



Economic Impact *of* Public Transportation Investment

2020 Update



AMERICAN PUBLIC TRANSPORTATION ASSOCIATION

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Report Prepared for:

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Report Prepared by:

Economic Development Research Group, an EBP Company

Executive Summary

Objective

Public transportation is critical to the Americans who use it and even those who do not. It is a lifeline for many as it provides mobility options, generates jobs, spurs economic growth and supports public policies regarding energy use, air quality and carbon emissions. All of these are important elements when it comes to considering the benefits, costs and optimal investment levels of public transportation. This report focuses solely on one aspect—how investment in public transportation affects the economy in terms of employment, wages and business income. It specifically addresses how various aspects of the economy are affected by decisions made regarding investment in public transportation.

This report updates an earlier report, *Economic Impact of Public Transportation Investment*, prepared by Economic Development Research Group for the American Public Transportation Association in 2014.

Key findings are organized in terms of four categories: (1) **overall findings**, including the major changes from the previous report; (2) **longer-term effects of investment in public transportation**, which enables a variety of economic efficiency and productivity impacts to unfold as a consequence of changes in travel times, costs and access; (3) **the effects of spending money on public transportation**, which creates immediate jobs and income by supporting manufacturing, construction and public transportation operation activities; and (4) **conclusions** regarding the interpretation

and policy consideration of economic impacts associated with public transportation investment.

Overall Findings

Increased investment in public transportation can lead to significant economic growth as a result of both the short-term stimulus impact of public transportation outlays and a longer-term, cumulative impact on economic productivity. The latter is enabled by increasing investment to improve our nation's urban transportation systems and sustaining the investment over time. While the total impact will depend on the level and distribution of investment, the magnitude of potential impact can be illustrated by considering a scenario of enhanced investment sustained over 20 years.

Under such a scenario of sustained higher investment (which would lead to improved quality and availability of public transportation), there would be a significant increase in ridership¹, supporting additional growth of the national economy. The impact by the end of the 20-year period would represent a ratio of approximately \$5 billion of additional GDP per \$1 billion invested annually. This includes \$3 billion due to the productivity effect of cost savings in the economy and \$1.8 billion supported by the pattern of public transportation investment spending. At current wage rates, this is equivalent to a ratio of approximately 49,700 jobs per \$1 billion invested in public transportation.

¹ U.S. DOT FHWA. 2015 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance. Report to Congress (2016).

This report presents a methodology for calculating these impacts by examining the effects of three scenarios for long-term public transportation investment in the United States:

1. a **“No Growth Funding Scenario”** that maintains current spending levels and flat ridership;
2. an **“Increased Funding Scenario”** that represents a modest increase in funding (\$2.9 billion per year) and corresponding increase in ridership; and
3. a **“Higher Increased Funding Scenario”** with more investment (an additional \$7 billion per year) and higher ridership, which corresponds to levels of investment that APTA has recommended to Congress. Impacts of this scenario are summarized below. *(See Table 1)*

*Difference in impact between the “Base Case” scenario and “Higher Increased Funding” scenario, expressed as a ratio of \$1 billion of added annual investment in public transportation.

In the five years since the previous 2014 report, evolving mobility trends are magnifying the long-term cost savings effect of public transportation. In that report, the ratio for the long-term cost savings effect was \$2 billion for every \$1 billion invested, compared to \$3.2 billion estimated in this report. This change is a result both of changing mobility options and new data that enabled the research team to accurately estimate new sources of economic impact. There are two important differences from previous reports.

First, this analysis estimates the significant travel cost savings for public transportation passengers who are able to use public transportation instead of Transportation Network Companies (TNCs) or taxis. Based on recent on-board surveys that ask public transportation passengers about their alternatives, this research indicates that 15 percent of additional transit trips in a scenario of increased public transportation investment and ridership would shift from TNCs and 4 percent would shift from taxis. This reflects the mode alternatives available to public transportation passengers, who often come from car-poor households, with fewer cars than drivers.

Table 1: Potential Long-term Economic Impact per Billion Dollars of Enhanced National Investment in Public Transportation (Annual Effect in the 2040)*

Category of Economic Impact	Value of Economic Impact (GDP Equivalent)	Wage Equivalent	Job Equivalent
Long-Term Cost Savings Effect	\$3.2 billion	\$1.4 billion	31,800
Investment Spending Effect	\$1.8 billion	\$1.2 billion	17,900
Total Economic Impact	\$5.0 billion	\$2.6 billion	49,700

*Difference in impact between the “Base Case” scenario and “Higher Increased Funding” scenario, expressed as a ratio of \$1 billion of added annual investment in public transportation. See full text for interpretation of wage and job equivalents.

² APTA. “Who Rides Public Transit?” (2017)

³ TransitCenter. Who’s On Board 2019: How to Win Back America’s Transit Riders (2019).

⁴ Uber’s Economic Impact in the United States, 2018 (<https://www.uber.com/newsroom/uber-in-t>)



\$11.7 Billion

will be saved annually in car operating costs by America's drivers as a result of APTA's recommendations

(In the year 2040, after sustained investment following APTA's recommendations.)

According to recent on-board surveys, 68 percent of bus riders and 50 percent of rail riders reported that they did not have a car available for their transit trip.² Given the cost differences between taking a TNC or taxi trips and taking public transit, enabling households to choose good quality public transit over a taxi or TNC can provide significant household cost savings.

