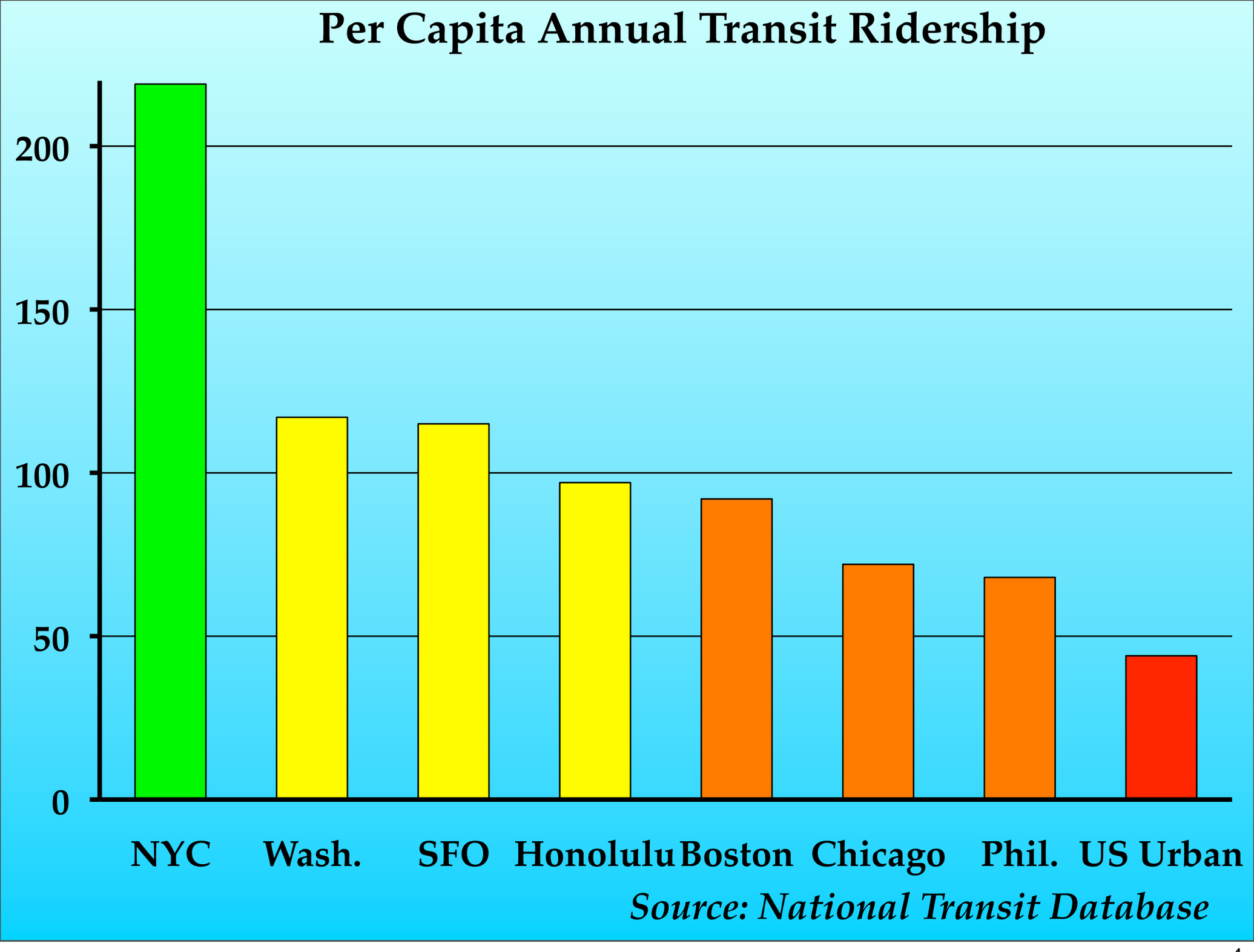
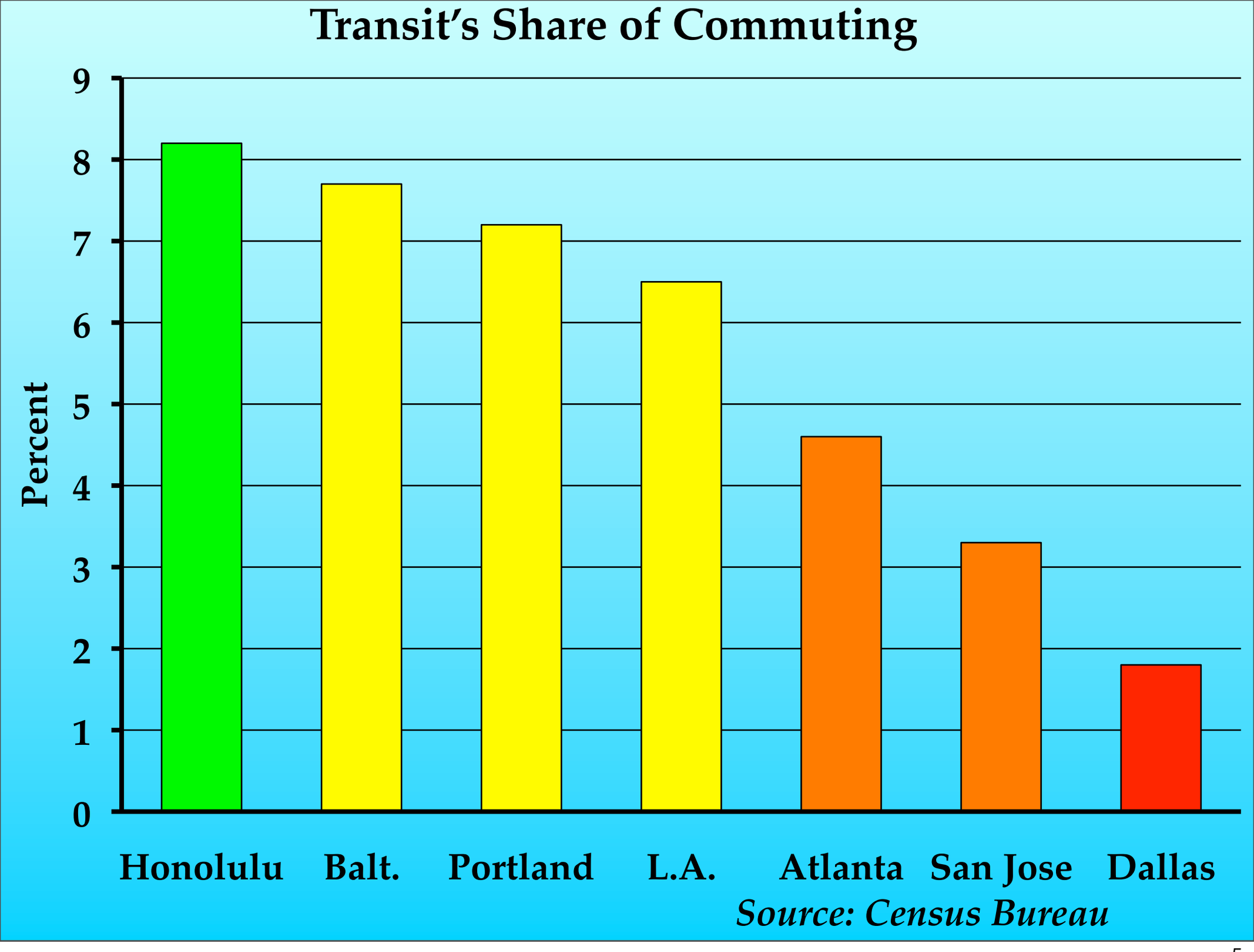
I love trains. I've traveled hundreds of thousands of miles on Amtrak as well as trains in at least six other countries.

I helped restore the nation's second-most powerful operating steam locomotive. If there were a rail transit proposal that worked, I would support it.

However, the Honolulu rail proposal will not work. In fact, it seems designed to fail.

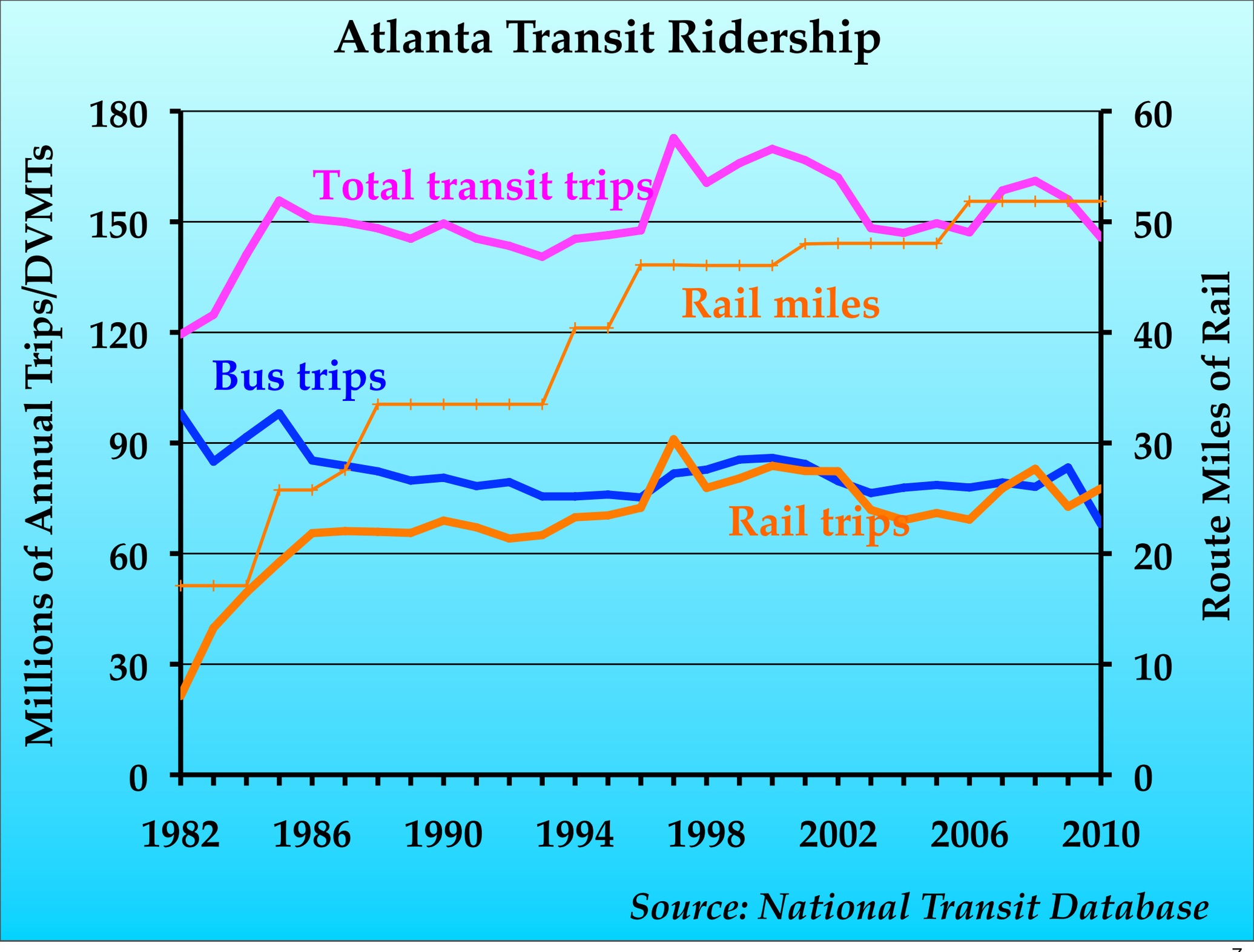


It is worth noting that Honolulu already has one of the nation's best transit systems. Although Honolulu is only the 52 largest urban area in America, it has the fourth-highest per capita transit ridership, ahead of cities like Boston, Chicago, and Philadelphia that have extensive rail systems.

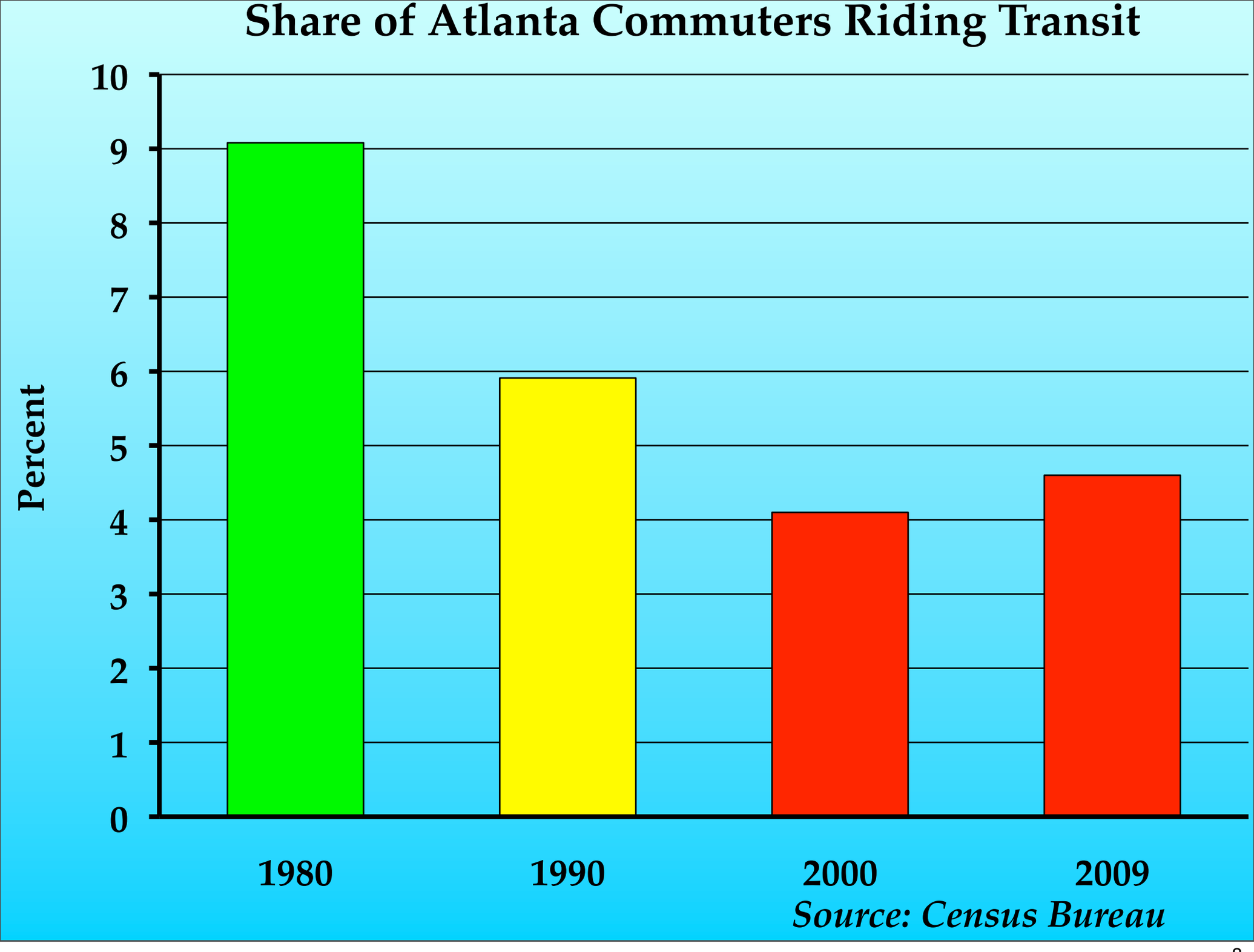


Honolulu transit's share of commuting is the eighth-highest of major urban areas, ahead of cities that have recently built rail transit including San Diego, Houston, Minneapolis, and Sacramento.

