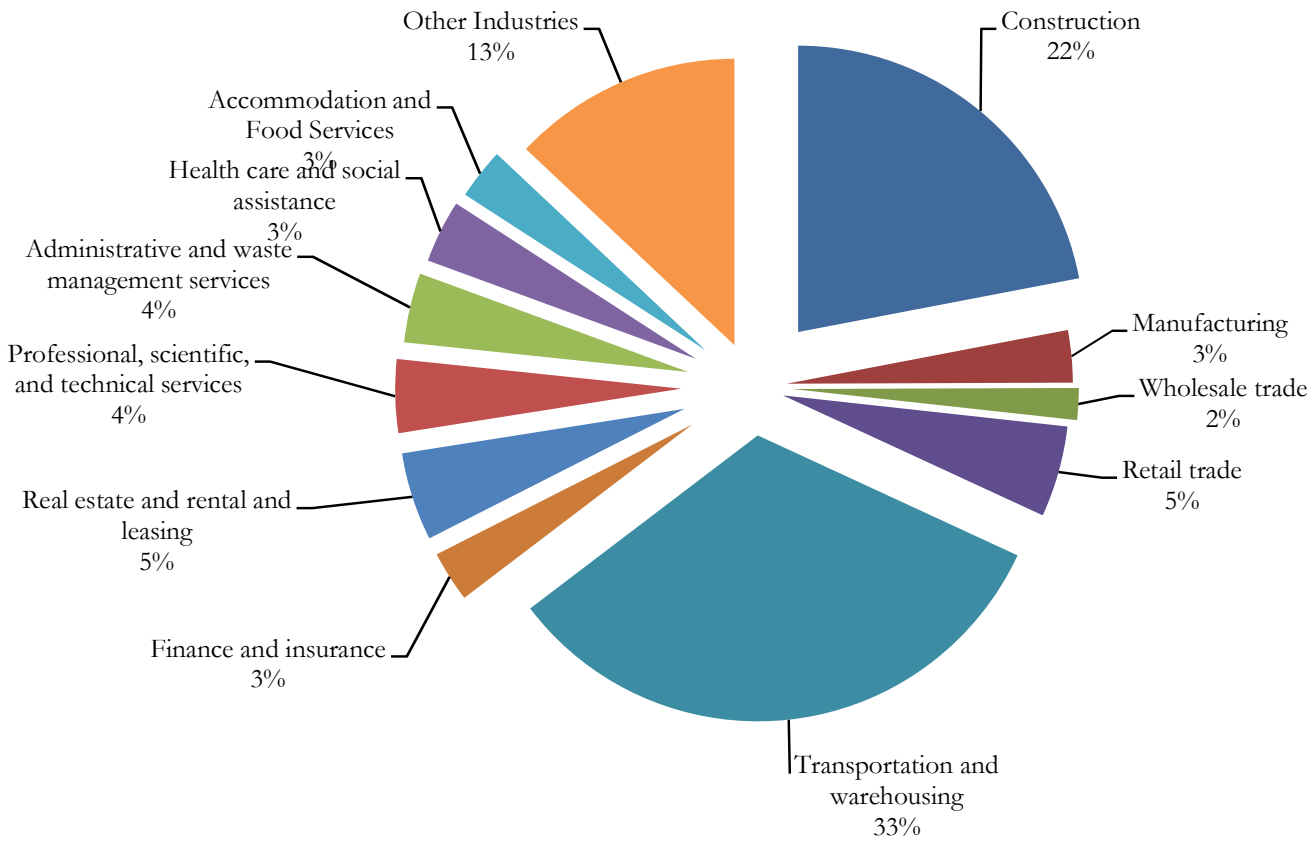
	Impact of Highway, Bridge and Street Construction	Impact of Transit Construction	Impact of Other Transit Activity	Impact of Design, Engineering, Right of Way and Project Support	Total Annual Impact
Total Output	$792.1 million	$195.5 million	$381.4 million	$560.6 million	$1.9 billion
Total Value Added (GSP)	$417.0 million	$107.2 million	$190.8 million	$274.2 million	$989.2 million
Earnings	$205.3 million	$60.4 million	$128.4 million	$143.2 million	$537.4 million
Employment	3,619 jobs	1137 jobs	4964 jobs	2573 jobs	12,293 jobs
Total Tax Revenues	$54.4 million	$16.3 million	$54.9 million	$38.1 million	$163.7 million
State Payroll Tax	$1.4 million	$410.7 thousand	$873.2 thousand	$974.0 thousand	$3.7 million
Federal Payroll Tax	$15.7 million	$4.6 million	$9.8 million	$11.0 million	$41.1 million
State Income Tax	$29.6 million	$9.3 million	$40.6 million	$21.1 million	$100.6 million
State & Local Sales Tax	$7.7 million	$2.0 million	$3.5 million	$5.1 million	$18.2 million

Total Economic Impact of SB 1 on the San Francisco Bay Area 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	$7.9 billion	$2.0 billion	$3.8 billion	$5.6 billion	$19.3 billion
Total Value Added (GSP)	$4.2 billion	$1.1 billion	$1.9 billion	$2.7 billion	$9.9 billion
Earnings	$2.1 billion	$603.9 million	$1.3 billion	$1.4 billion	$5.4 billion
Employment	36,189 job-years	11,373 job-years	49,641 job-years	25,729 job-years	122,932 job-years
Total Tax Revenues	$544.2 million	$163.2 million	$548.6 million	$380.5 million	$1.6 billion
State Payroll Tax	$14.0 million	$4.1 million	$8.7 million	$9.7 million	$36.5 million
Federal Payroll Tax	$157.1 million	$46.2 million	$98.2 million	$109.6 million	$411.1 million
State Income Tax	$296.3 million	$93.1 million	$406.4 million	$210.6 million	$1.0 billion
State & Local Sales Tax	$76.9 million	$19.8 million	$35.2 million	$50.6 million	$182.4 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 Francisco Bay Area Jobs Supported/Created by Increase in Highway, Bridge, Street and Transit Investment from SB 1



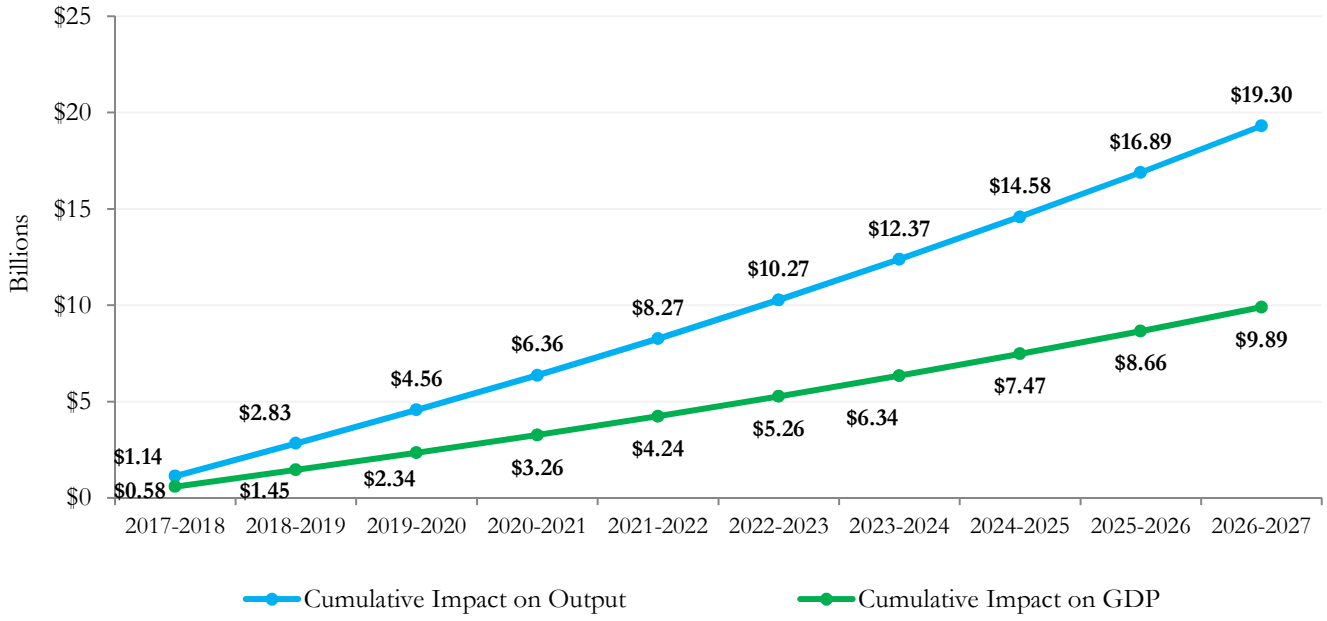
Average Annual Economic Impact of SB 1 in the San Francisco Bay Area		
Industry	Impact on Industry Output (in millions)	Jobs Supported/Created
Agriculture, forestry, fishing, and hunting	$1.5	12
Mining	$5.8	18
Utilities	$7.9	10
Construction	$638.0	2,693
Manufacturing	$162.7	361
Wholesale trade	$50.0	218
Retail trade	$56.1	632
Transportation and warehousing	$214.9	4,011
Information	$38.0	98
Finance and insurance	$85.3	352
Real estate and rental and leasing	$118.6	609
Professional, scientific, and technical services	$86.6	508
Management of companies and enterprises	$15.4	53
Administrative and waste management services	$38.5	480
Educational services	$8.3	117
Health care and social assistance	$47.0	434
Arts, entertainment, and recreation	$8.1	97
Accommodation and Food Services	$26.7	351
Other services	$320.2	1,185
Total industry impact*	$1,929.5	12,293

*Does not include impact on government output.

