Negative: Mass Transit Subsidies - Good

By Paul Prentice

*Resolved: The**United States federal government should substantially reform its transportation policy.*

Summary: The Affirmative plan phases out federal mass transit subsidies to state and local governments. This brief argues that mass transit is good and federal subsidies are needed to keep it up.

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NEGATIVE BRIEF: Mass Transit Subsidies - Good

NEGATIVE PHILOSOPHY

Federal intervention is justified because transportation is an essential matter of social welfare and equality

Yonah Freemark 2013 (Master of Science in Transportation, Department of Civil and Environmental Engineering; Master of City Planning, Department of Urban Studies and Planning at MIT.) 25 Jan 2013 “The Federal Role in Surface Transportation Funding” <http://www.thetransportpolitic.com/2013/01/25/the-federal-role-in-surface-transportation-funding/>

Like with most expenditures, one clear argument for federal involvement is that using funds derived from nationally produced revenues allows for a more progressive apportionment of overall spending power, since revenues can be redistributed among the population as a whole. This, after all, is how our national social programs work, in health and education, for example. The benefit is obvious: A more equal society in which people all over the country are blessed with the nation’s wealth. The U.S. provides similar benefits to people in Mississippi and Connecticut even though, of course, incomes in the former state are far lower than those in the latter. I have argued that transportation, like other issues more commonly referred to as matters of public concern, is an essential matter of overall social welfare. We need a robust national mobility system to guarantee that all of our country’s residents have adequate access to jobs, goods, and people.

Have to look at the big picture of higher-order social goals when evaluating transportation policy

Kevin DeGood and Andrew Schwartz 2016 (*DeGood - Director of Infrastructure Policy at the Center for American Progress. Schwartz - Research Associate on the Economic Policy team at the Center*) “Can New Transportation Technologies Improve Equity and Access to Opportunity?” 27 Apr 2016 <https://www.americanprogress.org/issues/economy/reports/2016/04/27/135425/can-new-transportation-technologies-improve-equity-and-access-to-opportunity/>

Transportation policy debates tend to focus on narrow issues, such as the number of deficient bridges or the completion of a particular mega project, as opposed to overall outcomes. In truth, transportation infrastructure and services have value to the extent that they help a society achieve higher-order social, economic, and environmental goals. This is especially the case when considering the role of transportation in addressing poverty.

Mass transit service benefits to the poor have to be considered even though they don’t count on any economic measurement

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

It is important to note that transit provides critical economic and social links for typically underserved and economically disadvantaged populations. These benefits are not accounted for with standard b-c [benefit-cost] estimation methods. Appropriately measuring and valuing transit’s equity benefits is an ongoing challenge for b-c analysts.

HARMS / SIGNIFICANCE

1. A/T “Cost and efficiency”

Locally-funded transit systems are not better or more efficient than federally funded ones

Yonah Freemark 2013 (Master of Science in Transportation, Department of Civil and Environmental Engineering; Master of City Planning, Department of Urban Studies and Planning at MIT.) 25 Jan 2013 “The Federal Role in Surface Transportation Funding” <http://www.thetransportpolitic.com/2013/01/25/the-federal-role-in-surface-transportation-funding/>

Second, cities in low-tax states may find their ability to actually raise taxes locally stymied by state legislatures that believe that any tax increase should be prevented. Finally, there is little evidence that locally funded transit projects are “better” or “more efficient” than federally funded ones, since most projects already require a significant local contribution.

1. A/T “Highways harmed or neglected”

Funding public transit benefits highways: gets cars off the road, frees up space for drivers

Martine Powers 2016 (Reporter for the Washington Post’s transportation and development team. She writes primarily about Metro, and generally about trains, planes, and automobiles. She previously worked at the Boston Globe and Politico, and spent a year reporting on traffic and congestion as a Fulbright Fellow in Trinidad & Tobago.) 20 Jul 2016 “The irony of the GOP’s new promise to cut mass transit funding? Donald Trump loves trains” <https://www.washingtonpost.com/news/dr-gridlock/wp/2016/07/20/the-irony-of-the-gops-new-promise-to-cut-mass-transit-funding-donald-trump-loves-trains/?utm_term=.a35fd26c37df>

Urban transit advocates argue that funding for bikes and public transit projects actually have sizable benefits for the highway system: When more people use trains, buses and bikeways, there is more space on roads for people who need to drive and trucks carrying goods across the country. And public transportation can be a lifeline in rural areas where people don’t have the money to own cars.