Why doesn't rail transit work? Atlanta built an mostly elevated rail network designed to serve middle-class neighborhoods where people have lots of cars. To pay for it, they cut bus service to low-income neighborhoods where people have few cars.

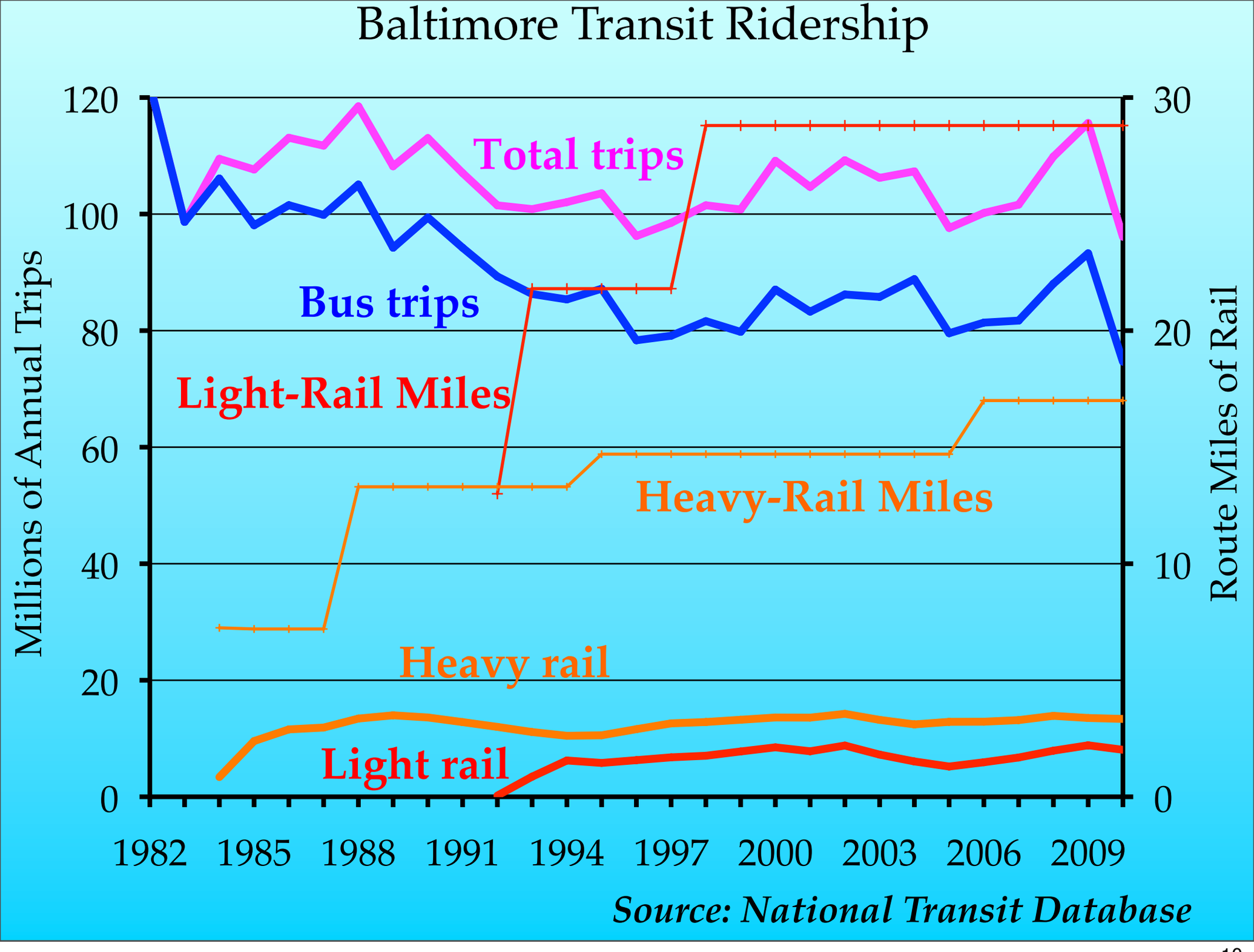


The result is that ridership has been flat--increases in rail ridership were compensated for by declines in bus ridership.

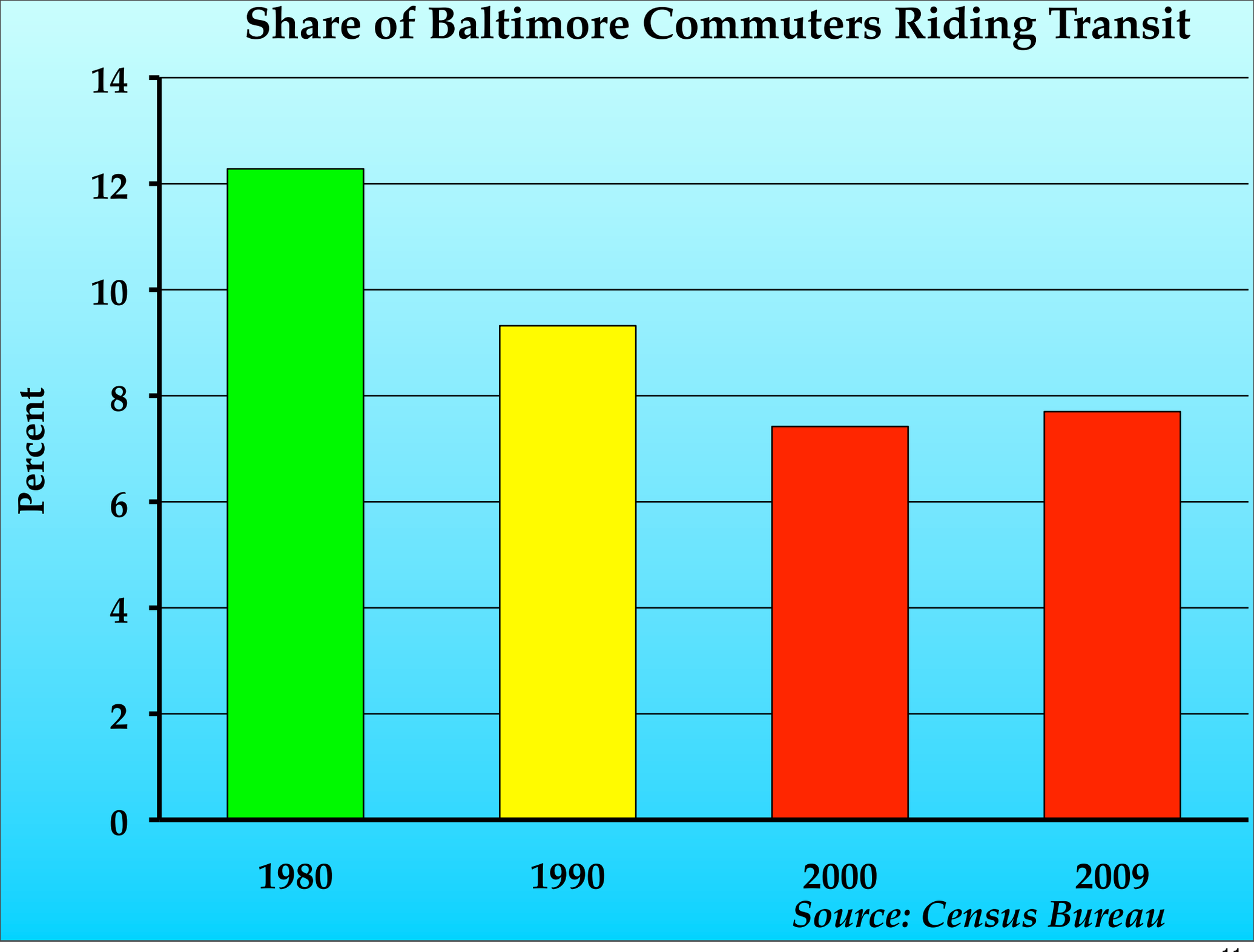


Even worse, Atlanta's population has doubled in this time period, so per capita ridership has been cut in half.

The same thing happened in Baltimore, which built both light-rail lines and a heavy-rail line.



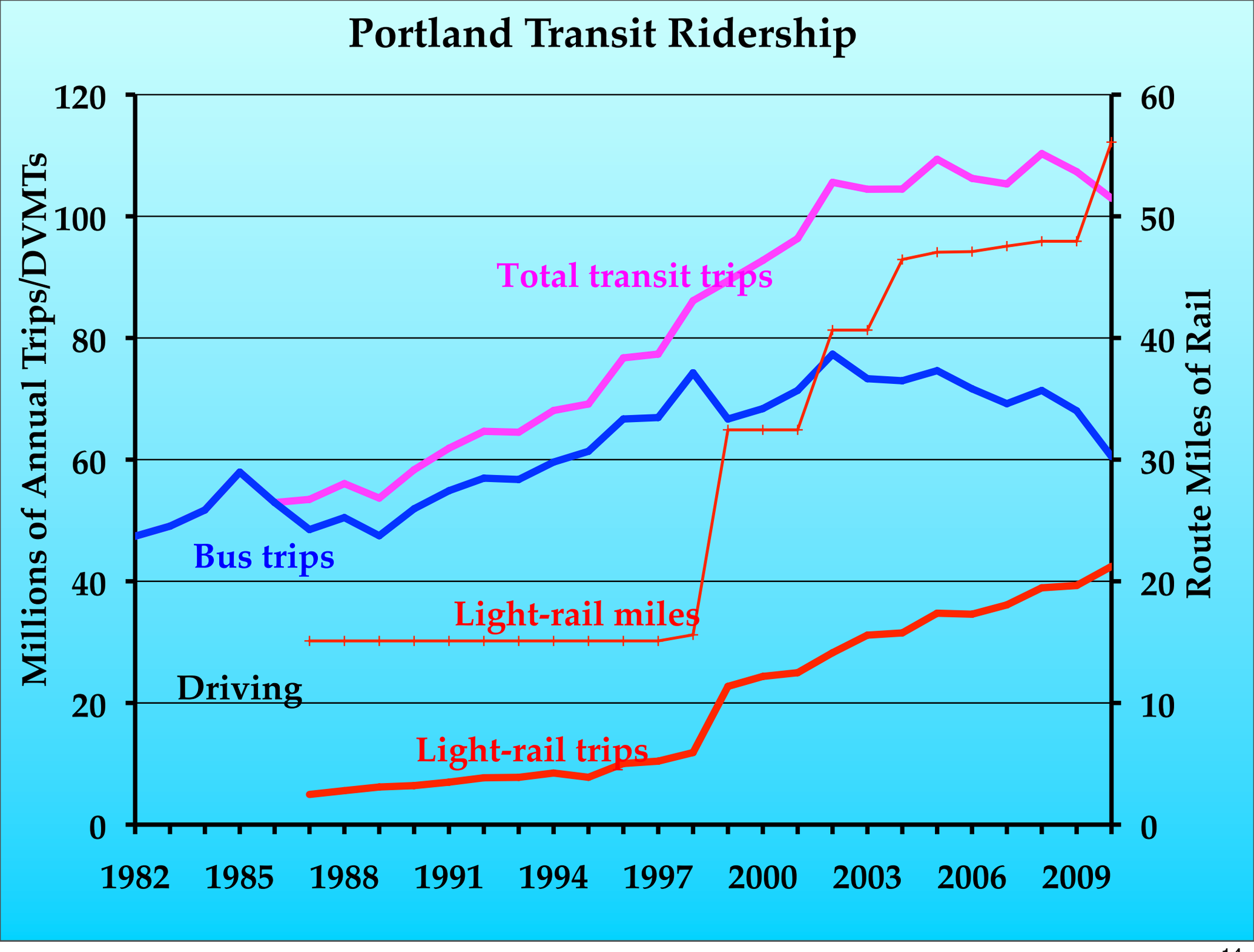
Bus ridership plummeted.



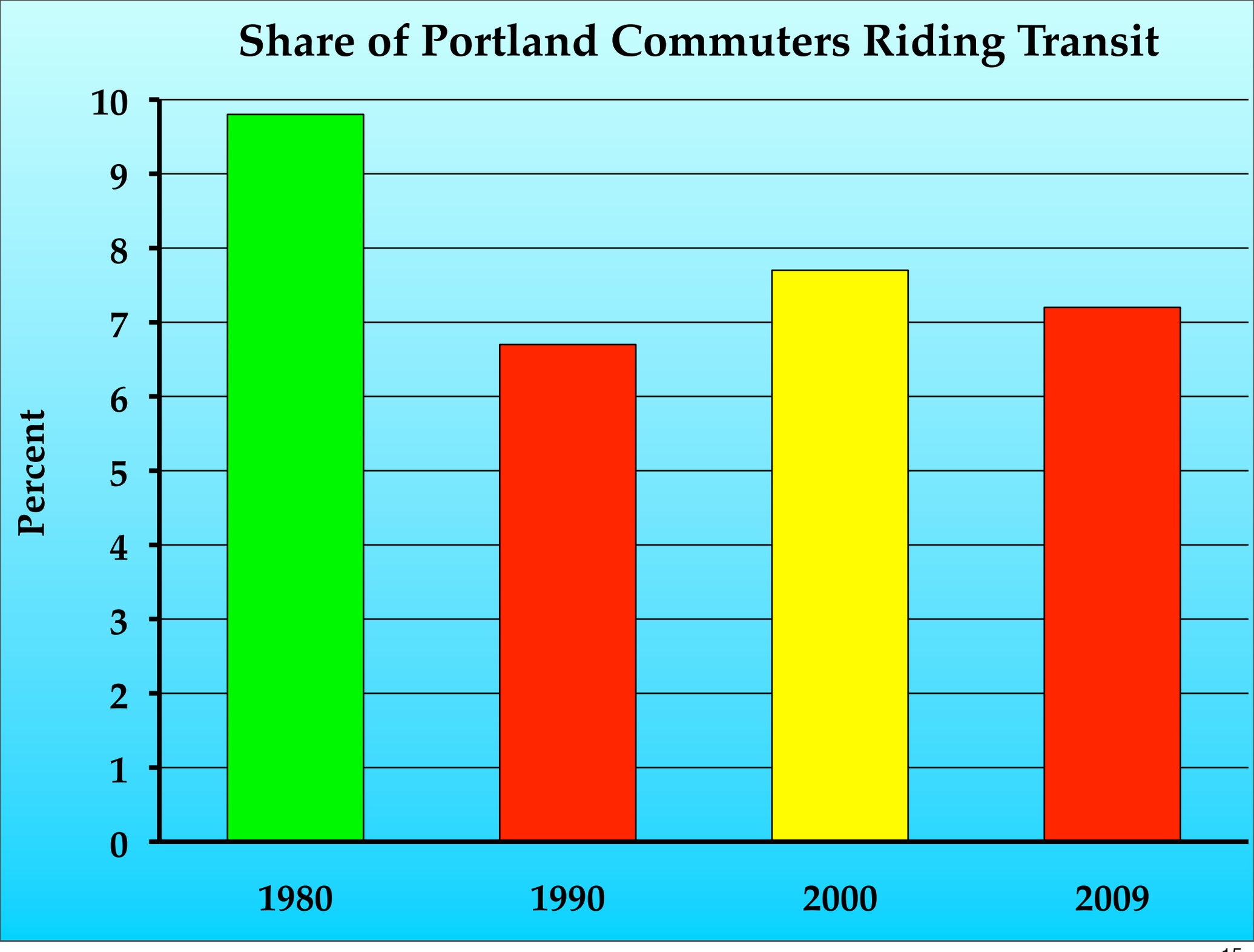
And per capita ridership fell as well.