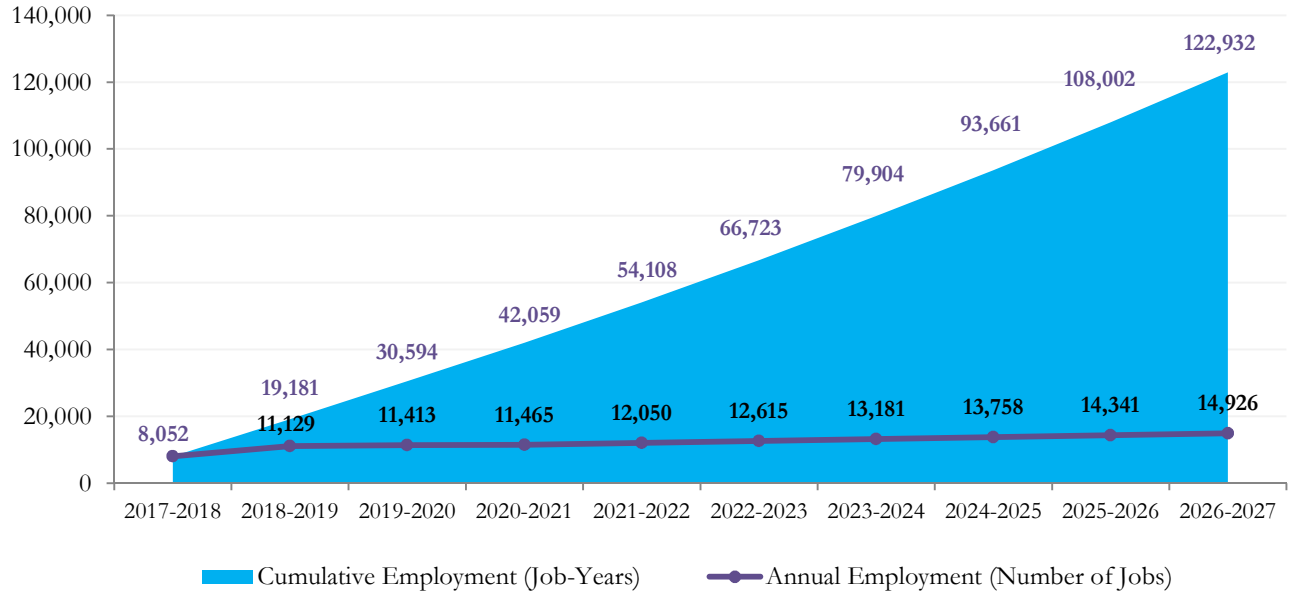
Total Economic Impact of SB 1 in the San Francisco Bay Area over 10 Years		
Industry	Impact on Industry Output (in millions)	Job-Years Supported/Created
Agriculture, forestry, fishing, and hunting	$14.8	123
Mining	$57.6	183
Utilities	$78.8	96
Construction	$6,380.1	26,929
Manufacturing	$1,626.5	3,607
Wholesale trade	$500.5	2,183
Retail trade	$560.8	6,323
Transportation and warehousing	$2,149.2	40,114
Information	$380.4	983
Finance and insurance	$852.5	3,519
Real estate and rental and leasing	$1,186.2	6,095
Professional, scientific, and technical services	$866.4	5,081
Management of companies and enterprises	$153.5	534
Administrative and waste management services	$384.8	4,798
Educational services	$82.7	1,169
Health care and social assistance	$469.8	4,343
Arts, entertainment, and recreation	$80.9	969
Accommodation and Food Services	$266.7	3,514
Other services	$3,202.4	11,851
Total industry impact*	$19,295.1	122,932

*Does not include impact on government output.

Annual Impact of SB 1 on Output and GDP in the San Francisco Bay Area



Annual Impact of SB 1 on Employment in the San Francisco Bay Area Jobs vs. Job-Years



Additional User Benefits and Savings for San Francisco Bay Area Drivers and Businesses

In addition to the immediate economic impacts from highway, street, bridge and transit investment and construction activity, San Francisco Bay Area 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 Francisco Bay Area companies relies on the mobility provided by the highway, street and bridge system.

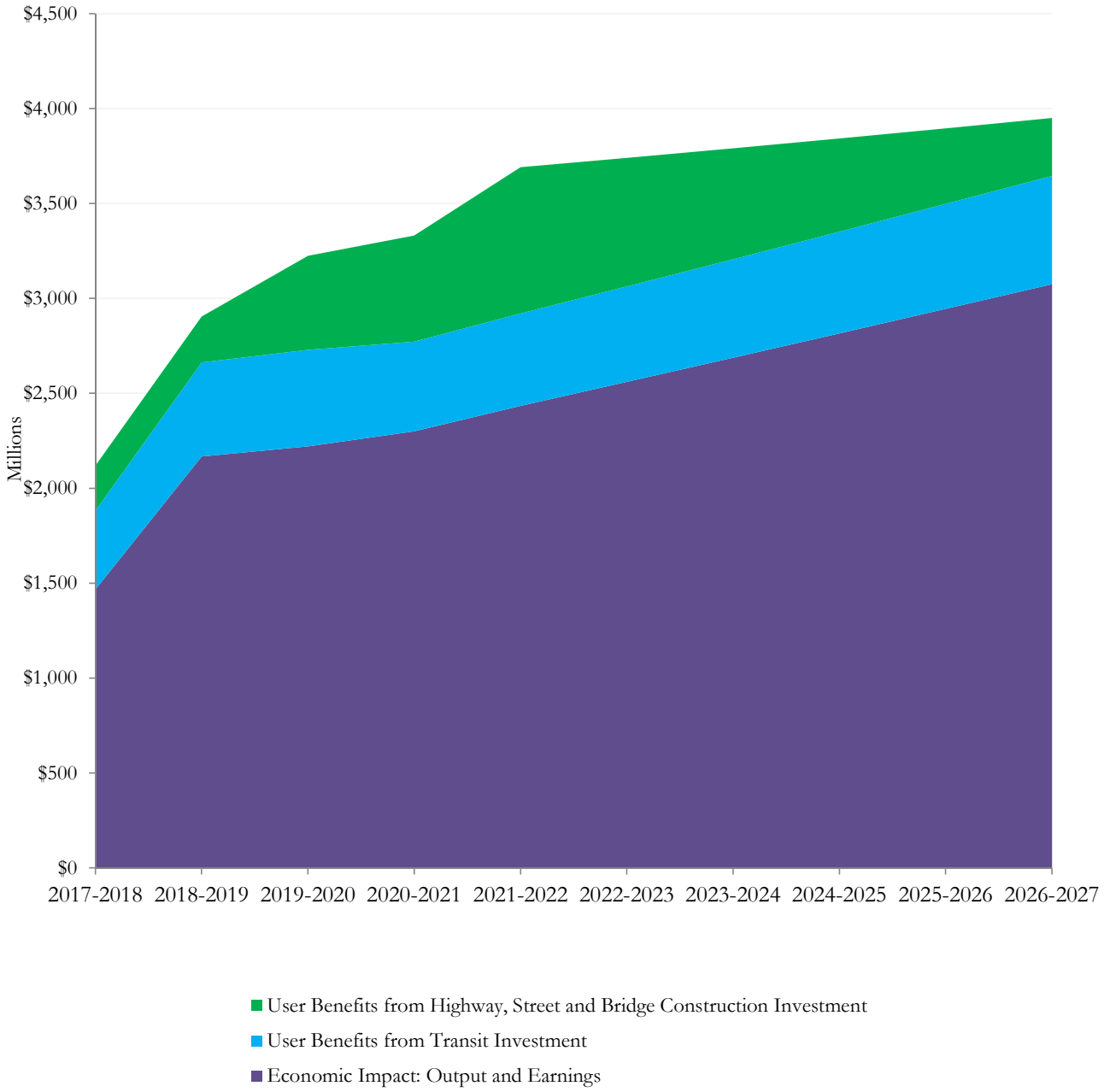
Without the infrastructure built, maintained and managed by the San Francisco Bay Area's transportation construction industry, virtually all major industry sectors that comprise the region's economy—and the local jobs they sustain—would not exist or could not function.

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

- San Francisco Bay Area drivers, transit riders and businesses will save an estimated $982 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 $9.8 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 $476 million per year, adding up to $4.8 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 $506.1 million per year. Over 10 years, this will add up to $5.1 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 in metropolitan areas, as they create an improved innovation environment that will attract workers and firms to the region. Particular industries with documented benefits from these learning effects are computing, advanced electronics, software, entertainment, and manufacturing, major industries in the San Francisco Bay Area. 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 Francisco Bay Area 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 MTC and ABAG.

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 Francisco Bay Area is estimated to be $1.1 billion per year[4], which represents 20 percent of the total transportation investment increase generated by SB 1. Therefore, to calculate the estimated user benefits to the San Francisco Bay Area, we assume that 20 percent of California highway, street and bridge user benefits are concentrated in the San Francisco Bay Area.

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 Francisco Bay Area 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 Francisco Bay Area have been awarded $769.8 million in SB 1 funds, with almost all (88 percent) designated for highway or bridge projects. The remaining $92.0 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] Ranhjit 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 impact is particularly strong in a large and densely populated area like the San Francisco Bay Area. 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

[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

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]

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 Francisco Bay Area 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 Francisco Bay Area 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] Additionally, by locating near each other, firms can benefit from

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

[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>.

face-to-face communication[19] , an important component of knowledge-intensive or creative industries, such as technology or social media firms, many of which are based in the San Francisco Bay Area. These agglomeration benefits have been documented to operate in areas of five to ten miles.[20] However, a good transportation network that allows for reliable travel time "shrinks distances" between businesses, suppliers and customers. Increasing returns to local industries can be anticipated in areas with intermodal linkages or intra-modally, as between major highways.

The San Francisco Bay Area, recognized worldwide as a major center of technological innovation, has incubated innovations in social media and biotechnology, clearly demonstrating the benefits of innovation and entrepreneurship from these agglomeration economies.[21]

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 Francisco Bay Area 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.[22] 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.[23]

In their latest Regional Transportation Plan/Sustainable Communities Strategy report, MTC and ABAG highlighted the importance of transportation networks to the regional economy. Metropolitan areas increasingly rely on agglomeration economics; however, congestion has increased to the level that it inhibits economic growth, with the San Francisco Bay Area consistently ranked as one of the most congested metropolitan areas in the country. A transportation system that is "maxed-out" at peak hours can inhibit the growth of centers of industry across the region. Reducing congestion, and therefore increasing mobility and access, can have a significant effect on economic growth.[24]

- **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.[25]

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

[20] Rosenthal, Stuart S., and Strange, William C. (2003). Geography, Industrial Organization, and Agglomeration. Review of Economics and Statistics, 85(2): 377-393.

[21] MTC and ABAG, "Plan Bay Area 2040: Final," July 26, 2017. <http://www.planbayarea.org/>.

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

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

[24] MTC and ABAG, "Plan Bay Area 2040: Final," July 26, 2017. <http://www.planbayarea.org/>.

[25] Weisbrod, 4.

- **Intra-Industry Linkages:** San Francisco Bay Area 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, warehousing, and logistics, key industries in the region, are all heavily dependent on a well-maintained transportation network.

- **Fostering Innovation:** Transportation infrastructure investment is closely linked with economic competitiveness. Research suggests that highway investment results in industry growth and innovation.[26] Innovation results from infrastructure better supporting business activity. Infrastructure also attracts research and development firms for the large return on investment it offers.

- **Access to Global Markets:** Many San Francisco Bay Area firms depend on connections to global markets. A robust and efficient transportation system makes San Francisco Bay Area 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

[26] 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)

[27] Li, 669-683.

