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The Streetcar Fantasy

by Randal O'Toole*

Executive Summary

Plans to build streetcar lines in San Antonio are based on several critical fallacies, including claims that streetcars are superior to buses in their ability to attract riders and that streetcars promote economic development. In fact, streetcars are slower, less flexible, less capable of moving large numbers of people, and far more expensive than buses.

City officials who think a streetcar alone will generate new development have been misled.

The biggest argument for streetcars is that they promote economic development. This is mainly based on the experience in Portland, where officials claim a streetcar generated billions of dollars of economic development. In fact, that development was attracted by roughly a billion dollars worth of tax breaks, tax-increment financing, and other local subsidies to developers.

In Northwest Portland, the streetcar serves two neighborhoods of roughly equal size, in one of which developers received hundreds of millions of dollars of subsidies while the other received none other than the streetcar. According to the city's own tally, the first neighborhood received more than 75 times as much investment as the second. Clearly, it was the subsidies, not the streetcar, that attracted the new development. City officials who think a streetcar alone will generate new development have been misled.

What streetcars do is impose huge costs on taxpayers. Cities with streetcar lines spend three to four times as much to operate a streetcar one mile as they spend on buses. Far from moving large numbers of people, most streetcars actually carry fewer people, on average, than the average buses in those cities, and the cost of moving one person one mile is two to seven times greater by streetcar than by bus.

Though streetcar advocates like to call streetcars "high-capacity transit," they are actually one of

* Randal O'Toole is a senior fellow of the Cato Institute. For a more complete bio, see page 25.

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the lowest-capacity forms of transit available. So-called modern streetcars can move only about 2,000 people per hour, most of them standing. By comparison, standard 40-foot buses can move well over 6,000 people per hour through city streets, all of them comfortably seated. Double-decker buses are now available that can double this throughput without occupying any more street space.

Claims that streetcars have some kind of a "rail advantage" that attracts travelers who won't ride a bus are purely hypothetical. If there are people so snobbish that they will ride public transit vehicles only if those vehicles are on rails, taxpayers shouldn't be asked to subsidize them.

As a practical matter, transit ridership is more sensitive to frequency, speed, and convenience than to whether tires are made of rubber or steel, and buses can operate faster, more frequently, and to more destinations than streetcars. So it is no wonder that, of seven cities with streetcars in the United States, the only two where streetcars attract more riders per vehicle mile than buses can do so only because they offer most or all streetcar rides for free to the riders.

Streetcars are an obsolete technology that does not belong in modern cities. They do not promote mobility; they do not promote economic development; they do not protect the environment.

Ridership projections for San Antonio streetcars assume the line would attract the average number of riders per mile carried by streetcars in the seven other American cities that have them. But the projections also assume streetcar fares would cover 15 percent of operating costs. The projections ignored the fact that most of the streetcar lines that attract large numbers of riders charge no fares, and that farebox revenues cover only 8 percent of the costs of operating the seven existing streetcar lines.

Streetcars don't even have the virtue of saving energy or reducing air pollution. The average streetcar line today uses twice as much energy to move someone one passenger mile as the average car. In places such as Texas, where a major portion of the electricity used to power streetcars comes from burning fossil fuels, the streetcars end up causing more pollution per passenger mile than cars.

Streetcars are an obsolete technology that does not belong in modern cities. They do not promote mobility; they do not promote economic development; they do not protect the environment. The only thing they do that buses can't do better is cost lots of money. San Antonio should reject the idea of building a streetcar line.

Introduction

Writing an objective report about streetcar proposals without sounding extreme is difficult, as the recent fad for so-called "modern streetcars" is patently ridiculous. The idea that an expensive nineteenth-century technology will help meet the transportation and economic development needs of twenty-first century urban areas makes sense only in a fantasy world where cost is no

object and transport consumers are so hypnotized by shiny steel wheels on steel rails that they ignore the huge inherent disadvantages of a fixed-guideway system that doesn't go where people want to go, takes a long time to get to where it does go, and can't get out of its own way in the event of any kind of a problem.

This report will reveal that the San Antonio streetcar feasibility study is riddled with fantasies.

A 2010 feasibility study for a San Antonio streetcar is firmly stuck in this fantasy world. For example, page 68 of the study describes three separate ways that Boise, Idaho financed the construction and operation of its streetcar line. Yet Boise has no streetcar line. Similarly, page 69 of the study describes the impact of Arlington, Virginia's streetcar line on economic development. Yet Arlington has no streetcar line and any economic development from it is completely imaginary.[1] As this report will reveal, the feasibility study is riddled with such fantasies.

Proponents of streetcars often object to the description of streetcars as a nineteenth-century technology by saying that automobiles, like streetcars, are also a nineteenth-century technology. Yet automotive technology has advanced considerably since 1900, while streetcar technology has not.

- In 1900, motorcars had a top speed of about 15 miles per hour; today, people routinely drive five times that fast. By comparison, in 1900 streetcars traveled at average speeds of about 8 miles per hour, about the same as streetcars today.

- In 1900, open-top autos left users exposed to the elements; today's cars are paragons of comfort with adjustable seats, climate control, and on-board entertainment systems. Streetcars of 1900 had uncomfortable seats, and many riders had to stand. So-called modern streetcars, though much longer (and therefore a greater obstacle to traffic) than a conventional bus, have fewer seats than such buses, and many riders still have to stand.

- In 1900, automobiles were dangerous machines, and an average of 36 people died for every hundred million vehicle miles of driving.[2] Today's autos and highways are far safer, with fatality rates falling to about one per hundred-million vehicle miles in 2011.[3] In 1900, streetcars were dangerous because they outweighed everything else on the road, could not easily stop, could not be safely run close together, and the gaps in the roads created by the rails created hazardous situations for narrow-tired vehicles. Today, the average streetcar weighs more than 60,000 pounds; streetcars must be kept at least three minutes apart; and the

[1] "Inner-City Rail Streetcar Feasibility Study," Jacobs, June 2010, pp. 68, 69.

[2] Highway Statistics Summary to 1995 (Washington: Federal Highway Administration, 1996), table FI-200.

[3] "Early Estimate of Motor Vehicle Traffic Fatalities in 2011," National Highway Traffic Safety Administration, May 2012, p. 1; "Traffic Volume Trends, December 2011," Federal Highway Administration, p. 1.

gaps in the streets create such dangerous conditions for bicycles that streetcar tracks are the cause of one-third of the bike accidents (including at least one recent fatality) in Toronto and cyclists are suing the city of Seattle for accidents resulting from Seattle's streetcar.[4]

- Whereas automobile owners in 1900 were frustrated by the limited length and poor condition of the national and local road system, today the United States has four million miles of highways and streets that go practically everywhere. By contrast, streetcars are limited to where rails go, which includes far fewer places today than in 1900.

- In 1900, pavement was expensive and road construction techniques were largely based on hand labor; today, new road construction is relatively inexpensive: Texas road authorities have recently built four-lane limited-access highways that carry tens of thousands of people an hour for just $2.5 million per lane-mile.[5] In 1900, laying rail in dirt streets was cheap; today, new rail construction costs around $30 million per mile for rail lines that carry no more than a few hundred people per hour.

Streetcars make no more sense in modern cities than delivering water through hollow logs, relying on telegraphs to deliver messages, or using whale oil to provide night-time reading lights.

For all these reasons, streetcars make no more sense in modern cities than delivering water through hollow logs, relying on telegraphs to deliver messages, or using whale oil to provide night-time reading lights. Yet the San Antonio streetcar feasibility study manages to overlook all of these problems by ignoring alternatives and selectively presenting and sometimes fabricating data.