Portland is supposed to be a light-rail success story.

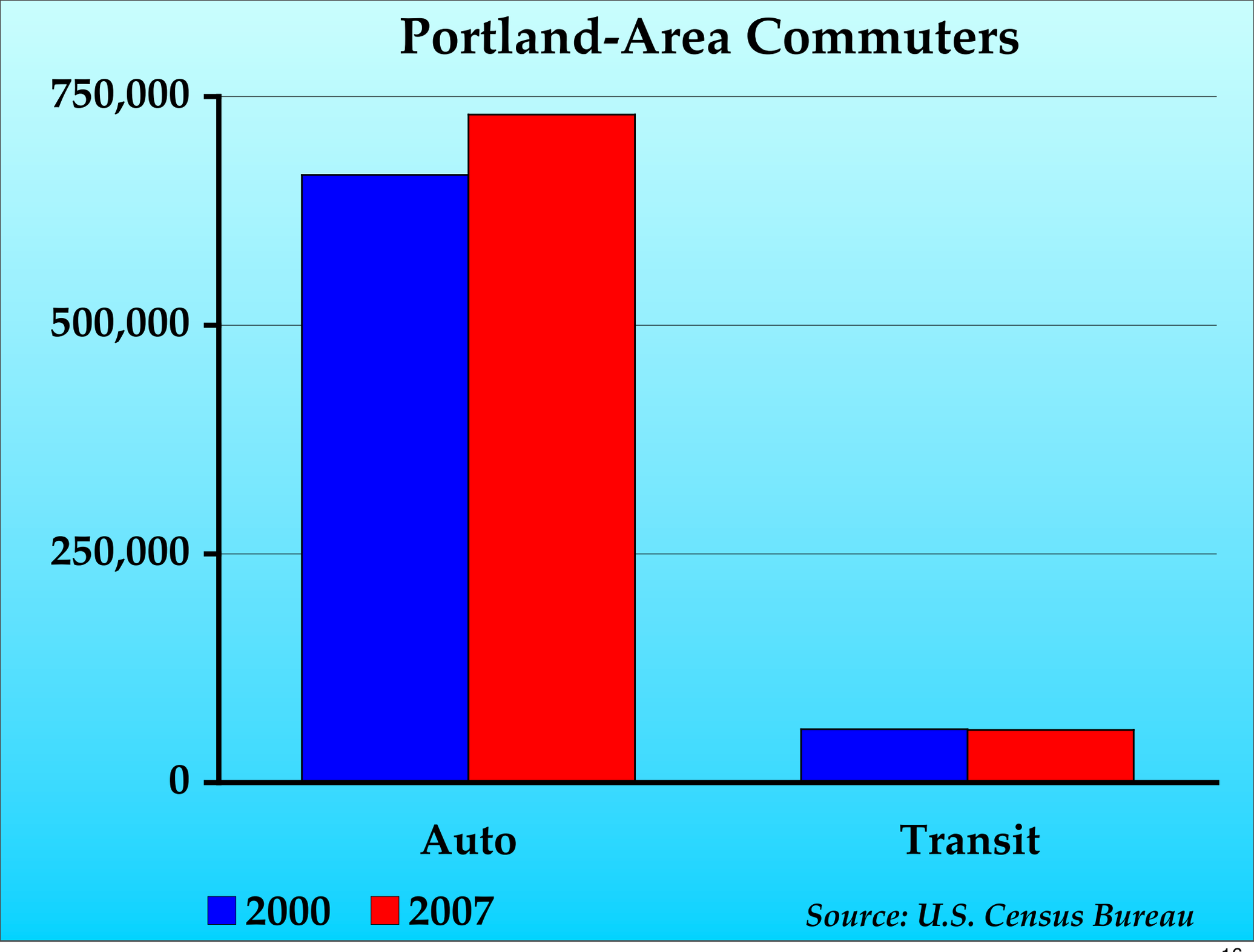
I don’t want to say no one rides Portland’s light rail, but one day a coyote, looking for solitude, boarded an empty train.



In truth, Portland transit ridership has grown, but not as fast as the population.



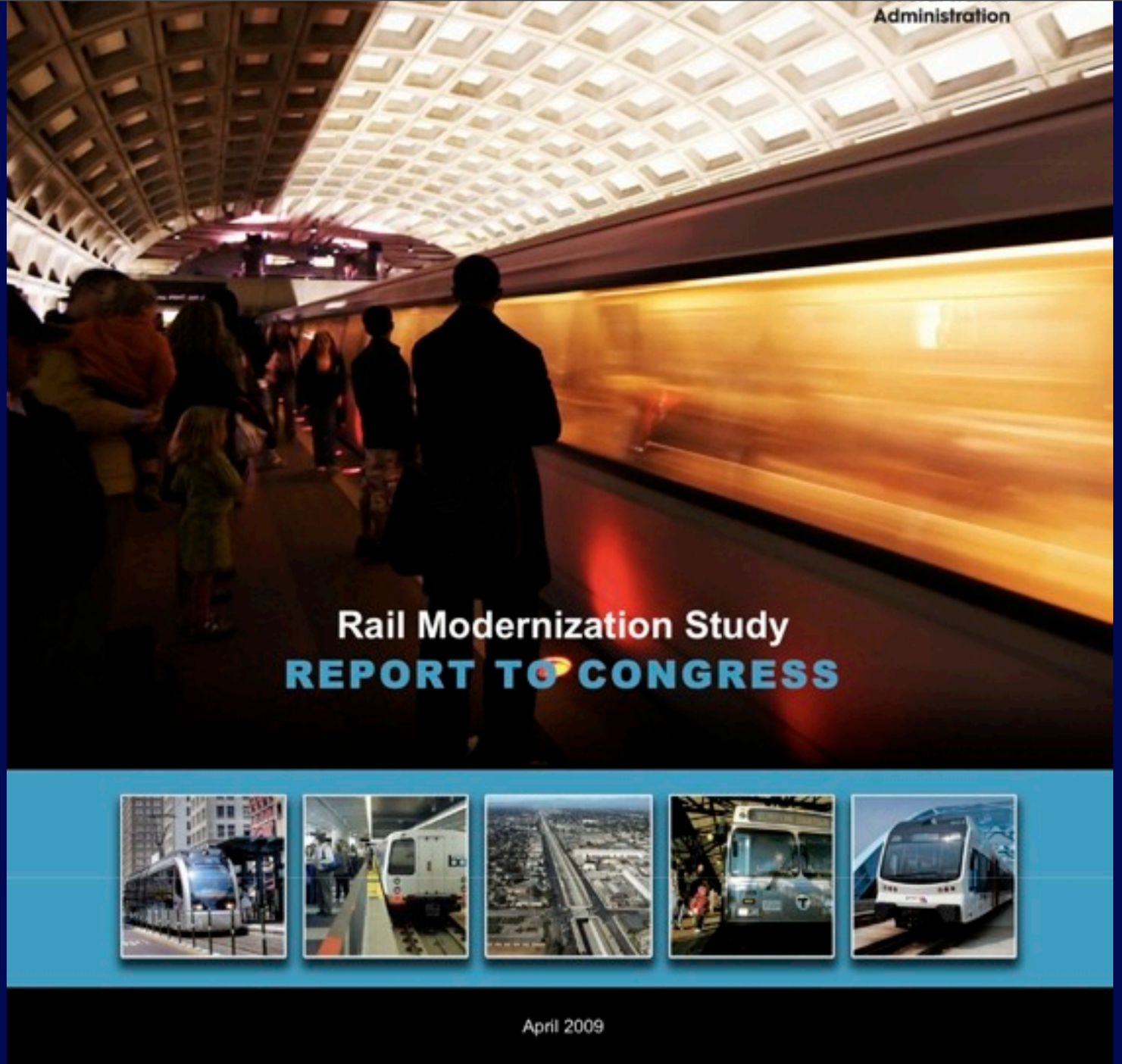
Before building any rail lines, 9.8 percent of Portland-area commuters took transit to work. Today, Portland has five light-rail lines, a streetcar, and a commuter train, yet only 7.2 percent of commuters take transit to work.



Between 2000 and 2007, Portland opened two new light-rail lines and a streetcar line, yet the number of transit commuters declined and the number of commuters using automobiles grew by more than the total number of transit commuters.

Cities that have had rail transit for more than 30 years are having serious maintenance problems. Rail lines must be rebuilt at a high cost about every 30 years, and few transit agencies have budgeted for this as indicated by this pillar holding up a Chicago elevated line.

The Washington DC crash that killed 9 people in 2009 resulted from inadequate maintenance.



The Federal Transit Administration says that the 10 cities with older rail systems have about a $60 billion maintenance backlog, and the rail lines are deteriorating faster than the cities are maintaining them.

Light-Weight Rail?

The Honolulu rail line is particularly designed to fail. Is it a light rail or heavy rail?

Most people think the “light” in light rail refers to weight, but the rails weigh the same as heavy rail and the railcars actually weigh more.

Light-Capacity Rail

In fact, the light in light rail refers to capacity: light rail is light-capacity rail. Even buses can carry more people than light rail because, for safety reasons, light rail trains must be spaced two or more minutes apart while buses can run every few seconds.

Heavy-Capacity Rail

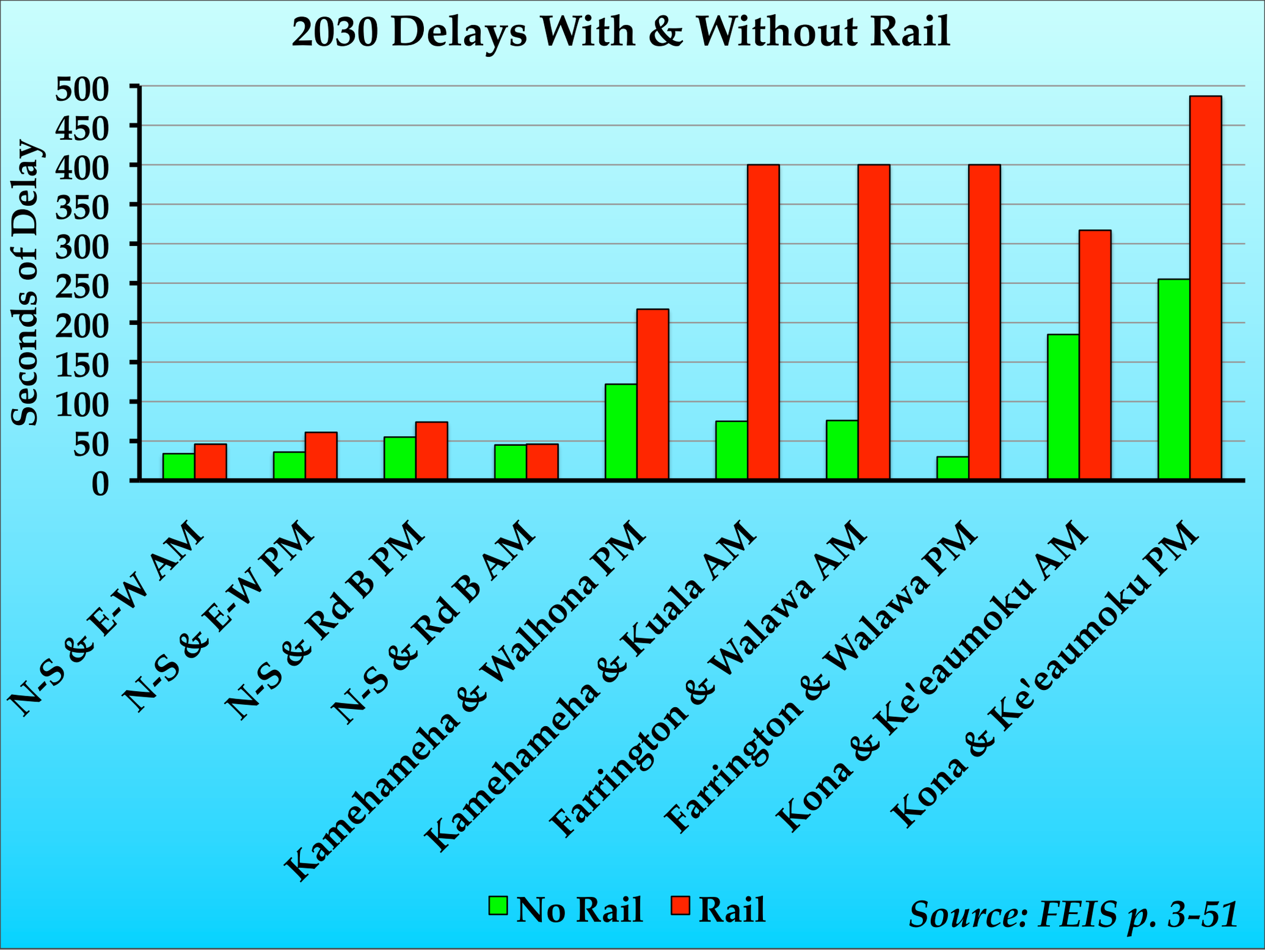
Heavy-capacity rail is expensive but typically can run 8 or more cars on a train and so can move far more people.