More highways = more traffic, so there’s no harm to “Not” building more. They fill up as soon as you build them

Eric Jaffe citing a study by Univ. of California-Davis 2015. (journalist) California's DOT Admits That More Roads Mean More Traffic, 11 Nov 2015 <https://www.citylab.com/transportation/2015/11/californias-dot-admits-that-more-roads-mean-more-traffic/415245/> (“Caltrans” is the California Dept of Transportation)

**More roads means more traffic in both the short- and long-term.** Adding 10 percent more road capacity leads to 3-6 percent more vehicle miles in the near term and 6-10 percent more over many years. **Much of the traffic is brand new.** Some of the cars on a new highway lane have simply relocated from a slower alternative route. But many are entirely new. They reflect leisure trips that often go unmade in bad traffic, or drivers who once used transit or carpooled, or shifting development patterns, and so on. What’s significant about the Caltrans acknowledgement is that induced demand creates something of a mission crisis for transportation agencies that spend [most of their money](https://www.citylab.com/cityfixer/2015/02/americas-infrastructure-crisis-is-really-a-maintenance-crisis/385452/) on building new roads.

1. A/T “Nobody rides / trains run empty”

Transit usage is big and getting bigger

DETROIT FREE PRESS 2011 (journalist Matt Helms) 11 Dec 2011 “Debunking Public Transportation Myths” <http://www.frontiergroup.org/media/debunking-public-transportation-myths>

There are a lot of misconceptions about public transit, despite its critical role in getting people around. It's a $55-billion industry in the U.S. and a system that has been stretched by record-high gas prices and ridership levels not seen since the 1950s even as a troubled economy reduces funding nationwide. The American Public Transportation Association says the long-term trend is clear: Ridership on the nation's buses, subways, commuter rail lines and other transit systems grew 34% in 1995-2009, outpacing 23% growth in the number of vehicle miles driven on highways in that period. The number of workers who rely on transit regularly grew by a million, to nearly 7 million nationwide, in 2005-09.

Transit use has rapidly increased

Citizens for Modern Transit Copyright 2017 (Citizens for Modern Transit, or CMT, is a nationally recognized non-profit advocacy organization made up of graduate experts and dedicated citizens. CMT seeks to provide the public with the best transit solutions possible, and present the facts regarding transit.) “Benefits of Transit” <http://cmt-stl.org/benefits-of-transit/>

In the last five years, transit use has increased faster than any other mode of transportation. It has increased 22% over the last six years.

Turn AFF plan: More people would ride transit if we funded more of it

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

However, an important reason people choose driving over transit is because of a history of under-investment in transit and the predominance of auto-oriented sprawling development in the U.S. ‒ in other words, many people would choose transit in the U.S. instead of driving if they had access to safe and affordable transit options.

Maximizing riders isn’t the goal. It’s guaranteeing service to the whole city

Jarett Walker 2009 (consulting transit planner, helping to design transit networks and policies for a huge range of communities) 15 Dec 2009 The “Transit Isn’t Green Because It Runs Empty” Line <http://humantransit.org/2009/12/yet-another-transit-isnt-green-because-of-empty-buses-story.html>

In 19 years as a transit planning consultant, I’ve studied the operations of at least 100 bus and bus+rail systems on three continents; I have never encountered one whose overriding goal was to maximize its ridership. All transit agencies would like more people to ride, but they are required to run many empty buses for reasons unrelated to ridership or environmental goals. To describe the resulting empty buses as a failure of transit, as Cox does, is simply a false description of transit’s real, and conflicted, objectives. If public transit agencies were charged **exclusively** with maximizing their ridership, and all the green benefits that follow from that, they could move their empty buses to run in places where they’d be full. Every competent transit planner knows how to do this. Just abandon all service in low-density areas, typically outer suburbs, and shift all these resources to run even more frequent and attractive service where densities are high, such as inner cities. In lower-density areas, you’d run only narrowly tailored services for brief surges of demand, such as trips to schools at bell-times and commuter express runs from suburban Park-and-Rides to downtown. If you do such a massive shift of resources, I promise your productivity (ridership per unit of cost) will soar, and you won’t have as many empty buses.

