

Economic Impact of Sacramento County Measure A Transportation Sales Tax: 2021-2061

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Prepared for:

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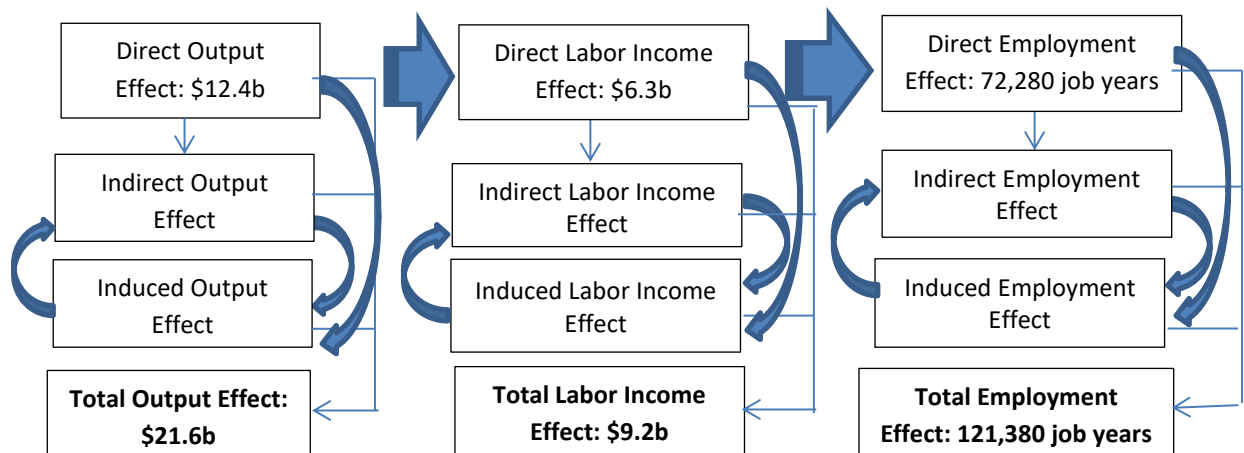


Executive Summary

Based on Sacramento Transportation Authority staff analysis, Measure A is estimated to generate \$127.1 million in revenue in the first year and grow at a 2.41% rate annually for a total of \$8.4 billion over 40 years. We estimate Measure A funds will leverage an additional \$198.4 million in state and federal matching funds in the first year, and a total of \$13.1 billion in state and federal match over 40 years.

Measure A is estimated to create 121,380 job years in Sacramento County over the life of Measure A, an average of 3,035 jobs annually with an average annual compensation of \$77,000 in 2020 dollars. As illustrated in the figure below, these include jobs that directly result from Measure A activities, as well as indirect and induced jobs that result from supplier and employee purchases in Sacramento County. Construction is the top sector for job creation, with 48,540 job years supported by expanded capital expenditures, followed by 33,270 job years in service sectors supported by indirect supplier and induced consumer spending, and 24,370 job years in government, primarily transit operations. This report assumes even distribution of expenditures over 40 years, but several shovel-ready projects could be accelerated with bond financing to shift these economic impacts forward to stimulate the local economy as it recovers from the Covid-19 recession.

Measure A Spending Economic Impact on Sacramento County, 2021-2061. (2020\$)



In addition to the spending impacts from Measure A and matching funds that it leverages, the immediate expenditures will generate long-term economic benefits from enhancement to Sacramento's economic productivity. Those performance benefits may include:

- Increases to household disposable income as their travel costs decline.
- Reduced business costs as their transportation costs are lowered.

- Enhanced business productivity as the improvements to the transportation system expands their access to specialized products and markets.
- Growing employment opportunities for residents' reduced travel time and costs increase the accessibility of jobs.
- Increased community safety, improved health of residents, a deeper sense of place, and reduced air pollution resulting from active transportation investments.

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Acronyms

CBPR	Center for Business and Policy Research
SacRT	Sacramento Regional Transit District
STA	Sacramento Transportation Authority
TEP	Transportation Expenditure Plan

Section 1 - Introduction

Measure A is a potential ballot measure in November 2020 for a one-half of one percent retail transactions and use tax by the Sacramento Transportation Authority to benefit the local transportation system in Sacramento County. If adopted, it would support wide ranging activities including road maintenance and repair, public transit investments, and improved integration of all transportation modes, as well as funding for innovation, environmental protection, and improved health and safety.