Light-Heavy Rail

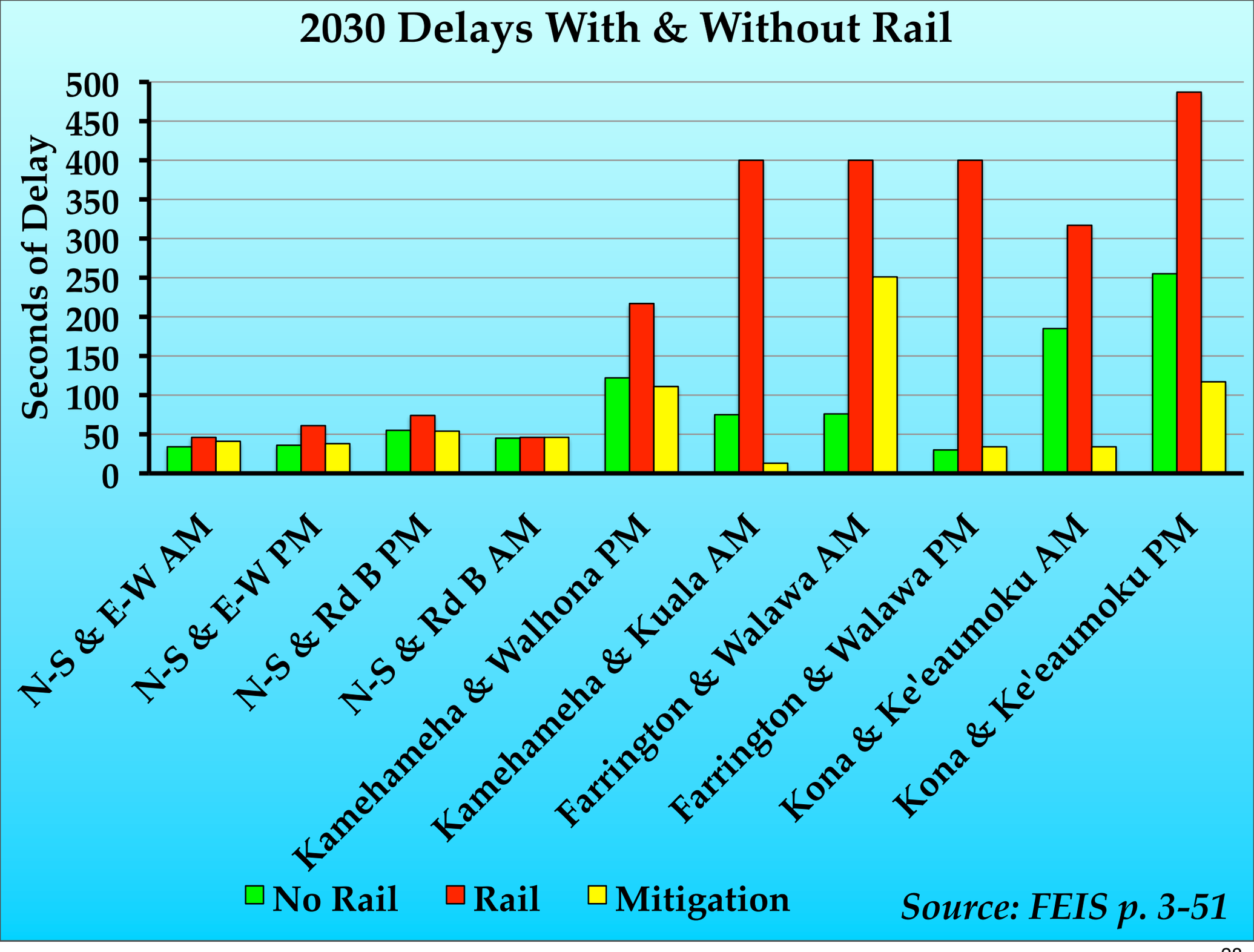
But Honolulu's rail project combines the high cost of heavy rail with the limited capacity of light rail, making it a big loser.

The real problem with rail transit is we live and work in many different locations. Only about 10 percent of Honolulu jobs are downtown. Since the rail line serves so few locations, few people will ride it.

Instead of big boxes serving a few locations, transit needs lots of little boxes service a lot of locations.



Many people think the rail line will relieve congestion, but according to the environmental impact statement for the Honolulu line, congestion will get worse at every place evaluated. In addition, any so-called transit-oriented developments along the rail line will add to congestion because the vast majority of trips from those developments will be by car.



The EIS says they can mitigate this increase in congestion by building new lanes and coordinating traffic signals. Why not just do that without going to the expense of first building the rail line and making congestion worse?

Energy Savings

Daily Savings in 2030:

2.44 billion BTUs

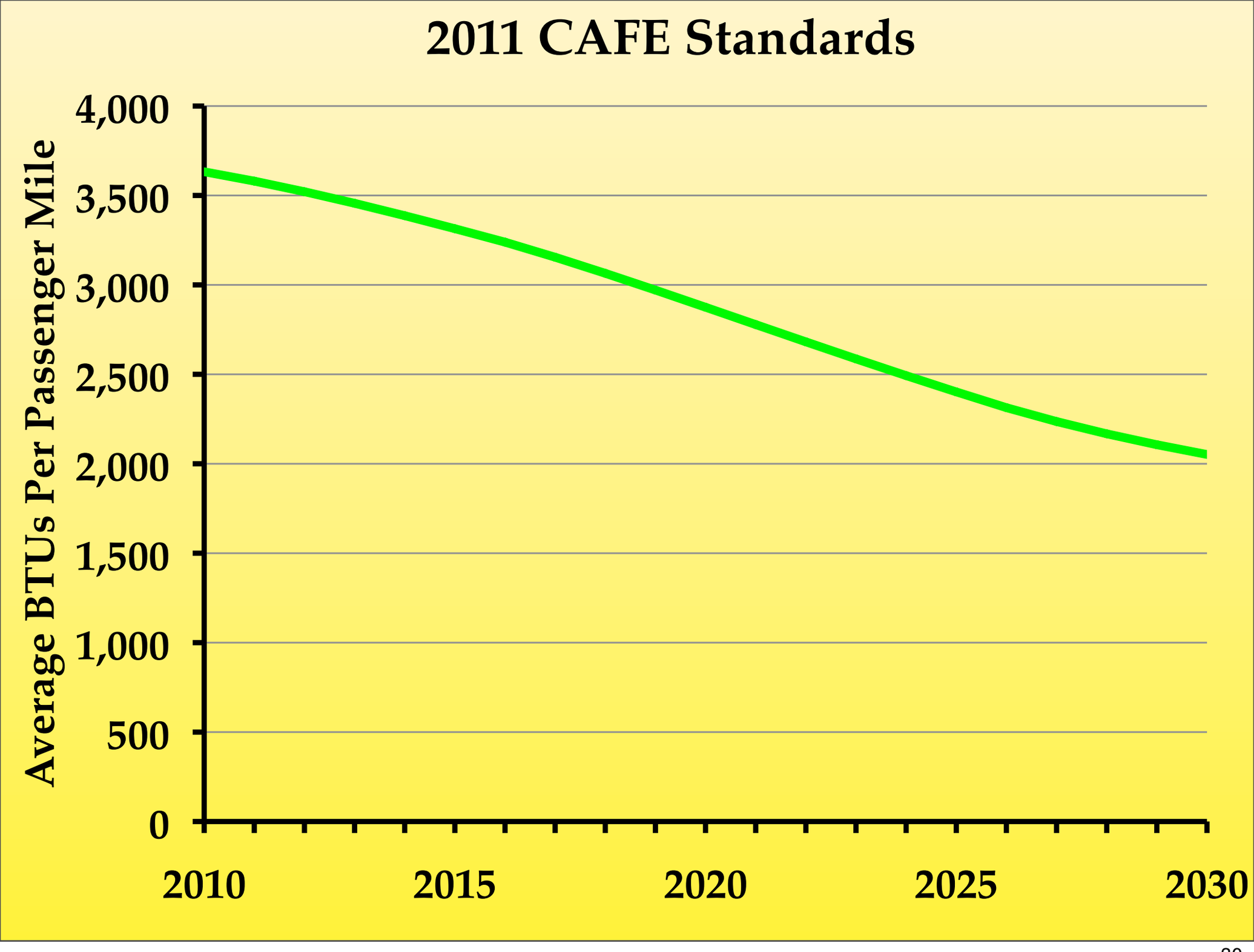
Energy Used in Construction

7.48 trillion BTUs

10-Year Payback Period

Source: FEIS p. 4-124, 4-206

The EIS claims the rail line will save about 2.4 billion BTUs of energy per day, but that it will cost 7.5 trillion BTUs of energy to build. This cost will require 10 years of savings to pay it back.



But the writers of the EIS failed to account for the fact that Obama's fuel-economy standards will significantly reduce the energy requirements of automobiles in 2030.

Corrected Energy Savings

Daily Savings in 2030:

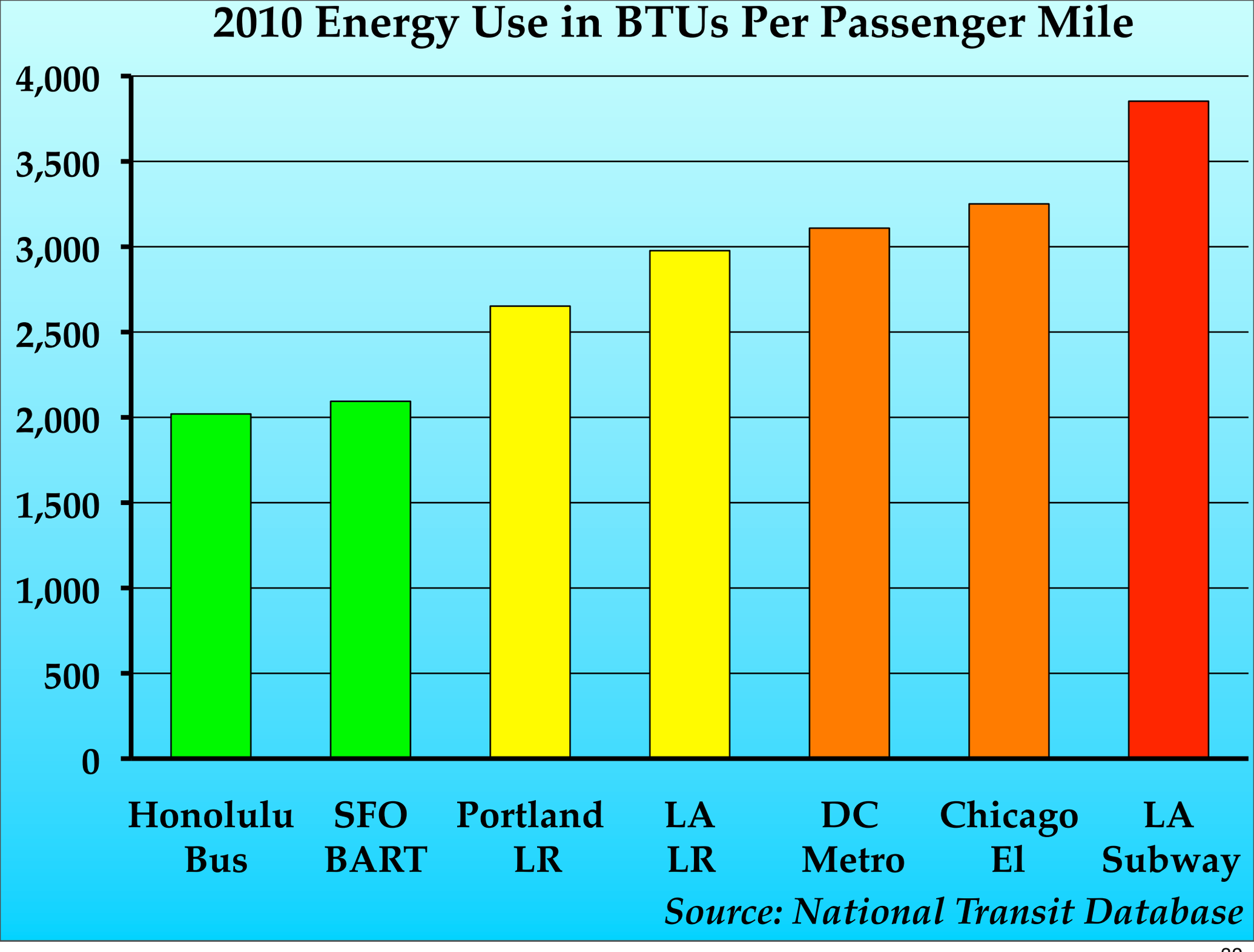
740 million BTUs

Energy Used in Construction

7.48 trillion BTUs

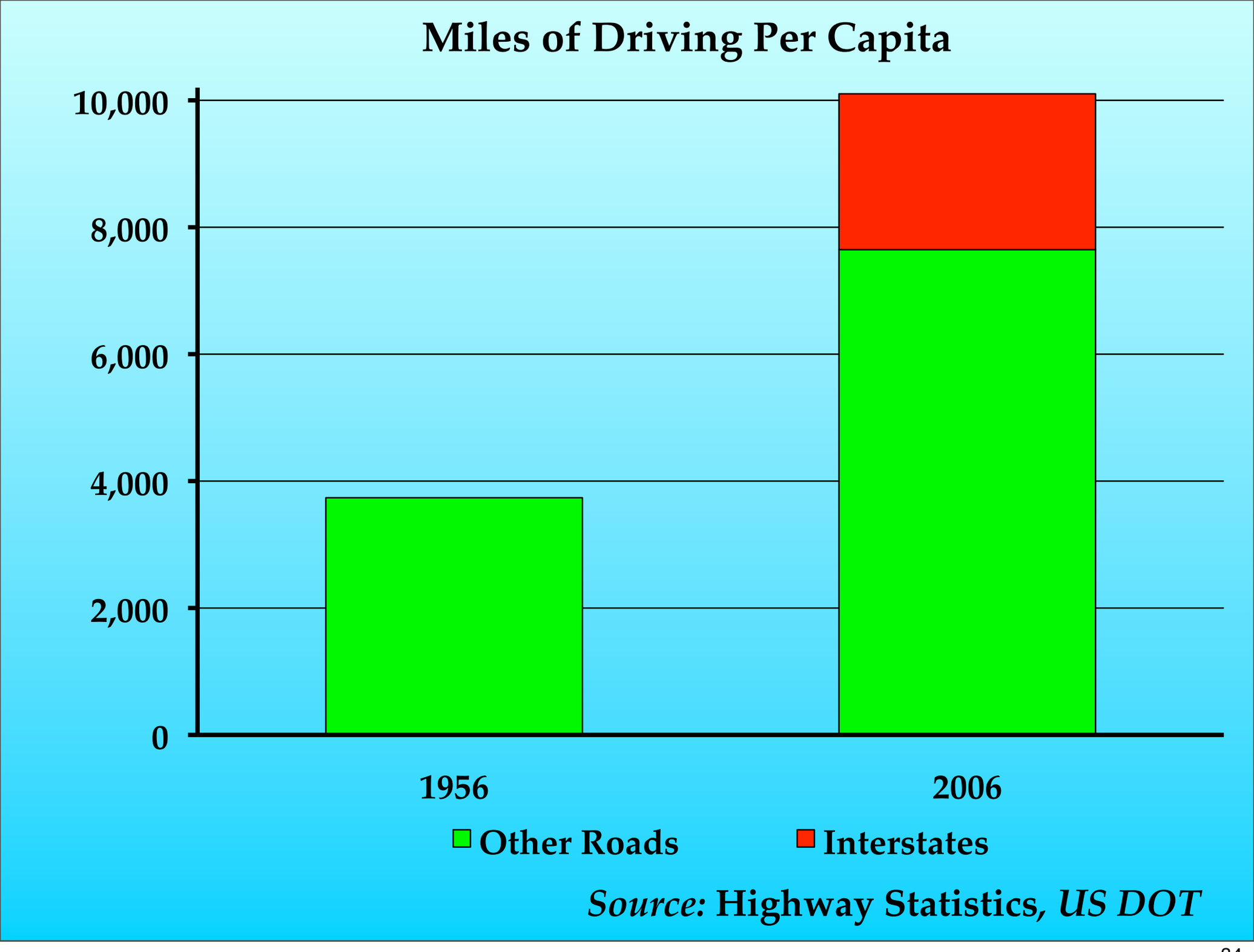
32-Year Payback Period

After correcting for this, the payback period turns out to be more than 30 years. Since the rail line must be extensively rebuilt (requiring lots of energy) every 30 years, it is likely that savings will never repay the energy costs of construction.



