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Rails Won't Save America

by Randal O'Toole

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Executive Summary

Rising gas prices and concerns about greenhouse gases have stimulated calls to build more rail transit lines in urban areas, increase subsidies to Amtrak, and construct a large-scale intercity high-speed rail system. These megaprojects will cost hundreds of billions of dollars, but they won't save energy or significantly reduce greenhouse gas emissions.

Although media reports suggest that many people are taking public transit instead of driving, actual numbers show that recent increases in transit ridership account for only 3 percent of the decline in urban driving. Also, contrary to popular belief, rail transit does not save energy. Many light-rail operations use more energy per passenger mile than the average sport utility vehicle, and almost none uses less than a fuel-efficient car such as a Toyota Prius. People who respond to high fuel prices by taking transit are not saving energy; they are merely imposing their energy costs on someone else.

Rail transportation is also much more heavily subsidized than other forms of travel. Where highway subsidies average less than a penny per passenger mile, and subsidies to flying are even lower, Amtrak costs taxpayers 22 cents per passenger mile and urban transit costs 61 cents per passenger mile.

Even if rail transport did save energy, spending more money on rail will get few people out of their cars. People who want to save energy should plan to buy more fuel-efficient cars and encourage cities to invest in traffic signal coordination, which can save far more energy at a tiny fraction of the cost of building new rail transport lines.

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Per passenger mile, subsidies to Amtrak are 40 times greater, and subsidies to urban transit are 120 times greater, than subsidies to driving.

Myth 1: Rail transportation is inexpensive

Reality: Rail transport is several times more expensive, per passenger mile, than driving or flying.

Intercity rail transportation and urban transit are often billed as affordable alternatives to the automobile or airlines. In fact, government-funded rail transportation is far more expensive than more popular forms of travel. To make them at all competitive with flying and driving, taxpayers must heavily subsidize intercity rail and urban transit.

Americans spent $1.03 trillion buying, operating, repairing, and insuring automobiles in 2006.[1] In exchange, they traveled 4.55 trillion passenger miles by car and light truck.[2] That works out to about 22.5 cents per passenger mile. Roads also received $25.1 billion in subsidies, mostly from local governments, which adds a half penny per passenger mile to the cost of driving.[3] Including subsidies, domestic airline service cost about 13.1 cents per passenger mile in 2006.[4]

By comparison, Amtrak spent more than $3 billion carrying people about 5.4 billion passenger miles in 2006. This works out to 56 cents per passenger mile, more than four times the cost of flying. Also in 2006, America's urban transit agencies spent about $42 billion on 49.5 billion passenger miles, for a cost of 85 cents per passenger mile, or more than three times the cost of driving. (See Figure 1.)

Myth 2: We've subsidized highways and airports for years; now it is time to subsidize alternatives.

Reality: Since at least 1975, subsidies to Amtrak and transit have been many times greater, per passenger mile, than subsidies to highways and air travel.

In 2006, Americans paid $93.6 billion in tolls, gas taxes, and other highway user fees. Of this amount, $19.3 billion was diverted to mass transit and other nonhighway activities. At the same time, various governments—mainly local—spent $44.5 billion in property, sales, or other taxes on highways, roads, and streets. The net subsidy to highways was $25.1 billion, or about half a penny per passenger mile.[5] As most airport costs are paid for out of airport landing fees, subsidies to air travel were even smaller: about 0.1 cent per passenger mile.[6]

Transit carries only 1.5 percent of urban travel and Amtrak carries only 0.2 percent of intercity travel, yet transit and intercity rail require huge subsidies. In 2006, subsidies to Amtrak totaled just over $1 billion, or about 22 cents per passenger mile.[7] This is more than 40 times the subsidies to driving. Subsidies to public transit totaled about 61 cents per passenger mile, or 120 times the subsidies to autos and highways.[8] (See Figure 2.)

This imbalance in transportation subsidies is hardly new. According to available data, subsidies per passenger mile to Amtrak and public transit have been many times greater than subsidies to driving since at least 1975.[9]

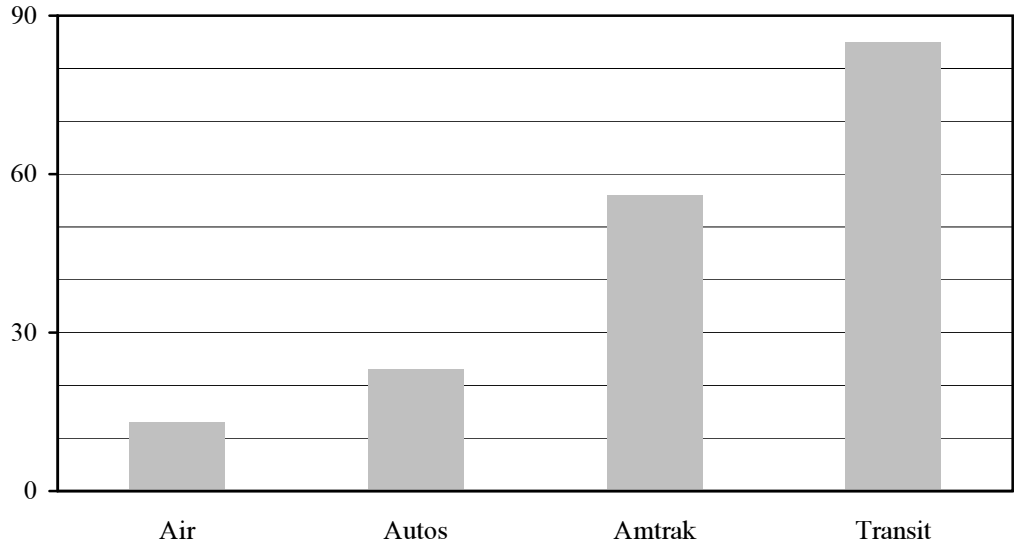
Like any infrastructure, rail lines, once built, require continued and expensive maintenance and frequent rehabilitation. Such costs threaten to bankrupt many of the nation's transit systems. The Chicago Transit Authority is "on the verge of collapse" and needs $9 billion to rehabilitate its rail service.[10] The Washington Metrorail needs $12 billion for rehabilitation but does not even have the $1.5 billion it needs for "bare-bones urgent priorities."[11] Boston is spending a full third of its transit budget on interest on the debt it incurred to rehabilitate its rail system, while interest charges for New York's subway system are expected to reach $2 billion per year by 2010.[12] America's taxpayers should not be asked to support even more high-cost transportation projects.