In this report, the Center for Business and Policy Research (CBPR) reviews and estimates the local economic impacts of Measure A supported activities. The analysis is based on the draft Transportation Expenditure Plan (TEP) adopted on May 14, 2020 by the Sacramento Transportation Authority for review.¹ The draft TEP contains details of transportation system investments across the proposed Measure's 40 years from 2021 to 2061.

1.1 Scope of Economic Impacts

The size and range of projects like those envisioned in the TEP will have impacts across many parts of the economic system. Some of those impacts will be short-term stimulus from the TEP's immediate expenditures, while others will be longer-term, cumulative impacts from sustained investment and enhanced economic productivity.² While the short-term impacts of the spending are particularly important in supporting jobs and industry, the funds will also facilitate matching funds from state and federal agencies, which further amplify the short-term and long-term impacts of the TEP through investment supported by new non-local funds.

The improvements to the transportation system also constitute longer-term investments in the economic infrastructure. Transportation system performance benefits can lead to broader economic growth as cost savings increase disposable household income and reduce business costs. Similarly, enhanced mobility from the investments expands market access, supporting business productivity and employment opportunities available to residents.

1.2 Overview of the Report

This report is organized in four sections. Following the Introduction, Section Two of the report focuses on the impacts of spending from the TEP. It examines the stimulus impacts from the

¹ See the Sacramento Transportation Authority's website for details: <https://www.sacta.org/2020-transportation-expenditure-plan>

² For further discussion of the economic impacts of transportation system investments like those proposed in the TEP see the 2020 report from the American Public Transportation Association entitled: "Economic Impact of Public Transportation Investment." Available at: <https://www.apta.com/research-technical-resources/research-reports/economic-impact-of-public-transportation-investment/>

TEP on the Sacramento County economy. Section Three reviews important dimensions through which the investments can lead to broader economic consequences. These include benefits associated with reduced congestion, enhanced regional competitiveness, and transportation equity as well as impacts on safety, health, and the environment.

Section 2 - Economic Spending Impacts of Measure A

To analyze the impacts from spending associated with the TEP, we utilize economic modelling software called IMPLAN, which allows us to develop a model of the Sacramento County economy.³ This model is effectively a general accounting system of transactions between industries, businesses, and consumers that estimates a range of economic impacts. We thereby create complete, extremely detailed Social Accounting Matrix and Multiplier Model of the County's economy that enables in-depth examination of the impacts associated with the TEP.

IMPLAN was developed in the late-1970s by the United States Forest Service and researchers at the University of Minnesota. The software was initially based on input-output accounts whose analysis was pioneered in the Nobel Prize winning work of Wassily Leontief. As the software evolved, it began using Social Accounting Matrices to incorporate transactions among institutional agents in its analysis. Currently, IMPLAN is among the most widely used economic impact modeling systems. It provides a transparent and detailed approximation of economic impacts that is widely utilized by businesses and government agencies.

The full range of economic contribution from spending associated with the TEP, known as the Total Effect, is the sum of the direct, indirect, and induced effects:

- **Direct Effects** are the changes in sales (output), value (value-added), wages (personal income), and jobs (employment) directly supported by the TEP.
- **Indirect Effects** represent the iterative impacts of inter-industry transactions as supplying industries respond to demand from the sector(s) where the initial expenditures occurred. An example of an indirect impact would be sales from a cement company supplying a construction firm directly funded by the TEP.
- **Induced Effects** reflect the expenditures made by recipients of wages in the direct and indirect industries. Examples of induced impacts include employees' expenditures on items such as retail purchases, housing, food, education, banking, and insurance.

³ Specifically, in this analysis we use IMPLAN PRO Version 3.1 with calendar year 2018 data.

