

# Myths & Facts about Rail Transit

With rare exceptions, rail transit is a costly and foolish investment that is more about pork barrel than it is about moving people.

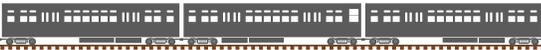
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In the last few decades, some two-dozen cities have spent around a hundred billion dollars building rail transit lines, and many other cities want to follow suit. Proponents say rail transit reduces congestion, cleans the air, and promotes economic redevelopment. Yet a look at existing rail lines shows that rail transit does none of these things.

This fact sheet will review some of the myths and facts surrounding the three most common types of rail transit:



- *Light rail*—One- to four-car trains, usually powered from overhead electric wires, that sometimes run in the streets with cars;



- *Heavy rail*—Four- to ten-car trains, usually powered by a third rail, that run in subways, elevateds, or other separated lines;



- *Commuter rail*—Diesel locomotives pulling several passenger cars on existing tracks that may also be used for freight service.

Monorail, personal rapid transit, and other systems have not been widely tested, but most statements about light- or heavy-rail will also apply to those systems.

**The Capacity Myth:** A single rail line can carry as many people as an eight-lane freeway.

**The Reality:** No rail system outside of New York City carries as many people as one freeway lane.

While few rail lines actually have a capacity anywhere close to an eight-lane freeway, capacity isn't as important as actual use. New York City subways are the only rail lines in the country that carry more than one freeway lane's volume of passenger traffic.

Outside of New York, the most heavily used heavy-rail lines carry less than two-thirds of a freeway lane. The most heavily used light-rail lines carry only about a third of a freeway lane; the average is about half of that. New York City commuter rail lines carry close to half a freeway lane, but no other commuter rail line carries more than a sixth of a freeway lane.

**The Congestion Myth:** Rail transit can greatly reduce congestion.

**The Reality:** Outside of New York and a few other cities, rail transit carries too few people to noticeably reduce congestion.

New York is the only urban area where transit has more than a 10 percent share of urban travel, and transit has more than a 3 percent share in only five other areas. Even if rail transit could increase transit's share of travel, an increase from, say, 1.5 to 2.0 percent is simply not significant. In most urban areas, miles of daily driving are growing so

fast that all the congestion relief provided by a billion-dollar rail project will be consumed by growth in a few weeks to a few months.

**The Rush-Hour Myth:** Rail transit can cost-effectively reduce rush-hour congestion.

**The Reality:** While a few rail-transit lines may have had a marginal effect on rush-hour congestion, the cost is exorbitant. The average light-rail line under construction or in planning stages today costs \$25 million per mile (\$50 million per mile in both directions). Heavy rail costs more than twice as much.

By comparison, the average lane mile of freeway costs only about \$5 to \$10 million. Since freeway lanes carry far more people than any rail line outside of New York, they are much more cost effective. Running express buses on high-occupancy vehicle or high-occupancy/toll lanes will carry more people at a far lower cost than rail.

**The Operating-Cost Myth:** Rails cost less to operate than buses.

**The Reality:** Almost all rail transit systems cost more to operate than buses running on routes in comparable corridors.

Rail transit sometimes costs less to operate than the *average* bus route in a bus system. But rail lines are usually built along the most popular travel corridors, where costs per rider are lowest. The bus lines that rail replaces almost always cost less to operate than the rail lines that replace them. Even the average bus lines cost less to operate per ride than heavy-rail systems in Baltimore, Chicago, and Miami, and less than light-rail systems in Dallas, Los Angeles, Pittsburgh, and San Francisco.

**The Speed Myth:** Rail transit is *fast*.

**The Reality:** Rail transit speeds rarely compete with autos; express buses can go as fast or faster than most rail transit.

Rail advocates advertise light-rail top speeds of 55 miles per hour and heavy- and commuter-rail speeds of 80 miles an hour. But top speeds are less important than average speeds. Scheduled speeds for U.S. light-rail lines average just 20 miles per hour. Heavy-rails average around 30 miles an hour, commuter a bit more. Add the time getting to and from stations and rail transit can rarely compete with the door-to-door service provided by autos.

Though most buses operate less frequently and stop more frequently (thus going slower) than rail lines, express buses or bus-rapid transit can run on schedules competitive with rail. Such bus routes can run on existing roads and cost far less and take less time to start than new rail lines, and cost less to operate as well.

**The Eternity Myth:** Pay no attention to the high construction cost, because once rail lines are built they will last forever.

**The Reality:** Rail lines must be rebuilt and equipment replaced every twenty to thirty years. Reconstruction often costs as much as the origi-

nal construction.

The Washington, DC, metro rail system was built at a cost of \$12.5 billion. Today, its managers say that over the next ten years they will need to spend another \$12.5 billion renovating roadbed, replacing cars, and refurbishing stations. The Federal Transit Administration calls these “capital costs,” but really they are maintenance costs, and as such they make rail much costlier to maintain than buses.

**The Balanced-Transportation Myth:** Rail transit needs more subsidies to make up for historic subsidies to the automobile.

**The Reality:** Transit subsidies have greatly exceeded highway subsidies for more than thirty years.

Highways and local streets receive some subsidies. But they are heavily used, so these subsidies average just 0.4 cents per passenger mile. By comparison, transit subsidies now exceed 50 cents per passenger mile, and have been significantly greater than highway subsidies for more than three decades.