Honolulu's buses are already more energy-efficient than almost any rail system. Moving people from buses to trains will definitely waste energy.

Rail backers claim the rail line will create jobs. It is true that new transportation projects, such as Interstate Highways can create lasting jobs. They do so by reducing the cost of transportation and/or increasing travel speeds.



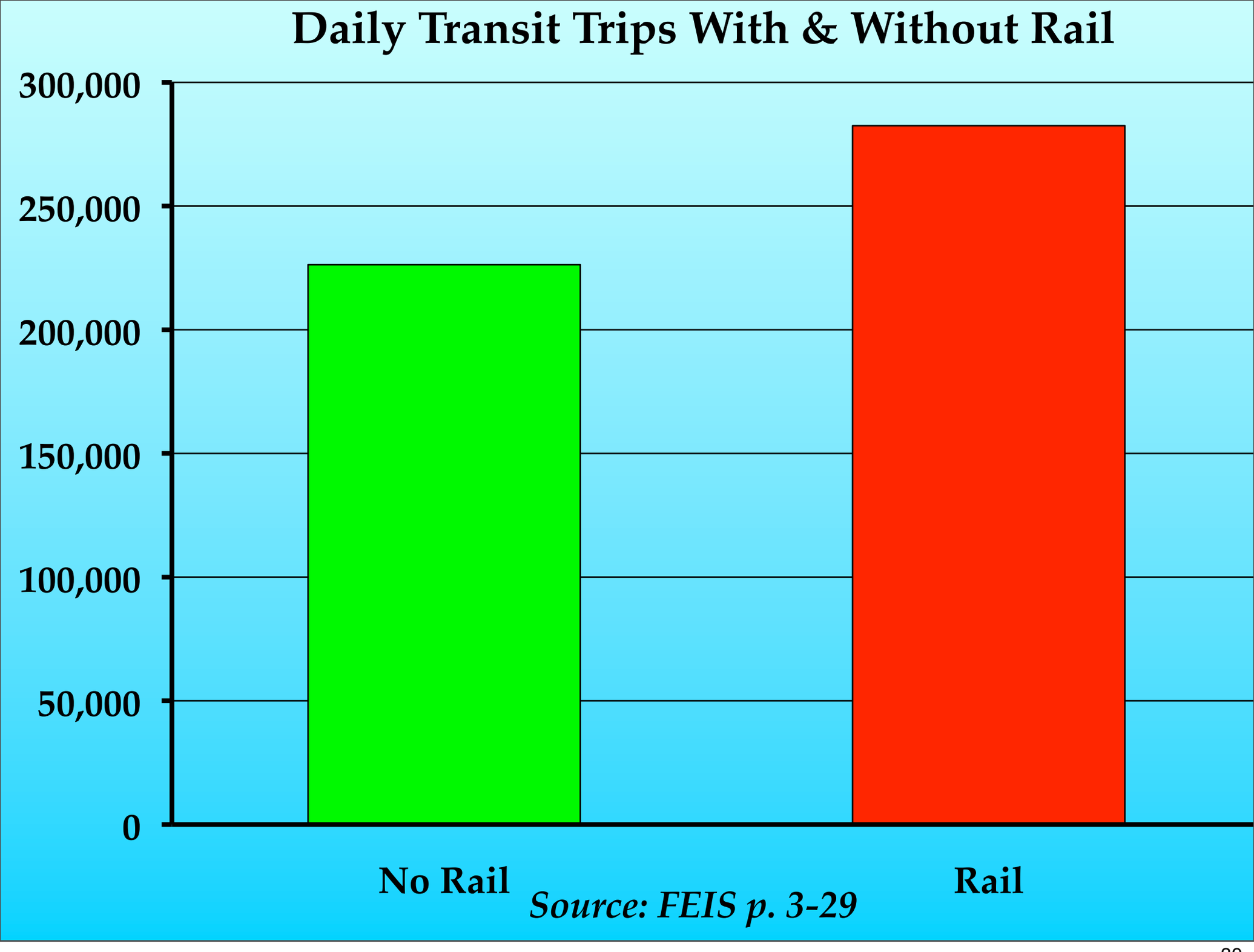
The Interstate Highway System, for example, increased personal travel by at least 4,000 passenger miles per year as well as freight travel by 2,000 ton miles per year for every resident of the U.S.

That made jobs more accessible and gave employers access to a larger pool of skilled workers.

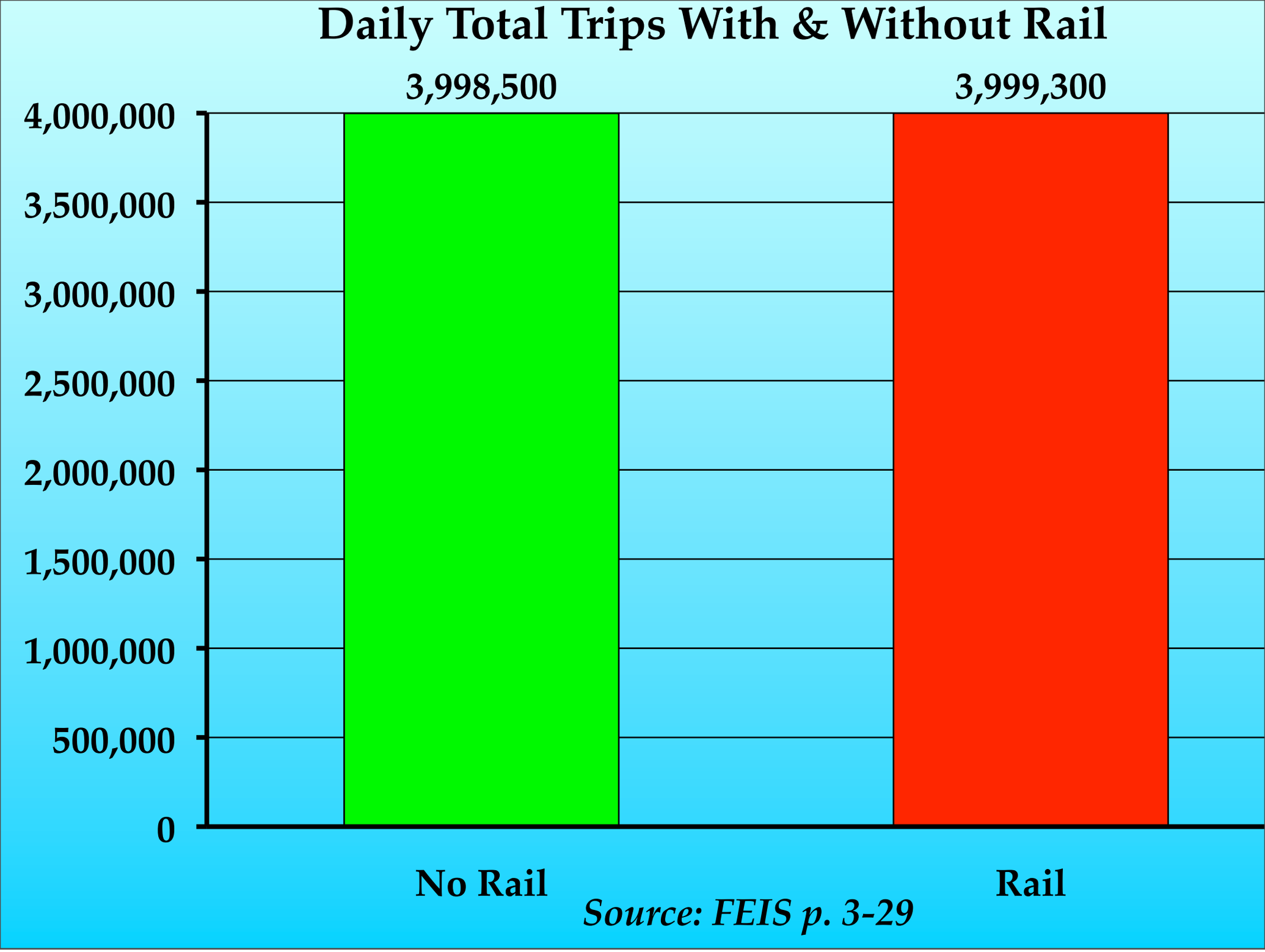
It gave people access to lower-cost consumer goods.

Better housing at low cost.

And all sorts of other social and recreational opportunities.



The EIS for the rail line says that the line will increase transit trips by about 50,000 new trips per day. But these are not the same as new total trips; these are merely transferred from autos, walking, or cycling.



When all trips are counted, the rail line will add only 800 new trips per day out of 4 million. That isn't enough to add even one new job, much less thousands. Yes, jobs will be created building the rail line, but you could get the same jobs digging holes and filling them up without disrupting the region's transportation system.

The San Francisco BART system carries more than 350,000 riders per day. A pro-transit planner at UC Berkeley looked at it to see how much economic development it generated.

BART "has not triggered hoped-for levels of reinvestment in downtown Berkeley, Oakland, or Richmond." In fact, "Population has grown faster away from BART than near it."

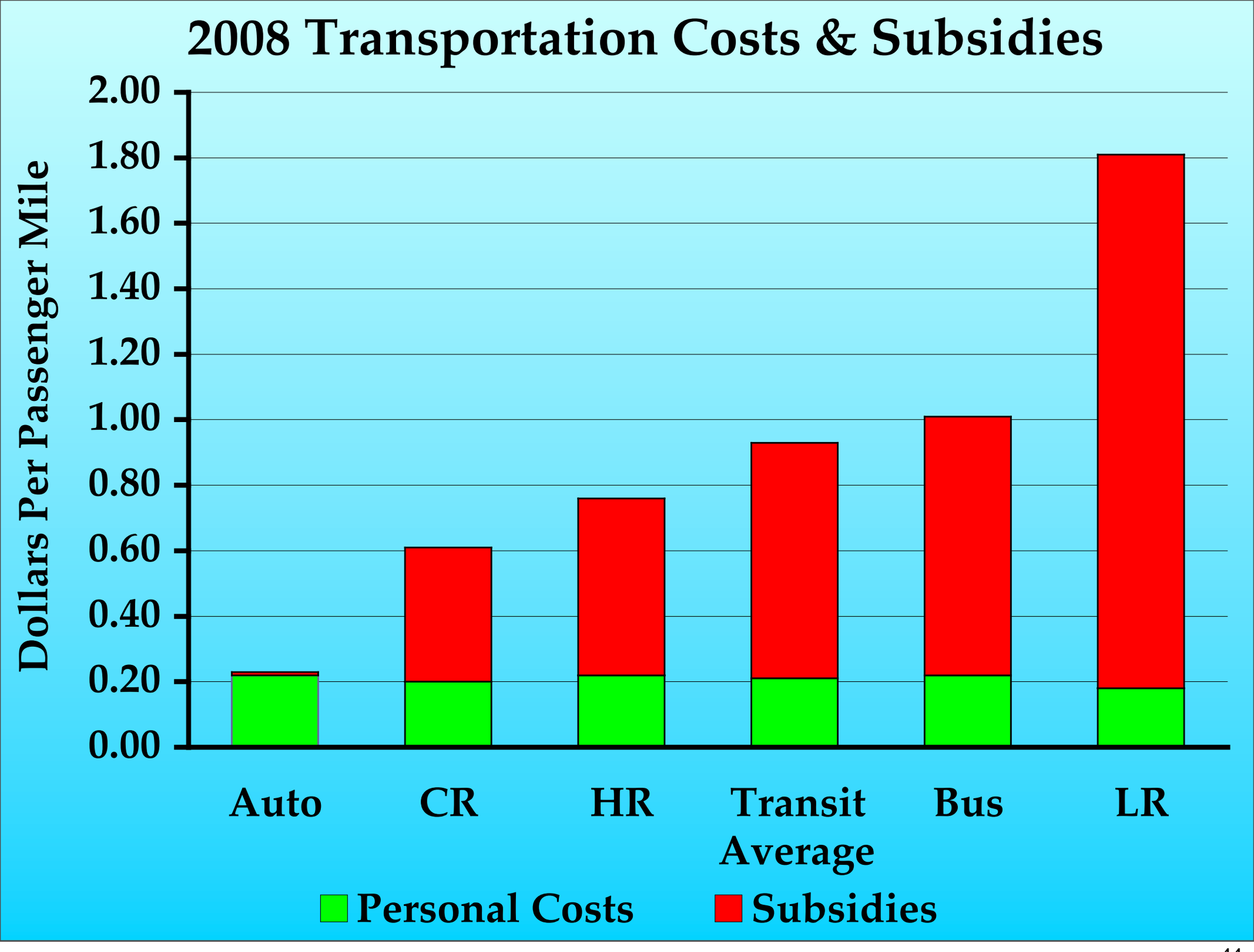
—Robert Cervero, UC Berkeley

He found that development increased away from BART stations more than near such stations.