1. Social benefits of transit

Public transit supports quality of life, economic prosperity and environmental sustainability

Matthew Tucker 2016 (executive director & CEO of North County Transit District (NCTD), having received his education from Virginia Commonwealth University.) 24 Mar 2016 “Public transit plays role in our quality of life” <http://www.sandiegouniontribune.com/opinion/commentary/sdut-public-transit-environment-2016mar24-story.html>

As our region continues to grow, public transit will be a key part of our transportation toolbox that will support our quality of life, economic prosperity and environmental sustainability. To maintain our quality of life in this region, we must have a comprehensive transportation toolbox that includes highway and street improvements, freeway widening projects, filling potholes and improving traffic flow.

Public transit has many benefits: reduces costs, helps the economy, reduces congestion

Sly James 2017 (Mayor of Kansas City.) 20 Apr 2017 “Trump’s proposed cuts to federal transit funding will harm American cities” <http://thehill.com/blogs/pundits-blog/transportation/329761-trumps-proposed-cuts-to-federal-transit-funding-will-harm>

Public transit is key to connecting people with jobs, but it also produces powerful benefits that keep our country’s economy buzzing. Efficient public transit reduces transportation costs for families, giving people more money to spend in the local economy on everything from restaurant meals to clothes to housing. It also reduces road congestion and provides financial value by increasing productivity, creating new business opportunities and the boosting our ability to compete in the global economy.

1. A/T “Transit expensive / wasting money”

Transit funding is tiny compared to roads

Tanya Snyder 2011 (Writer for Streetsblog and POLITICO Pro’s transportation reporter.) 12 Dec 2011 “Transit’s Not Bleeding the Taxpayer Dry – Roads Are” [http://usa.streetsblog.org/2011/12/12/transit’s-not-sucking-the-taxpayer-dry-roads-are/](http://usa.streetsblog.org/2011/12/12/transit's-not-sucking-the-taxpayer-dry-roads-are/)

Non-users fork over $779 per household for roads — as opposed to $50 for transit. But most drivers still believe that transit eats a huge chunk of transportation funding while roads are self-supporting.

1. A/T “Transit only needed in a few big cities”

Transit is net beneficial in cities large and small, even in rural areas

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

In general, transit benefits the most people and is most cost-efficient in urban environments both large and small. Cities provide dense collections of riders (i.e., fare-paying customers) who want to make trips to dense collections of destinations. Transit planners try to make the best match of transit investments that will connect these origins and destinations with the fastest, most direct routes possible. Generally speaking, the more density, the more riders who can be served, and the more the investments pay off. However, this white paper finds evidence that transit pays off even in small urban and rural areas when the right transit investments are made.

Quantification: Transit produces net benefits in small urban areas. 2.16 benefit for every 1.00 in cost

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

In their survey of U.S. small urban transit agencies, Godavarthy et al. (2014) found an average benefit-cost ratio of 2.16, indicating that benefits are generally more than double the costs. In a more focused study of small urban areas in South Dakota, Penet (2011) estimated a benefit-cost value of 1.23. This value is substantially lower than Godavarthy et al. found for small urban areas. However, comparison of the methodologies used by each research team suggests they used different definitions of “small urban.” While Godavarthy et al. classified areas with fewer than 200,000 people as small urban, Penet classified areas with between 2,500 and 50,000 people as small urban and those with populations between 50,000 and 200,000 as urbanized. Combining Penet’s urbanized and small urban benefit-cost ratio estimates (2.96 and 1.23 respectively) would likely yield an estimate somewhere close to the 2.16 value found for small urban areas by Godavarthy et al. Finally, a benefit-cost ratio of 9.7—the highest found in researching this white paper—was estimated by Skolnik and Schreiner (1998) for Danbury, Connecticut, a small urban area.

SOLVENCY

1. Induced demand

When you build more highways, it attracts more driving, so congestion is never solved

Dr. Susan Handy 2015. (PhD; professor in Dept of Environmental Science & Policy, Univ. of California-Davis) Increasing Highway Capacity Unlikely to Relieve Traffic Congestion, Oct 2015 <http://www.dot.ca.gov/research/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf>

Traffic congestion has traditionally been addressed by adding additional roadway capacity via constructing entirely new roadways, adding additional lanes to existing roadways, or upgrading existing highways to controlled-access freeways. Numerous studies have examined the effectiveness of this approach and consistently show that adding capacity to roadways fails to alleviate congestion for long because it actually increases vehicle miles traveled (VMT). An increase in VMT attributable to increases in roadway capacity where congestion is present is called “induced travel”. The basic economic principles of supply and demand explain this phenomenon: adding capacity decreases travel time, in effect lowering the “price” of driving; and when prices go down, the quantity of driving goes up.