In this analysis, the total, direct, indirect, and induced effects are reported by employment, value added, labor income, and output:

- **Employment** is the number of full- and part-time jobs based on an annual average of monthly jobs. In other words, employment is measured as a full year of employment. Thus, 3 temporary jobs that lasted for 4 months are reported as 1 job year.
- **Labor Income** is the sum of employee compensation and proprietor income. Employee compensation includes wages, salaries, benefits, and all other employer contributions, while proprietor income consists of payments received by self-employed individuals, and unincorporated business owners.
- **Output** represents the value of industry production. It accounts for the total change in the value of production in an industry for a given time. Output varies as a measure across industries. For agriculture and service sectors, the value of production equals their sales. For manufacturers, the value of production is sales plus or minus any change in inventories. While for retail and wholesale trade, the value of production equals their gross margin and not their gross sales.
- **Value added** is industry production (output) less the cost of intermediate inputs. It consists of labor income, business profits, and taxes. An industry's value added equals its contribution to Gross Regional/Domestic Product. Therefore, the sum of all industries' value added equals the Gross Regional Product.

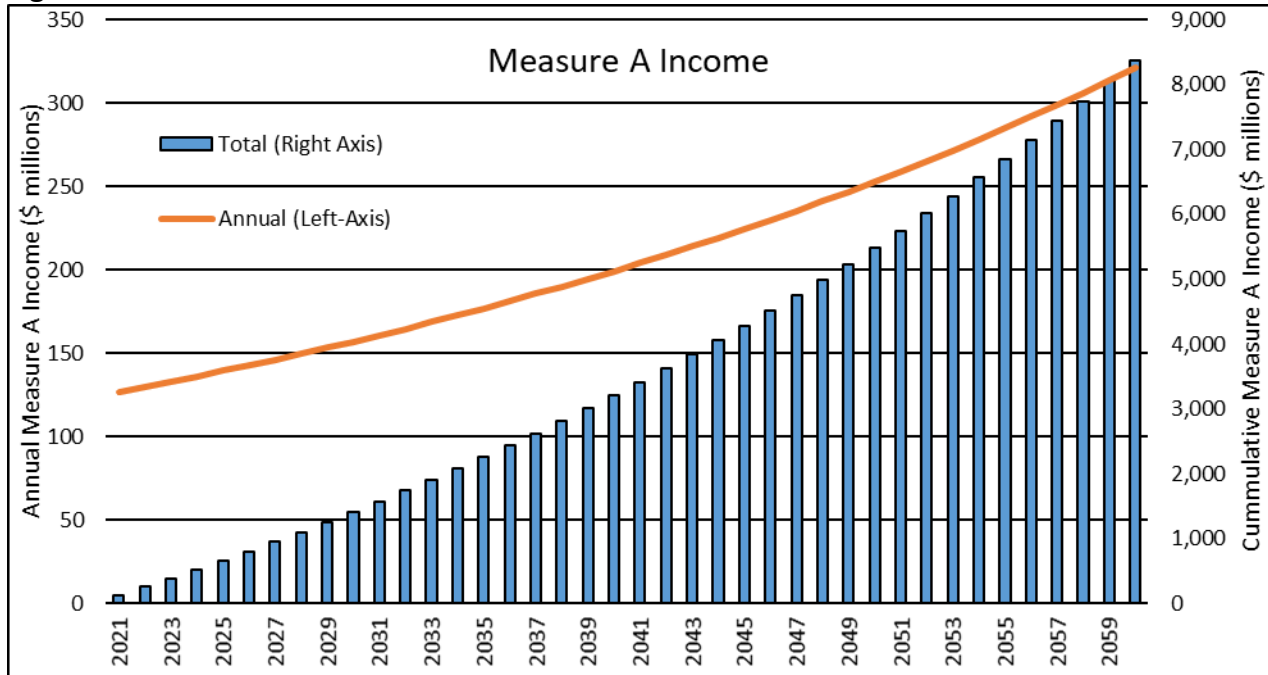
The economic model is defined for a specific geographic area, Sacramento County, and economic contributions are calculated for that area. Indirect and induced effects are calculated using regional purchasing coefficients calculated by IMPLAN except where the geography of a particular purchase is known from the TEP, in which case the regional purchasing coefficients have been adjusted to reflect those specifics. Thus, economic impacts do not include spending outside of Sacramento County even if the purchases are made by individuals or businesses located within Sacramento County.

2.1 Estimated Transportation Expenditure Plan (TEP) Spending 2021 to 2061

To determine direct spending impacts it is first necessary to estimate how much revenue the potential transaction and use tax will generate. The next step is to identify what those revenues will be spent on and then the time horizon of those expenditures. The final step involves reviewing expenditures and identifying where and how much matching funds could be leveraged from the expenditures.