Second, this analysis develops a new model to understand potential trends in reduced car ownership. According to the model, which was estimated based on census mode share and car ownership data, a 1 percent increase in public transit mode share corresponds to 0.02 fewer cars per household at the metropolitan area level (the equivalent of two out of every hundred households giving up a car). In the future, the ability of households to rely primarily on public transit and give up a car is expected to increase, as modes such as TNCs, carsharing, and micro-mobility become increasingly available. These modes can act as complements to transit. For example, individuals may use a TNC or a scooter to reach a train station. Or transit commuters may occasionally rely on TNCs on nights when they return home after transit service has ended.

A recent TransitCenter study found that for each additional transit trip taken, transit users made an additional 0.24 taxi or TNC trips, supporting the hypothesis that taxis and TNCs complement transit.³ Surveys by Uber and Lyft provide further evidence of an evolution towards use of those modes as a feeder for high volume transit services as well as a factor reducing car ownership.⁴

Productivity Impacts

Investment in public transportation expands service and improves mobility, and if sustained over time at APTA's recommended level, can potentially affect the economy by providing:

- **travel and vehicle ownership cost savings** for public transportation passengers who are able to use public transit instead of other modes, including driving, taxis and TNCs of \$11.7 billion annually;
- **reduced traffic congestion** for those traveling by automobile and truck, leading to direct travel cost savings for businesses and households, and business operating cost savings associated with worker wage and reliability effects of reduced congestion of \$800 million annually;
- **business productivity** gained from access to broader labor markets with more diverse skills, enabled by expanded public transit service areas and reduced traffic congestion of \$1.2 billion annually.

Spending Impacts

In addition to increasing workforce access and economic productivity, public transportation spending has additional impacts on the economy. Public transportation operations (i.e., management, operations and maintenance of vehicles and facilities) are a significant source of jobs in the United States. The analysis indicates that approximately 20,000 jobs are supported for a year per \$1 billion dollars of annual spending on public transportation operations.

Capital investment in public transportation (including purchases of vehicles and equipment and the development of infrastructure and supporting facilities) are also a significant source of jobs. The analysis indicates that nearly 13,000 jobs are supported for a year per \$1 billion of spending on public transportation capital.

Combining investment in public transportation capital and operations within the United States, the analysis indicates that an average of 17,900 jobs are supported for one year, per \$1 billion dollars of annual spending on public transportation, given the existing mix of operations (72 percent) and capital (28 percent) expenditures.

All of the above job numbers include “direct” jobs associated with manufacturing, construction and operation of public transportation equipment and facilities, plus additional “supplier purchase effect” jobs at

jobs is approximately \$2.9 billion of added business output (sales volume), which provides \$1.8 billion of GDP (gross domestic product or “value added”)—including \$1.2 billion of worker income. This additional economic activity generates approximately \$382 million in federal, state and local tax revenues, that is \$16.2 billion in annual federal, state and local tax revenue at APTA’s recommended funding level.

Care should be taken in use of these impact measures. Specifically, they should not be added or otherwise combined, because a portion of the business output provides the worker income and other elements of GDP, which in turn are sources for tax revenues. It should also be noted that while all of these numbers are in real (constant) dollars, the ratio of jobs supported per \$1 billion of spending will fall over time due to future changes in wages per worker.



2 Million Jobs

will be created or sustained

as a result of APTA’s recommendations



\$16.2 Billion

will be generated annually in federal, state and local tax revenue

as a result of APTA’s recommendations

(In the year 2040, after sustained investment following APTA’s recommendations.)

parts, materials and service providers, and “employee spending effect” jobs supported by consumer spending of workers’ wages. These overall impacts can represent new jobs as long as there is an increase in public transportation spending and a sufficient number of unemployed persons to fill these jobs (so that other pre-existing jobs are not displaced).

The economic impacts of public transportation spending can be measured in other ways besides jobs. Corresponding to the 17,900

Conclusion

The analysis shows that public transportation investment can have significant impacts on the economy, and thus represent an important public policy consideration. These impacts include:

1. **supporting American jobs and industry** with spending on public transportation; and
2. **providing savings for households and businesses** due to improvement of transportation system performance.

In the long term, a program of enhanced investment sustained over 20 years can have a total effect on the economy in the range of 5 times the amount being spent annually. This is the equivalent of the value of 49,700 jobs per \$1 billion spent (at current wage rates) or over 2 million jobs at APTA’s recommended funding level. Actual national job growth impacts will depend on how national economic competitiveness, workforce availability and unemployment rates are affected.

Public transportation is a cost-efficient industry for several reasons:

- **Capital investments have a long lifetime.**

As a result, capital costs per trip are low;

- **Transportation investments support**

cost savings for both public transit users and non-users. With sufficient investment, improved public transportation may enable more households to reduce multiple car ownership. Relinquishing a car and transitioning to transit use can save approximately \$9,797 per year⁵, including \$6,200 in the fixed costs of car ownership (insurance, license and registration, and depreciation).⁶ The cost savings from replacing a TNC trip with public transit can average nearly \$15 per trip.

It is important to stress that this analysis examines the scale of potential impacts on the economy and does not purport to show benefit-cost ratios. Specifically, economic

impact studies do not account for some of the social and environmental impacts that are included in benefit-cost studies, although they do account for indirect and induced economic growth that is typically not included in benefit-cost studies.

The social and environmental impacts that are not counted in this economic impact study include, most notably, personal time savings, emissions impacts, and public transit's role in providing mobility for those without cars, along with backup mobility for those who do have personal vehicles. The inclusion of these additional benefits would generate a larger measure of total societal benefit per \$1 billion dollars of public transportation investment. However, they were not analyzed because this report focuses specifically on how public transportation spending and investment affect the economy.

⁵ APTA Transit Savings Report, June 2017.

⁶ AAA Your Driving Costs 2018



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1300 I Street NW | Suite 1200 East | Washington, DC 20005 | (202) 496-4800 | www.apta.com