The High-Capacity Transit Fantasy

In at least three different places, the San Antonio feasibility study claims or implies that streetcars are a form of "high-capacity transit."[6] In fact, streetcars have some of the lowest capacities of any form of transportation.

The typical modern streetcar used in Portland, Seattle, and other cities is about 66 feet long and has just 30 to 35 seats. This compares with a typical full-sized bus, which is 40 feet long and has about 40 seats. Streetcar advocates claim higher capacities because streetcars have standing

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[4] "Streetcar Tracks Blamed in One-Third of Toronto Bike Accidents," MedicalXpress, October 26, 2012, tinyurl.com/cswqech; Stephen Spencer Davis, "Toronto Cyclist Dies after Wheel Gets Trapped in Unused Streetcar Track," The Globe & Mail, August 7, 2012, tinyurl.com/bgcqhp2; Matthew Halverson, "Bike Crashes Along SLU Streetcar Pit Cyclists Against City," Seattle Met, May 18, 2012, tinyurl.com/bhp9ct6.

[5] ''Fort Bend Parkway Toll Road,'' Fort Bend County Toll Road Authority, 2008, tinyurl.com/5t9znq.

[6] Feasibility study, pp. 3, 11, 32.

room for many more people; however, that depends on the willingness of transit riders to cram close to one another.

Portland, for example, claims its streetcars have standing room for more than 130 people. This is called "crush capacity" and allows only 1.5 square feet per person. Americans will rarely tolerate such cramped conditions, which is why Tacoma says its streetcars, though nearly identical to Portland's, have standing room for just 55 people.

The real measure of transit capacity is not the per-vehicle capacity but the capacity to move people per hour. The San Antonio proposal calls for running streetcars every 12 minutes, or five per hour. Generously assuming seating and standing room capacities of 100 people per streetcar, that's a throughput of 500 people per hour. Streetcar frequencies could be increased, but for safety reasons streetcars cannot be run more frequently than about every three minutes, or 20 per hour, which represents a throughput of no more than 2,000 people per hour.

Buses can operate far more frequently. A single bus stop can serve more than 40 buses per hour, and Portland's downtown area features staggered bus stops that allow 160 buses per hour.[7] At 40 seats per bus, that allows a throughput of 6,400 people per hour, more than three times the streetcar line without requiring anyone to stand. When standees are counted, throughputs can approach 10,000 people per hour. If that isn't enough, bus makers are now manufacturing double-decker buses that have as many as 85 seats yet still are just 40 feet long. Such buses could move well over 13,000 people per hour, and well over 15,000 people per hour counting standing room.

Buses in Portland allow a throughput of 6,400 people per hour, more than three times the streetcar line without requiring anyone to stand.

Buses have the virtue of flexibility: They can go anywhere the street network goes, with little or no new infrastructure. This means buses can serve a dense inner-city area, then spin off to scores of remote destinations. Moreover, buses are far more reliable: Unlike streetcars, if one bus breaks down, the entire system doesn't come to a screeching halt.

The Operating Cost Fantasy

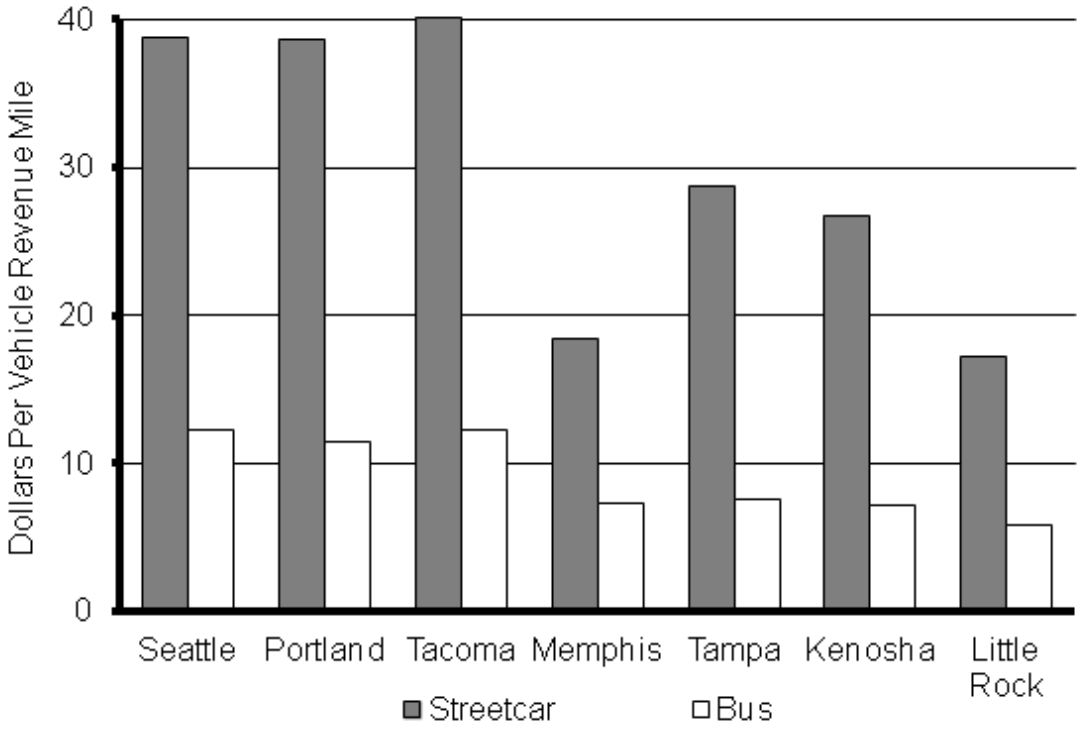
Streetcar advocates often claim streetcars cost less per rider to operate than buses because a single streetcar driver can move many more people than a single bus driver. This makes the erroneous assumption that the driver's wages are the main cost of running transit vehicles.

According to the 2011 National Transit Database, the cost of operating a streetcar one mile is typically three to four times as much as it costs to operate a bus one mile. (See Figure 1.) This would be fine if streetcars carried at least three to four times as many people as buses, but they don't: In all but two of the cities in Figure 1, buses averaged more passenger miles per vehicle

[7] Robert L. Bertini, "Bus Facility Capacity," Portland State University, May 2, 2006, p. 15.

revenue mile than streetcars. In the two exceptions, Portland and Tacoma, streetcars carried only about 30 to 60 percent more passenger miles per vehicle mile, not enough to make up for the tripling of operating costs. As a result, streetcars cost two to seven times as much as buses to move a passenger one mile. (See Figure 2.)