To identify revenues, we use the Sacramento Transportation Authority’s (STA) staff analysis. That estimates \$127.1 million in revenue from Measure A in the first year and growth at a 2.41% rate annually for a total of \$8.4 billion over 40 years. Figure 1 illustrates the annual and cumulative timing of that income.

Figure 1 Measure A Estimated Revenue 2021 to 2061



The TEP was used to identify what the revenues are expected to be spent on.⁴ Once initial distributions were identified the expenditure estimates were validated and finalized in consultation with Sacramento Regional Transit District (SacRT) staff and other potential recipients of Measure A funds. It was then necessary to determine the timing of those expenditures. After consultation with STA staff it was decided to assume the revenues would be spent on a pay-as-you-go basis with annual revenues equaling annual expenditures. Several areas of spending could be accelerated with bond financing to shift expenditures and associated job creation to earlier years, but without explicit plans, we determined it was best to not present hypothetical scenarios.

Lastly, local revenues like those from Measure A can increase their direct impact by facilitating matching funds from multiple state or federal sources. The extent and scale of these matching funds varies by the nature of the funding programs. Therefore, after the TEP expenditures were identified and validated, each category was reviewed, and a historic level of matching funds

⁴ See the Sacramento Transportation Authority’s website for details: <https://www.sacta.org/2020-transportation-expenditure-plan>

determined. As a result of that analysis, we estimate that Measure A funds will leverage an additional \$198.4 million in state and federal matching funds in the first year, and a total of \$13.1 billion in state and federal match over 40 years. Using expenditures identified in the TEP for the sum of these two revenue sources, Figure 2 reports the total annual direct spending which equals \$21.5 billion between 2021 and 2061. These Measure A expenditures, the estimated matching funds and total expenditures are reported in Table 1 below.