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

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 Francisco Bay Area to take advantage of this improved labor market matching. This effect is particularly important for firms that depend on a skilled workforce, such as the region's growing technology sector.
- **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 San Francisco Bay Area, with warehousing and distribution jobs moving 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. The Port of Oakland is the fifth-largest U.S. container port; additionally, the region has several specialized seaports, two of the most active air cargo airports in the Western U.S., and major rail and highway networks.[32] However, as the San Francisco Bay Area economy continues to grow, the accompanying congestion takes away this comparative advantage. Reducing landside freight shipping times at ports can lead to higher volumes of shipments and lower costs; this higher productivity will make the Ports of Oakland more cost effective and competitive compared to other U.S. ports of entry.

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

[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] 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>

- **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]. For example, in Silicon Valley, engineers interact regularly, both within and across different firms, and this learning effect creates a high-quality hub of knowledge and innovation for the computing, advanced electronics and software industries. Other industries that benefit from learning effects are 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.

Consider the benefits to a business in the San Francisco Bay Area 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 Francisco Bay Area 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.

[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.

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]

- **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

[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."

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 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.

[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.

- 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 Francisco Bay Area'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]

- 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.

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[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

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

- 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.

[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 Francisco Bay Area 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 Francisco Bay Area 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: Sonoma County had a PCI of 55; Napa County had a PCI of 59; Marin County had a PCI of 64; Santa Clara County had a PCI of 67; Alameda, San Francisco, and Solano Counties had a PCI of 68; and Contra Costa had a PCI of 69, all in the "at risk" category. San Mateo County had a PCI of 71, at the lower bound of the "good" category. San Francisco Bay Area pavement needs over 10 years were estimated at $10.05 billion, including $2.49 billion in pavement needs for Santa Clara County, $1.88 billion for Alameda County, $1.45 billion for Contra Costa County, $1.38 billion for Sonoma County, $741 million for Solano County, $723 million for San Mateo County, $516 million for San Francisco County, $458 million for Marin County, and $408 million for Napa 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 Francisco Bay Area and other local roads highlights the need for this additional investment provided by SB 1.

- **Deficient Bridges**— The San Francisco Bay Area has 4,039 roadway bridges, captured by the FHWA National Bridge Inventory (NBI) data. FHWA reports 28.7 percent of these bridges are either "structurally deficient" (297 bridges) or "functionally obsolete" (863 bridges). This is above the national

[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.

average of 22 percent. Bridge owners estimate it will cost at least $4.61 billion 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 418 fatal motor vehicle crashes, resulting in 445 fatalities, in the San Francisco Bay Area during 2016. Of these, 27 percent of fatalities occurred on rural roads and 31 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]

  The region's transit system is seeing historic crowding and capacity issues, with average weekly Bay Area Rapid Transit (BART) ridership at the highest level on record, ridership that exceeds capacity on the 10 highest-demand Caltrain trains, and San Francisco's Municipal Railway (Muni) Metro lines at capacity during peak travel periods.[57]

- **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 Francisco Bay Area, this can cost urban drivers anywhere from $143 to $1,675 per year.[58]

[54] Ibid.

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

[56] Ibid.

[57] MTC and ABAG, "Plan Bay Area 2040: Final," July 26, 2017. <http://www.planbayarea.org/>.

[58] Texas Transportation Institute 2015 Urban Mobility Scorecard

The San Francisco Bay Area has overall commute times and levels of highway congestion that are at the highest level on record, with traffic bottlenecks at U.S. 101 in San Francisco and Interstate 80 (I-80) in Alameda and Contra Costa counties.[59]

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.

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:[60]

- 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

[59] MTC and ABAG, "Plan Bay Area 2040: Final," July 26, 2017. <http://www.planbayarea.org/>.

[60] 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 Francisco Bay Area 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)
San Francisco-Oakland CA	78	$1,675	146,013	$3,143
San Jose CA	67	$1,422	104,559	$2,230
Concord CA	35	$752	21,712	$466
Vallejo CA	21	$456	5,915	$83
Santa Rosa CA	19	$407	3,993	$128
Livermore CA	16	$358	3,703	$31
Antioch CA	15	$347	3,806	$100
Gilroy-Morgan Hill CA	14	$311	2,093	$33
Fairfield CA	14	$303	1,890	$42
Napa CA	13	$290	1,606	$26
Petaluma CA	9	$201	1,178	$15
Vacaville CA	7	$143	571	$14
Total San Francisco Bay Area Cities			297,039	$6,311

Source: Texas Transportation Institute 2015 Urban Mobility Scorecard

- 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

Increasing traffic congestion, an issue in virtually all U.S. metropolitan areas, inhibits job growth. In order to evaluate the actual effect of congestion on employment growth, Hymel (2009) used a regression analysis to estimate the effect of reducing congestion on new job creation. Looking at the period from 1990 to 2003, Hymel found that if congestion had been reduced by 10 percent in the Los Angeles-Long Beach-Santa Ana metropolitan area, employment growth would have increased by 4.67 percent. In the San Diego area, a 10 percent congestion reduction would have increased employment growth by 2.48 percent. Since the Los Angeles area is more congested than San Diego, these results suggest that the effect of addressing congestion is greater in more congested urban areas – this is called the "distance shrinking" effect of managing congestion. Relieving congestion also becomes additionally important for the economy as congestion levels increase. Evidence also suggests that the negative economic effects of congestion are strongest and increasing in the most congested cities. Congestion has increased the "effective distance" between metropolitan regions.[61]

[61] Hymel, Kent. (2009). Does traffic congestion reduce employment growth? Journal of Urban Economics, 65(2): 127-135.

V. Broader Economic Challenges

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

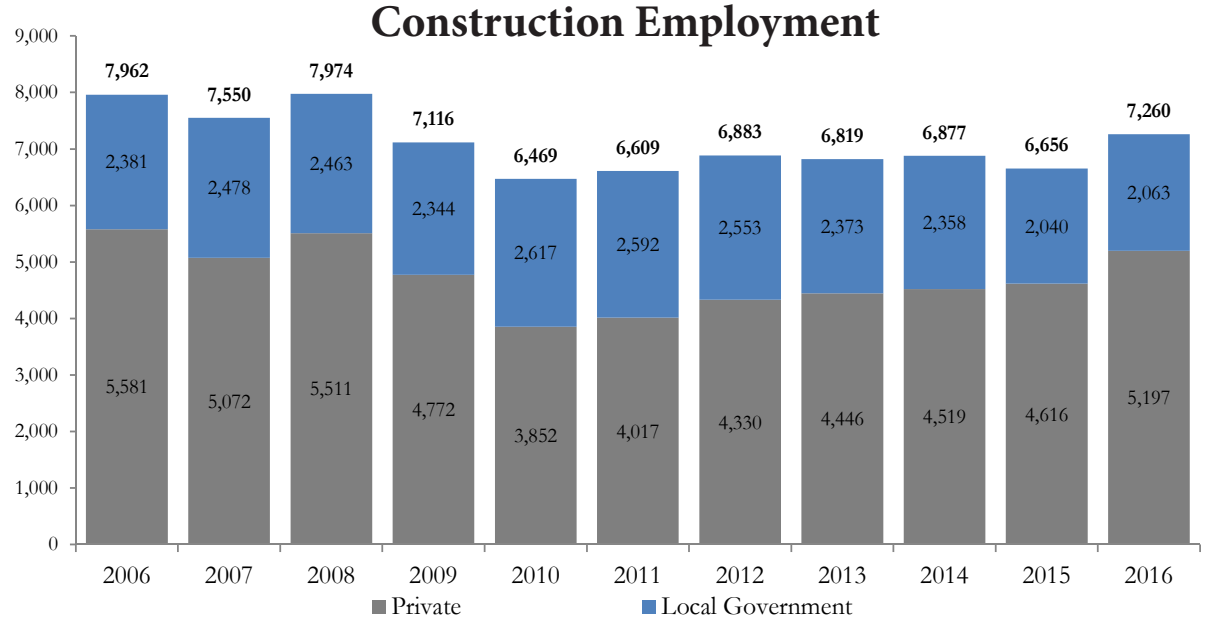
The San Francisco Bay Area construction sector continues to fall behind other parts of the economy. Though San Francisco Bay Area construction employment increased over the past six years, annual employment levels are still below pre-recession levels. San Francisco Bay Area construction employment is estimated at 188,045 people in 2016 (the latest year data is available), 3 percent below 2007 levels.[62] Highway, street and bridge construction employment has also seen recent improvement after years of relatively flat growth, and is also slightly below 2007 levels. Other heavy and civil engineering construction employment, which comprises transit employment, also contracted during the recession and then saw flat growth, with the exception of an uptick in 2012. Significant growth in this sector in 2016 then brought other heavy and civil engineering construction employment slightly above 2007 levels.

[62] 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 unavailable for Marin, Napa, San Francisco, and Solano Counties. Local government construction employment makes up between 1 to 2 percent of construction employment, averaging 2,452 people over the past six years, and is concentrated primarily in the highway, street and bridge construction sector.

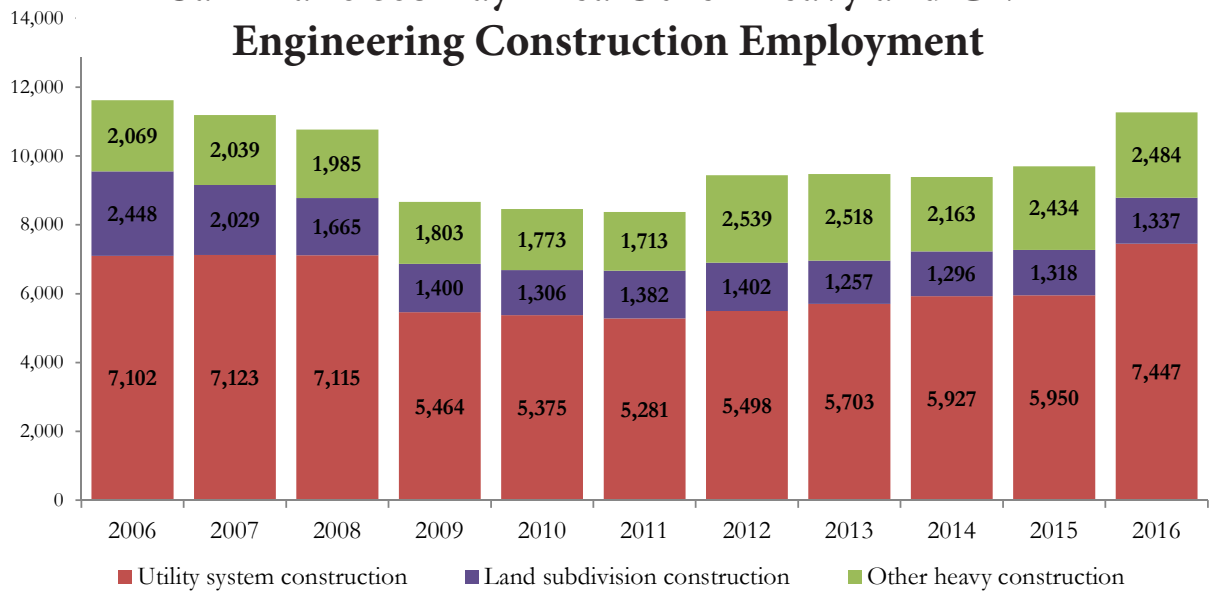
San Francisco Bay Area Total Highway, Street and Bridge Construction Employment



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

Note that private construction data was unavailable for: Marin County; Napa County in 2013; San Francisco County in 2006, 2007, 2010, and 2011; San Mateo County in 2006 and 2007; and Solano County between 2012 and 2016. Additionally, local government construction employment data was unavailable for Marin, San Francisco, Solano, and Sonoma Counties, and was unavailable for Contra Costa County in 2006 through 2009, 2015, and 2016.