Figure One
Streetcar & Bus Operating Cost Per Vehicle Revenue Mile

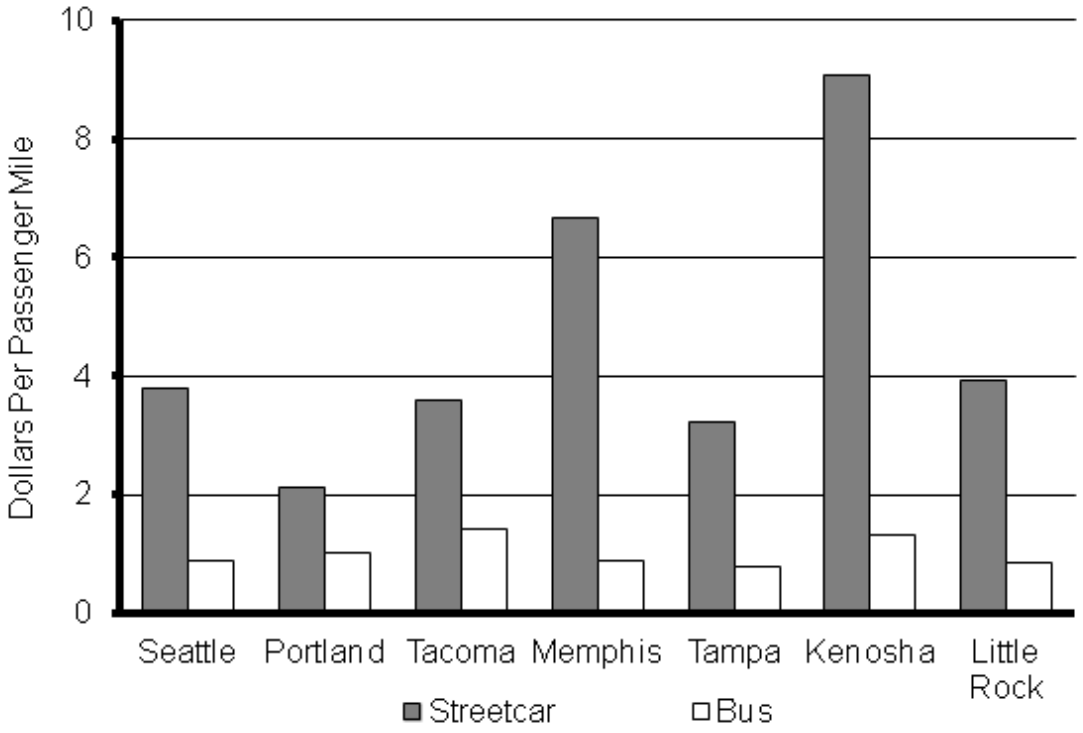


Transit agencies typically spend about three times as much per revenue mile on streetcars as on buses.

Source: Calculated from 2011 National Transit Database, Federal Transit Administration, 2012, "Operating Expense" and "Service" spreadsheets.

A related fantasy is that capital and operating costs are the only expenses in running streetcar systems. The feasibility study goes to great lengths to find sources of income to pay these two expenses. But there is a third expense that is almost always ignored by rail advocates: maintenance. Maintenance costs rise significantly when rail systems reach about 30 years of age and railcars and infrastructure need replacement. By comparison, buses are far less expensive than streetcars and require minimal infrastructure that needs long-term maintenance. The feasibility study never looks far ahead to see those maintenance costs and so provides no warning that such costs exist.

Figure Two
Streetcar & Bus Operating Cost Per Passenger Mile



Transit agencies spend anywhere from two to nearly eight times as much moving passengers one mile by streetcar as by bus.

Source: Calculated from 2011 National Transit Database, Federal Transit Administration, 2012, "Operating Expense" and "Service" spreadsheets.

These maintenance costs are disguised in published transit data by calling them "capital improvements."[8] Yet generally accepted accounting principles say maintenance should be considered part of operating costs, not capital improvements.[9]

American cities that have rail transit systems older than 30 years are spending huge amounts of money on maintenance. Boston, Chicago, New York, Philadelphia, San Francisco, Washington, and other cities typically spend about $1 on maintenance for every $2 they spend on

[8] The "Capital Use" spreadsheet of the National Transit Database breaks out "capital improvements" into improvements for "existing service"—meaning maintenance—and improvements for "expanded service"—meaning true capital improvements.

[9] "Amtrak: Overview and Options," Congressional Research Service, January 25, 2001, p. 25, tinyurl.com/92asmzc.

operations.[10] Moreover, these spending levels are far from adequate: The Federal Transit Administration estimates the nation's older rail transit systems suffer from a nearly $60 billion maintenance backlog and that systems are deteriorating faster than existing maintenance is keeping them up.[11]

Streetcar plans often call for cities to borrow money to be repaid over 30 years, with the expectation that once these are paid, cities will have to do no more than pay for operating costs. Yet by that time the annual maintenance costs will typically rise to be roughly equal to the cost of servicing the debt on the original construction loans. As a result, the long-run costs of streetcars are far higher than are usually claimed.

The Economic Development Fantasy

The biggest fantasy about streetcars is that they stimulate economic development.

The biggest fantasy about streetcars is that they stimulate economic development. "The proposed streetcar is considered to be a catalyst project that will ... enhance economic development in the center city," says the feasibility study.[12] In fact, the most a streetcar will do is catalyze demand for subsidies to economic development on top of the subsidies to the streetcar.

This can be seen by looking at some of the existing streetcar lines. The Memphis streetcar, for example, passes a long dreary series of vacant buildings with crumbling facades. Those buildings that are occupied have such distinguished tenants as dollar stores, bars, and a few souvenir shops for visitors to the Beale Street Entertainment District (which long preceded the streetcar).

One end of the line passes the Pyramid Arena, another failed project that was built in 1991 by the city and Shelby County for $65 million and lasted little more than a decade before being shut down as unsuitable for its intended design as a basketball arena and too expensive to maintain for other purposes. Despite the nearby streetcar, no private investors have stepped up to rehabilitate the arena.

Streetcar lines in Tacoma and Tampa are not much better. Claims that these and other lines have generated hundreds of millions of dollars of economic development are generally made by adding up all the construction that takes place near the lines – much of it in government or

[10] 2011 National Transit Database (Washington: Federal Transit Administration, 2012), "Capital Use" and "Operating Expense" spreadsheets.

[11] "National State of Good Repair Assessment," Federal Transit Administration, 2010, p. 3.

[12] Feasibility Study, p. 7.

government-funded buildings – and then claiming that the streetcar "catalyzed" this construction. In fact, virtually all of the construction would have happened anyway.

Close scrutiny reveals that many of the developments supposedly catalyzed by streetcar lines were themselves subsidized. The subsidies, not the streetcars, catalyzed the developments. This is clearly apparent in Portland, the city that originated the claim that streetcars would stimulate new development.

Close scrutiny reveals that many of the developments supposedly catalyzed by streetcar lines were themselves subsidized.

Portland opened its first light-rail line in 1986 and immediately rezoned all of the land around the line for high-density, mixed-use development – so-called "transit-oriented development." Ten years later, Portland city planner Mike Saba sadly reported to the city commission, "We have not seen any of the kind of development of a mid-rise, higher-density, mixed-use, mixed-income type that we would have liked to have seen" along the light-rail line. He advocated the use of property tax abatements and other subsidies to stimulate such developments.[13]

Developers also testified in support of the subsidies. Wayne Remboldt, who had built housing in the Portland area for several decades, testified that denser developments would not pay their way without subsidies.[14] Another developer, Dan Steffey, agreed, saying he could not finish a planned high-density project without a tax incentive.[15] Both owned land along the light-rail line that the city had zoned for higher densities, and they found the costs per unit were high and demand for high-density housing was already being met by existing developments.

At the hearing, Portland transportation commissioner Charlie Hales observed, "We are in the hottest real estate market in the country," yet city planning maps revealed that "most of those sites [near light-rail stations] are still vacant." He added, "It is a myth to think the market will take care of development along transit corridors," at least the kind of dense development the Portland planners were seeking.[16]

Portland eventually gave hundreds of millions of dollars in subsidies to developers along its light-rail lines, including tax abatements; land sales at below-market prices; waivers of permit

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[13] Mike Saba, testimony before Portland city council, October 23, 1996, video online at tinyurl.com/6mfxtl9.