Figure 2 Total Annual Revenues and Expenditures 2021 to 2061

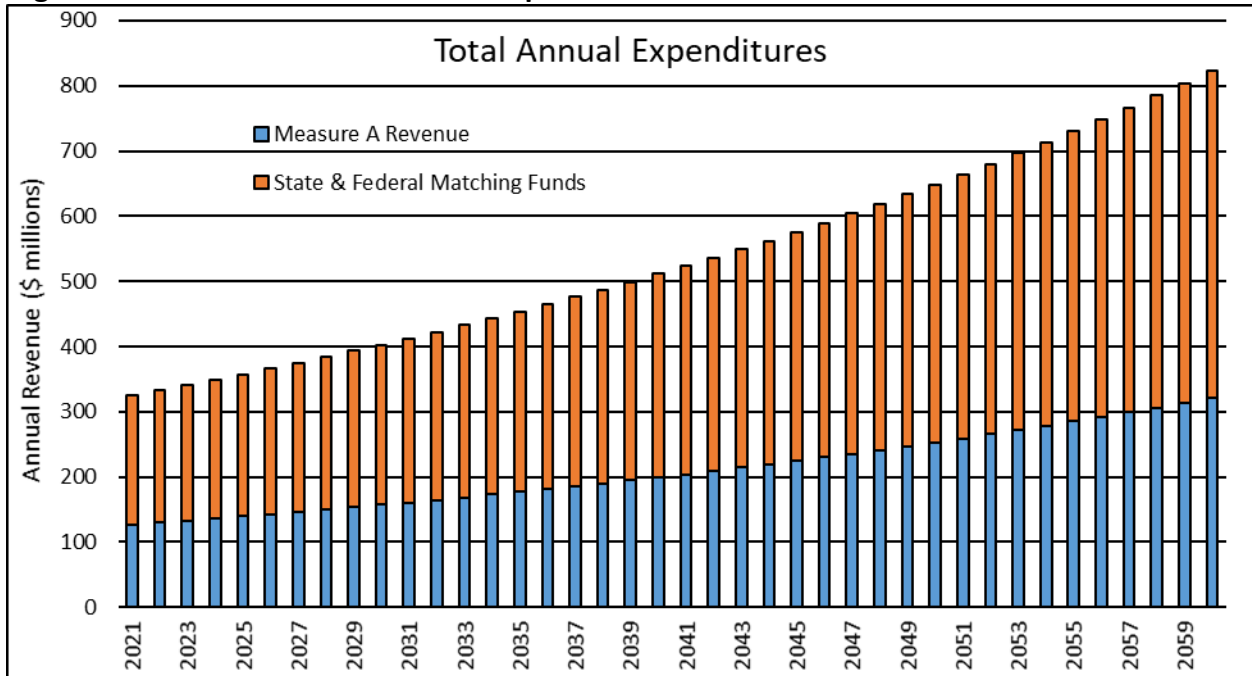


Table 1 Proposed Measure A Transportation Expenditure Plan

	Measure A Funds	Matching Funds	Total Expenditures
1 Off the Top Expenditures	294,780,000	101,012,000	395,792,000
2 Local Streets and Roads	3,876,000,000	6,116,052,000	9,992,052,000
3 SacRT Maintenance, Operations, and Transformative System Improvements	1,770,000,000	1,323,075,000	3,093,075,000
4 Congestion Relief Improvements	2,010,000,000	5,444,750,000	7,454,750,000
5 Senior and Disabled Transportation Services	250,000,000	82,500,000	332,500,000
6 Air Quality	177,500,000	58,575,000	236,075,000
Total	8,378,280,000	13,125,964,000	21,504,244,000

2.2 Economic Spending Impact Estimates

As mentioned above, IMPLAN software is used to generate an input-output model of Sacramento County’s economy. That model is then used to estimate the county-wide economic impacts of the TEP. In Section 2.1 we explained that Measure A’s total direct output spending over 40 years equaled \$21.5 billion. Table 2 shows how that spending is allocated to economic

sectors in the IMPLAN model for analysis. Nearly \$14 billion of the \$21.5 billion in total spending is in the IMPLAN sector labeled construction of new highways and streets.

Table 2 Economic Modelling (IMPLAN) Sector Details of Expenditures

<i>IMPLAN Sector</i>	Measure A Funds	Matching Funds	Total Expenditures
Construction of new highways and streets	3,246,600,000	10,689,800,000	13,936,400,000
Construction of other new nonresidential structures	88,750,000	29,287,500	118,037,500
Maintenance and repair construction of nonresidential structures	7,560,000	2,494,800	10,054,800
Maintenance and repair construction of highways, streets, bridges, and tunnels	2,566,680,000	847,004,400	3,413,684,400
Other communications equipment manufacturing	12,500,000	4,125,000	16,625,000
Heavy duty truck manufacturing	250,250,000	454,750,000	705,000,000
Railroad rolling stock manufacturing	221,250,000	442,500,000	663,750,000
Local government passenger transit ⁵	1,603,000,000	528,990,000	2,131,990,000
Scientific research and development services	16,000,000	6,334,100	22,334,100
Other local government enterprises	365,690,000	120,677,700	486,367,700
Total	8,378,280,000	13,125,963,500	21,504,243,500

The direct employment effect of the expenditures described in Table 2 are 72,280 job years supporting over \$6.3 billion in labor income in 2020 dollars. Measure A's total effects includes indirect and induced impacts to be estimated and combined with the direct effects. Each of these calculations were made within our impact analysis model and the results for each component are reported in Table 3 below.

Table 3 Total Spending Impacts from 2021 to 2061 (results in 2020\$)

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	72,280	\$6,314,833,000	\$4,648,593,000	\$12,411,831,000
Indirect Effect	15,640	\$1,087,416,000	\$2,089,026,000	\$3,754,784,000
Induced Effect	33,460	\$1,821,877,000	\$3,334,309,000	\$5,419,848,000
Total Effect	121,380	\$9,224,125,000	\$10,071,928,000	\$21,586,463,000

⁵ Local government passenger transit spending can't be entered into IMPLAN model as a change in output as other sectors because output is generally equivalent to customer sales, and fare revenue does not support most transit expenditures. Thus, transit was modeled as a percentage increase to operations. Using Sacramento RT's FY 2018 budget as a reference, we estimate Measure A supports a 24.6% increase in local government transit operations.

The indirect and induced effects would support an additional 49,100 job years. Taken together, Measure A would support 121,380 job years over 40 years, an annual average of over 3,035 jobs with an average compensation of \$75,990 per job in 2020 dollars. Total economic output supported by Measure A over 40 years exceeds \$21.5 billion in 2020 dollars.