San Francisco Bay Area Other Heavy and Civil Engineering Construction Employment



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

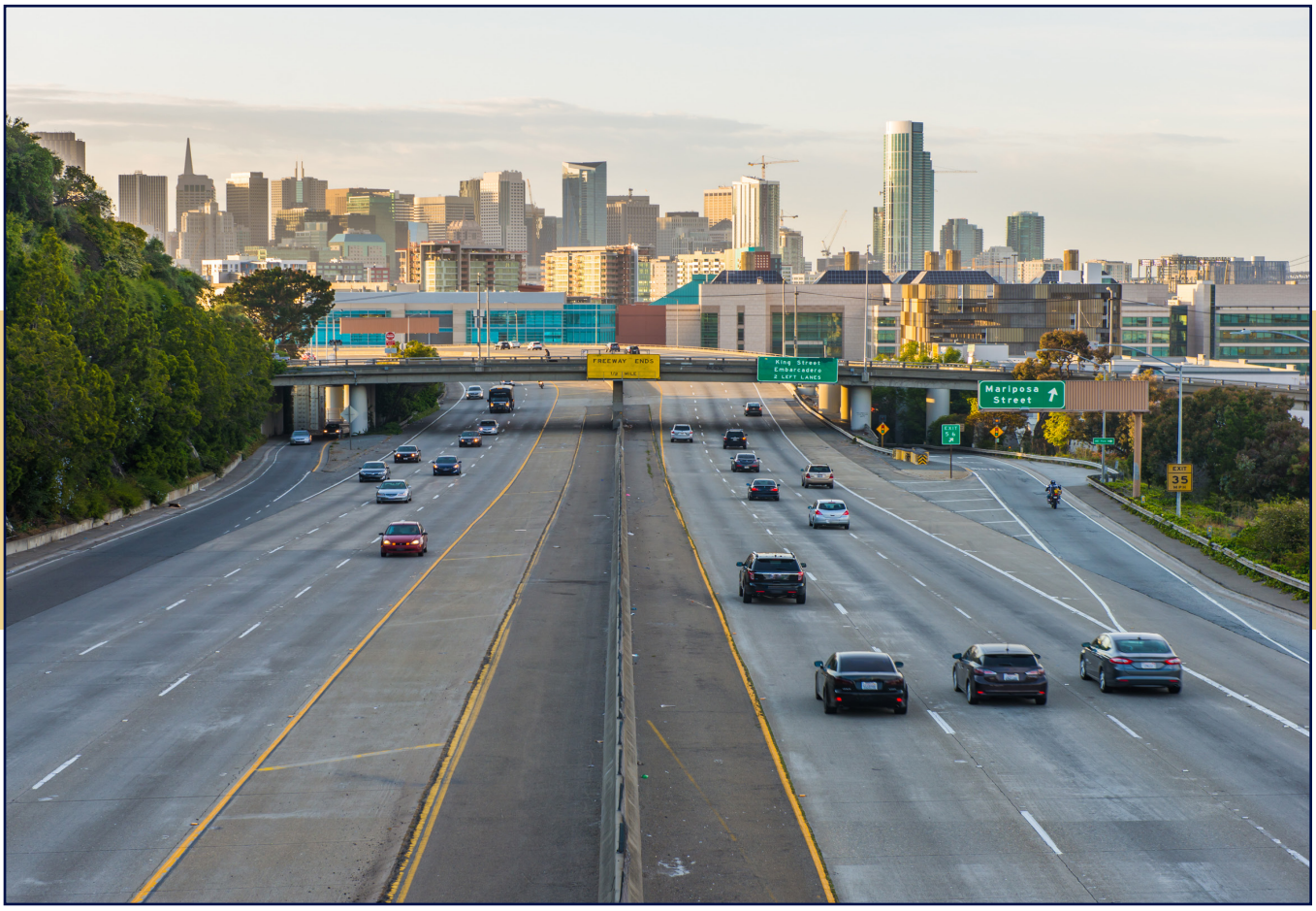
Note that utility system construction data was unavailable for Marin County in 2011 through 2013, and for San Mateo County in 2009. Land Subdivision construction data was unavailable for: Solano County; Marin County in 2006 through 2010 and in 2013 through 2016; Napa County in 2013; and San Mateo County in 2007 and 2008. Other heavy construction data was unavailable for: San Francisco County in 2006, 2007, 2010 and 2011; San Mateo County in 2006 through 2009; and Solano County in 2006 through 2008, 2010, and 2011.

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

SB 1 will increase San Francisco Bay Area 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 Francisco Bay Area.



Average Annual Economic Impact of SB 1 on the San Francisco Bay Area 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	$528	$203	$374	$377	$1,481
Mining	$3,743	$326	$673	$1,014	$5,756
Utilities	$3,119	$732	$1,944	$2,086	$7,881
Construction	$482,275	$113,211	$3,289	$39,235	$638,010
Manufacturing	$83,018	$16,308	$37,827	$25,500	$162,653
Wholesale trade	$24,042	$5,684	$10,989	$9,331	$50,045
Retail trade	$21,163	$10,444	$10,186	$14,286	$56,078
Transportation and warehousing	$11,901	$2,487	$192,704	$7,824	$214,916
Information	$12,717	$3,782	$9,345	$12,199	$38,042
Finance and insurance	$20,923	$5,897	$23,922	$34,512	$85,254
Real estate and rental and leasing	$45,540	$12,481	$27,043	$33,555	$118,620
Professional, scientific, and technical services	$23,082	$6,753	$18,988	$37,815	$86,638
Management of companies and enterprises	$6,478	$1,688	$3,476	$3,709	$15,352
Administrative and waste management services	$8,926	$2,577	$11,737	$15,242	$38,482
Educational services	$3,119	$934	$1,981	$2,231	$8,266
Health care and social assistance	$18,043	$5,312	$11,195	$12,431	$46,981
Arts, entertainment, and recreation	$2,975	$900	$1,869	$2,347	$8,092
Accommodation and Food Services	$9,885	$2,847	$6,167	$7,766	$26,666
Other services	$10,605	$2,904	$7,663	$299,071	$320,242
Total industry impact*	$792,130	$195,472	$381,352	$560,559	$1,929,513

*Does not include impact on government output.

Average Annual Economic Impact of SB 1 on the San Francisco Bay Area 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	5	2	3	3	12
Mining	14	1	1	2	18
Utilities	4	1	2	3	10
Construction	1,877	609	18	189	2,693
Manufacturing	193	46	60	62	361
Wholesale trade	105	25	48	41	218
Retail trade	238	118	115	161	632
Transportation and warehousing	62	15	3,886	48	4,011
Information	33	9	23	32	98
Finance and insurance	89	25	96	142	352
Real estate and rental and leasing	226	65	140	178	609
Professional, scientific, and technical services	132	40	111	226	508
Management of companies and enterprises	23	6	12	13	53
Administrative and waste management services	123	35	135	186	480
Educational services	45	13	27	32	117
Health care and social assistance	168	48	102	116	434
Arts, entertainment, and recreation	35	11	23	27	97
Accommodation and Food Services	132	37	80	102	351
Other services	96	26	68	995	1,185
Total industry impact*	3,619	1,137	4,964	2,573	12,293

*Does not include impact on government output.

Total Economic Impact of SB 1 on the San Francisco Bay Area 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	$5	$2	$4	$4	$15
Mining	$37	$3	$7	$10	$58
Utilities	$31	$7	$19	$21	$79
Construction	$4,823	$1,132	$33	$392	$6,380
Manufacturing	$830	$163	$378	$255	$1,627
Wholesale trade	$240	$57	$110	$93	$500
Retail trade	$212	$104	$102	$143	$561
Transportation and warehousing	$119	$25	$1,927	$78	$2,149
Information	$127	$38	$93	$122	$380
Finance and insurance	$209	$59	$239	$345	$853
Real estate and rental and leasing	$455	$125	$270	$336	$1,186
Professional, scientific, and technical services	$231	$68	$190	$378	$866
Management of companies and enterprises	$65	$17	$35	$37	$154
Administrative and waste management services	$89	$26	$117	$152	$385
Educational services	$31	$9	$20	$22	$83
Health care and social assistance	$180	$53	$112	$124	$470
Arts, entertainment, and recreation	$30	$9	$19	$23	$81
Accommodation and Food Services	$99	$28	$62	$78	$267
Other services	$106	$29	$77	$2,991	$3,202
Total industry impact*	$7,921	$1,955	$3,814	$5,606	$19,295

*Does not include impact on government output.

Total Economic Impact of SB 1 on the San Francisco Bay Area 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	45	16	29	33	123
Mining	136	10	13	23	183
Utilities	38	9	24	26	96
Construction	18,766	6,092	177	1,893	26,929
Manufacturing	1,930	462	599	617	3,607
Wholesale trade	1,049	248	480	407	2,183
Retail trade	2,380	1,176	1,155	1,612	6,323
Transportation and warehousing	625	146	38,862	481	40,114
Information	334	94	231	324	983
Finance and insurance	886	250	957	1,425	3,519
Real estate and rental and leasing	2,260	654	1,397	1,784	6,095
Professional, scientific, and technical services	1,317	396	1,112	2,256	5,081
Management of companies and enterprises	226	59	121	129	534
Administrative and waste management services	1,234	350	1,354	1,860	4,798
Educational services	452	128	270	319	1,169
Health care and social assistance	1,680	483	1,020	1,159	4,343
Arts, entertainment, and recreation	353	111	232	273	969
Accommodation and Food Services	1,323	372	800	1,019	3,514
Other services	958	259	683	9,951	11,851
Total industry impact*	36,189	11,373	49,641	25,729	122,932

*Does not include impact on government output.