[14] Wayne Remboldt, testimony before Portland city council, October 23, 1996, video online at tinyurl.com/86sbgu3.

[15] Dan Steffey, testimony before Portland city council, October 23, 1996, video online at tinyurl.com/7xx3wbh.

[16] Charlie Hales, comments at Portland city council hearing, October 23, 1996, video online at tinyurl.com/88qpspe.

fees and system development charges that would otherwise average more than $12,000 per dwelling unit; and taxpayer-funded infrastructure development. Even as city commissioner Hales promoted subsidies to developments along the light rail, he also was promoting construction of a downtown streetcar line, campaigning on a promise of building such a line in 1996.[17]

When the streetcar line opened in 2001, the city used tax-increment financing (TIF) to provide hundreds of millions of dollars of subsidies to developers along the route.

When the streetcar line opened in 2001, the city used tax-increment financing (TIF) to provide hundreds of millions of dollars of subsidies to developers along the route. The streetcar initially connected two TIF districts: the River District (more popularly known as the Pearl District) and the South Park Blocks. In 2006, the line was extended into a third district, North Macadam (sometimes confusingly known as the South Waterfront District). A major extension to the streetcar that opened in 2010 connects to three other TIF districts: Downtown Waterfront, Convention Center, and Central Eastside.

TIF essentially allows cities to use the taxes paid on new developments – taxes that otherwise would go for schools, fire response, libraries, and other urban services – to subsidize those developments. By 2010, Portland had sold $371 million worth of bonds that would be repaid out of property taxes on new developments in the River, South Park Blocks, and North Macadam districts, and used the revenues from those bonds to subsidize developments along the original streetcar line.

About $21 million of this money helped pay for streetcar construction, while the rest went for other infrastructure improvements such as the removal of obsolete structures, paving of streets, and installation of water, sewer, parks, and other infrastructure to handle the new development. The city also has sold $185 million worth of bonds to subsidize developments in the TIF districts that are crossed by the 2012 extension, and it has the authority to sell another $700 million worth of bonds in all six TIF districts served by the streetcar.[18]

The waiver of at least $12,000 in fees per dwelling unit for many of the 10,200 housing units that have been built near the existing streetcar line adds tens of millions more in subsidies to the area. According to tax assessors, hundreds of those housing units also have been exempted from property taxes for ten years, providing an effective subsidy of at least $25 million more.

These aren't the only subsidies to property developers along the streetcar line. The Portland Development Commission, which oversees Portland urban-renewal projects, gets only about half its budget from TIF. The rest comes from city general funds, federal grants, rentals and property

[17] Wade Nkrumah, "1996 Voters' Guide Portland City Council, Seat 4," The Oregonian, April 24, 1996, p. C2.

[18] "Portland Development Commission Adopted Budget FY 2011–12," Portland Development Commission, Portland, 2011, p. 37.

sales, and other sources.[19] In addition, developers in Portland's urban-renewal districts enjoy a streamlined project approval process. In total, the city provided somewhere between $600 million and $1 billion in subsidies to property developers along the streetcar lines on top of the $250 million cost of the streetcar lines.

Portland's Pearl District, for example, was previously a railroad yard and warehouse area. The city sold $173 million of TIF bonds and used the proceeds to remove obsolete structures, effectively turning the brown field into a green field. Then the city built new parks, parking garages, and other infrastructure that developers would normally pay for themselves.

Developers eagerly responded to these subsidies, transforming the area into mid-rise condos, apartments, offices, shops, and restaurants. Similarly, the South Waterfront District was an industrial area that – with the help of $86 million worth of TIF bonds – developers transformed into high-rise offices and apartments.

The South Park Blocks district received only about $112 million of TIF subsidies. But it is the home of Portland State University, which happened to spend $357 million on new classroom and office buildings. It would have built these with or without the streetcar, but streetcar advocates still count them among the developments stimulated by the streetcar.

The subsidies inside the Pearl District contributed to 75 times as much private investment as the streetcar alone did outside the Pearl District.

The comparative influence on developers of subsidies vs. streetcars can be seen by comparing development in Portland's Pearl District with development in Northwest Portland outside the Pearl District. (The rest of the original streetcar route, including the South Park Blocks and North Macadam areas, is in Southwest Portland.) About the same area of land is located within two blocks of the Northwest Portland streetcar inside and outside of the Pearl District. A 2008 report by the city of Portland on development supposedly stimulated by the streetcar reveals a huge difference between these two areas.

Inside Portland's Pearl District, the report found some 50 projects collectively worth more than $1.3 billion, an average of more than $26 million per project. But in Northwest Portland outside the Pearl District, the report identified just seven projects collectively worth about $17.6 million, about $2.5 million each.[20] In other words, the subsidies inside the Pearl District contributed to 75 times as much private investment as the streetcar alone did outside the Pearl District. (See Table 1.)

[19] "Adopted Budget: FY2011-12," Portland Development Commission, 2012, p. 29.

[20] "Portland Streetcar Development Summary," City of Portland Office of Transportation, April 2008, pp. 1–6.

Table One Streetcar Development With and Without TIF		
	Pearl TIF District	**NW Portland (No TIF)**
Number of Projects	50	7
Value (millions of dollars)	$1,330	$17.6
Value/Project (millions of dollars)	$26	$2.5
Source: "Portland Streetcar Development Summary," City of Portland Office of Transportation, April 2008, pp. 1–6.		

Of the seven projects outside the Pearl District, one was a fitness center that closed after just five years. Another was a condominium completed two years before the streetcar opened, raising the question of whether the streetcar had anything to do with the decision to build that project.[21] Developers of Portland's Pearl District were clearly following the subsidies, not the streetcar, otherwise more development would have taken place near the streetcar line in Northwest Portland outside the Pearl District.

> Portland has made a conscious decision to put streetcars and bike paths ahead of street maintenance.

In order to subsidize streetcars and transit-oriented developments, Portland is letting its most valuable asset – its 5,000-mile street network – crumble. A recent inventory found more than a quarter of the city's major roads and nearly half of its neighborhood streets are in "poor" or "very poor" shape, and at least 60 miles of streets have never been paved at all. Yet the city has deferred plans to repave any rutted streets until at least 2017. While Portland's light-rail lines are built by the region's transit agency, the city builds the streetcar lines, and it has made a conscious decision to put streetcars and bike paths ahead of street maintenance.[22]

These rail lines have made little progress in adding jobs downtown. Between 2001, when the streetcar opened, and 2010, the Portland area's population grew by 14 percent, yet downtown jobs grew by a mere 0.3 percent. The influx of new, subsidized housing in Portland's Pearl District led to more people walking and cycling to downtown jobs, but – as previously noted – the number of people taking transit to downtown jobs declined by 15 percent.[23]

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[21] Ibid.

[22] Beth Slovic, "Why Can't Portland Repave Its Rutted Roads?" The Oregonian, February 26, 2012, tinyurl.com/848ff3d.

[23] "2006 Downtown Portland Business Census & Survey," Portland Business Alliance, 2007, pp. 3, 11.

Despite the stagnation of job creation, downtown Portland has become a lively entertainment district, which is probably due more to the microbrewery revolution, which started in Portland in 1980, than to mass transit. By 1990, Portland had at least a dozen microbrew pubs, more per capita than any other city in the United States, and most were located in or on the periphery of downtown.[24] Today, Portland has nearly 50 such brewpubs. These, combined with other unique stores such as Powell's Books, which claims to be the largest bookstore in the world, turned downtown Portland from a place where "they rolled up the streets at 5 p.m." in the 1970s to one that was, by the late 1990s – well before the city opened its first streetcar line – as lively at 10 p.m. as at 10 a.m. and as busy on weekends as during weekdays.