The effects of these contributions are distributed throughout the entire economy. Using a seven-sector classification of economic sectors, the distribution of the total effects across the economy are reported in Table 4. That analysis shows that the largest effects are in the construction sector supported by capital expenditures. The next most significant in area of employment impacts is services which are primarily supported by indirect supplier and induced consumer spending. Government has the third most significant impacts in terms of employment, and second most in terms income and output. Those impacts in the government sector are supported by expanded operations of transit and other transportation services in the County.

Table 4 Total Spending Impacts by Sector from 2021 to 2061 (results in 2020\$)

Sector	Total Employment	Total Labor Income (millions)	Total Value Added (millions)	Total Output (millions)
Construction	48,540	\$4,139.2	\$6,600.7	\$11,120.0
Service	33,270	\$1,952.9	\$3,418.0	\$5,442.1
Government	24,370	\$2,243.7	-\$1,891.8	\$1,190.1
Trade	9,340	\$500.2	\$1,286.6	\$1,863.6
Transportation, Information, Power & Utilities	4,560	\$272.2	\$406.0	\$843.5
Manufacturing	1,170	\$114.0	\$244.6	\$1,094.7
Agriculture & Mining	120	\$2.0	\$7.9	\$32.5
Total All Sectors	121,380	\$9,224.1	\$10,071.9	\$21,586.5

Section 3 - Additional Economic Impacts

In addition to the spending impacts from Measure A and matching funds that it leverages, the immediate expenditures can have a wide range of longer-term social and economic benefits. This section reviews some of those broader economic impacts. These include reduced congestion, enhanced regional competitiveness, advancing transportation equity as well as impacts on safety, health, and the environment.⁶

3.1 Congestion relief benefits for travelers

The investments contained in the TEP are designed to improve the transportation infrastructure and enhance the public transit system. Measure A resources would be directed to some of the most congested areas of the Sacramento transportation system. Improved and expanded transit service by Sacramento RT would reduce vehicle trips and also contribute to reduced congestion. Congestion relief carries several benefits for users of the transportation system which include time savings and improving travel reliability.

Congestion increases traffic delays as collision rates rise and larger traffic backups occur when there is a collision or disabled vehicle. This adds direct costs because of the increased travel time. The costs of that additional travel time vary depending on the purpose of the trip. If the travel was for business as part of someone's job, that time may cost employers directly because of the additional time they pay their worker or indirectly through reduced employee productivity. If the delays are part of a commute trip between home and work, the costs impact the workers directly but may also impact employers if they need to pay a wage premium to attract and retain workers. Even if the travel delay affects a personal trip, the costs of lost time due to congestion are clear to those individuals as well.

The costs of congestion are not limited to additional time in traffic. Congestion reduces travel reliability. In response to that uncertainty many travelers will schedule additional time to ensure they arrive at their destination on time. This can affect worker productivity, product and service delivery logistics, and market accessibility for both workers and customers.

3.2 Enhanced Regional Competitiveness

The TEP is designed to support further development of a well-planned and well-functioning transportation system in Sacramento County. This is important because a good transportation system facilitates access and allows business to benefit from agglomeration economies,

⁶ For additional details about these additional impacts see the American Public Transportation Association's (APTA) study on public transportation investment: APTA (2020) *Economic Impact of Public Transportation Investment* Available at: <https://www.apta.com/research-technical-resources/research-reports/economic-impact-of-public-transportation-investment/>

including more rapid access to knowledge, suppliers, and customers. These investments then also directly support Sacramento's regional economic competitiveness.

In 2015, the Southern California Association of Governments analyzed the benefits of both the spending impacts and the broader enhanced competitiveness impacts from their transportation system investments.⁷ They found that employment impacts over a 25-year period from the enhanced competitiveness were twice those of the spending impacts, and continuing to grow. They identified five paths for transportation investments to increase regional competitiveness: 1) Improve labor market matching – reducing travel time allows firms to hire from a larger geographic area and expand the size of their labor pool to find better employee match for its needs. 2) Increase firm attraction – the larger labor pool made possible from transportation investments makes finding specialized skills easier and makes the area more attractive to firms, especially those needing a skilled workforce, to move into the area. 3) Increase the labor supply – reduced congestion associated with transportation investments makes the area more attractive to migrants as it increases the amenity value of the region and allows firms to hire good workers at reasonable wages. 4) Increase the market for firms' products – the reduced travel time due to a better transportation system can expand the market area served by local firms. This allows a firm to be more specialized and create potentially higher value products as well as support the competitiveness of business whose access to larger markets generate increasing return to scale. 5) Increase learning and innovation – transportation investments can reduce congestion and facilitate active transportation which supports inter-personal interactions with likeminded experts and thereby increases the learning and innovation in a regional economy.