The Economic Benefits of SB 1 on …

Agriculture, forestry, fishing, and hunting

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $15 million in output in the Agriculture, Forestry, Fishing, and Hunting sector over 10 years, supporting over 120 job-years.*

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

- Over $1 million in additional economic output
- A $796.0 thousand increase in gross state product (GSP)
- Supporting or creating an additional 12 jobs. These workers will earn over $428 thousand in wages
- $89.0 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$1.5 million	$14.8 million
Value Added (contribution to GSP)	$796.0 thousand	$8.0 million
Employment	12 people	123 job-years
Total Payroll	$428.3 thousand	$4.3 million
Total Tax Revenues	$89.0 thousand	$889.9 thousand
State Payroll Tax Contribution	$2.9 thousand	$29.1 thousand
Federal Payroll Tax Contribution	$32.8 thousand	$327.6 thousand
State Income Tax Contribution	$43.7 thousand	$436.6 thousand
State & Local Sales Tax Contribution	$9.7 thousand	$96.5 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Agriculture, forestry, fishing, and hunting in the San Francisco Bay Area contributed $1.3 billion to county economic activity in 2016, accounting for 0.2% 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 1,240 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $586.2 million. These businesses contribute an estimated $48.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of $38,126 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	$2.2 billion	18	0.2%
Value Added (contribution to GSP)	$1.3 billion	18	0.2%
Establishments	1,240 businesses	17	0.6%
Employment	15,375 people	17	0.4%
Average Annual Salary	$38,126	17	
Total Payroll	$586.2 million	18	0.2%
Total Tax Revenues	$119.1 million	18	0.2%
State Payroll Tax Contribution	$4.0 million	18	0.2%
Federal Payroll Tax Contribution	$44.8 million	18	0.2%
State Income Tax Contribution	$54.4 million	18	0.2%
State & Local Sales Tax Contribution	$15.8 million	16	0.1%

The Economic Benefits of SB 1 on …

Mining

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $58 million in output in the Mining sector over 10 years, supporting over 180 job-years.*

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

- Nearly $6 million in additional economic output
- A $3.7 million increase in gross state product (GSP)
- Supporting or creating an additional 18 jobs. These workers will earn over $966 thousand in wages
- $360.0 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$5.8 million	$57.6 million
Value Added (contribution to GSP)	$3.7 million	$37.2 million
Employment	18 people	183 job-years
Total Payroll	$966.1 thousand	$9.7 million
Total Tax Revenues	$360.0 thousand	$3.6 million
State Payroll Tax Contribution	$6.6 thousand	$65.7 thousand
Federal Payroll Tax Contribution	$73.9 thousand	$739.1 thousand
State Income Tax Contribution	$183.8 thousand	$1.8 million
State & Local Sales Tax Contribution	$95.7 thousand	$957.2 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Mining in the San Francisco Bay Area contributed $376.7 million to county economic activity in 2016, accounting for 0.1% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $649.0 million, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 70 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $84.6 million. These businesses contribute an estimated $7.0 million in state and federal payroll taxes. Individuals working in this sector earn an average of $89,209 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	$649.0 million	19	0.1%
Value Added (contribution to GSP)	$376.7 million	19	0.1%
Establishments	70 businesses	19	0.03%
Employment	948 people	19	0.03%
Average Annual Salary	$89,209	8	
Total Payroll	$84.6 million	19	0.03%
Total Tax Revenues	$26.3 million	19	0.04%
State Payroll Tax Contribution	$575.1 thousand	19	0.03%
Federal Payroll Tax Contribution	$6.5 million	19	0.03%
State Income Tax Contribution	$9.5 million	19	0.03%
State & Local Sales Tax Contribution	$9.7 million	18	0.1%

The Economic Benefits of SB 1 on …

Utilities

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $79 million in output in the Utilities sector over 10 years, supporting nearly 100 job-years.*

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

- Nearly $8 million in additional economic output
- A $3.8 million increase in gross state product (GSP)
- Supporting or creating an additional 10 jobs. These workers will earn over $1 million in wages
- $236.8 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$7.9 million	$78.8 million
Value Added (contribution to GSP)	$3.8 million	$37.9 million
Employment	10 people	96 job-years
Total Payroll	$1.1 million	$11.3 million
Total Tax Revenues	$236.8 thousand	$2.4 million
State Payroll Tax Contribution	$7.7 thousand	$77.0 thousand
Federal Payroll Tax Contribution	$86.6 thousand	$866.2 thousand
State Income Tax Contribution	$118.4 thousand	$1.2 million
State & Local Sales Tax Contribution	$24.1 thousand	$240.9 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Utilities in the San Francisco Bay Area contributed $2.4 billion to county economic activity in 2016, accounting for 0.4% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $4.1 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 133 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $642.1 million. These businesses contribute an estimated $53.5 million in state and federal payroll taxes. Individuals working in this sector earn an average of $128,852 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	$4.1 billion	17	0.4%
Value Added (contribution to GSP)	$2.4 billion	17	0.4%
Establishments	133 businesses	18	0.1%
Employment	4,983 people	18	0.1%
Average Annual Salary	$128,852	5	
Total Payroll	$642.1 million	17	0.2%
Total Tax Revenues	$130.0 million	17	0.2%
State Payroll Tax Contribution	$4.4 million	17	0.2%
Federal Payroll Tax Contribution	$49.1 million	17	0.2%
State Income Tax Contribution	$61.2 million	17	0.2%
State & Local Sales Tax Contribution	$15.3 million	17	0.1%

The Economic Benefits of SB 1 on …

Construction

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $6 billion in output in the Construction sector over 10 years, supporting nearly 26,930 job-years.*

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

- Over $638 million in additional economic output
- A $334.2 million increase in gross state product (GSP)
- Supporting or creating an additional 2,693 jobs. These workers will earn over $172 million in wages
- $35.3 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$638.0 million	$6.4 billion
Value Added (contribution to GSP)	$334.2 million	$3.3 billion
Employment	2,693 people	26,929 job-years
Total Payroll	$172.3 million	$1.7 billion
Total Tax Revenues	$35.3 million	$352.7 million
State Payroll Tax Contribution	$1.2 million	$11.7 million
Federal Payroll Tax Contribution	$13.2 million	$131.8 million
State Income Tax Contribution	$18.1 million	$181.2 million
State & Local Sales Tax Contribution	$2.8 million	$28.1 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Construction in the San Francisco Bay Area contributed $25.5 billion to county economic activity in 2016, accounting for 4.1% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $43.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 16,103 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $14.1 billion. These businesses contribute an estimated $1.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $77,573 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	$43.9 billion	9	4.1%
Value Added (contribution to GSP)	$25.5 billion	9	4.1%
Establishments	16,103 businesses	6	8.0%
Employment	181,446 people	9	5.3%
Average Annual Salary	$77,573	9	
Total Payroll	$14.1 billion	8	4.6%
Total Tax Revenues	$2.6 billion	10	4.0%
State Payroll Tax Contribution	$95.7 million	8	4.6%
Federal Payroll Tax Contribution	$1.1 billion	8	4.6%
State Income Tax Contribution	$1.2 billion	8	4.3%
State & Local Sales Tax Contribution	$214.2 million	6	1.9%

The Economic Benefits of SB 1 on …

Manufacturing

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $2 billion in output in the Manufacturing sector over 10 years, supporting nearly 3,610 job-years.*

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

- Nearly $163 million in additional economic output
- A $52.2 million increase in gross state product (GSP)
- Supporting or creating an additional 361 jobs. These workers will earn nearly $28 million in wages
- $6.2 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 Francisco Bay Area'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	$162.7 million	$1.6 billion
Value Added (contribution to GSP)	$52.2 million	$521.7 million
Employment	361 people	3,607 job-years
Total Payroll	$27.5 million	$275.1 million
Total Tax Revenues	$6.2 million	$62.5 million
State Payroll Tax Contribution	$187.1 thousand	$1.9 million
Federal Payroll Tax Contribution	$2.1 million	$21.0 million
State Income Tax Contribution	$3.3 million	$32.7 million
State & Local Sales Tax Contribution	$691.2 thousand	$6.9 million

* 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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Manufacturing in the San Francisco Bay Area contributed $61.9 billion to county economic activity in 2016, accounting for 10.0% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $106.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 7,808 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $24.4 billion. These businesses contribute an estimated $2.0 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $99,356 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	$106.7 billion	4	10.0%
Value Added (contribution to GSP)	$61.9 billion	4	10.0%
Establishments	7,808 businesses	11	3.9%
Employment	245,155 people	6	7.1%
Average Annual Salary	$99,356	7	
Total Payroll	$24.4 billion	6	7.9%
Total Tax Revenues	$5.1 billion	6	7.8%
State Payroll Tax Contribution	$165.6 million	6	7.9%
Federal Payroll Tax Contribution	$1.9 billion	6	7.9%
State Income Tax Contribution	$2.2 billion	6	7.9%
State & Local Sales Tax Contribution	$820.3 million	4	7.2%

The Economic Benefits of SB 1 on …

Wholesale trade

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $500 million in output in the Wholesale Trade sector over 10 years, supporting over 2,180 job-years.*

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

- Over $50 million in additional economic output
- A $33.9 million increase in gross state product (GSP)
- Supporting or creating an additional 218 jobs. These workers will earn over $15 million in wages
- $5.4 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$50.0 million	$500.5 million
Value Added (contribution to GSP)	$33.9 million	$339.4 million
Employment	218 people	2,183 job-years
Total Payroll	$15.1 million	$150.8 million
Total Tax Revenues	$5.4 million	$54.1 million
State Payroll Tax Contribution	$102.5 thousand	$1.0 million
Federal Payroll Tax Contribution	$1.2 million	$11.5 million
State Income Tax Contribution	$2.7 million	$27.3 million
State & Local Sales Tax Contribution	$1.4 million	$14.3 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Wholesale trade in the San Francisco Bay Area contributed $34.0 billion to county economic activity in 2016, accounting for 5.5% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $58.6 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 10,002 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $26.0 billion. These businesses contribute an estimated $2.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $129,055 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	$58.6 billion	6	5.5%
Value Added (contribution to GSP)	$34.0 billion	6	5.5%
Establishments	10,002 businesses	9	5.0%
Employment	201,227 people	8	5.8%
Average Annual Salary	$129,055	4	
Total Payroll	$26.0 billion	5	8.5%
Total Tax Revenues	$6.1 billion	4	9.3%
State Payroll Tax Contribution	$176.6 million	5	8.4%
Federal Payroll Tax Contribution	$2.0 billion	5	8.4%
State Income Tax Contribution	$2.5 billion	4	8.9%
State & Local Sales Tax Contribution	$1.4 billion	3	12.5%

The Economic Benefits of SB 1 on …

Retail trade

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $561 million in output in the Retail Trade sector over 10 years, supporting over 6,320 job-years.*