Myth 3: High gas prices are leading millions to turn to public transportation.

Reality: High prices may reduce driving, but hardly any of that reduction is taken up by public transport.

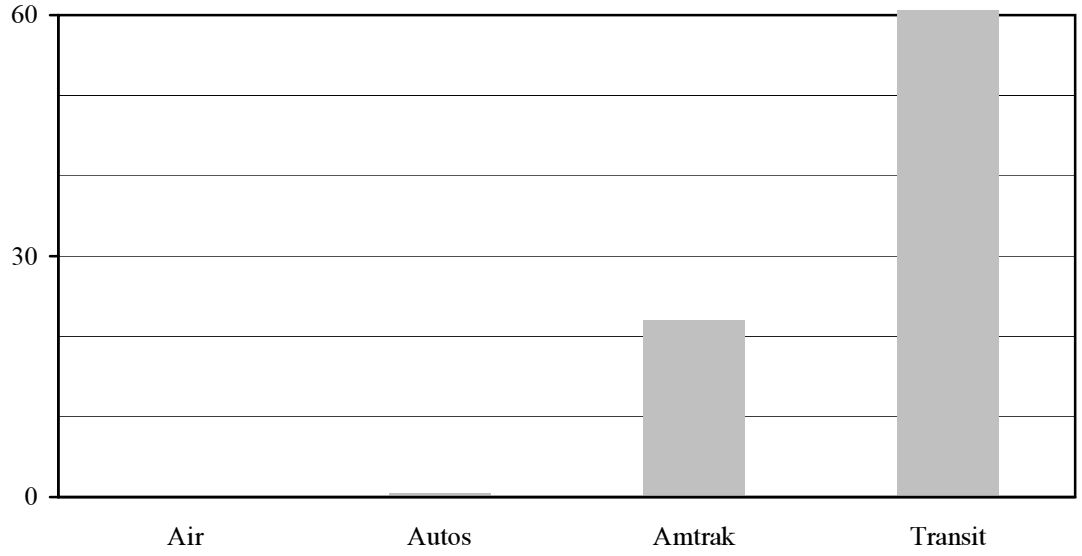
The U.S. Department of Transportation recently announced that Americans drove 4 percent less in March of 2008 than they did in the same month of 2007—the biggest drop in driving since World War II.[13] Meanwhile, the

Figure 1
Cost of Transport per Passenger Mile, 2006 (cents)



Sources: *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), tables 1-37, 3-07, and 3-16; *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Capital Use" and "Operating Expenses" spreadsheets; *National Economic Accounts* (Washington: Bureau of Economic Analysis, 2008), table 2.5.5; *2006 Annual Report* (Washington: Amtrak, 2007).

Figure 2
Transportation Subsidies per Passenger Mile, 2006 (cents)



Sources: *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), tables 1-37, 3-27a, and 3-29a; *Highway Statistics 2006* (Washington: Federal Highway Administration, 2008), table HF10; *2006 Annual Report* (Washington: Amtrak, 2007); *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Capital Use," "Operating Expense," and "Fares" spreadsheets.

Increased transit ridership only made up for 3 percent of the decline in driving due to high gas prices.

American Public Transportation Association has eagerly noted that transit ridership in 2008 appears on target to exceed any of the previous 50 years.[14] APTA wants people to conclude that auto drivers are switching to transit in droves.

In fact, transit ridership in the first three months of 2008 was only 3.4 percent greater than the same period in 2007. Since transit carries only about 1.5 percent of all urban travel, a 3.4 percent increase has an insignificant impact on auto driving. (See Figure 3.)

The 3.4-percent first-quarter ridership increase equaled 86 million new transit trips, or—since the average transit trip is about 5.3 miles long—about 455 million transit passenger miles. That is less than 3 percent of the 15.4 *billion* decline in urban auto passenger miles. That means 97 percent of the decline represented people doing something other than riding transit—perhaps carpooling, trip chaining, or simply forgoing travel.

Ironically, APTA data for March 2008—the month with the 4 percent decline in driving—actually show a slight *decrease* in ridership from 2007. Transit is clearly not making a difference for most people who are affected by high fuel prices. This is because transit systems cannot take people where they want to go, when they want to go there—which is especially a problem for inflexible rail systems.

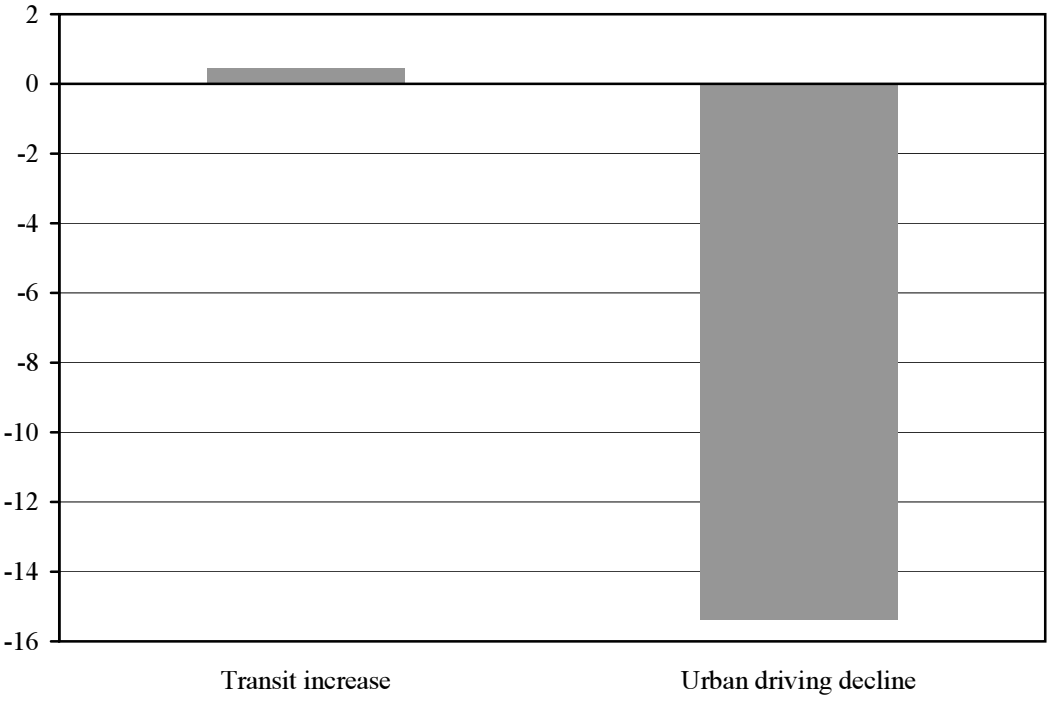
Myth 4: Intercity rail and transit improvements can get a lot of people out of their cars.