DISADVANTAGES

1. Harms the poor

Link & Brink: Funding cuts would be devastating for local transit systems

Yonah Freemark 2013 (Master of Science in Transportation, Department of Civil and Environmental Engineering; Master of City Planning, Department of Urban Studies and Planning at MIT.) 25 Jan 2013 “The Federal Role in Surface Transportation Funding” <http://www.thetransportpolitic.com/2013/01/25/the-federal-role-in-surface-transportation-funding/>

The problem with this whole line of discussion is that it would likely be devastating for transit systems in major cities, particularly in conservative states with no history of state support for public transportation. One major advantage of the current federal finance system is that it devotes a fifth of all transportation funding to transit. The consequence is that cities are awarded funds for maintaining their bus and rail systems by formula at about $8 billion a year (and that’s not even including the $2 billion annually devoted to new transit construction). That funding plays an essential part in ensuring cities can keep their systems up to date.

Link: Poorer cities can’t afford to fund their transit systems

Yonah Freemark 2013 (Master of Science in Transportation, Department of Civil and Environmental Engineering; Master of City Planning, Department of Urban Studies and Planning at MIT.) 25 Jan 2013 “The Federal Role in Surface Transportation Funding” <http://www.thetransportpolitic.com/2013/01/25/the-federal-role-in-surface-transportation-funding/>

There is some argument to be made that cities that [want to invest in public transportation should simply pay for it themselves](http://www.thetransportpolitic.com/2012/02/16/clearing-it-up-on-federal-transportation-expenditures/), yet that approach has a number of serious flaws. First, it would be a serious impediment for poorer cities to continue the funding of their transit systems, since they lack adequate local funds; there is a [very strong correlation between metropolitan-area income and the amount of money cities spend on transit operations, producing highly inequitable results](http://www.thetransportpolitic.com/2011/12/28/local-funding-for-public-transportation-operations-producing-inequitable-results/). Second, cities in low-tax states may find their ability to actually raise taxes locally stymied by state legislatures that believe that any tax increase should be prevented.

Impact: Poor harmed. Public transit is essential to daily needs for large numbers of poor who don’t have cars

Kevin DeGood and Andrew Schwartz 2016 (*DeGood - Director of Infrastructure Policy at the Center for American Progress. Schwartz - Research Associate on the Economic Policy team at the Center*) “Can New Transportation Technologies Improve Equity and Access to Opportunity?” 27 Apr 2016 <https://www.americanprogress.org/issues/economy/reports/2016/04/27/135425/can-new-transportation-technologies-improve-equity-and-access-to-opportunity/>

Public transportation is an essential part of our surface transportation system. For many families, especially those without access to a car, public transportation is that critical link to employment, education, and child care facilities, among other services. In 2014, the last year for which complete data are available, more than 2,100 public transit operators provided 10.5 billion unlinked trips, carrying passengers more than 57 billion miles. Nationwide, 20 percent of households at or below the federal poverty line lack access to a car. The percentages of low-income African American and Latino households without a car are even higher at 33 percent and 25 percent, respectively. For these families, public transportation provides the only way to meet daily needs.

Impact: Harms the disadvantaged. Some can only hold jobs if they can access subsidized public transit

Prof. David Levinson and Prof. David King 2013 (Levinson - [School of Civil Engineering](http://sydney.edu.au/engineering/civil/) at the University of Sydney, Australia. King – Assistant Professor of Urban Planning, Columbia Univ.) The case for (and against) public subsidy for public transport) 22 Apr 2013 <https://streets.mn/2013/04/22/the-case-for-and-against-public-subsidy-for-public-transport/>

Transit helps the transportation disadvantaged. Equity or welfare has often been an argument in favor of subsidy, that we do it to provide benefits for people unable to afford otherwise, or transportation for the disadvantaged. This gets more into values than economics, but there are some people who would be employed but for their ability to access jobs, so some subsidy on the transportation front is at least partially repaid by more economic productivity.