Downtown Portland has become a lively entertainment district, which is probably due more to the microbrewery revolution than to mass transit.

Commissioner Hales was liberally rewarded for providing subsidies to developers. In 2000, a well-funded critic of Portland's light rail and streetcars challenged Hales' reelection for city commissioner. Hales simply called developers and rail contractors and quickly raised far more money than his opponent, helping him win reelection.[25] Yet, in 2002, Hales quit his seat on the city council in the middle of his term to take a job with HDR, an engineering firm that, among other things, designs streetcar lines.[26] More recently, Hales won Portland's 2012 mayoral election. Subsidized developers were among the largest contributors to his campaign.

Working for HDR, Hales persuaded Atlanta, Cincinnati, Salt Lake City, Tucson, and several other cities to apply for federal grants to build streetcars as an economic development tool, using Portland as an example. "The $55 million streetcar line has sparked more than $1.5 billion (and growing) in new development," claimed Hales in 2006, without mentioning the hundreds of millions of dollars worth of other subsidies, all of which he voted for and some of which he himself proposed to supplement the streetcar line.[27]

Prepared with the help of HDR, the applications for federal grants relied almost exclusively on economic development benefits to justify the projects. Economic development (measured by a projected increase in land values near the streetcar line) accounts for 71 to 95 percent of the projected benefits for five streetcar lines, four of which received TIGER grants and are currently under construction. (See Table 2.) In every case, the economic development benefits alone are

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[24] "The History of Craft Beer in Oregon," Oregon Brewers Guild, p. 2, accessed at tinyurl.com/84gdq3x in 2012.

[25] Scott Learn, "Last-Minute Donations Come into Campaigns; Council Hopefuls Charlie Hales and Ted Piccolo and Mayor Vera Katz Collect from Familiar Sources," The Oregonian, May 16, 2000, p. B2.

[26] Janet Christ, "Hugs and Flowers as Hales Hits the Road," The Oregonian, May 30, 2002, p. D2.

[27] Charles Hales and Robert Cone, "Streetcars Bringing People, Businesses Back to the City," HDR Transit Line, 2006, p. 2, tinyurl.com/2nx6x5.

greater than the costs. Without the economic development benefits, the costs of all of the lines exceed the remaining benefits.

Table Two
Projected Benefits and Costs of New Streetcar Lines

	Total Benefits	Total Costs	Economic Development Share of Benefits	B:C Ratio without Economic Development
Atlanta	167.8	65.5	159.3	0.13
Cincinnati	240.0	169.0	211.3	0.17
Kansas City	316.7	157.0	251.4	0.42
Salt Lake City	89.1	62.2	63.6	0.41
Tucson	414.3	166.3	293.2	0.73

All of these projections were made by HDR on behalf of the cities applying for federal stimulus funds. Tucson's benefit-cost ratio comes closest to 1 only because HDR made another mistake in the Tucson analysis: counting jobs as benefits, which is inappropriate in a benefit-cost analysis.

Sources: "Atlanta Streetcar TIGER II Funding Application Project Narrative," City of Atlanta, 2010, p. 12; "Cincinnati Streetcar TIGER II Application," State of Ohio, 2010, pp. 14–15; "Kansas City Downtown Streetcar TIGER IV Grant Application," City of Kansas City, 2012, p. 21; "Sugar House Streetcar TIGER II Discretionary Grant Program: Economic Analysis Supplementary Documentation," HDR, 2010, pp. 20–21; "Tucson Modern Streetcar Project TIGER Application," City of Tucson, 2009, p. 17.

Even to the extent that a streetcar, by itself, can enhance the value of nearby properties, it is likely such an enhancement is at the expense of other property owners in the region. Researchers have repeatedly shown that the use of government subsidies to improve one district or neighborhood has zero net benefits for an urban area as a whole.[28] Some research even shows cities that subsidize economic development actually grow slower than those that don't.[29] Thus, rather than being a genuine social benefit, any increase in property values due to a streetcar is merely a transfer of wealth from property owners farther from the streetcar to those nearby.

City officials often claim TIF is "free money" since they get the money without apparently raising taxes, and no other tax district appears to be losing money. In fact, since nearly all development subsidized by TIF would have taken place without TIF (though not necessarily in the exact same location), the taxes on that new development would otherwise have gone to schools and other tax-dependent agencies.

[28] See, for example, David Swenson and Liesl Eathington, "Do Tax Increment Finance Districts in Iowa Spur Regional Economic and Demographic Growth?" Department of Economics, Iowa State University, 2002, p. 1, tinyurl.com/6unvc2u.

[29] Richard Dye and David Merriman, "The Effects of Tax Increment Financing on Economic Development," Institute of Government and Public Affairs, University of Illinois, Chicago, 1999, p. 1, tinyurl.com/clpltus.

For example, even if no new development took place, TIF districts would collect revenues based on the inflation in the value of property in the district. But costs inflate as well, and other taxing entities count in inflation in property values to cover those inflated costs. By diverting that revenue to developer subsidies, TIF districts force other entities to raise taxes or reduce public services.

California invented tax-increment financing in 1952. By 2011, TIF was consuming such a large share of that state's property taxes that it was significantly affecting both schools and the state's overall budget. The first thing Gov. Jerry Brown did when taking office in January 2011 was propose to abolish TIF, which the legislature did later in the year.[30] As governor, Brown realized something he had conveniently overlooked when he was mayor of Oakland: TIF is not free money after all.

The first thing California Gov. Jerry Brown did when taking office in January 2011 was propose to abolish TIF, which the legislature did later in the year.

Portland specifically designed its urban renewal districts (equivalent to what Texas calls tax-increment reinvestment districts) to "support" rail transit by subsidizing increased residential densities along rail lines. Thus, riders are subsidized for two purposes: first to live near the rail lines, and second to ride the railcars. Despite these double subsidies, transit's share of commuting in the Portland area declined from 9.8 percent in 1980, before Portland started building rail transit, to 7.1 percent in 2010.

Like Portland, San Antonio has several tax-increment reinvestment districts along proposed streetcar routes.[31] The feasibility study calls for using TIF dollars to help build the streetcar, but no doubt even more TIF dollars will be used to subsidize development along the streetcar lines.[32] Thus, like Portland taxpayers, San Antonio taxpayers will pay for the streetcar twice: once for the streetcar line itself and once for the development along the line that the line itself is supposedly going to catalyze.

Like tax-increment financing, the effect of rail transit in particular on economic development is a zero-sum game. According to a literature review funded by the Federal Transit Administration, "Urban rail transit investments rarely 'create' new growth, but more typically redistribute growth that would have taken place without the investment."[33] The rail transit lines that have had the greatest such shuffling effects, including the Washington MetroRail and San Francisco BART

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[30] Tim Cavenaugh, "California Kills Redevelopment: Gov. Jerry Brown's Winning Campaign Against Blight Hustlers," Reason magazine, April, 2012, tinyurl.com/7ed84vt.

[31] Feasibility Study, p. 97.

[32] Ibid., p. 68.

[33] Robert Cervero and Samuel Seskin, "An Evaluation of the Relationship between Transit and Urban Form," Transportation Research Board, 1995, p. 3.

systems, carry hundreds of thousands of people a day.

Transportation improvements influence economic development when they allow faster, less costly, or more convenient movement of goods and people. These improvements lead to genuine increases in mobility, giving people access to more jobs, expanded markets, increased consumer goods, and other economic opportunities.