Reality: Despite high gas prices and huge subsidies to transit and intercity rail, Europeans drive almost as much as Americans.

Europe's experience offers no hope that huge investments in intercity rail or urban transit will get a lot of people to stop driving, even in the face of high fuel prices. Instead, the main long-term effect of high fuel prices is to encourage people to buy more fuel-efficient cars.

Thanks to high fuel taxes, Europeans have paid $5 to $6 per gallon for fuel for many

Figure 3
Transit versus Driving (billions of passenger miles)



Sources: *Traffic Volume Trends: March 2008* (Washington: Federal Highway Administration, 2008), p. 3; *Transit Ridership Report: First Quarter 2008* (Washington: American Public Transportation Association, 2008), p. 1.

years. Meanwhile, University of Paris transport economist Rémy Prud'homme estimates that countries in the European Union spend 68 billion euros a year subsidizing intercity rail and a similar amount subsidizing urban transit.[15] Despite these taxes and subsidies, the differences between American and European travel patterns are slight.

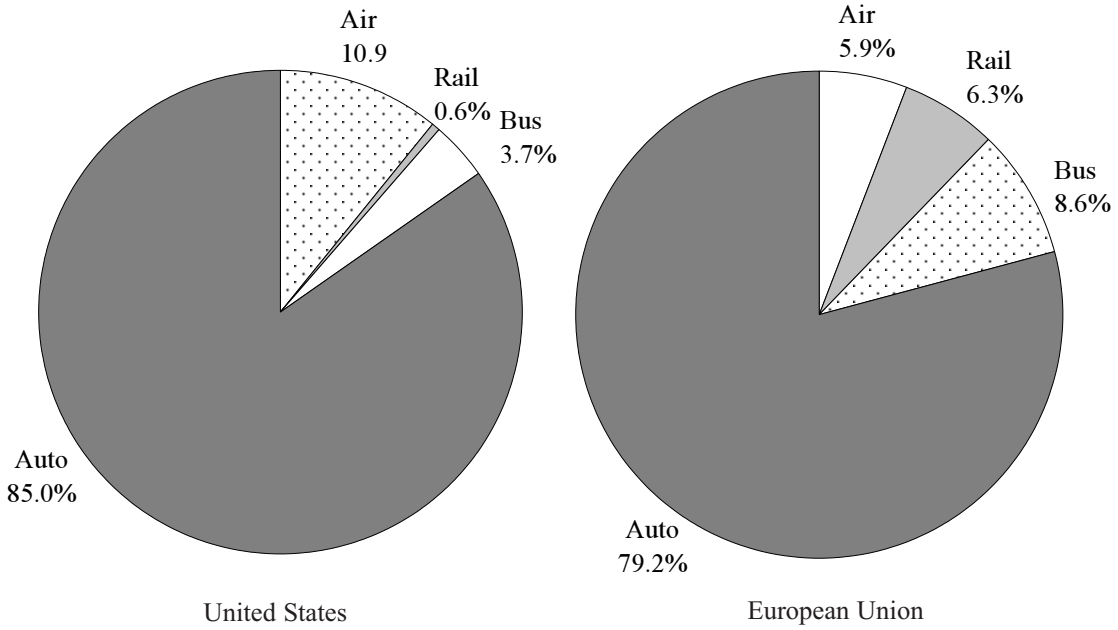
In 2000, residents of the European Union used rail or bus for 14.9 percent of all their travel, while Americans used those modes for just 4.3 percent of travel. Americans flew for 10.9 percent of their travel, while Europeans only went by air for 5.9 percent of travel. That means Americans drove for about 85 percent of travel, while Europeans drove for just over 79 percent—hardly a major difference, and one that can largely be explained by Europe's lower per-capita incomes.[16] (See Figure 4.)

Even as planners tell Americans they should be more like Europe, Europe is looking more like the United States. Between 1970 and 2000, rail's and bus's share of travel in the European Union declined from 23.2 to 14.9 percent. Newly deregulated airlines captured much of the difference, while the auto's share of travel increased from 75.2 to 79.2 percent.[17] European planners predict that rail and bus's combined share will continue to decline between 2000 and 2030.[18] If subsidies of roughly 100 billion euros ($160 billion) a year—approximately what the U.S. spends each year (mostly out of user fees) on its entire roadway system—are not enough to increase rail and transit's share of travel, then how much would it take? Despite the huge subsidies, rail travel in the European Union grew by only 38 percent between 1970 and 2000. Despite high fuel taxes, auto driving grew by 140 percent in the same time period. (See Figure 5.)