Impact: Trapped in poverty. Transit is the ticket out of poverty for many urban poor

Kevin DeGood and Andrew Schwartz 2016 (*DeGood - Director of Infrastructure Policy at the Center for American Progress. Schwartz - Research Associate on the Economic Policy team at the Center*) “Can New Transportation Technologies Improve Equity and Access to Opportunity?” 27 Apr 2016 <https://www.americanprogress.org/issues/economy/reports/2016/04/27/135425/can-new-transportation-technologies-improve-equity-and-access-to-opportunity/> (brackets in original)

Decades of research show that access to affordable transportation—either an automobile or public transportation—is an essential part of moving out of poverty. A recent major study by Raj Chetty, a professor of economics at Stanford University, and his colleagues found that geographic isolation—as measured by lengthy commute times— was a significant factor in people’s ability to leave poverty. The authors concluded that “upward mobility is higher in cities with less sprawl, as measured by commute times to work. These findings lead us to identify segregation as the first of five broad factors that are strongly correlated with [economic] mobility.” Other research demonstrates that the presence of public transit improves access to employment at all levels and that transit reduces the geographic mismatch between households and employment.

Impact: Spending more on transit has bigger impact on people’s lives than spending more on highways

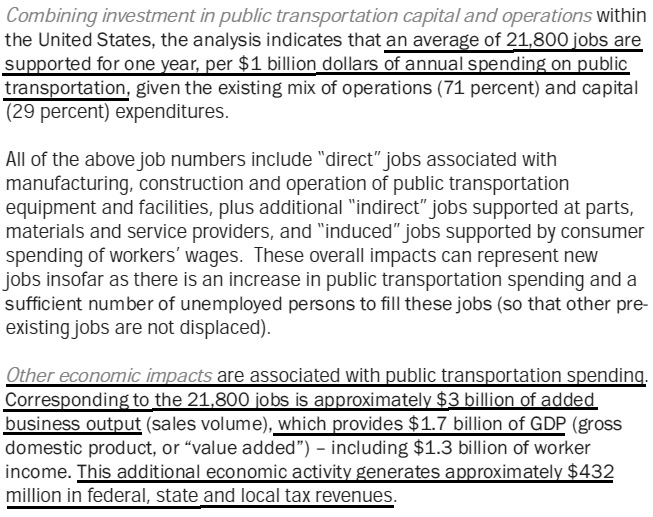
Kevin DeGood and Andrew Schwartz 2016 (*DeGood - Director of Infrastructure Policy at the Center for American Progress. Schwartz - Research Associate on the Economic Policy team at the Center*) “Can New Transportation Technologies Improve Equity and Access to Opportunity?” 27 Apr 2016 <https://www.americanprogress.org/issues/economy/reports/2016/04/27/135425/can-new-transportation-technologies-improve-equity-and-access-to-opportunity/>

For example, a highway improvement project that saves drivers two minutes during both the morning and evening peak periods delivers only modest marginal benefits over and above the current highway system. Additionally, these modest benefits accrue to people who already have access to a car and to employment centers. By comparison, spending an equivalent amount to add late-night bus service that allows an unemployed transit-dependent rider to affordably access a previously inaccessible job with nontraditional hours provides substantial marginal benefits. The decision about which investment to make depends in large measure on the relative weight given to each group of users. Returning to the above examples, it may be the case that the cumulative value of four minutes of time savings multiplied by thousands of drivers has a higher total economic value than the bus project. However, someone who saves four minutes per day has not experienced a qualitative change of life, whereas someone who is able to obtain employment through extended bus hours has experienced a dramatic change—one that has both personal and social benefits.

1. Harms the US economy

Impact: $1 billion in public transit = 21,800 jobs + $3 billion in added business output + $1.7 billion GDP growth + $432 million in tax revenues

Economic Development Research Group 2014. (EDR Group analyzes the economic opportunities, impacts and benefits associated with public transit systems, services, policies and investments – including bus, BRT, streetcar, commuter rail, light rail and heavy rail transit. The firm works for national, state/provincial and local agencies, as well as local transit operators across the US and Canada, and abroad. Principal study authors were: Glen Weisbrod, Derek Cutler, Chandler Duncan) Economic Impact of Public Transportation Investment for American Public Transportation Association, May 2014 <http://www.apta.com/resources/reportsandpublications/Documents/Economic-Impact-Public-Transportation-Investment-APTA.pdf>



Impact: Transit has large benefits to jobs and the economy

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

Rural and small urban areas tend to capture fewer economic and employment benefits from transit services, at least as measured by Penet. However, the share of total benefits is substantial for both, with jobs and economy benefits paying for more than one-third of total transit costs in rural areas and almost breaking even in small urban areas.