Residents of the San Antonio area travel more than 50 million miles per day, less than 1 percent of which is by public transit.[34] A streetcar line that moves only a few thousand passenger miles a day – about 1 percent of all transit, meaning about 0.01 percent of all travel – is not going to have a measurable effect on economic development. Streetcar advocates typically don't even claim streetcar projects will increase mobility. Instead, their goal is to change people's travel habits by reducing auto driving and urban sprawl.

No new mobility, however, means no new economic development. By substituting slow, expensive travel for faster, inexpensive travel, streetcars are actually a drag on any urban area that has them. Even if streetcars could influence economic development, there is no reason why property owners throughout a region should pay higher taxes to support a project that will reduce (or slow the growth of) their own property values while it exclusively benefits a few property owners in one neighborhood or business district.

The Rail Advantage Fantasy

The consultants who wrote the feasibility study believe a substantial number of San Antonians are so snobbish that they'll ride an expensive railcar when they won't ride a bus.

The feasibility study claims the simple fact that streetcars use steel wheels on steel rails gives them a "rail advantage" over buses. The study estimates the number of people expected to ride the streetcar, and then arbitrarily adds 30 percent based on this supposed advantage. "These calculations demonstrate the ability for rail service to attract choice riders, or others who may discriminate between bus and rail transit," concludes the study.[35]

In fact, the study makes no calculations other than to add 30 percent to a ridership projection that is somewhat crudely calculated in the first place. All the 30 percent figure demonstrates is that the consultants who wrote the study believe a substantial number of San Antonians are so snobbish that they'll ride an expensive railcar when they won't ride a bus, even if the bus is as comfortable and fast as the railcar and can reach far more destinations.

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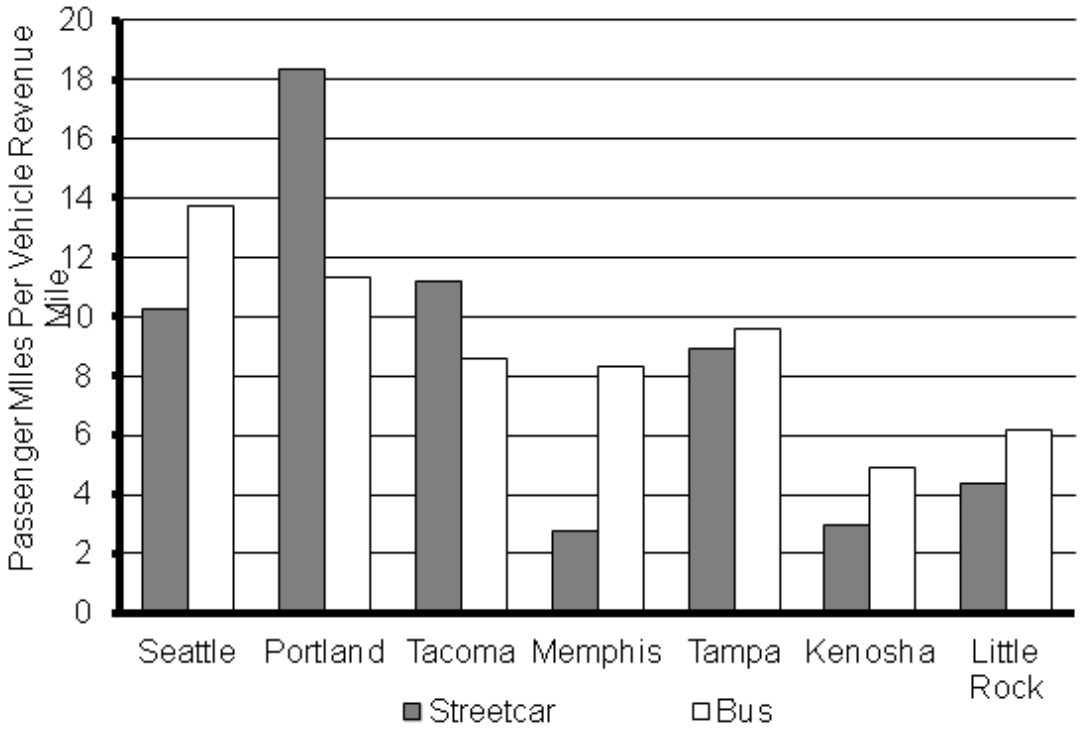
[34] Highway Statistics 2008 (Washington: Federal Highway Administration, 2009), table HM-72; 2011 National Transit Database, "service" spreadsheet.

[35] Feasibility Study, p. 53.

Although there may be snobs "who may discriminate between bus and rail transit," studies show overall transit ridership is most sensitive to frequencies and speeds. Transit agencies generally operate their rail lines at higher frequencies and with fewer stops per mile (thus higher average speeds) than bus lines, which largely accounts for the supposed rail advantage. But there is nothing to prevent agencies from running buses at higher frequencies with fewer stops, a service known as "bus-rapid transit."

If streetcars really did have a rail advantage over buses, then the streetcars operating in various cities around the country should be jammed with riders. In fact, the average streetcar carries fewer riders than the average bus in five of the seven cities with streetcar lines. (See Figure 3.) The two exceptions, Portland and Tacoma, attract people to the streetcars by offering most or all of the rides for free while charging for buses.

Figure Three
Average Number of Streetcar and Bus Riders



The only cities where average streetcar ridership exceeds average bus ridership are Portland and Tacoma, where most or all streetcar rides have been free to the riders.

Source: 2011 National Transit Database, "Service" spreadsheet.

This contrast is even starker when we consider that streetcars tend to be in downtown areas where there are high numbers of potential transit riders, whereas buses tend to operate throughout urban areas, including suburbs where potential transit riders are scarce. If the only way to fill as many seats on streetcars as on buses is to give the rides away, it is apparent that streetcars really have no advantage over buses.

The real problem with rail lines is they are far more expensive than bus lines, and so building rail means operating fewer buses somewhere else. As a result of this cannibalizing of their bus systems, several American cities that have built new rail systems since 1970 have experienced an overall decline in transit ridership, while Atlanta, Baltimore, Buffalo, Dallas, Houston, Los Angeles, Nashville, San Francisco, Seattle, and St. Louis have all seen significant declines in per-capita transit ridership since building rail partly because rail construction and operation was accompanied by cuts in bus service.[36]

The streetcar lines with the highest ridership have either low or no fares, whereas streetcars that charge fares of more than about 50 cents a ride tend to have much lower ridership.

Not even Peter Rogoff, the Obama administration's person in charge of the Federal Transit Administration, claims to believe railcars are better at attracting riders than buses. "Paint is cheap; rails systems are extremely expensive," Rogoff said in a speech in 2010. Although many people like trains, he continued, "it turns out you can entice even diehard rail riders onto a bus, if you call it a 'special' bus and just paint it a different color than the rest of the fleet." One way of improving bus service, bus-rapid transit, "is a fine fit for a lot more communities than are seriously considering it," Rogoff added.[37] The same can be said for downtown circulators, the bus-equivalent of streetcars.