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

- Over $56 million in additional economic output
- A $36.7 million increase in gross state product (GSP)
- Supporting or creating an additional 632 jobs. These workers will earn over $19 million in wages
- $11.0 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$56.1 million	$560.8 million
Value Added (contribution to GSP)	$36.7 million	$367.1 million
Employment	632 people	6,323 job-years
Total Payroll	$19.2 million	$191.8 million
Total Tax Revenues	$11.0 million	$109.6 million
State Payroll Tax Contribution	$130.4 thousand	$1.3 million
Federal Payroll Tax Contribution	$1.5 million	$14.7 million
State Income Tax Contribution	$2.1 million	$20.6 million
State & Local Sales Tax Contribution	$7.3 million	$73.1 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Retail trade in the San Francisco Bay Area contributed $30.1 billion to county economic activity in 2016, accounting for 4.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $51.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 21,777 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $12.5 billion. These businesses contribute an estimated $1.0 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $35,446 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	$51.9 billion	8	4.9%
Value Added (contribution to GSP)	$30.1 billion	8	4.9%
Establishments	21,777 businesses	3	10.8%
Employment	352,278 people	4	10.2%
Average Annual Salary	$35,446	18	
Total Payroll	$12.5 billion	9	4.1%
Total Tax Revenues	$8.2 billion	3	12.5%
State Payroll Tax Contribution	$84.9 million	9	4.1%
Federal Payroll Tax Contribution	$955.2 million	9	4.1%
State Income Tax Contribution	$1.1 billion	9	4.1%
State & Local Sales Tax Contribution	$6.0 billion	1	52.4%

The Economic Benefits of SB 1 on …

Transportation and warehousing

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $2 billion in output in the Transportation and Warehousing sector over 10 years, supporting over 40,110 job-years.*

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

- Nearly $215 million in additional economic output
- A $98.5 million increase in gross state product (GSP)
- Supporting or creating an additional 4,011 jobs. These workers will earn over $82 million in wages
- $29.0 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$214.9 million	$2.1 billion
Value Added (contribution to GSP)	$98.5 million	$985.4 million
Employment	4,011 people	40,114 job-years
Total Payroll	$82.2 million	$822.3 million
Total Tax Revenues	$29.0 million	$289.9 million
State Payroll Tax Contribution	$559.2 thousand	$5.6 million
Federal Payroll Tax Contribution	$6.3 million	$62.9 million
State Income Tax Contribution	$21.8 million	$218.2 million
State & Local Sales Tax Contribution	$320.6 thousand	$3.2 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Transportation and warehousing in the San Francisco Bay Area contributed $12.2 billion to county economic activity in 2016, accounting for 2.0% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $21.0 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,839 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $5.9 billion. These businesses contribute an estimated $494.6 million in state and federal payroll taxes. Individuals working in this sector earn an average of $62,162 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	$21.0 billion	13	2.0%
Value Added (contribution to GSP)	$12.2 billion	13	2.0%
Establishments	3,839 businesses	14	1.9%
Employment	95,525 people	14	2.8%
Average Annual Salary	$62,162	12	
Total Payroll	$5.9 billion	13	1.9%
Total Tax Revenues	$1.1 billion	15	1.6%
State Payroll Tax Contribution	$40.4 million	13	1.9%
Federal Payroll Tax Contribution	$454.3 million	13	1.9%
State Income Tax Contribution	$519.6 million	13	1.8%
State & Local Sales Tax Contribution	$39.7 million	12	0.3%

The Economic Benefits of SB 1 on …

Information

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $380 million in output in the Information sector over 10 years, supporting over 980 job-years.*

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

- Over $38 million in additional economic output
- A $21.8 million increase in gross state product (GSP)
- Supporting or creating an additional 98 jobs. These workers will earn nearly $8 million in wages
- $2.4 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 Francisco Bay Area'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	$38.0 million	$380.4 million
Value Added (contribution to GSP)	$21.8 million	$217.9 million
Employment	98 people	983 job-years
Total Payroll	$7.7 million	$76.9 million
Total Tax Revenues	$2.4 million	$24.5 million
State Payroll Tax Contribution	$52.3 thousand	$522.8 thousand
Federal Payroll Tax Contribution	$588.2 thousand	$5.9 million
State Income Tax Contribution	$1.8 million	$17.6 million
State & Local Sales Tax Contribution	$46.0 thousand	$459.7 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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Information in the San Francisco Bay Area contributed $83.7 billion to county economic activity in 2016, accounting for 13.5% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $144.2 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 5,773 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $53.9 billion. These businesses contribute an estimated $4.5 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $201,679 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	$144.2 billion	2	13.5%
Value Added (contribution to GSP)	$83.7 billion	2	13.5%
Establishments	5,773 businesses	12	2.9%
Employment	267,460 people	5	7.7%
Average Annual Salary	$201,679	1	
Total Payroll	$53.9 billion	1	17.6%
Total Tax Revenues	$9.5 billion	1	14.5%
State Payroll Tax Contribution	$366.8 million	1	17.5%
Federal Payroll Tax Contribution	$4.1 billion	1	17.5%
State Income Tax Contribution	$4.8 billion	1	17.0%
State & Local Sales Tax Contribution	$176.6 million	8	1.5%

The Economic Benefits of SB 1 on …

Finance and insurance

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $853 million in output in the Finance and Insurance sector over 10 years, supporting nearly 3,520 job-years.*

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

- Over $85 million in additional economic output
- A $42.9 million increase in gross state product (GSP)
- Supporting or creating an additional 352 jobs. These workers will earn nearly $24 million in wages
- $7.0 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$85.3 million	$852.5 million
Value Added (contribution to GSP)	$42.9 million	$428.9 million
Employment	352 people	3,519 job-years
Total Payroll	$23.8 million	$237.8 million
Total Tax Revenues	$7.0 million	$69.8 million
State Payroll Tax Contribution	$161.7 thousand	$1.6 million
Federal Payroll Tax Contribution	$1.8 million	$18.2 million
State Income Tax Contribution	$5.0 million	$49.6 million
State & Local Sales Tax Contribution	$40.8 thousand	$408.1 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Finance and insurance in the San Francisco Bay Area contributed $33.1 billion to county economic activity in 2016, accounting for 5.3% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $57.0 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 11,424 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $24.4 billion. These businesses contribute an estimated $2.0 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $156,634 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	$57.0 billion	7	5.3%
Value Added (contribution to GSP)	$33.1 billion	7	5.3%
Establishments	11,424 businesses	7	5.7%
Employment	155,489 people	10	4.5%
Average Annual Salary	$156,634	3	
Total Payroll	$24.4 billion	7	7.9%
Total Tax Revenues	$4.3 billion	8	6.5%
State Payroll Tax Contribution	$165.6 million	7	7.9%
Federal Payroll Tax Contribution	$1.9 billion	7	7.9%
State Income Tax Contribution	$2.2 billion	7	7.7%
State & Local Sales Tax Contribution	$31.5 million	13	0.3%

The Economic Benefits of SB 1 on …

Real estate and rental and leasing

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $1 billion in output in the Real Estate and Rental and Leasing sector over 10 years, supporting over 6,090 job-years.*

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

- Nearly $119 million in additional economic output
- A $82.9 million increase in gross state product (GSP)
- Supporting or creating an additional 609 jobs. These workers will earn nearly $19 million in wages
- $5.9 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$118.6 million	$1.2 billion
Value Added (contribution to GSP)	$82.9 million	$828.8 million
Employment	609 people	6,095 job-years
Total Payroll	$18.5 million	$185.0 million
Total Tax Revenues	$5.9 million	$59.5 million
State Payroll Tax Contribution	$125.8 thousand	$1.3 million
Federal Payroll Tax Contribution	$1.4 million	$14.2 million
State Income Tax Contribution	$4.0 million	$39.9 million
State & Local Sales Tax Contribution	$417.6 thousand	$4.2 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Real estate and rental and leasing in the San Francisco Bay Area contributed $93.7 billion to county economic activity in 2016, accounting for 15.1% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $161.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 11,138 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $4.5 billion. These businesses contribute an estimated $376.2 million in state and federal payroll taxes. Individuals working in this sector earn an average of $72,701 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	$161.5 billion	1	15.1%
Value Added (contribution to GSP)	$93.7 billion	1	15.1%
Establishments	11,138 businesses	8	5.5%
Employment	62,126 people	16	1.8%
Average Annual Salary	$72,701	10	
Total Payroll	$4.5 billion	15	1.5%
Total Tax Revenues	$1.3 billion	12	1.9%
State Payroll Tax Contribution	$30.7 million	15	1.5%
Federal Payroll Tax Contribution	$345.5 million	15	1.5%
State Income Tax Contribution	$406.4 million	15	1.4%
State & Local Sales Tax Contribution	$472.2 million	5	4.1%

The Economic Benefits of SB 1 on …

Professional, scientific, and technical services

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $866 million in output in the Professional, Scientific, and Technical Services sector over 10 years, supporting over 5,080 job-years.*

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

- Nearly $87 million in additional economic output
- A $53.5 million increase in gross state product (GSP)
- Supporting or creating an additional 508 jobs. These workers will earn over $37 million in wages
- $9.1 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$86.6 million	$866.4 million
Value Added (contribution to GSP)	$53.5 million	$535.0 million
Employment	508 people	5,081 job-years
Total Payroll	$37.3 million	$373.3 million
Total Tax Revenues	$9.1 million	$91.1 million
State Payroll Tax Contribution	$253.8 thousand	$2.5 million
Federal Payroll Tax Contribution	$2.9 million	$28.6 million
State Income Tax Contribution	$5.9 million	$59.1 million
State & Local Sales Tax Contribution	$86.2 thousand	$861.7 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Professional, scientific, and technical services in the San Francisco Bay Area contributed $73.6 billion to county economic activity in 2016, accounting for 11.9% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $126.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 33,314 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $49.4 billion. These businesses contribute an estimated $4.1 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $123,157 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	$126.8 billion	3	11.9%
Value Added (contribution to GSP)	$73.6 billion	3	11.9%
Establishments	33,314 businesses	1	16.5%
Employment	401,078 people	2	11.6%
Average Annual Salary	$123,157	6	
Total Payroll	$49.4 billion	2	16.1%
Total Tax Revenues	$8.9 billion	2	13.6%
State Payroll Tax Contribution	$335.9 million	2	16.1%
Federal Payroll Tax Contribution	$3.8 billion	2	16.1%
State Income Tax Contribution	$4.7 billion	2	16.5%
State & Local Sales Tax Contribution	$118.6 million	9	1.0%