Example: Billions in return in investment from Dallas’ public transit

Citizens For Modern Transit Copyright 2017 (Citizens for Modern Transit, or CMT, is a nationally recognized non-profit advocacy organization made up of graduate experts and dedicated citizens. CMT seeks to provide the public with the best transit solutions possible, and present the facts regarding transit.) “Benefits of Transit” <http://cmt-stl.org/benefits-of-transit/>

A study by the University of North Texas found that the new DART System in Dallas has already generated over $800 million in development and that the full system is projected to generate $3.7 billion in economic activity upon build out.

Impact: Streetcars have big economic benefits

Sly James 2017 (Mayor of Kansas City.) 20 Apr 2017 “Trump’s proposed cuts to federal transit funding will harm American cities” <http://thehill.com/blogs/pundits-blog/transportation/329761-trumps-proposed-cuts-to-federal-transit-funding-will-harm>

Individual public transportation projects also attract investment and grow jobs at the local level. I’ve seen this play out in Kansas City, where businesses are thrilled by the streetcar system that opened a year ago. Our KC Streetcar has contributed $1.8 billion in new investment in the city, including spurring the construction of 2,500 new residential housing units and 348 hotel rooms. Perhaps most importantly, 80 percent of the businesses along the streetcar line have seen increased revenue, and almost 40 percent of those businesses have hired more employees. KC Streetcar is important as a transportation option for my residents, but it’s also important to our economy. **Kansas City isn’t alone.** For cities that build them, streetcars have increased property values, spurred private investment in both residential and commercial development, and helped to attract major employers back to city centers.

Impact: Jobs. Public transportation employs over 400,000

American Public Transportation Association 2011 (A transportation organization dedicated to strengthening and improving public transportation. APTA seeks to provide the safest, most efficient, and most economical transit services and by improving those services to meet national energy, environmental, and financial concerns. “Public Transportation Gets Our Economy Moving”  
<http://www.publictransportation.org/benefits/grows/Documents/Economy-Fact-Sheet-2011.pdf>

Public transportation is a $55 billion industry that employs more than 400,000 people.

Impact: Productivity & jobs. Public transit leads to increased productivity and employment

Prof. Daniel G. Chatman and Prof. Robert B. Noland 2014 (Chatman is an associate professor at the Department of City and Regional Planning at Univ. of California – Berkeley; former director of the Alan M. Voorhees Transportation Center at Rutgers University. Noland - Professor at Rutgers Univ., Edward J. Bloustein School of Planning and Public Policy and serves as the Director of the Alan M. Voorhees Transportation Center and Director of the PhD program in Planning and Public Policy.) 6 Jun 2014 “How metropolitan public transit can benefit wages and employment” <http://blogs.berkeley.edu/2014/06/06/how-metropolitan-public-transit-can-benefit-wages-and-employment/>

In our first stage of analysis, we found fairly strong relationships between public transport service and these three types of agglomeration. A median-value increase in bus and rail seats per capita was associated with a 19 percent increase in central city employment density, with similar results for bus and rail seat density per square mile and for rail service-miles.

**END QUOTE. He furthers the point later in the same context QUOTE:**

Our results for GMP per capita were not as conclusive, but we did find that reductions in urbanized employment density were associated with increases in per capita GMP when controlling for central city employment density. This is consistent with the idea that public transportation services increase productivity by centralizing employment within urbanized areas.

1. Sickness & Death

Link: Publically-funded transit reduces obesity

Prof. Sheldon Jacobson 2017 (professor of computer science at University of Illinois at Urbana-Champagne) 16 May 2017 “Higher mass transit use associated with lower obesity rates” quoted in SCIENCE DAILY “Higher mass transit use associated with lower obesity rates” 16 May 2017 <https://www.sciencedaily.com/releases/2017/05/170516124020.htm>

"As local communities seek to allocate public funds to projects that will provide the most benefit to their residents, our research suggests that investing in convenient and affordable public transit systems may improve public health by reducing obesity, thereby providing more value than had been previously thought," said Sheldon H. Jacobson, a professor of computer science at Illinois. He conducted the study with graduate student Zhaowei She and Douglas M. King, a lecturer of industrial and enterprise systems engineering.