Amtrak's Northeast Corridor is the only example of high-speed rail service in the United States, and Amtrak runs more than 20 trains a day each way between New York and Washington. Amtrak carries almost as many

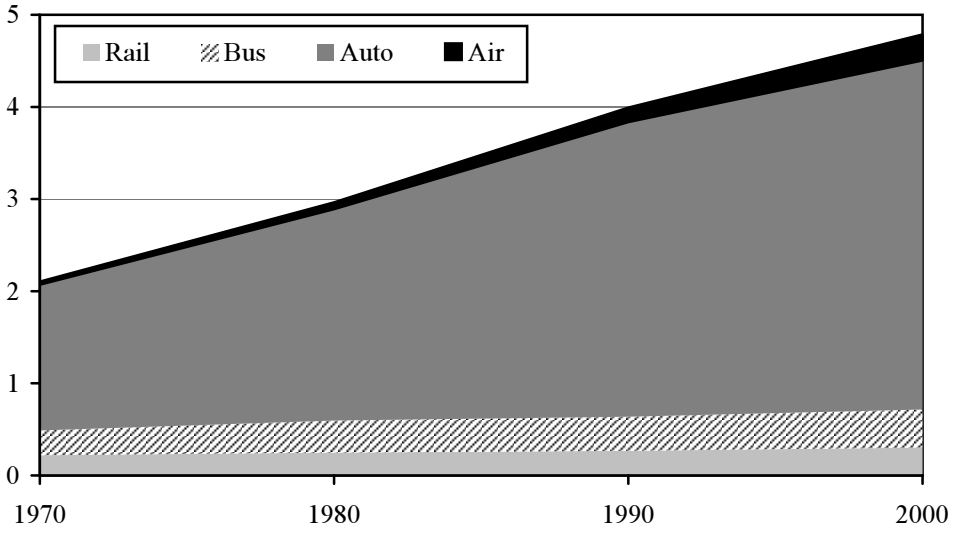
Americans drive for 85 percent of travel, while "green" Europeans drive for 79 percent—hardly a major difference.

Figure 4
U.S. and EU Transportation Modes, 2000 (percent)



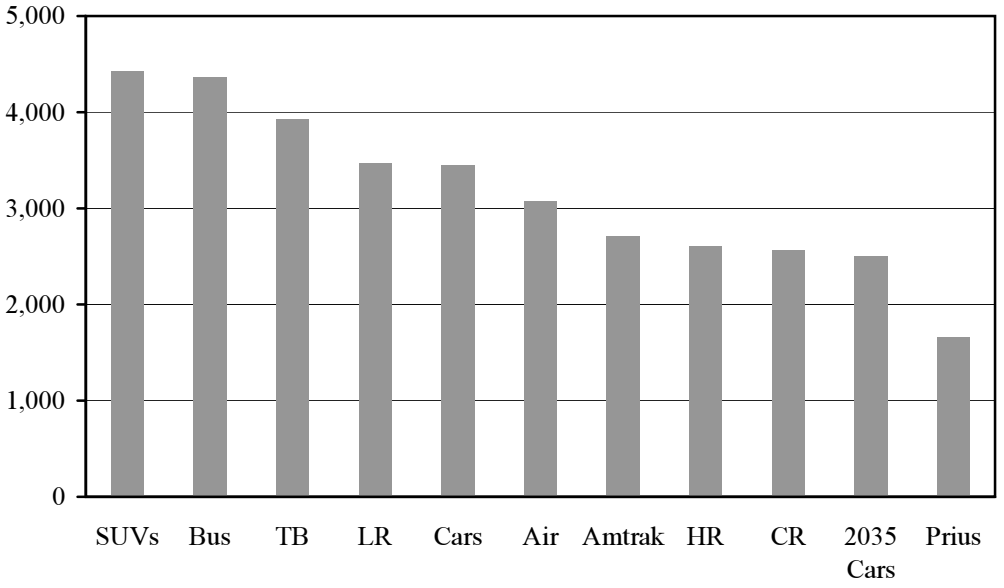
Sources: *Panorama of Transport: Statistical Overview of Transport in the European Union, part 2* (Luxembourg: European Communities, 2003), p. 89; *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), table 1-37.
Note: Rail and bus numbers include both intercity and urban rail and bus services.

Figure 5
EU Passenger Kilometers per Year, by Mode (trillions)



Source: *Panorama of Transport: Statistical Overview of Transport in the European Union, part 2* (Luxembourg: European Communities, 2003), p. 89.

Figure 6
Energy Consumption per Passenger Mile, by Transportation Type (BTU)



Sources: *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), tables 4-18 and 4-21; *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Energy Consumption" spreadsheet; Davis and Diegel, *Transportation Energy Data Book: Edition 26* (Oak Ridge, TN: U.S. Department of Energy, 2007), table 2.13.
Notes: The energy costs of various forms of transportation are shown in British thermal units (BTUs), a standard measure of energy consumption. "SUVs" includes pick ups and full-size vans. "TB" is electric trolley buses, "LR" light rail, "HR" heavy rail (elevated and subway), and "CR" commuter rail. All data are for 2006 except Amtrak which is for 2005, and 2035 Cars which is projected based on requirements of the Energy Independence and Security Act of 2007.

riders in this corridor as the airlines, but only 14 percent of total travel in this corridor.[19] High-speed rail does more to reduce the profitability of airlines than relieve crowded highways.

Myth 5: Rail transport saves energy.
Reality: Getting people to drive more fuel-efficient cars will save far more energy than building rail transit.

Contrary to popular belief, neither public transit nor intercity rail saves much energy. Buses consume about as much energy per passenger mile as light trucks (pick ups, vans, and sport utility vehicles). Light rail consumes about as much as the average passenger car. Amtrak is only a little better than the average domestic airline flight.

Heavy rail (subway and elevated) and commuter rail do a little better than automobiles and airlines. But neither is as energy efficient as the most fuel-efficient cars, such as the Toyota Prius. (See Figure 6.)

Unlike transit, which generally has been getting less energy efficient over time, automobiles are getting more energy efficient.[20] Under the Energy Independence and Security Act of 2007, this trend will continue so that, by 2035, the average auto on the road will consume just 2,500 BTUs per passenger mile—less than Amtrak or any urban transit mode today. The energy efficiency of proposed new rail projects must be compared not against today's autos but against those of the future, when those rail projects will actually be in service.

These numbers do not even count the exorbitant energy cost of constructing rail lines. Because rail lines tend to move far fewer people than highways, this construction cost is much higher per passenger mile. For example, planners projected that operating a new light-rail line in Portland, Oregon, would save a little energy each year, but it will take 172 years of that savings to pay for the energy cost of construction.[21] In general, people who ride public transit or intercity rail do not save energy so much as they make other people pay their energy bills.