The Economic Benefits of SB 1 on …

Management of companies and enterprises

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $154 million in output in the Management of Companies and Enterprises sector over 10 years, supporting over 530 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 53 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	$15.4 million	$153.5 million
Value Added (contribution to GSP)	$9.2 million	$92.2 million
Employment	53 people	534 job-years
Total Payroll	$6.1 million	$61.5 million
Total Tax Revenues	$1.4 million	$14.3 million
State Payroll Tax Contribution	$41.8 thousand	$417.9 thousand
Federal Payroll Tax Contribution	$470.2 thousand	$4.7 million
State Income Tax Contribution	$920.1 thousand	$9.2 million
State & Local Sales Tax Contribution	$692.7	$6.9 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Management of companies and enterprises in the San Francisco Bay Area contributed $15.7 billion to county economic activity in 2016, accounting for 2.5% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $27.0 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 1,419 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $26.6 billion. These businesses contribute an estimated $2.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $192,854 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	$27.0 billion	11	2.5%
Value Added (contribution to GSP)	$15.7 billion	11	2.5%
Establishments	1,419 businesses	16	0.7%
Employment	137,858 people	12	4.0%
Average Annual Salary	$192,854	2	
Total Payroll	$26.6 billion	4	8.7%
Total Tax Revenues	$4.6 billion	7	7.0%
State Payroll Tax Contribution	$180.8 million	4	8.6%
Federal Payroll Tax Contribution	$2.0 billion	4	8.6%
State Income Tax Contribution	$2.4 billion	5	8.4%
State & Local Sales Tax Contribution	$1.2 million	19	0.01%

The Economic Benefits of SB 1 on …

Administrative and waste management services

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $385 million in output in the Administrative and Waste Management Services sector over 10 years, supporting nearly 4,800 job-years.*

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

- Over $38 million in additional economic output
- A $24.0 million increase in gross state product (GSP)
- Supporting or creating an additional 480 jobs. These workers will earn over $15 million in wages
- $3.6 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$38.5 million	$384.8 million
Value Added (contribution to GSP)	$24.0 million	$239.6 million
Employment	480 people	4,798 job-years
Total Payroll	$15.2 million	$151.7 million
Total Tax Revenues	$3.6 million	$35.7 million
State Payroll Tax Contribution	$103.2 thousand	$1.0 million
Federal Payroll Tax Contribution	$1.2 million	$11.6 million
State Income Tax Contribution	$2.2 million	$21.7 million
State & Local Sales Tax Contribution	$135.3 thousand	$1.4 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Administrative and waste management services in the San Francisco Bay Area contributed $10.8 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 $18.6 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 9,811 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $10.3 billion. These businesses contribute an estimated $860.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of $50,215 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	$18.6 billion	14	1.7%
Value Added (contribution to GSP)	$10.8 billion	14	1.7%
Establishments	9,811 businesses	10	4.9%
Employment	205,789 people	7	6.0%
Average Annual Salary	$50,215	14	
Total Payroll	$10.3 billion	10	3.4%
Total Tax Revenues	$1.9 billion	11	2.8%
State Payroll Tax Contribution	$70.3 million	10	3.4%
Federal Payroll Tax Contribution	$790.5 million	10	3.4%
State Income Tax Contribution	$931.8 million	10	3.3%
State & Local Sales Tax Contribution	$61.1 million	11	0.5%

The Economic Benefits of SB 1 on …

Educational services

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $83 million in output in the Educational Services sector over 10 years, supporting nearly 1,170 job-years.*

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

- Over $8 million in additional economic output
- A $5.1 million increase in gross state product (GSP)
- Supporting or creating an additional 117 jobs. These workers will earn nearly $4 million in wages
- $864.9 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$8.3 million	$82.7 million
Value Added (contribution to GSP)	$5.1 million	$50.7 million
Employment	117 people	1,169 job-years
Total Payroll	$3.8 million	$37.8 million
Total Tax Revenues	$864.9 thousand	$8.6 million
State Payroll Tax Contribution	$25.7 thousand	$256.9 thousand
Federal Payroll Tax Contribution	$289.1 thousand	$2.9 million
State Income Tax Contribution	$535.6 thousand	$5.4 million
State & Local Sales Tax Contribution	$14.5 thousand	$145.3 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Educational services in the San Francisco Bay Area contributed $7.2 billion to county economic activity in 2016, accounting for 1.2% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $12.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,987 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $6.1 billion. These businesses contribute an estimated $508.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of $50,388 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	$12.5 billion	16	1.2%
Value Added (contribution to GSP)	$7.2 billion	16	1.2%
Establishments	3,987 businesses	13	2.0%
Employment	121,136 people	13	3.5%
Average Annual Salary	$50,388	13	
Total Payroll	$6.1 billion	12	2.0%
Total Tax Revenues	$1.1 billion	14	1.7%
State Payroll Tax Contribution	$41.5 million	12	2.0%
Federal Payroll Tax Contribution	$466.9 million	12	2.0%
State Income Tax Contribution	$555.1 million	12	2.0%
State & Local Sales Tax Contribution	$20.7 million	15	0.2%

The Economic Benefits of SB 1 on …

Health care and social assistance

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $470 million in output in the Health Care and Social Assistance sector over 10 years, supporting over 4,340 job-years.*

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

- Nearly $47 million in additional economic output
- A $28.0 million increase in gross state product (GSP)
- Supporting or creating an additional 434 jobs. These workers will earn over $20 million in wages
- $4.4 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$47.0 million	$469.8 million
Value Added (contribution to GSP)	$28.0 million	$279.8 million
Employment	434 people	4,343 job-years
Total Payroll	$20.4 million	$204.2 million
Total Tax Revenues	$4.4 million	$43.8 million
State Payroll Tax Contribution	$138.9 thousand	$1.4 million
Federal Payroll Tax Contribution	$1.6 million	$15.6 million
State Income Tax Contribution	$2.7 million	$26.6 million
State & Local Sales Tax Contribution	$20.7 thousand	$207.3 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Health care and social assistance in the San Francisco Bay Area contributed $36.2 billion to county economic activity in 2016, accounting for 5.8% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $62.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 23,373 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $29.5 billion. These businesses contribute an estimated $2.5 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $68,420 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	$62.3 billion	5	5.8%
Value Added (contribution to GSP)	$36.2 billion	5	5.8%
Establishments	23,373 businesses	2	11.6%
Employment	431,776 people	1	12.5%
Average Annual Salary	$68,420	11	
Total Payroll	$29.5 billion	3	9.6%
Total Tax Revenues	$5.1 billion	5	7.8%
State Payroll Tax Contribution	$200.9 million	3	9.6%
Federal Payroll Tax Contribution	$2.3 billion	3	9.6%
State Income Tax Contribution	$2.6 billion	3	9.3%
State & Local Sales Tax Contribution	$26.8 million	14	0.2%

The Economic Benefits of SB 1 on …

Arts, entertainment, and recreation

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $81 million in output in the Arts, Entertainment, and Recreation sector over 10 years, supporting nearly 970 job-years.*

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

- Over $8 million in additional economic output
- A $4.8 million increase in gross state product (GSP)
- Supporting or creating an additional 97 jobs. These workers will earn nearly $3 million in wages
- $636.0 thousand in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$8.1 million	$80.9 million
Value Added (contribution to GSP)	$4.8 million	$47.7 million
Employment	97 people	969 job-years
Total Payroll	$2.7 million	$27.3 million
Total Tax Revenues	$636.0 thousand	$6.4 million
State Payroll Tax Contribution	$18.6 thousand	$185.6 thousand
Federal Payroll Tax Contribution	$208.8 thousand	$2.1 million
State Income Tax Contribution	$364.2 thousand	$3.6 million
State & Local Sales Tax Contribution	$44.4 thousand	$444.1 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Arts, entertainment, and recreation in the San Francisco Bay Area contributed $7.2 billion to county economic activity in 2016, accounting for 1.2% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $12.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,071 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $2.8 billion. These businesses contribute an estimated $233.5 million in state and federal payroll taxes. Individuals working in this sector earn an average of $41,355 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	$12.5 billion	15	1.2%
Value Added (contribution to GSP)	$7.2 billion	15	1.2%
Establishments	3,071 businesses	15	1.5%
Employment	67,776 people	15	2.0%
Average Annual Salary	$41,355	15	
Total Payroll	$2.8 billion	16	0.9%
Total Tax Revenues	$555.7 million	16	0.9%
State Payroll Tax Contribution	$19.1 million	16	0.9%
Federal Payroll Tax Contribution	$214.4 million	16	0.9%
State Income Tax Contribution	$254.8 million	16	0.9%
State & Local Sales Tax Contribution	$67.5 million	10	0.6%

The Economic Benefits of SB 1 on …

Accommodation and food services

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate nearly $267 million in output in the Accommodation and Food Services sector over 10 years, supporting over 3,510 job-years.*

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

- Nearly $27 million in additional economic output
- A $14.8 million increase in gross state product (GSP)
- Supporting or creating an additional 351 jobs. These workers will earn over $8 million in wages
- $2.8 million in additional tax revenues

	Average Annual Impact of SB 1	Total Economic Impact of SB 1 over 10 Years
Industry Output	$26.7 million	$266.7 million
Value Added (contribution to GSP)	$14.8 million	$147.8 million
Employment	351 people	3,514 job-years
Total Payroll	$8.4 million	$83.7 million
Total Tax Revenues	$2.8 million	$28.4 million
State Payroll Tax Contribution	$56.9 thousand	$569.0 thousand
Federal Payroll Tax Contribution	$640.1 thousand	$6.4 million
State Income Tax Contribution	$764.4 thousand	$7.6 million
State & Local Sales Tax Contribution	$1.4 million	$13.8 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 Francisco Bay Area'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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Accommodation and Food Services in the San Francisco Bay Area contributed $16.9 billion to county economic activity in 2016, accounting for 2.7% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $29.2 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 20,584 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $9.3 billion. These businesses contribute an estimated $776.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of $25,063 each year. The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or reparing meals, snacks, and beverages for immediate consumption.

	Current Value	Region Ranking	Percentage of Region Total
Industry Output	$29.2 billion	10	2.7%
Value Added (contribution to GSP)	$16.9 billion	10	2.7%
Establishments	20,584 businesses	4	10.2%
Employment	372,097 people	3	10.8%
Average Annual Salary	$25,063	19	
Total Payroll	$9.3 billion	11	3.0%
Total Tax Revenues	$3.2 billion	9	4.8%
State Payroll Tax Contribution	$63.4 million	11	3.0%
Federal Payroll Tax Contribution	$713.4 million	11	3.0%
State Income Tax Contribution	$809.5 million	11	2.9%
State & Local Sales Tax Contribution	$1.6 billion	2	13.8%

The Economic Benefits of SB 1 on …

Other services

Increased spending on the San Francisco Bay Area's highways, bridges and transit as a result of SB 1 will generate over $3 billion in output in the Other Services sector over 10 years, supporting over 11,850 job-years.*

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

- Over $320 million in additional economic output
- A $137.8 million increase in gross state product (GSP)
- Supporting or creating an additional 1,185 jobs. These workers will earn nearly $74 million in wages
- $12.5 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 Francisco Bay Area'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	$320.2 million	$3.2 billion
Value Added (contribution to GSP)	$137.8 million	$1.4 billion
Employment	1,185 people	11,851 job-years
Total Payroll	$73.9 million	$739.2 million
Total Tax Revenues	$12.5 million	$125.0 million
State Payroll Tax Contribution	$502.6 thousand	$5.0 million
Federal Payroll Tax Contribution	$5.7 million	$56.5 million
State Income Tax Contribution	$4.4 million	$44.3 million
State & Local Sales Tax Contribution	$1.9 million	$19.1 million

* 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 Francisco Bay Area's GSP was estimated at $620.6 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 $1.1 trillion.