The study projects that a San Antonio streetcar line will attract about 450 to 600 daily riders per mile of track. To check its "calculations," the feasibility study examines ridership data for seven different streetcar lines to estimate the daily ridership on various lengths of a San Antonio streetcar. "The average ridership/mile was then applied to the lengths of the three proposed streetcar systems to get an estimate of ridership," says the study.[38]

The problem with applying the ridership average of seven other systems to project ridership on a San Antonio streetcar is that the ridership on those systems varies widely from less than 90 to 2,950 daily trips per mile. The main reason for this variation is fares: The streetcar lines with the highest ridership have either low or no fares, whereas streetcars that charge fares of more than

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[36] Randal O'Toole, "Defining Success: The Case Against Rail Transit," Cato Institute Policy Analysis 663, March 24, 2010, p. 6.

[37] Peter Rogoff, "Next Stop: A National Summit on the Future of Transit," presentation at the Federal Reserve Bank of Boston, May 18, 2010, tinyurl.com/7v6e8aq.

[38] Feasibility Study, p. 53.

about 50 cents a ride tend to have much lower ridership. (See Table 3.)

The Tacoma streetcar line, for example, is free. Until late in 2012, the Portland line was free over most of its length; only at the extremes were riders charged, and average fares were around 3 cents per trip. This explains the high ridership of these lines.

Table Three
Streetcar Ridership and Fares

City	Trips/Mile	Average Fare
Seattle	1,369	$0.56
Portland	2,950	0.00
Tacoma	1,219	0.00
Memphis	375	0.57
Tampa	361	1.42
Kenosha	89	1.00
Little Rock	167	0.53

Source: Trips/mile from Feasibility Study, p. 53; average fares from 2011 National Transit Database, Fare and Service spreadsheets. In reporting zero fares for Portland, the National Transit Database is in error; actual average fares are around 3 cents per trip.

The feasibility study, however, assumes San Antonio fares will cover 15 percent of operating costs, which are projected to be $2.1 million to $2.8 million per year for a 2.2-mile streetcar line.[39] To cover 15 percent of this amount, fares from the projected 1,351 daily riders will have to average $0.74 to $0.99.[40] But the numbers in Table 3 indicate that, at such high fares, ridership is likely to be fewer than 500 per day. Whether the city chooses to accept lower fares or lower ridership, fares won't cover 15 percent of operating costs. On average, fares from the seven streetcar lines reviewed in the feasibility study cover only 8 percent of their operating costs.

The idea that covering 15 percent of operating costs out of fares is in any way respectable is insulting to taxpayers who will have to pay the remaining 85 percent (plus 100 percent of capital and maintenance costs). Fares from major rail systems in Boston, New York, Philadelphia, and

[39] Ibid., p. 68.

[40] As a comparison of annual and daily ridership in the table on page 15 of the feasibility study shows, when the study uses the term "daily riders," it means "weekday riders." Since most of the streetcar lines carry more riders on weekdays than weekends, annual ridership averages about 313 times daily ridership, or about 422,600 trips per year at 1,351 trips per day.

Washington cover about half their operating costs. Although even this means an undue burden on taxpayers who receive little or no benefit from transit, the fact that a San Antonio streetcar probably won't be able to cover even 15 percent of its operating costs should immediately signal that it is a bad investment.

If anything, buses have the advantage over rail because of their flexibility. Buses passing through the inner city can diverge and reach destinations throughout the city and urban area. Even the New York urban area, which has the nation's best-developed rail system, has more than 25 miles of roads for every route-mile of rail, which mean buses can to go tens if not hundreds of thousands of locations that can't be reached by rail.

The Auto-Dependency Fantasy

> There is no evidence that streetcars reduce dependency on the automobile and improve air quality.

One of the advantages of a streetcar, the feasibility study states, is that a "streetcar system can provide transportation options that will reduce dependency on the automobile and thus support air quality goals by helping to control urban sprawl and reduce greenhouse gas emissions." There is, in fact, no evidence that any part of this statement is true and plenty of evidence that it is not.

Table 2 above shows that, in terms of ridership, Portland's streetcar is the most successful streetcar line in the nation. Yet far from reducing auto dependency, it has been associated with a significant decline in Portland-area transit commuting, partly because the high costs of the streetcar and Portland's other rail lines have forced cutbacks in bus service.

In 2001, when Portland first opened its downtown streetcar, more than 39,000 downtown employees regularly took transit to work. By 2010, after Portland's streetcar line had been extended to nearly double its original length, the number of downtown employees taking transit to work had declined to fewer than 34,000.[41]

Across the region, the number of Portland-area residents driving to work grew by 8,400 between 2000 and 2010, while the number taking transit to work grew by only 1,000. The big changes between these two years were the growth of bicycle commuting and people working at home, neither of which had anything to do with the Portland streetcar.

A fundamental assumption behind the drive to reduce "auto dependency" is that autos are energy guzzlers and heavy polluters. That might have been true in 1970, but cars today are far more energy efficient than they were a few decades ago. Moreover, under federal energy efficiency requirements, cars will continue to become more energy efficient for the next several decades.

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[41] "2010 Downtown Portland Business Census & Survey," Portland Business Alliance, 2011, p. 10; "2006 Downtown Portland Business Census & Survey," Portland Business Alliance, 2007, p. 11.

In 2010, the average car consumed about 3,450 British Thermal Units (BTUs) per passenger mile.[42] Federal fuel economy standards require that the average new car sold in 2025 be able to travel 54.5 miles on a gallon of gasoline.[43] As the American auto fleet turns over slightly faster than 5 percent per year, if auto manufacturers approach this standard on a straight line, the average car on the road in 2025 will get about 32.3 miles per gallon. At average occupancy rates of 1.6 people per car, this represents about 2,400 BTUs per passenger mile.

By comparison, streetcars are the real energy guzzlers. The seven streetcar lines reviewed in the feasibility study consumed an average of almost 7,000 BTUs per passenger mile. None consumed less than 3,500 BTUs per passenger mile, and three consumed more than 18,000 BTUs per passenger mile. (See Table 4.)

In 2010, the average car consumed about 3,450 BTUs per passenger mile. The seven streetcar lines reviewed in the feasibility study consumed an average of almost 7,000 BTUs per passenger mile.

Table Four
Energy Consumption and Emissions Per Passenger Mile

City	BTU/PM	CO2 Grams/PM
Seattle	8,469	106
Portland	3,528	58
Tacoma	4,609	58
Memphis	18,607	1,093
Tampa	8,546	508
Kenosha	37,549	2,546
Little Rock	18,545	1,105
Average	6,957	269

The average passenger car uses about 3,450 BTUs and emits 245 grams of carbon dioxide per passenger mile. Most streetcars do far worse, especially if the electricity they use is generated by burning fossil fuels. Source: Calculated from 2011 National Transit Database, "Energy Consumption" and "Service" spreadsheets.

[42] Stacy C. Davis, Susan W. Diegel, and Robert G. Boundy, "Transportation Energy Data Book, 31st Edition," Oak Ridge National Laboratory, 2012, table 2-13.

[43] The White House, "Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards," news release, August 28, 2012.

The amount of pollution emitted depends on the source of fuel. In terms of toxic pollutants such as carbon monoxide, nitrogen oxides, and volatile organic compounds, cars have become very clean: The typical new car sold today produces less than 10 percent as much pollution as new cars sold 40 years ago, and many produce less than 1 percent as much. As a result, even though Americans drive nearly three times as many miles as they did in 1970, total pollution has declined by nearly 80 percent. Greenhouse gas emissions, however, are strictly a function of the amount and type of fuel consumed. The average car emits about 250 grams of carbon dioxide per passenger mile.