Myth 6: Rail transport can reduce greenhouse gas emissions.
Reality: Diesel-powered transport emits as much greenhouse gases per passenger mile as driving, and electric power only reduces emissions if the electricity does not come from burning fossil fuels.

Since diesel buses and trains are no more energy efficient than autos, it is no surprise that they produce as much or more greenhouse gas emissions per passenger mile. Where electric power is generated by burning fossil fuels, electric rail transport is also a major generator of greenhouse gases. As with energy, moving consumers to more fuel-efficient automobiles will do more to reduce greenhouse gas emissions than building rail lines. Even if some forms of rail transit produced slightly less greenhouse gas than fuel-efficient cars, when the carbon dioxide (CO_2) emissions during construction are counted, the savings are too small to be worthwhile. (See Figure 7.)

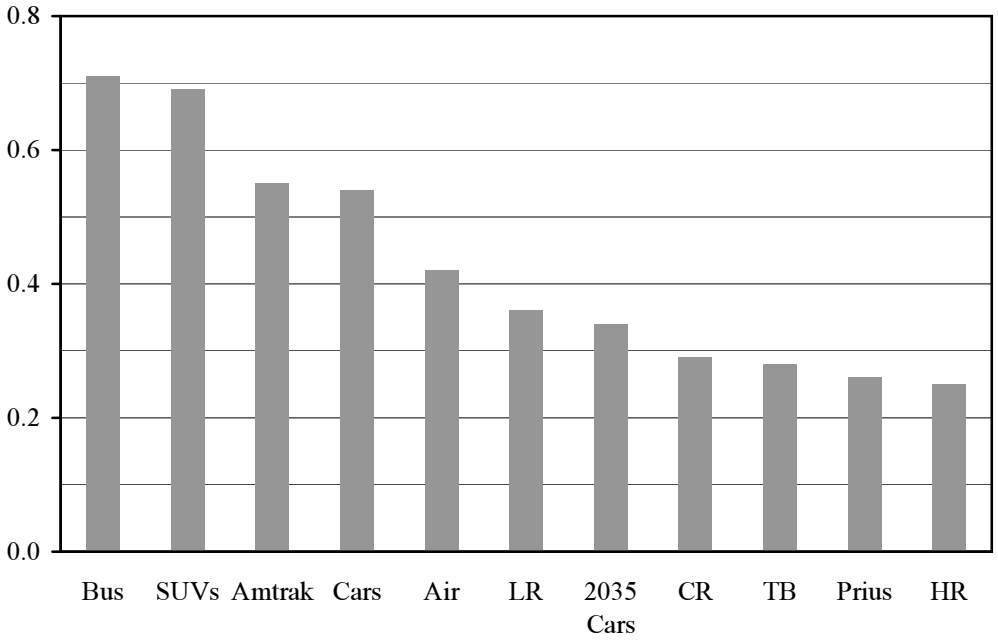
Electric-powered transit produces few greenhouse gases when the electricity is from nuclear, hydro, or other renewable sources. But in places such as Dallas, Denver, and Washington, D.C., where most electricity comes from burning fossil fuels, rail transit generates more greenhouse gases than driving today and much more than driving in the future. (See Figure 8.)

If the United States is going to significantly reduce its greenhouse gas emissions, McKinsey & Company says it should invest in technologies that will reduce emissions at a cost of no more than $50 per ton of CO_2–equivalent gases. In a report sponsored by several corporations (including Shell and PG&E) and nonprofit organizations (including Environmental Defense and Natural Resources Defense Council), McKinsey notes, for example, that cars built with lighter-weight materials can reduce emissions and actually save money in the long run.[22]

By comparison, a proposed light-rail line in Portland, Oregon, where most electricity comes from renewable sources, is expected to cost more than $7,600 per ton of reduced greenhouse gases.[23] Converting diesel buses to biodiesel at the rate of $200 a ton or buying hybrid buses at $1,300 a ton costs less than building light rail but still much more than $50 per ton.[24]

Transit riders are not saving energy; they are merely making others pay their energy bills.

Figure 7
CO_2 Emissions, by Vehicle Type (pounds per passenger mile)



Source: *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), tables 4-18 and 4-21; *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Energy Consumption" spreadsheet; *Transportation Energy Data Book: Edition 26* (Oak Ridge, TN: U.S. Department of Energy, 2007), table 2.13.
Notes: "SUVs" includes pick ups and full-size vans. "TB" is electric trolley buses, "LR" light rail, "HR" heavy rail (elevated and subway), and "CR" commuter rail. All data are for 2006 except Amtrak which is for 2005, and 2035 Cars which is projected based on requirements of the Energy Independence and Security Act of 2007. Conversions to CO_2 are based on Energy Information Administration, "Fuel and Energy Emission Coefficients," tinyurl.com/pqubq.

Where electricity comes from burning fossil fuels, rail transit generates more greenhouse gases than driving.

Transit agencies in regions with renewable sources of electricity will find that electric trolley buses will do far more to reduce greenhouse gas emissions at a far lower cost than rail transit. For example, Seattle trolley buses emit less than a third as much CO_2 per passenger mile as a Toyota Prius, and—unlike rail—the emissions during installation of the trolley wires are negligible.