San Jose is spending 80 percent of its transportation capital funds on transit, which carries 1 percent of regional travel. Minneapolis-St. Paul plans to spend 70 percent of its capital funds to transit, which also carries just 1 percent of travel. See [ti.org/vaupdate24.html](http://ti.org/vaupdate24.html) for similar disparities in other rail cities.

**The Under-Budget Myth:** Most rail lines are built under budget and carry more riders than anticipated.

**The Reality:** U.S. rail transit construction has gone an average of 41 percent over budget.

Transit agencies often make low initial cost estimates and high ridership estimates. After they gain approval to build, they revise cost estimates upward and reduce ridership projections. When the line opens, they compare final costs and ridership against the later estimates, not the ones made to get approval.

A recent article in the *Journal of the American Planning Association* found that U.S. rail projects cost an average of 41 percent more than the original projections, while highway projects average only 8 percent over budget (see [www.planning.org/japa/pdf/JAPAFlyvbjerg.pdf](http://www.planning.org/japa/pdf/JAPAFlyvbjerg.pdf)). Ridership in many rail transit projects is less than half the original projections.

**The Snob Myth:** People won't ride a bus, so we need rails to get them out of their cars.

**The Reality:** Fast, frequent bus service will attract as many riders as rail transit.

The most important job of urban transit systems is to provide mobility to people who can't drive. Trying to get people out of their cars with rail transit is expensive, fruitless, and detracts from the first job. Most rail projects cost \$10 to \$30 (and sometimes as much as \$100) for every new ride, that is, every ride that did not previously use transit. A new rail commuter who does 250 round trips a year costs taxpayers \$5,000 to \$15,000 (occasionally up to \$50,000) a year.

To pay the high cost of rail, especially when rail projects go over budget, many transit agencies raise bus fares and/or cut bus service. Because many rail lines are aimed at white, middle-class riders and

many bus routes serve minority and low-income riders, this has created serious problems in Los Angeles, San Jose, and other rail cities.

**The Air Pollution Myth:** Rail transit reduces air pollution.

**The Reality:** Rail transit has an insignificant effect on pollution.

Rail transit carries so few people that it is an extremely expensive way to reduce pollution (see [ntl.bts.gov/DOCS/tranchal.html](http://ntl.bts.gov/DOCS/tranchal.html)). In fact, it often increases pollution. Cars pollute most in congested traffic. Where light-rail transit shares the road with cars, the congestion it creates can contribute to pollution. Vermont recently cancelled an experimental commuter train when it found that the Diesel locomotives pulling the train polluted more than the cars it took off the road.

**The Redevelopment Myth:** Rail transit leads to economic development.

**The Reality:** Rail transit rarely generates any additional development.

“Urban rail transit investments rarely ‘create’ new growth,” says a federally funded study, “but more typically redistribute growth that would have taken place without the investment” (see [www.tcrponline.org/bin/doc-distr.cgi/TCRP%20RRD%2007.pdf](http://www.tcrponline.org/bin/doc-distr.cgi/TCRP%20RRD%2007.pdf), p. 3). Most of this redistribution has been to downtowns, so downtown-property owners strongly favor rail transit.

Outside of downtowns, high-density, transit-oriented developments are difficult to market, so developers won't build them without significant subsidies. Portland, Oregon, has given developers hundreds of millions of dollars in subsidies in the form of tax breaks, infrastructure support, and direct grants. Once built, so-called transit-oriented developments merely add to congestion because the vast majority of trips made from the



*Many people hope that others will ride rail lines so they can drive on less-congested roads. But rail's slow speeds and limited destinations mean most people will find even bumper-to-bumper traffic faster than the trolley cars.*

developments are still by automobile.

**The Safety Myth:** Rail transit is safer than highways.

**The Reality:** Light rail is a deadly form of urban travel.

Separated from autos and pedestrians, heavy rail is one of the safest forms of travel. But light rail, which operates in the streets with cars and pedestrians, is one of the most dangerous. Commuter rail is in between. Over the past decade, light rail has killed about 11 people per billion passenger miles, commuter rail and buses 8, and heavy rail 4. Freeways are about 4 to 5 and other roads and streets about 8.

**The Choice Myth:** Rail transit gives people choices.

**The Reality:** Government officials should be more concerned about spending taxpayer dollars wisely than with giving people needlessly expensive choices.

Rail advocates repeat the choice mantra as if there were some virtue in giving people choices between a 2-cent road subsidy, a \$2 bus subsidy, and a \$20 rail subsidy. Improved bus services can provide all the alternatives to autos that people need at a far lower cost than rails.

*Sources: Cost and ridership data are from the Federal Transit Administration's 2001 National Transit Data Base ([www.fta.dot.gov/ntl/database.html](http://www.fta.dot.gov/ntl/database.html)). Highway data are from the Federal Highway Administration's 2001 Highway Statistics ([www.fhwa.dot.gov/ohim/ohimstat.html](http://www.fhwa.dot.gov/ohim/ohimstat.html)). Accident data are from Highway Statistics and National Transportation Statistics (<http://www.bts.gov/btsprod/nts/>).*