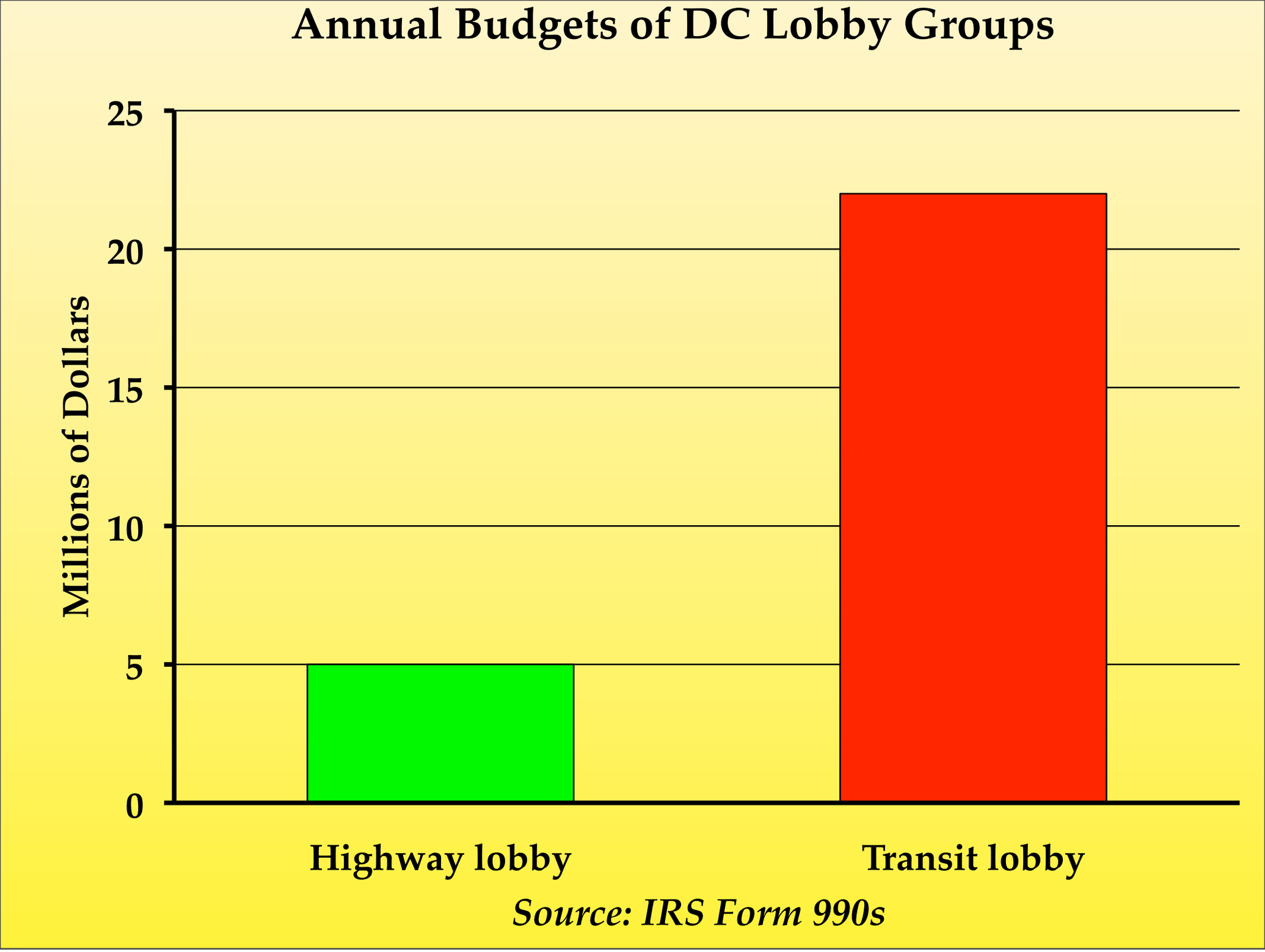
"Urban rail transit investments rarely 'create' new growth, but more typically redistribute growth that would have taken place without the investment."

Cervero & Seskin, FTA Report #TCRP-7

Working with Parsons Brinckerhoff consultant Samuel Seskin, Cervero did a nationwide study finding that rail transit does not stimulate new development. At best, it merely shuffles it around the urban area.



If anything, rail transit will inhibit new development because it it so much more expensive than driving and buses.



So why do so many cities want to build rail lines? One answer is that the rail transit lobby is very powerful. Just one group, the American Public Transportation Association (whose members include Parsons Brinckerhoff and Kiewit Construction) has a budget more than four times larger than all DC-based highway lobby groups combined.

Even as cities are building fixed infrastructure for transit, the intercity bus industry is moving in the other direction, focusing on less infrastructure and better service.

Rather than use expensive stations, they stop at curbsides. Rather than employ ticket agents, they sell over the Internet.

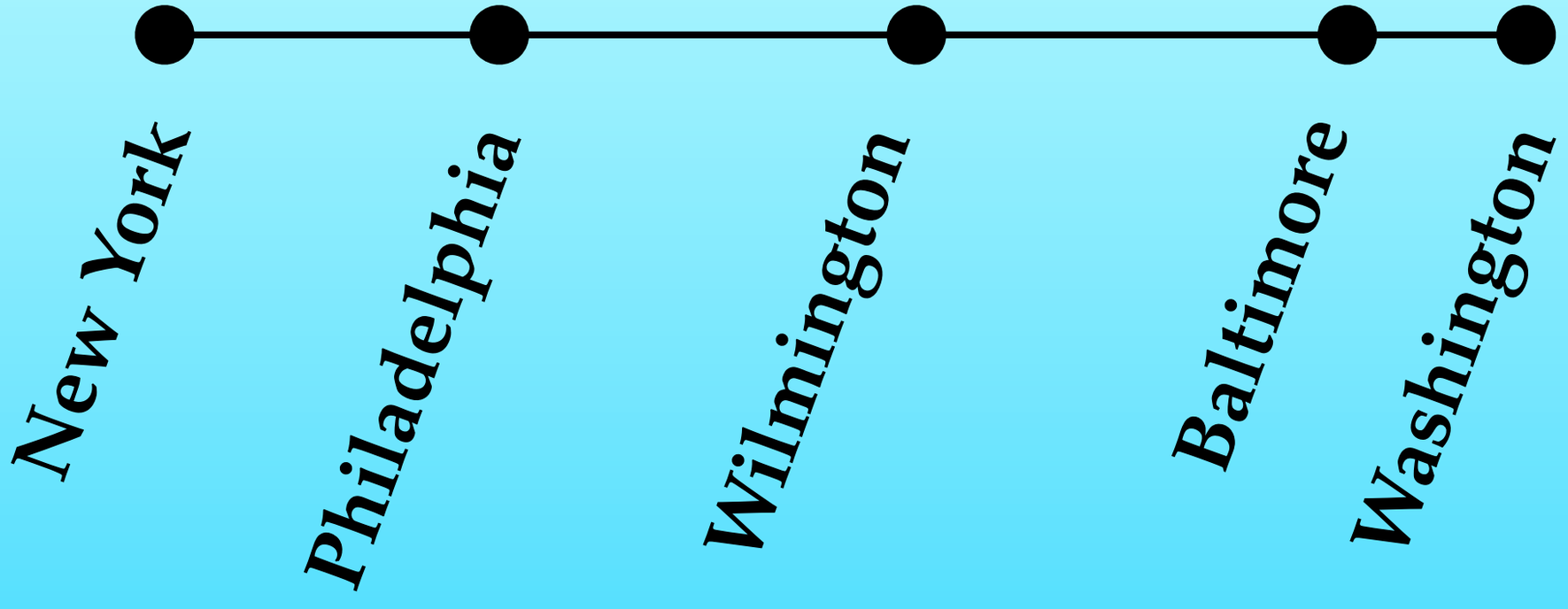
Buses include free wifi and power plugs at every seat.

Some buses have leather seats.

Others have three-across seating.

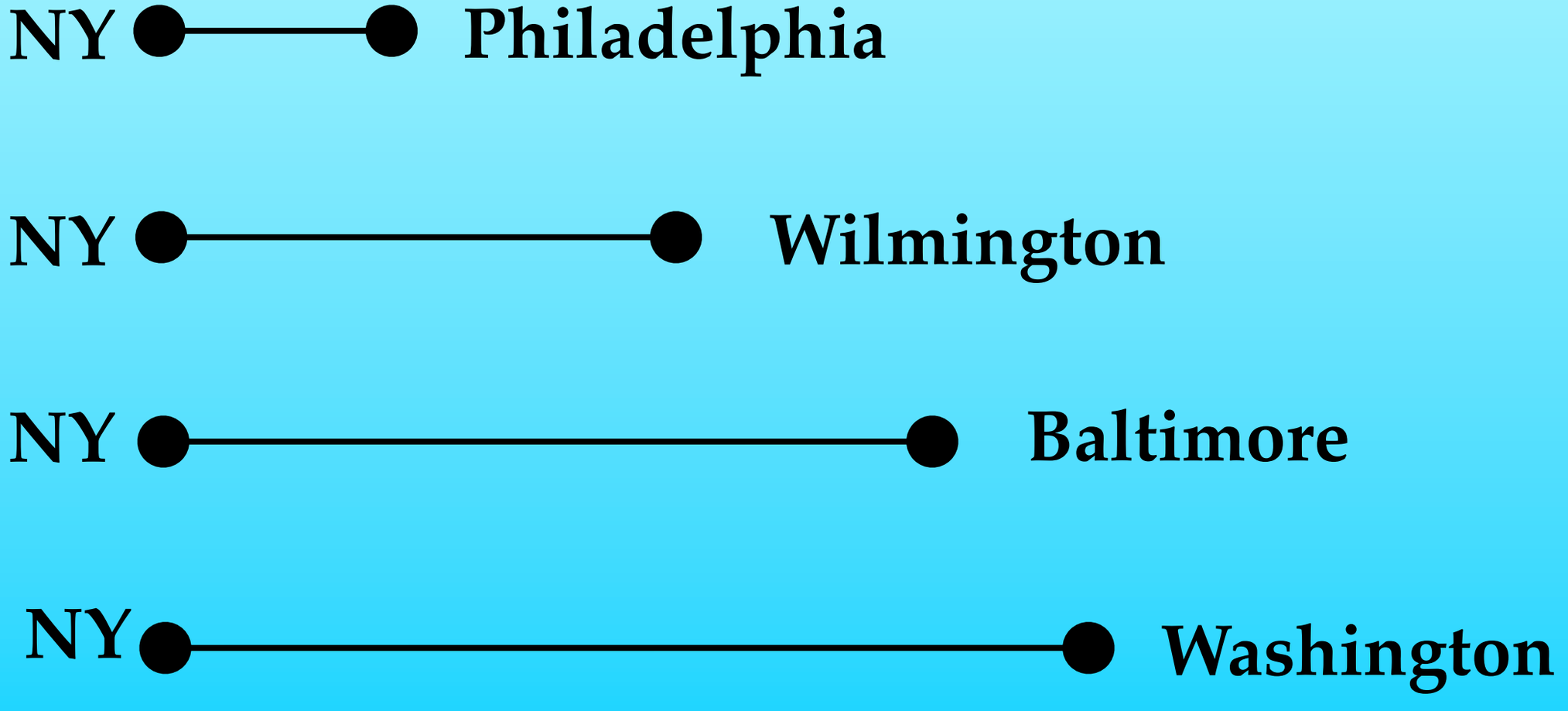
A few have meal service and on-board movies and videos.

Old Model



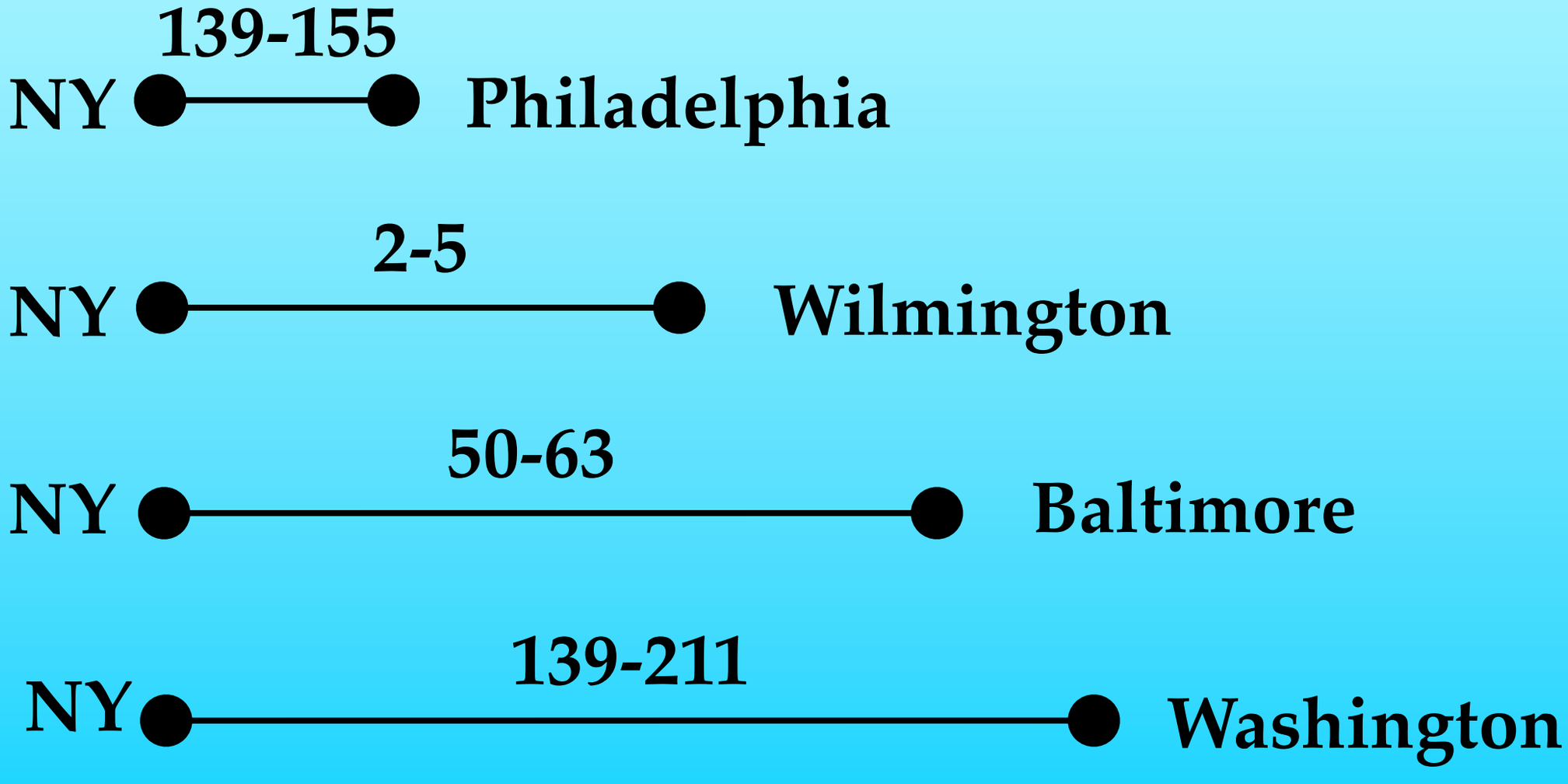
The old model of bus service made many stops between major cities.