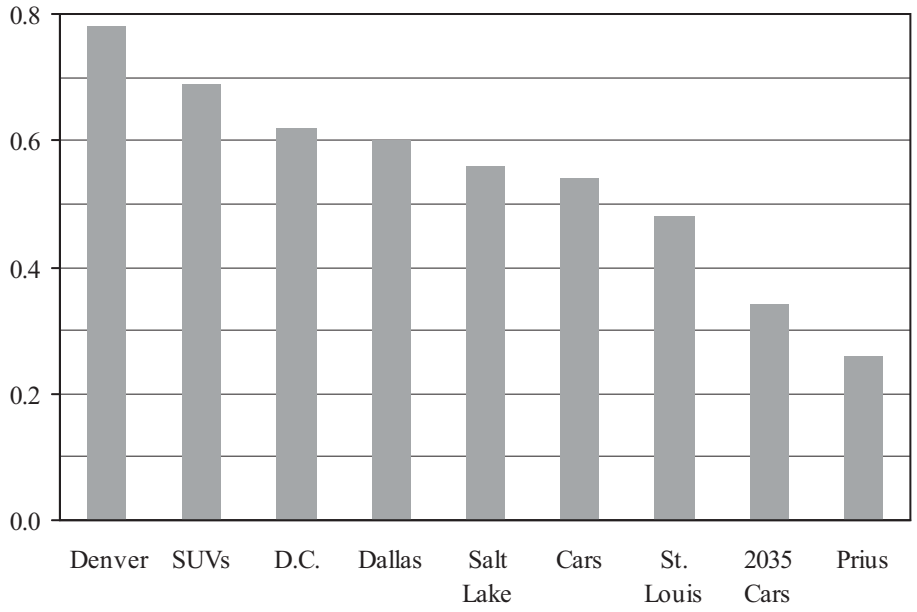
Cities that genuinely want to reduce greenhouse gases should invest in cost-effective congestion reduction techniques such as traffic signal coordination. The Federal Highway Administration says that three out of four traffic signals are not properly coordinated with nearby signals.[25] A 2003 signal coordination project in San Jose that cost $500,000 saved motorists an estimated 471,000 gallons of fuel per year.[26] At $2 per gallon, the savings more than paid for the project in the first year, and at 19.5 pounds of CO_2 per gallon, the project reduced greenhouse gas emissions at a savings of around $200 per ton.

Given that the vast majority of American travel is by car, increasing fuel economy by building lighter autos and reducing traffic congestion will do far more to reduce greenhouse gas emissions than transit improvements—and at a net savings rather than a huge cost. (See Figure 9.)

Myth 7: Rail transport helps low-income people.
Reality: Financial troubles with rail projects have forced many transit agencies to reduce bus service to low-income neighborhoods.

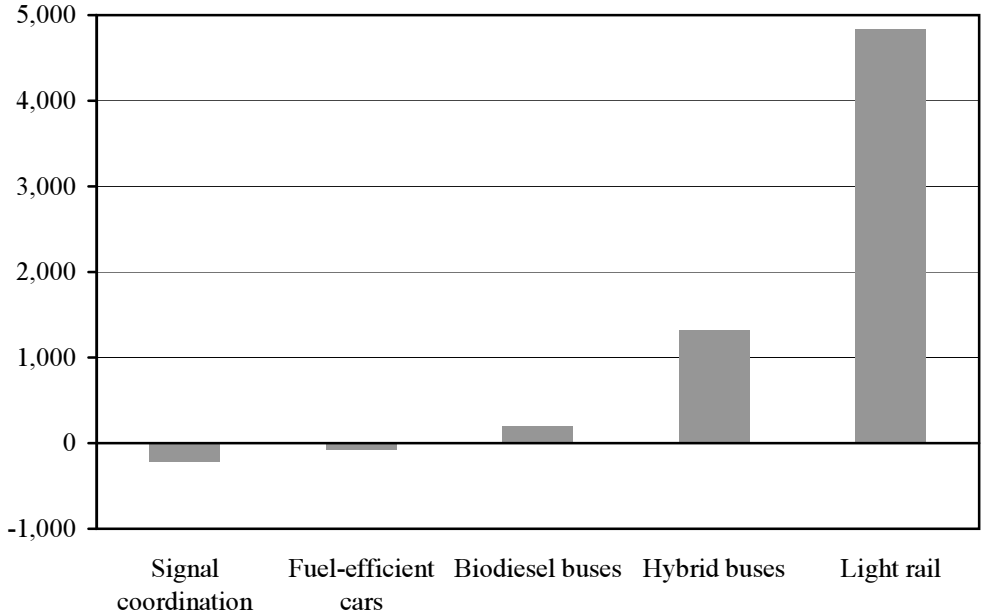
More than 90 percent of American families have at least one automobile. Rail proponents often claim that new rail construction

Figure 8
CO_2 Emissions from Rail Transit in Selected Cities (pounds per passenger mile)



Sources: SUVs and cars from Stacy C. Davis and Susan W. Diegel, *Transportation Energy Data Book: Edition 26* (Oak Ridge, TN: Department of Energy, 2007), tables 2.13 and 2.14; rail transit from 2006 National Transit Database (Washington: Federal Transit Administration, 2007), Energy Consumption spreadsheet; see Randal O'Toole, "Does Rail Transit Save Energy and Reduce Greenhouse Gas Emissions?" Cato Institute Policy Analysis no. 615, April 14, 2008, for detailed calculations.

Figure 9
Cost per Ton of CO2 Abated (dollars)



Sources: See calculations in Randal O'Toole, "Does Rail Transit Save Energy or Reduce Greenhouse Gas Emissions?" Cato Institute Policy Analysis no. 615, April 14, 2008, p. 17.

Cities that genuinely want to reduce greenhouse gases should invest in cost-effective congestion reduction techniques such as traffic signal coordination.

can provide mobility for those families whose incomes are so low that they cannot afford a car or the current high fuel prices. In fact, even with subsidies, rail is a high-cost luxury that mainly serves the well-to-do.