Link: People using public transit have significantly lower body fat and Body Mass Index (BMI)

Ellen Flint, Steven Cummins, and Amanda Sacker 2014 (Flint is a research fellow from the Department of Social and Environmental Health Research at the London School of Hygiene and Tropical Medicine. Cummins is a professor of population health from the Department of Social and Environmental Health Research at the London School of Hygiene and Tropical Medicine. Sacker is a professor of lifecourse studies from ESRC International Centre for Lifecourse Studies in Society and Health, Research Department of Epidemiology and Public Health at University College London.) 19 Aug 2014 “Associations between active commuting, body fat, and body mass index: population based, cross sectional study in the United Kingdom” <http://www.bmj.com/content/349/bmj.g4887>

Results from multivariate linear regression analyses suggest that, compared with using private transport, commuting by public or active transport modes was significantly and independently predictive of lower BMI for both men and women. In fully adjusted models, men who commuted via public or active modes had BMI scores 1.10 (95% CI 0.53 to 1.67) and 0.97 (0.40 to 1.55) points lower, respectively, than those who used private transport. Women who commuted via public or active modes had BMI scores 0.72 (0.06 to 1.37) and 0.87 (0.36 to 0.87) points lower, respectively, than those using private transport. Results for percentage body fat were similar in terms of magnitude, significance, and direction of effects.  
**Conclusions** Men and women who commuted to work by active and public modes of transport had significantly lower BMI and percentage body fat than their counterparts who used private transport. These associations were not attenuated by adjustment for a range of hypothesised confounding factors.

Impact: Obesity = disease and early death

US Centers for Disease Control & Prevention, last updated 2015. (federal agency, part of the US Dept of Health & Human Services) The Health Effects of Overweight and Obesity <https://www.cdc.gov/healthyweight/effects/index.html>

People who are obese, compared to those with a normal or healthy weight, are at increased risk for many serious diseases and health conditions, including the following: All-causes of death (mortality) High blood pressure (Hypertension) High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia) Type 2 diabetes, Coronary heart disease, Stroke, Gallbladder disease, Osteoarthritis (a breakdown of cartilage and bone within a joint) Sleep apnea and breathing problems, Some cancers (endometrial, breast, colon, kidney, gallbladder, and liver) Low quality of life, Mental illness such as clinical depression, anxiety, and other mental disorders, Body pain and difficulty with physical functioning

1. Traffic congestion

Link & Impact: Large city transit investments pay for themselves in congestion relief

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

Analysis of the effects of transit on traffic congestion suggests that the size of the metropolitan area and the type of transit provided are critical to determining when transit investments pay off, considering only congestion cost savings. In general, large transit (heavy rail) investments in metropolitan areas larger than 2.5 million people tend to pay for themselves in terms of congestion relief, although there are exceptions.

Link & Impact: Public transit saves travel time, fuel, and overall costs from traffic congestion

American Public Transportation Association Copyright 2017 (A transportation organization dedicated to strengthening and improving public transportation. APTA seeks to provide the safest, most efficient, and most economical transit services and by improving those services to meet national energy, environmental, and financial concerns. )“Public Transportation Benefits” <http://www.apta.com/mediacenter/ptbenefits/Pages/default.aspx>

Public transportation has a proven record of reducing congestion. The latest research shows that in 2011, U.S. public transportation use saved 865 million hours in travel time and 450 million gallons of fuel in 498 urban areas. Without public transportation, congestion costs in 2011 would have risen by nearly $21 billion from $121 billion to $142 billion in 498 urban areas.

1. Wasted energy and environmental harm

Link: Public transit reduces energy use and pollutant emissions

John Neff and Matthew Dickens 2017 (**Neff:** Senior Policy Researcher for the American Public Transportation Association; has done analytical and statistical research work in the transportation field for over 40 years; worked for the Dept of Transportation for a short time before his research work. **Dickens:** Policy Analyst for the American Public Transportation Association. He collects and analyzes data on the public transportation industry and writes policy papers on a wide range of issues facing the industry; B.A. from Macalester College.) “2016 Public Transportation Fact Book” Feb 2017 <http://www.apta.com/resources/statistics/Documents/FactBook/2016-APTA-Fact-Book.pdf>

Public transportation plays an important role in reducing the nation’s energy use and greenhouse gas emissions. Due to the combined reduction in private passenger vehicle miles, reduced automobile congestion, and reduced travel distances due to the land use impact of public transportation, more than 4 billion gallons of gasoline are saved and 37 million metric tons of carbon dioxide emissions are avoided, as described in Table 20.