Pollution from electric-powered streetcars depends on how the electricity is generated. Portland, Seattle, and Tacoma get most of their electricity from hydroelectric dams, so the emissions of greenhouse gases and other pollutants are very low. Like Arkansas, Florida, and Tennessee, however, Texas (including San Antonio's CPS) gets most of its electricity from burning fossil fuels.[44] San Antonio's CPS, for example, gets 47 percent of its electricity from burning coal and as much as 12 percent more from burning natural gas and other fossil fuels.[45]

Greenhouse gas and other emissions from electrically powered transit tend to be high.

As a result, greenhouse gas and other emissions from electrically powered transit tend to be high. The Dallas light-rail system, for example, produces 53 percent more greenhouse gas emissions per passenger mile than the average car.[46] Emissions of nitrogen oxides and other pollutants from burning fossil fuels to generate this electricity also tend to be much higher than those from autos.

This discussion of energy and pollution is all based on the energy costs of operating cars and streetcars. But construction also requires large amounts of energy. Because highways are more heavily used than rail lines, the energy and pollution cost of constructing roads tends to be a lot lower than for rail. Researchers at the University of California estimate the energy costs of construction and disposal for rail transit are about 150 percent of operating costs, whereas for highway transit they are only about 60 percent of operating costs.[47] This puts streetcars at an even greater disadvantage.

[44] "State Electricity Profiles 2010," Department of Energy, 2012, table 5 (for each state).

[45] "Who We Are," CPS Energy, 2012, tinyurl.com/295rey7.

[46] Calculations based on 2011 National Transit Database, "Energy" and "Service" spreadsheets, and "State Electricity Profiles 2010" for Texas, p. 261.

[47] Mikhail V. Chester and Arpad Horvath, "Environmental Assessment of Passenger Transportation Should Include Infrastructure and Supply Chains," Environmental Research Letters 4 (2009), p. 1, tinyurl.com/njz4vt.

The Streetcar Conspiracy Fantasy

Although the feasibility study doesn't mention it, almost any debate over streetcars invariably leads someone to bring up the General Motors streetcar conspiracy myth. According to this legend, American cities would have plenty of streetcars today, but General Motors bought up all the streetcar systems so it could dismantle the streetcars and force people to buy GM cars.

Although the feasibility study doesn't mention it, almost any debate over streetcars invariably leads someone to bring up the General Motors streetcar conspiracy myth.

This fantasy is a gross misreading of history and has been debunked numerous times.[48] In brief, in 1936 General Motors, Firestone Tire, Chevron Oil, and Phillips Petroleum invested in a company called National City Lines, which owned transit systems in about 60 cities. The goal was to ensure that when these transit systems bought buses, they would buy them from General Motors, with tires from Firestone and fuel from Chevron (in the West) and Phillips (in the East). In 1949, the federal government convicted General Motors of attempting to monopolize the bus market and forced it to sell its interest in National City Lines; the other companies did as well.

At one time, more than 750 American cities had streetcar lines. By the time General Motors invested in National City Lines, more than half were gone; in 1933 – three years before the "conspiracy" began – San Antonio became the nation's largest city to completely convert to buses. During the 13 years the companies owned National City, transit companies in about 300 cities replaced streetcars with buses, fewer than 30 of which were owned by National City.[49]

Many of the other National City streetcar systems still had streetcar lines in 1949, when the "conspirators" sold their interest in the company. When National City bought the St. Louis transit system in 1939, for example, it purchased more modern streetcars for the system and continued to operate streetcars until 1963, when it sold the system to a public agency – which soon converted all streetcars to buses, leaving just six other cities with streetcars.[50]

When General Motors owned a share of National City, transportation experts agreed that buses

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[48] See, for example, Scott Bottles, Los Angeles and the Automobile: The Making of the Modern City (Berkeley, CA: UC Press, 1987), pp. 3–4; Christine Cosgrove, "Roger Rabbit Unframed: Revising the GM Conspiracy Theory," ITS Review Online, 3(1), tinyurl.com/2bcg2t; Martha J. Bianco, Kennedy, 60 Minutes, and Roger Rabbit: Understanding Conspiracy-Theory Explanations of the Decline of Urban Mass Transit, Portland State University Center for Urban Studies Discussion Paper 98-11, November, 1998; and Cliff Slater, "General Motors and the Demise of Streetcars," Transportation Quarterly 51(3, Summer 1997): 45–66, tinyurl.com/yuth5m.

[49] Bill Vandervoort, "Cities Served by National City Lines," 2005, tinyurl.com/aycvpbj.

[50] "Physical Growth of the City of St. Louis," St. Louis City Planning Commission, 1969, tinyurl.com/ckwand.

were far superior to streetcars. In 1947, a New York City transit expert named John Bauer testified before the Portland city council that he was "absolutely opposed" to cities maintaining their streetcar lines. Streetcars, he told the council, are slow and noisy and tie up traffic. The limitations of tracks also prevent express services that are possible with buses. "Streetcars maintain an average speed of only eight miles per hour," he testified, "whereas [trackless] trolleys and gasoline buses average 12 miles per hour. The most modern streetcar equipment could make only about 10 miles per hour."[51]

City transit agencies and companies replaced streetcars with buses for the same rational reasons that building streetcar lines is irrational today. Whereas buses share the cost of roads with autos and trucks, streetcars require their own dedicated infrastructure. This makes the cost of operating and maintaining streetcars far greater than buses. Buses can safely operate more frequently than streetcars, and if one bus breaks down or is in an accident, the entire line does not become disabled, as is the case for streetcars.

Conclusion

Streetcar advocates who think new streetcar lines will be anything other than a subsidy to contractors and a few property owners (who will also benefit from other TIF subsidies) are fooling themselves. Slow speeds, limited numbers of seats, and inflexibility make streetcars inferior to buses in every respect except in their ability to consume large amounts of taxpayer money.

Slow speeds, limited numbers of seats, and inflexibility make streetcars inferior to buses in every respect except in their ability to consume large amounts of taxpayer money.

Local government officials who believe that streetcars alone will revitalize blighted parts of their urban areas have been deceived. Cities with a billion dollars or so to burn could spend $100 million on a streetcar line, support it with $900 million in other subsidies to developers, and still fail to get the success of Portland's Pearl District if the area is not already supported by a variety of attractive restaurants and shops.

Streetcars are a long-obsolete technology. Cities that wish to revitalize neighborhoods would do better to invest in modern transportation, including repairing their streets, installing the latest traffic signal coordination systems, and improving safety for all travelers, than to build eight-mile-per-hour rail lines in the hope of attracting a few professionals to move into downtown residences.

[51] "Streetcars' Use Rapped: New Yorker Cites Expense, Slowness," The Oregonian, August 24, 1947, p. 14.

About the Author

Randal O'Toole is a senior fellow of the Cato Institute studying urban growth, public land, and transportation issues.

O'Toole's research on national forest management, culminating in his 1988 book, *Reforming the Forest Service*, has had a major influence on Forest Service policy and on-the-ground management. His analysis of urban land-use and transportation issues, brought together in his 2001 book, *The Vanishing Automobile and Other Urban Myths*, has influenced decisions in cities across the country. In his book *The Best-Laid Plans*, O'Toole calls for repealing federal, state, and local planning laws and proposes reforms that can help solve social and environmental problems without heavy-handed government regulation. His latest book is *American Nightmare: How Government Undermines the Dream of Homeownership*.

O'Toole is the author of numerous Cato Institute papers. He has written for *Regulation* magazine as well as op-eds and articles for numerous other national journals and newspapers. O'Toole travels extensively and has spoken about free-market environmental issues in dozens of cities.

An Oregon native, O'Toole was educated in forestry at Oregon State University and in economics at the University of Oregon.

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