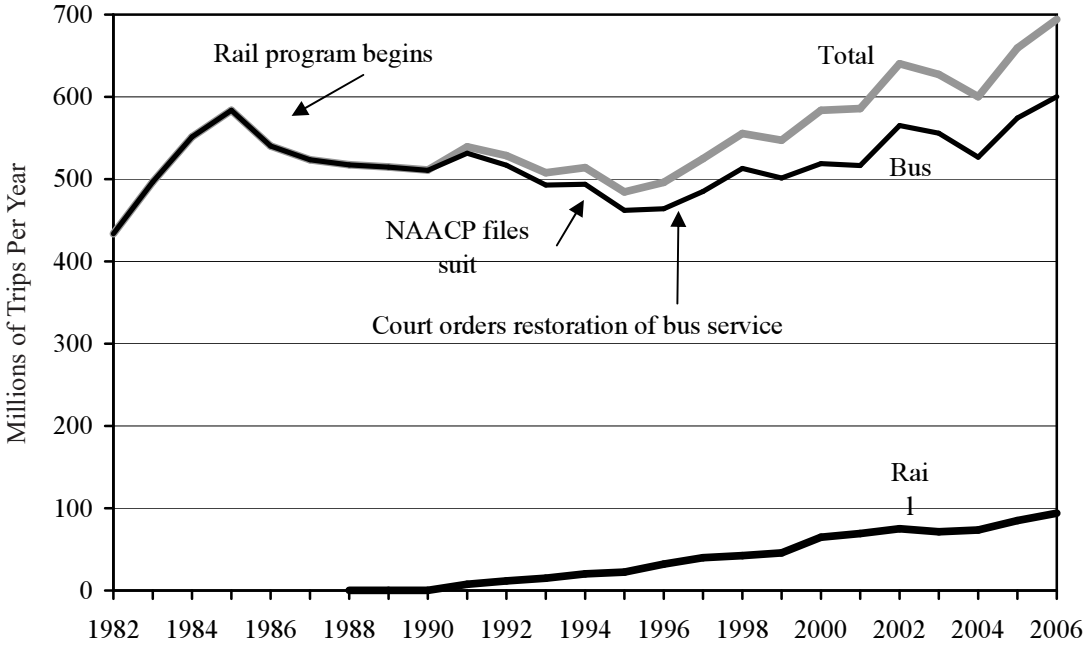
Intercity buses carry more than 25 times as many passenger miles each year to more destinations than Amtrak at about half the fares and without subsidies.[27] Some low-income passengers may ride Amtrak. But most of the travel in the Northeast Corridor, California, and other short-distance corridors is business travel; much of the long-distance travel is vacationers.

Meanwhile, new rail transit projects continue to suffer large cost overruns, require transit agencies to make high mortgage payments, and impose huge long-term repair and maintenance costs. These problems almost inevitably force transit agencies to cut bus service to low-income and transit-dependent neighborhoods.

Los Angeles bus ridership was growing rapidly until the county began building rail transit. In 1985, when the Los Angeles County Metropolitan Transit Authority started construction of rail transit lines, cost overruns forced it to cut bus service and raise fares, leading to a 17 percent decline in ridership by 1995. In 1994, the NAACP successfully sued the agency for cutting service to low-income, minority neighborhoods in order to finance rail lines to white middle-class neighborhoods.[28] Since a 1996 court order restored bus service (and curtailed rail construction), bus ridership has recovered. To date, billions of dollars have been invested in nearly 500 miles of Los Angeles-area rail transit lines. Despite having 80 miles of light rail and subways and hundreds of miles of commuter-rail lines, rail ridership has never equaled the loss in bus ridership between 1985 and 1995. (See Figure 10.)

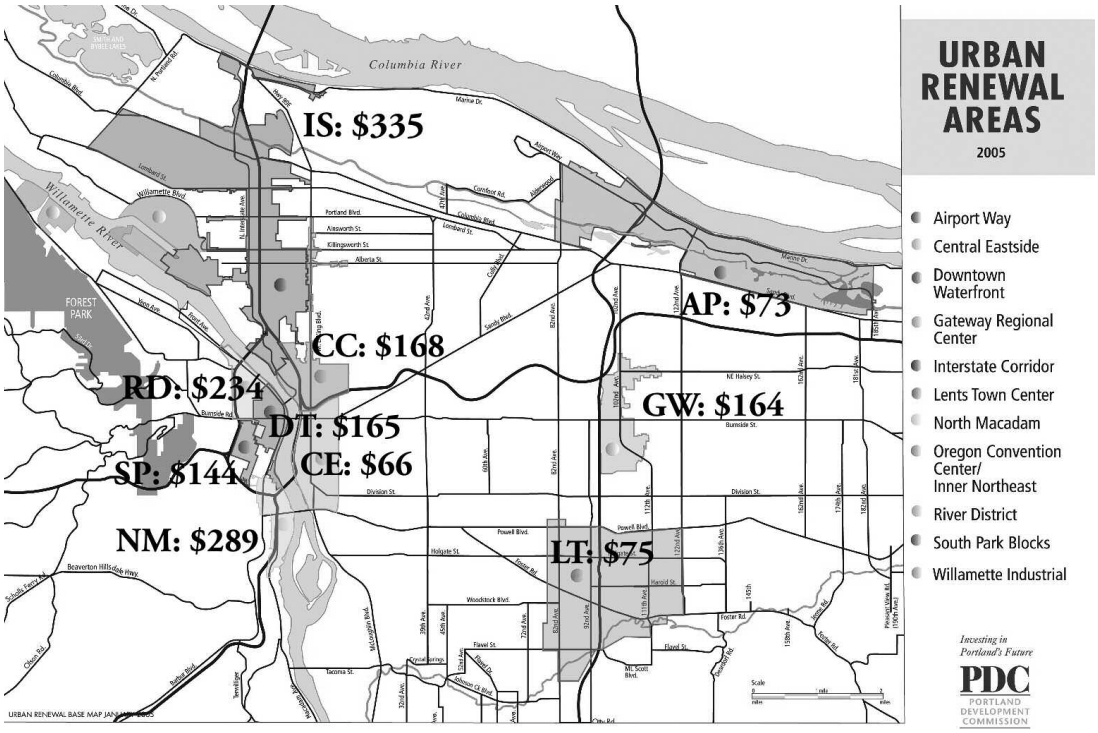
A similar lawsuit has been filed in the San Francisco Bay area. "The Bay Area has two 'separate and unequal' transit systems: an expanding state-of-the-art rail system for predominantly white, relatively affluent communities and a shrinking bus system for low-income people of color," said one of the attorneys in the

Figure 10
Los Angeles Transit Ridership



Source: *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Service Supplied and Consumed" spreadsheet for indicated years.