New Model



New Model

Departures Per Day



The new model uses mostly non-stop buses with the number of departures varying by demand.

Megabus actually charges as low as $1 for most of its tickets and average fares are about half the cost of the old model bus lines.

This system is easily adaptable to commuter buses, as shown by such lines as the Hampton Jitney, which connects Manhattan with outer Long Island.

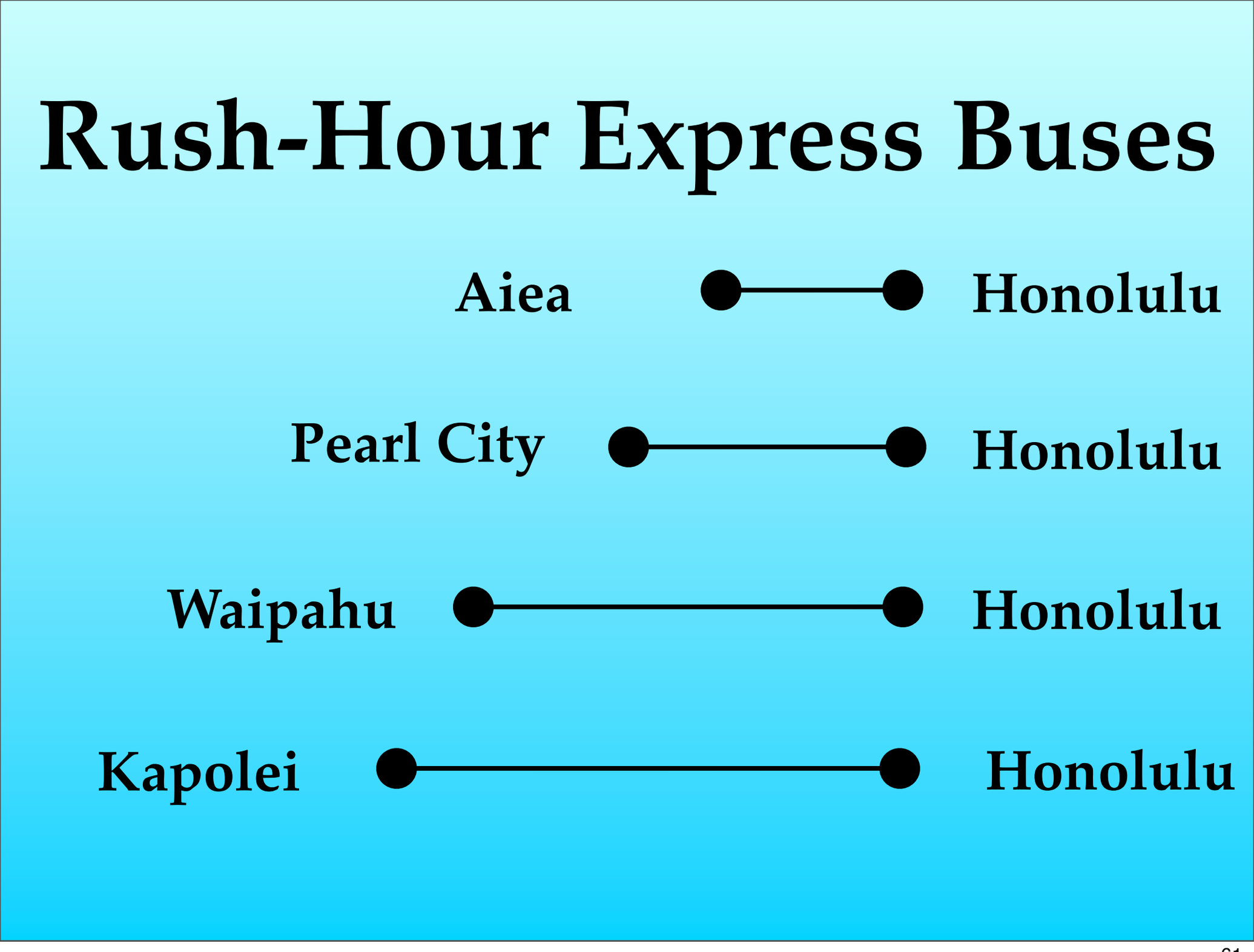
FTA Administrator Peter Rogoff actually gave a speech recently saying that “paint is cheap – trains are expensive” and noting that transit agencies can paint buses a special color, call it a special bus, and get as many new passengers as building an expensive rail line.

One private operator is offering luxury bus service in the San Francisco Bay Area.

Passengers pay for rides by swiping their credit card -- no fumbling for exact change.

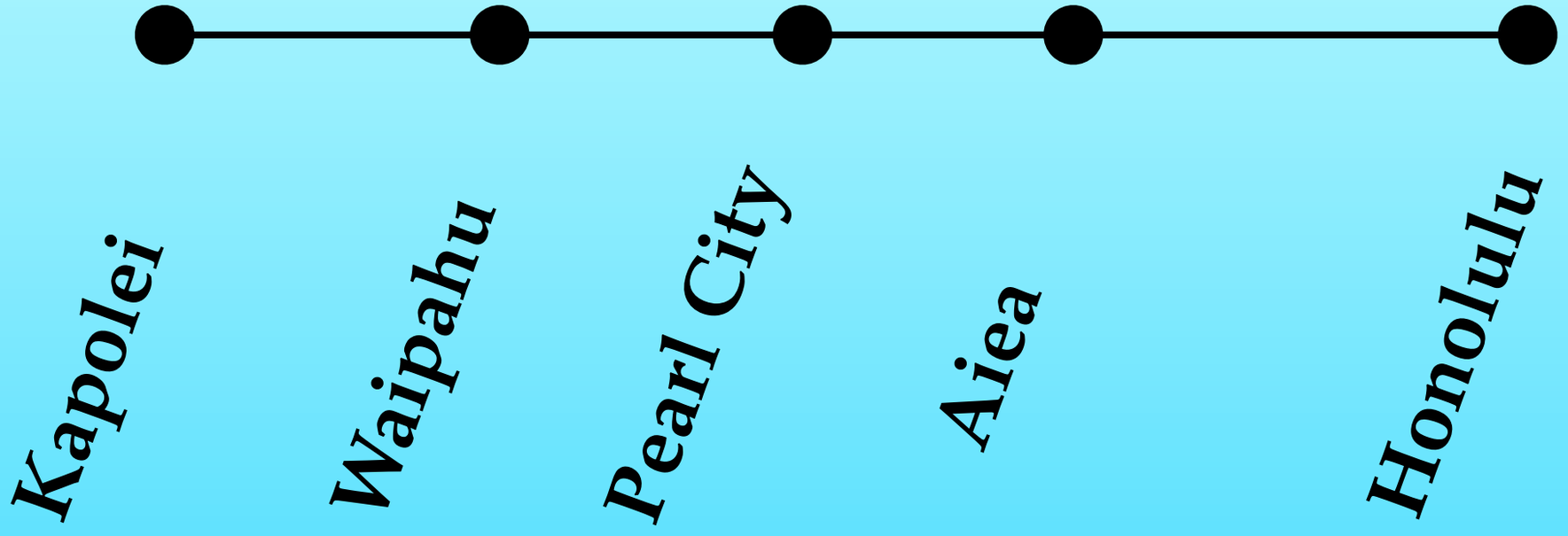
Buses have wifi, leather seats, and free coffee and donuts.

Rush-Hour Express Buses



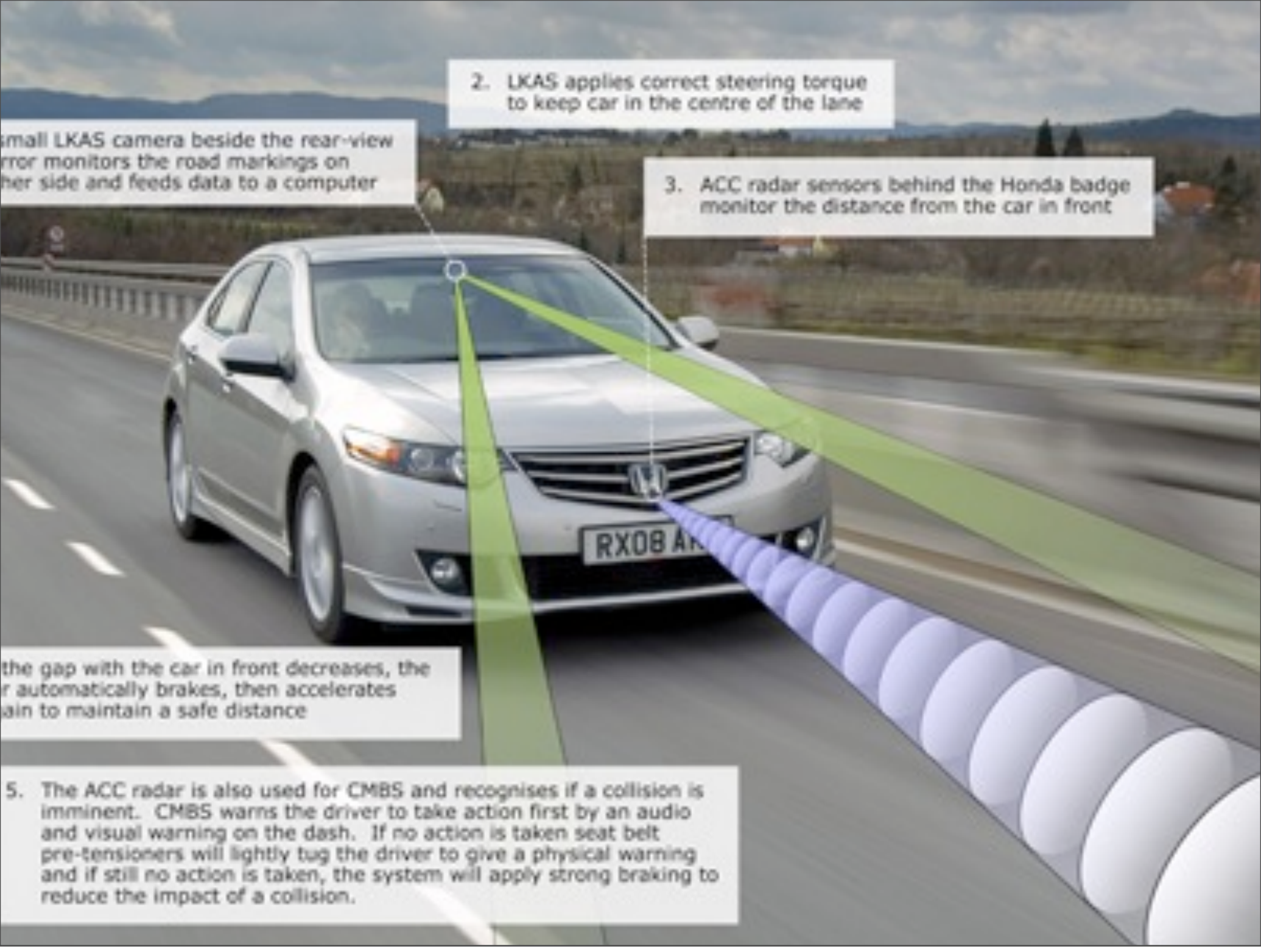
Honolulu could have a system like this with express, non-stop buses between major points during rush hour.

Off-Peak BRT

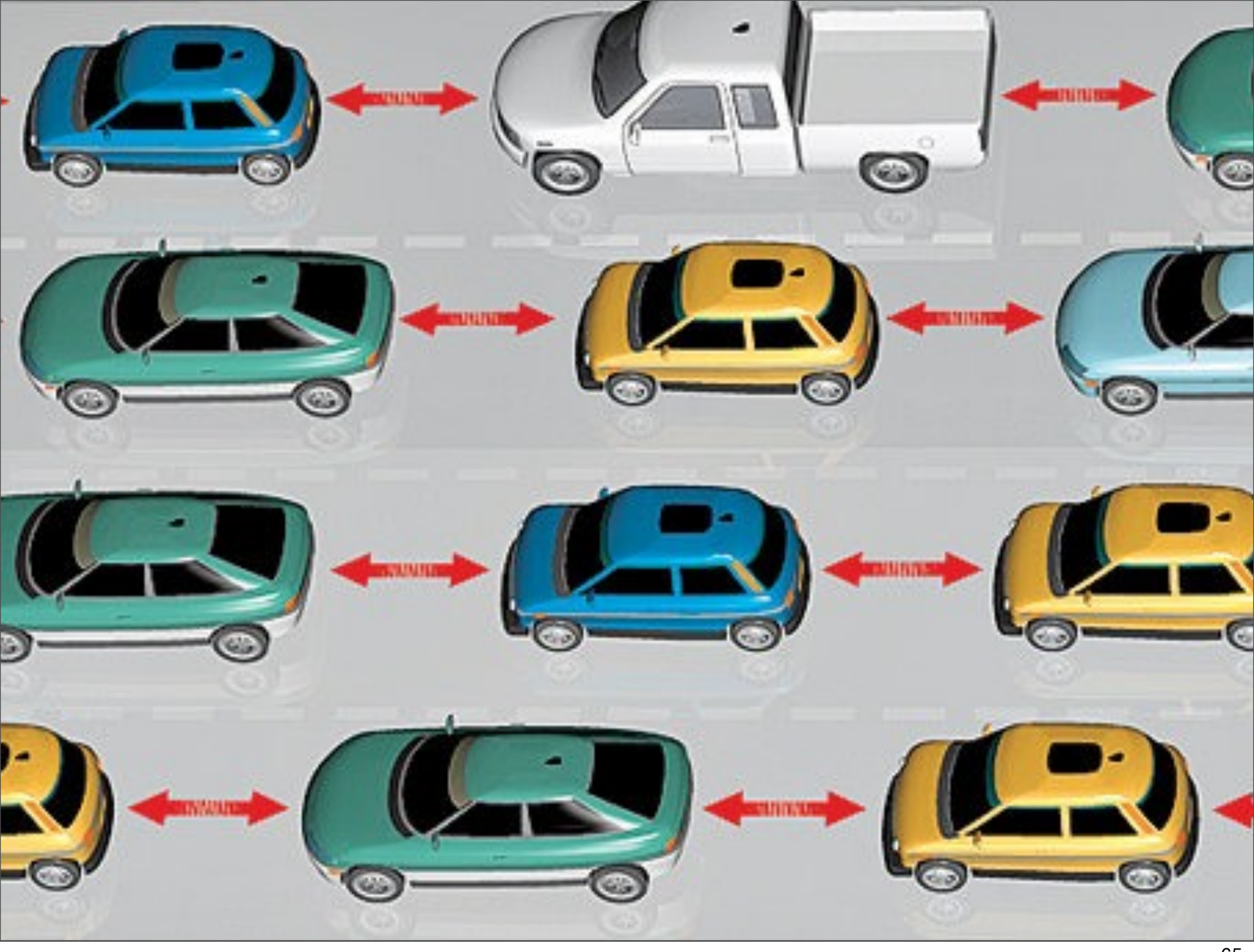


During non-rush hours, the buses might make a few stops, making it “bus-rapid transit” or BRT.