3.3 Facilitate Transportation Equity

The TEP will facilitate accessibility for Sacramento County residents by expanding transportation options and directly supporting senior and disabled transportation services. This is particularly important for members of disadvantaged communities as access to transportation is critical to their ability to participate in and benefit from economic growth and amenities throughout the County.⁸ Through the expansion of access to reliable and affordable transportation, the TEP's investments address several social challenges including poverty, unemployment and obesity. The reduction in travel costs resulting from these investments can reduce barriers to accessing health, education, and childcare services, which are needed to alleviate poverty. The reduced cost of travel may also allow residents from poorer areas with

⁷ Southern California Association of Governments (2015) *Economic and Job Creation Analysis*. Available at: http://scagrtpscsc.net/Documents/2016/draft/d2016RTPSCS_EconomicJobCreationAnalysis.pdf

⁸ For further information about the impacts of equitable transportation see the discuss in the following policy paper from PolicyLink: Rubin, V. (2009) *All Aboard: Making Equity and Inclusion Central to Federal Transportation Policy*. Available at: https://equitycaucus.org/sites/default/files/AllAboard_final_web.pdf

limited access to affordable and nutritious foods, an ability to access better food. Similarly, the expanded employment markets and reduced costs associated with these investments will expand employment opportunities available to County residents and thereby address some of the challenges facing the unemployed. As the TEP also includes a range of funding to support and maintain complete streets and active transportation infrastructure, its investments will facilitate healthy transportation options, which are particularly important among economically disadvantaged populations where obesity and other health issues from inactivity are particularly acute.⁹

3.4 Safety, Health and Environmental Impacts

Measure A's TEP contains several components that will generate safety, health, and environmental benefits. These include a funding requirement that all projects incorporate design elements to reduce the risk of traffic-related deaths and severe injuries, ensuring construction projects meet air quality requirements and greenhouse gas reduction targets. It also promotes planning, development and maintaining of "complete streets," which are integrated roadways with integrated safety and convenience for multi-modal travel.¹⁰ Air quality is also directly promoted in the TEP with a fixed portion of revenue allocated to the Sacramento Metropolitan Air Quality Management District. In addition, the TEP provides funding for a Regional Mobility Center, which will work collaboratively with other public and private entities to foster innovation in clean transportation. The impacts from those components will be in addition to safety, health and environmental benefits, reduced congestion and increased transportation efficiency that the TEP will support.

Section 4 - Conclusion

This analysis is based on STA staff projections of Measure A revenues and the draft TEP. It estimates that the \$8.4 billion in Measure A funds will leverage an additional \$13.1 billion in state and federal matching funds over the measure's 40-year duration. Modelling the spending impacts of this \$21.5 billion, the measure is estimated to create 121,380 job years in Sacramento County, an average of 3,035 jobs annually over the life of Measure A. The jobs created by Measure A have an average compensation of \$75,990 in 2020 dollars.

Measure A balances construction and operation spending. Construction projects attract more outside matching funds, enhancing the impact of each locally generated dollar. The government sector supported by local passenger transit services has the highest job creation per dollar of

⁹ For further discussion of the relationship between poverty and obesity see: Lee, H. (2012) Why Poverty Leads to Obesity and Life-Long Problems. Available at: <https://scholars.org/contribution/why-poverty-leads-obesity-and-life-long-problems>

¹⁰ <https://www.transportation.gov/mission/health/complete-streets>

expenditures. Construction will have the greatest employment impacts from these expenditures, supporting an annual average of 1,214 jobs, with government supporting an annual average of 609 jobs. Annual employment impacts in all other sectors total 1,212 jobs, primarily supported by indirect supplier and induced consumer spending that support a variety of service sector jobs throughout Sacramento County.