SECTOR OVERVIEW

Other services in the San Francisco Bay Area contributed $13.3 billion to county economic activity in 2016, accounting for 2.1% of the county's Gross State Product (GSP).** Total sales in the industry were an estimated $22.9 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 16,977 establishments and sole proprietorships in the San Francisco Bay Area with an existing payroll valued at $5.7 billion. These businesses contribute an estimated $476.6 million in state and federal payroll taxes. Individuals working in this sector earn an average of $41,346 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	$22.9 billion	12	2.1%
Value Added (contribution to GSP)	$13.3 billion	12	2.1%
Establishments	16,977 businesses	5	8.4%
Employment	138,375 people	11	4.0%
Average Annual Salary	$41,346	16	
Total Payroll	$5.7 billion	14	1.9%
Total Tax Revenues	$1.2 billion	13	1.8%
State Payroll Tax Contribution	$38.9 million	14	1.9%
Federal Payroll Tax Contribution	$437.7 million	14	1.9%
State Income Tax Contribution	$517.6 million	14	1.8%
State & Local Sales Tax Contribution	$183.6 million	7	1.6%

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 Francisco Bay Area 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 Francisco Bay Area 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 Francisco Bay Area is estimated to be 20 percent of the total transportation investment increase generated by SB 1. Therefore, to calculate the estimated user benefits to the San Francisco Bay Area, we assume that 20 percent of California highway, street and bridge user benefits are concentrated in the San Francisco Bay Area.

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 Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma 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 Francisco Bay Area 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 Francisco Bay Area 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 Francisco Bay Area 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 Francisco Bay Area Counties averaged 2.0 percent, adding up to an average 8.5 percent total combined sales and use tax rate for the region's residents. The county rates were: 7.625 percent for Solano County; 8.0 percent for Napa County; 8.25 percent for Sonoma County; 8.5 percent for Contra Costa and Marin Counties; 8.75 percent for San Francisco and Santa Clara Counties; 9.0 percent for San Mateo County; and 9.5 percent for Alameda County. There are additional local sales taxes levied in the cities of: Albany, Hayward, San Leandro, and Union City (an additional 0.5 percent) within Alameda County; Antioch, Concord, Hercules, Orinda, and Pittsburg (an additional 0.5 percent), San Pablo (an additional 0.75 percent), Moraga, Pinole, and Richmond (an additional 1.0 percent), and El Cerrito (an additional 1.5 percent) within Contra Costa County; Corte Madera, Fairfax, Larkspur, Novato, San Anselmo, and Sausalito (an additional 0.5 percent) and San Rafael (an additional 0.75 percent) within Marin County; San Mateo (an additional 0.25 percent) and Half Moon Bay (an additional 0.5 percent) within San Mateo County; Campbell (an additional 0.35 percent) within Santa Clara County; Vacaville (an additional 0.25 percent),

Rio Vista (an additional 0.75 percent), and Benecia, Fairfield, and Vallejo (an additional 1.0 percent) within Solano County; and Healdsburg, Rohnert Park, Santa Rosa, and Sonoma (an additional 0.5 percent), Sebastopol (an additional 0.75 percent), and Cotati (an additional 1.0 percent) within Sonoma 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 22.9 percent of California taxable sales, total San Francisco Bay Area sales tax revenues are calculated as 22.9 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 Francisco Bay Area County values were then summed to view the region's taxable sales. Since the region's 2016 taxable Retail Trade sales comprise 21.1 percent of California taxable sales, San Francisco Bay Area Retail Trade sales tax revenues are calculated as 21.1 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 Francisco Bay Area SB 1 Expenditure 10-Year Forecast

San Francisco Bay Area 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	$4	$4	$16	$23	$29	$35	$41	$48	$54	$255	$25
Local Streets and Roads (2103)	$15	$15	$20	$17	$24	$30	$36	$42	$48	$55	$300	$30
RMRA – Local Streets and Roads	$62	$180	$182	$197	$208	$218	$227	$237	$247	$256	$2,014	$201
Total Local Streets and Roads	**$77**	**$198**	**$205**	**$230**	**$254**	**$277**	**$299**	**$321**	**$343**	**$365**	**$2,568**	**$257**
State Transit Assistance	$107	$145	$151	$157	$162	$168	$175	$181	$188	$195	$1,629	$163
Transit and Intercity Rail Capital Program	$116	$118	$120	$92	$94	$97	$99	$102	$104	$107	$1,048	$105
Local Partnership	$52	$52	$52	$52	$52	$52	$52	$52	$52	$52	$524	$52
Active Transportation	$21	$21	$21	$21	$21	$21	$21	$21	$21	$21	$210	$21
STIP (Local Share)	$0	$0	$3	$11	$16	$20	$24	$28	$32	$36	$171	$17
Commuter Rail and Intercity Rail	$9	$14	$14	$15	$16	$16	$17	$18	$18	$19	$156	$16
Local Planning Grants	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$42	$4
RMRA – Administration (DMV, SCO, CTC)	$0	$1	$1	$1	$1	$1	$1	$1	$1	$1	$6	$1
Total Local Expenditures	**$387**	**$553**	**$572**	**$583**	**$620**	**$656**	**$692**	**$728**	**$764**	**$800**	**$6,355**	**$636**
State												
SHOPP/Maintenance												
SHOPP (44/44/12)	$0	$0	$1	$3	$4	$6	$7	$8	$9	$10	$48	$5
SHOPP (2108)	$10	$15	$15	$20	$28	$35	$43	$50	$58	$65	$340	$34
RMRA – SHOPP/Maintenance	$62	$180	$182	$197	$208	$218	$227	$237	$247	$256	$2,014	$201
Total SHOPP/Maintenance	**$72**	**$195**	**$197**	**$220**	**$240**	**$259**	**$277**	**$295**	**$314**	**$332**	**$2,401**	**$240**
Bridges and Culverts	$69	$69	$69	$69	$69	$69	$69	$69	$69	$69	$688	$69
Trade Corridor Enhancement	$34	$50	$50	$52	$53	$54	$55	$56	$57	$57	$518	$52
Congested Corridors	$42	$42	$42	$42	$42	$42	$42	$42	$42	$42	$423	$42
Parks (excise tax on vehicle used off-highway)	$9	$13	$13	$14	$14	$15	$15	$15	$15	$15	$139	$14
Agriculture (excise tax on farm vehicle use)	$3	$4	$4	$4	$5	$5	$5	$5	$5	$5	$44	$4
STIP (State Share)	$0	$0	$1	$4	$5	$7	$8	$9	$11	$12	$57	$6
Freeway Service Program	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$42	$4
RMRA – Administration (DMV, SCO, CTC)	$0	$1	$1	$1	$1	$1	$1	$1	$1	$1	$6	$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	$12	$1
Total State Expenditures	**$235**	**$381**	**$384**	**$413**	**$435**	**$456**	**$476**	**$497**	**$518**	**$539**	**$4,336**	**$434**
Total Expenditures from SB 1	**$623**	**$934**	**$956**	**$996**	**$1,056**	**$1,112**	**$1,168**	**$1,225**	**$1,282**	**$1,339**	**$10,691**	**$1,069**

Source: SB 1 Revenue and Expenditures Forecast from the Governor's 2017-2018 Enacted Budget. San Francisco Bay Area 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 Francisco Bay Area SB 1 Spending by Type

San Francisco Bay Area 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	$579	$883	$906	$945	$1,004	$1,061	$1,117	$1,173	$1,230	$1,287	$10,184	$1,018
Highway, Bridge & Street	$333	$591	$605	$665	$715	$763	$809	$856	$902	$949	$7,190	$719
Construction	$222	$394	$404	$444	$477	$509	$540	$571	$602	$634	$4,799	$480
Other Highway, Bridge & Street Activity	$111	$196	$201	$221	$238	$254	$269	$285	$300	$316	$2,391	$239
Transit	$245	$293	$301	$280	$288	$298	$307	$317	$327	$338	$2,994	$299
Construction	$92	$110	$113	$105	$108	$112	$116	$119	$123	$127	$1,125	$113
Other Transit Activity	$153	$183	$188	$175	$180	$186	$192	$198	$204	$211	$1,869	$187
Other SB 1 Spending	$44	$51	$50	$51	$52	$51	$51	$52	$52	$52	$507	$51
Total Spending	**$623**	**$934**	**$956**	**$996**	**$1,056**	**$1,112**	**$1,168**	**$1,225**	**$1,282**	**$1,339**	**$10,691**	**$1,069**

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 Francisco Bay Area over 10 Years

Total Economic Impacts of SB 1 on the San Francisco Bay Area 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	$653	$737	$1,004	$1,032	$1,257	$1,180	$1,103	$1,027	$951	$875	$9,818	$982
Highway, Street & Bridge	$238	$243	$495	$559	$769	$677	$584	$491	$398	$304	$4,757	$476
Transit	$415	$494	$509	$473	$487	$503	$519	$536	$553	$571	$5,061	$506
Economic Impacts	$1,466	$2,168	$2,220	$2,299	$2,433	$2,560	$2,687	$2,815	$2,945	$3,074	$24,669	$2,467
Economic Output	$1,139	$1,692	$1,733	$1,798	$1,904	$2,004	$2,103	$2,205	$2,306	$2,408	$19,295	$1,930
Earnings	$326	$475	$487	$501	$529	$556	$583	$611	$638	$666	$5,374	$537
Total Impact	**$2,118**	**$2,905**	**$3,224**	**$3,331**	**$3,690**	**$3,740**	**$3,790**	**$3,842**	**$3,895**	**$3,949**	**$34,487**	**$3,449**
Other Economic Impacts												
Value Added (GSP)	$584	$868	$888	$922	$976	$1,027	$1,078	$1,130	$1,182	$1,235	$9,892	$989
Employment	8,052	11,129	11,413	11,465	12,050	12,615	13,181	13,758	14,341	14,926	122,932	12,293

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.