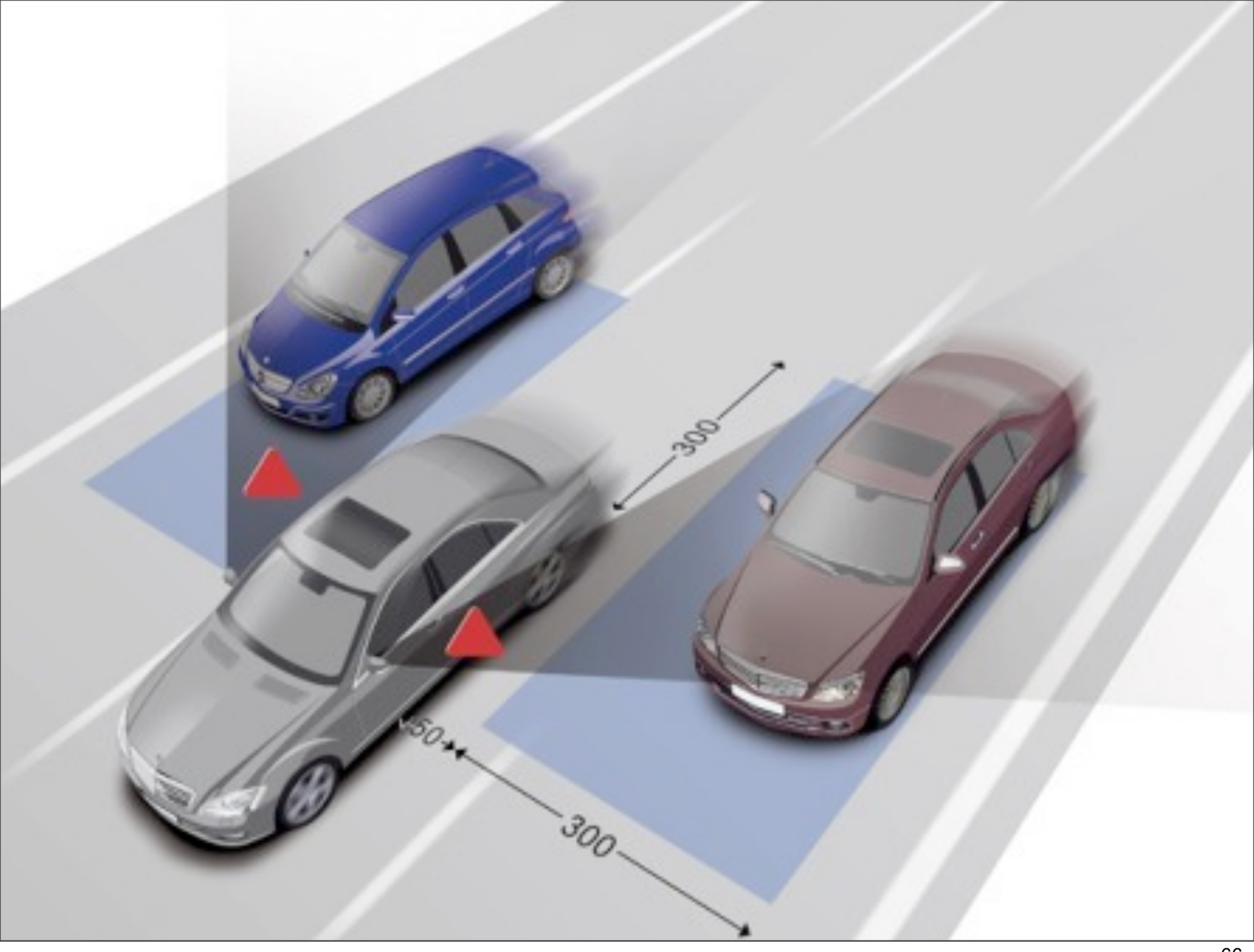
Transit alone will not solve the region's congestion problems. The most cost-effective way to reduce congestion is through traffic signal coordination. For less than the cost of one mile of the proposed Honolulu rail line, every signal in the region could be coordinated saving enormous amounts of time and energy.



New technologies will reduce congestion in the future. Many cars today have adaptive cruise control, which means the cars maintain a fixed distance from the car in front.



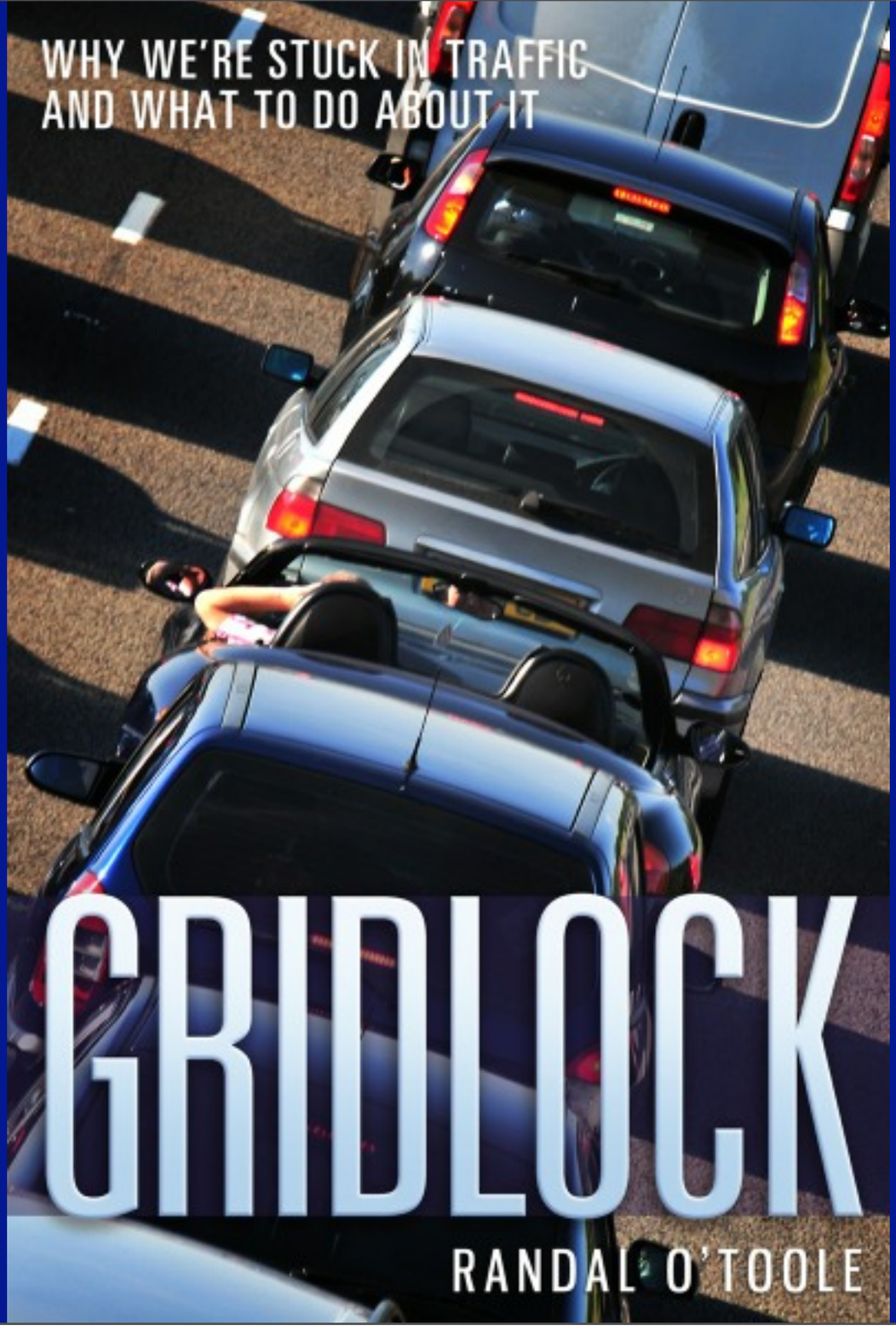
Because about half of all congestion is due to slow human reflexes, once as few as 20 percent of cars are using adaptive cruise control, a lot of congestion will go away.



New cars are also coming with collision avoidance, meaning the cars can sense other cars on the road and brake or take other actions to avoid collisions. Since lots of congestion results from auto accidents, this will help eliminate such congestion.

Turning cars with these technologies into completely driverless cars will be little more than a software upgrade. Google has successfully operated driverless cars more than 200,000 miles in California.

Here is a Volkswagen with a “valet parking” feature. When you arrive at your destination, you can get out of your car and tell it to go find a parking place. When you are ready for your car, you can call it on your smart phone and it will come pick you up.



All of these ideas and more are discussed in detail in Gridlock.

Policy Analysis

No. 663 March 24, 2010

Defining Success
The Case against Rail Transit

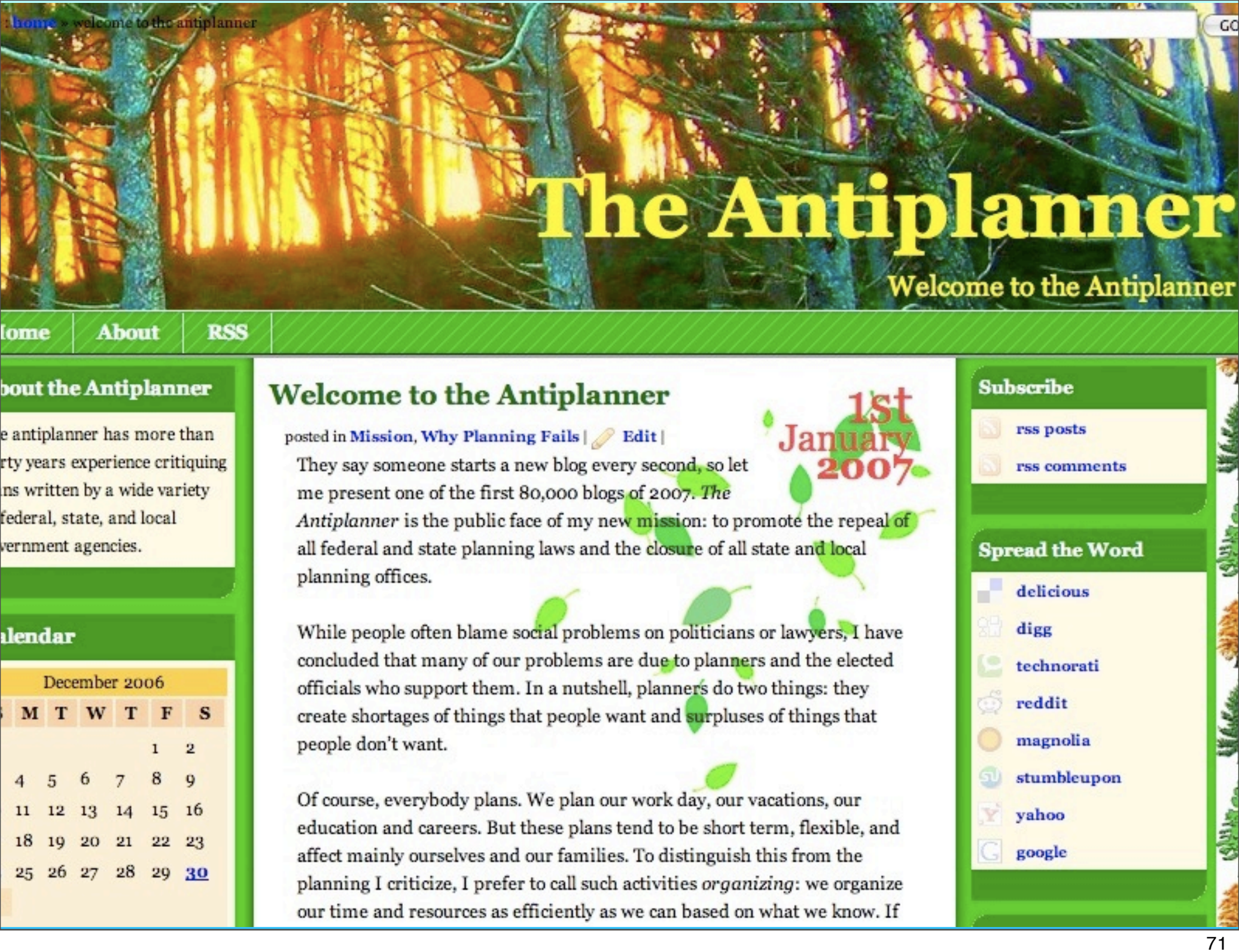
by Randal O'Toole

Executive Summary

Over the past four decades, American cities have spent close to $100 billion constructing rail transit systems, and many billions more operating those systems. The agencies that spend taxpayer dollars building these lines almost invariably call them successful even when they go an average of 40 percent over budget and, in many cases, carry an insignificant number of riders. The people who rarely or never ride these lines but still have to pay

- Ridership: Do new rail lines significantly increase transit ridership?
- Cost-Effectiveness: Are new rail lines less expensive to operate than buses providing service at similar frequencies and speeds?
- The "Cable Car" Test: Do rail lines perform as well as or better than cable cars, the oldest and most expensive form of mechanized land-based transportation?

You can also download my papers on these subjects from cato.org.



My daily blog also frequently comments on Portland and rail transit. Go to http://ti.org/antiplanner or just Google "antiplanner" and I'll be the first thing on the list.

For more information:

Web sites:

ti.org **cato.org**

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