Impact: Pollution deaths from vehicle emissions

Jennifer Chu 2013 (with the Massachusetts Institute of Technology (MIT) News Office) 29 Aug 2013 <https://news.mit.edu/2013/study-air-pollution-causes-200000-early-deaths-each-year-in-the-us-0829>

Researchers from MIT’s Laboratory for Aviation and the Environment have come out with some sobering new data on air pollution’s impact on Americans’ health. The group tracked ground-level emissions from sources such as industrial smokestacks, vehicle tailpipes, marine and rail operations, and commercial and residential heating throughout the United States, and found that such air pollution causes about 200,000 early deaths each year. Emissions from road transportation are the most significant contributor, causing 53,000 premature deaths, followed closely by power generation, with 52,000.

1. Accidents & Crime

Transit leads to lower casualty rate and crime rate

Todd Litman 2014 (Founder and executive director of the Victoria Transport Policy Institute, an independent research organization dedicated to developing innovative solutions to transport problems. His research is used worldwide in transport planning and policy analysis; has worked as a research and planning consultant for a diverse range of clients, including government agencies, professional organizations, developers and non- government organizations.) 16 Dec 2014 “Public Transit Increases Safety, Reduces Crime” <https://www.planetizen.com/node/72862>

Transit travel has less than a tenth the crash casualty rate as automobile travel, and transit-oriented development residents experience less than a fifth of the traffic casualty rate, per capita, as automobile-oriented communities. In addition, per capita crime rates tend to be lower in more compact, mixed, transit-oriented neighborhoods, and all else being equal, tend to be lower in more transit-oriented cities than in automobile-dependent cities.

Transit is safer than automobile travel

Todd Litman 2016 (Founder and executive director of the Victoria Transport Policy Institute, an independent research organization dedicated to developing innovative solutions to transport problems. His research is used worldwide in transport planning and policy analysis; has worked as a research and planning consultant for a diverse range of clients, including government agencies, professional organizations, developers and non- government organizations.) 25 Nov 2016 “Safer Than You Think! Revising the Transit Safety Narrative” <http://www.vtpi.org/safer.pdf>

Public transit is, overall, a relatively safe (low crash rate) and secure (low crime rate) travel mode. Transit travel has about a tenth the crash casualty (death or injury) rate as automobile travel, and transit- oriented development residents have about a fifth the per capita traffic casualty rate as in automobile- oriented areas. Transit crimes tend to be less frequent and costly than motor vehicle crimes, and crime risk declines as more responsible (non-criminal) people use transit and live in transit-oriented communities.

1. Reduced Health Care Access

Transit access is key to better health and lower health care costs for the poor

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

Transit improves health care access and outcomes while reducing costs: Few of the published b-c studies surveyed for this white paper measured the health care cost benefits of transit. However, Godavarthy et al. (2014) found that giving people low-cost and reliable transit access to medical services decreases the tendency of low-income people living in rural and small urban areas to forgo treatments, thereby improving public health and reducing the costs of health care to society.

Quantification: 3.6 million/year miss health care from lack of transportation. Impacts: More disease, higher cost to society

Dr. Christopher E. Ferrell 2015 (PhD in City & Regional Planning; began his career in 1995 as a planner for the Metropolitan Transportation Commission; has been the principal investigator for five research projects for the Mineta Transportation Institute, where he has been a Research Associate since 2005.) Jul 2015 “The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies” <http://transweb.sjsu.edu/PDFs/research/1425-US-transit-benefit-cost-analysis-study.pdf>

While most studies did not explicitly measure the effects of transit service availability on the costs of health care, Godavarthy et al. (2014) reasoned that many low income people living in rural or small urban areas with poor access to transportation and relatively long trips from home to medical services will forgo their medical trips and treatments. Therefore, transit can play a critical role in reducing health care costs and improving outcomes. Wallace et al. (2005, 2006) estimated that 3.6 million Americans do not obtain medical care every year because they lack adequate transportation. Hughes-Cromwick et al. (2005) found that these people are disadvantaged in other ways than simply their access to transportation. They are disproportionately older, low income, female, minorities, and without college degrees. As a consequence, those lacking transportation have an inordinately high prevalence of disease. In turn, the costs to society from people who lack adequate transportation access to medical care are high because foregoing health care trips can lead to more expensive treatments later.

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