Figure 11
Development Subsidies along Transit Lines, Portland, OR



Source: Portland Development Commission, "Urban Renewal History Appendix," 2006, tinyurl.com/yo2zde.
Notes: Most of Portland's active urban-renewal districts have been drawn to provide financial support for real estate development along light-rail and streetcar lines. Numbers are millions of dollars of authorized TIF subsidies. The River (RD, also called the Pearl District), South Parkblocks (SP), and North Macadam (NM, or South Waterfront) districts are on the streetcar line. Interstate (IS) is on the yellow light-rail line; Airport (AP) is on the red line; Gateway (GW) is on the blue line; and Lents (LT) is on the green line. Convention Center (CC) and Downtown (DT) are on all light-rail lines. Central Eastside (CE) is on a proposed streetcar line.

lawsuit.[29] Many other cities have cut bus service to low-income neighborhoods following rail construction to middle-class suburbs, including Portland, Sacramento, San Jose, and Washington, D.C. In fact, transit agencies in nearly half the cities with rail service carried fewer riders in 2005 than they did in the mid-1980s, and transit has lost market share to the automobile in nearly all other rail cities.

Myth 8: Rail transport promotes economic development.
Reality: Rail transport has not been a catalyst to economic development, but it has been a catalyst to subsidies to economic development.

Proponents of rail transport argue that it promotes economic development. The Federal Transit Administration asked Robert Cervero, of the University of California, Berkeley, Planning School, and Samuel Seskin, of rail consulting firm Parsons-Brinckerhoff, to examine this question. They found that any new development around rail transport is a zero-sum game for urban areas. "Urban rail transit investments," they said, "rarely 'create' new growth, but more typically redistribute growth that would have taken place without the investment."[30]

Portland, Oregon, is often cited as an example of a place where rail transit has stimulated new development. When Portland opened its first light-rail line in 1986, it rezoned land along the line for high-density, mixed-use, transit-oriented developments. Ten years later, not a single new development of this sort had been built along the line.

Between 1985 and 2005, transit lost market share to the automobile in nearly all rail cities.

Portland schools, fire, police, and other public services have seen budget cuts as the city gives more subsidies to developers near its light-rail and streetcar lines.

"It is a myth to think that the market will take care of development along transit corridors," said city commissioner Charles Hales at the time.[31] He persuaded the rest of the city council to subsidize such development with property tax waivers. Since then, the city has also offered below-market land sales and tax-increment financing (TIF) to developers in rail corridors. The TIF subsidies alone total more than $1.7 billion, including $665 million along the city's streetcar line and nearly a billion more along its light-rail lines.[32] (See Figure 11.)

Today, Hales works for a consulting firm that is trying to persuade other cities to build rail transit lines. Portland's "streetcar line has sparked more than $1.5 billion (and growing) in new development," Hales tells those cities, conveniently forgetting about the subsidies that he initiated.[33] Since tax-increment financing diverts money that would otherwise go to schools, police, fire, and other services, those services have seen major budget cuts as Portland gives more subsidies to developers.[34]

Conclusion

Rail transit and intercity high-speed rail are expensive programs that require huge subsidies and provide little in the way of energy savings or other environmental or social benefits. Rail transit does not attract many people away from driving, and intercity high-speed rail mainly takes business from the airlines. Federal, state, or local officials who are truly interested in saving energy and reducing greenhouse gas emissions should find more cost-effective solutions than new rail projects.

Notes

1. *National Economic Accounts* (Washington: Bureau of Economic Analysis, 2008), table 2.5.5.

2. *Highway Statistics 2006* (Washington: Federal Highway Administration, 2008), table VM1.

3. Ibid., table HF10.

4. *National Transportation Statistics 2008* (Washington: Bureau of Transportation Statistics, 2008), tables 3-07, 3-27a, and 3-27b.

5. *Highway Statistics 2006*, table HF10.

6. *National Transportation Statistics 2008*, tables 3-27a and 3-27b.

7. *2006 Annual Report* (Washington: Amtrak, 2007), p. 20; *National Transportation Statistics 2008*, table 3-07.

8. *2006 National Transit Database* (Washington: Federal Transit Administration, 2007), "Capital Use," "Operating Expenses," and "Fare Revenues Earned by Mode" spreadsheets.

9. *Public Transportation Fact Book Historical Tables* (Washington: American Public Transportation Association, 2007), tables 31, 32, and 36; *Highway Statistics Summary to 1995* (Washington: Federal Highway Administration, 1996), table HF210. Data about capital subsidies to transit only go back to 1992, but operating subsidies alone, data for which go back to 1975, were much greater, per passenger mile, than subsidies to highways.

10. Tudor Van Hampton, "Chicago Rail System on Verge of Collapse," *Engineering News Record*, November 11, 2007.

11. "America's Transit System Stands at the Precipice of Fiscal and Service Crisis," *Metro Matters Fact Sheet* (Washington: Washington Metropolitan Area Transit Authority, 2002), pp. 1–2.

12. Michael Term, "Nation's Oldest Subways in Need of Major Repairs," Associated Press, November 22, 2007.

13. *Traffic Volume Trends: March 2008* (Washington: Federal Highway Administration, 2008), p. 3.

14. "Public Transit Ridership Continues to Grow in the First Quarter of 2008," American Public Transportation Association News Release, June 2, 2008.

15. Rémy Prud'homme, "The Current EU Transport Policy in Perspective," paper delivered at the conference on European Transport Policy in the European Parliament on July 12, 2005, p. 1.

16. *Panorama of Transport: Statistical Overview of Transport in the European Union, part 2* (Luxembourg: European Communities, 2003), p. 89; *National Transportation Statistics 2008*, table 1-37.

17. *Panorama of Transport*, p. 89.

18. *Key Facts and Figures about the European Union* (Brussels, Belgium: European Communities, 2006), p. 54.

19. *The Past and Future of U.S. Passenger Rail Service* (Washington: Congressional Budget Office, 2003), p. 19.

20. Stacy C. Davis and Susan W. Diegel, *Transportation Energy Data Book: Edition 26* (Oak Ridge, TN: Department of Energy, 2007), tables 2.13 and 2.14.

21. *North Corridor Interstate MAX Final Environmental Impact Statement* (Portland, OR: Metro, 1999), pp. 4–104.

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