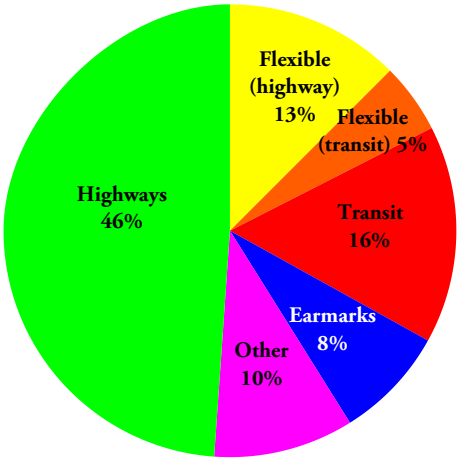
The Citizens' Guide to Transportation Reauthorization

American Dream Coalition ★ americandreamcoalition.org ★ August, 2009

Whenever you buy gasoline, you pay 18.4 cents per gallon to the federal government. About every six years, Congress decides how to spend this money in a process called *surface transportation reauthorization*. The next reauthorization is scheduled for 2009 but may not happen until 2011.

Where Your Federal Gas Taxes Are Going Nov



Most of your federal gas taxes are given to states and metropolitan areas for various transportation projects. From 1956 to 1982, Congress dedicated 100 percent of gas taxes and other federal road user fees to highways. The 1982 reauthorization began diverting some of these funds to mass transit. Also in 1982, Congress inserted the first *earmarks*, or requirements that states spend money on projects that they might not consider high priorities.[1]

By the 2005 reauthorization, Congress dedicated less than half of your gas taxes to highways, while giving nearly 16 percent to transit. Another 18 percent was *flexible*, meaning states and metropolitan areas could spend it on either highways or transit; they spent nearly a third of flexible funds on transit, for a total of more than 20 percent going for transit. About 8 percent was earmarked, some of which went for highways and some for transit, and another 10 percent went for administration, planning, off-road vehicle trails, and a variety of non-transportation programs.[2]

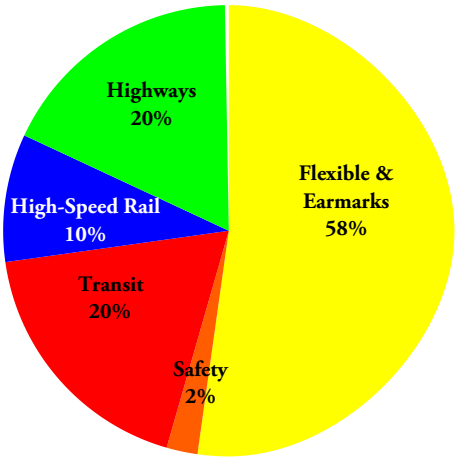
For the 2009 reauthorization, the House Transportation Committee has proposed a much more expensive bill that dedicates only 20 percent to highways, plus 20 percent for transit and 10 percent for high-speed rail. After setting some aside for safety and other programs, nearly all the remaining money would be either earmarks or flexible funds.[3]

To pay for the bill, some on the committee would like to raise gas taxes, but the Obama administration does not want to increase taxes in a recession. Other proposals include a tax on oil futures trades. Either way, road users would end up paying the bulk of the costs even though they will get only a small share of the benefits.

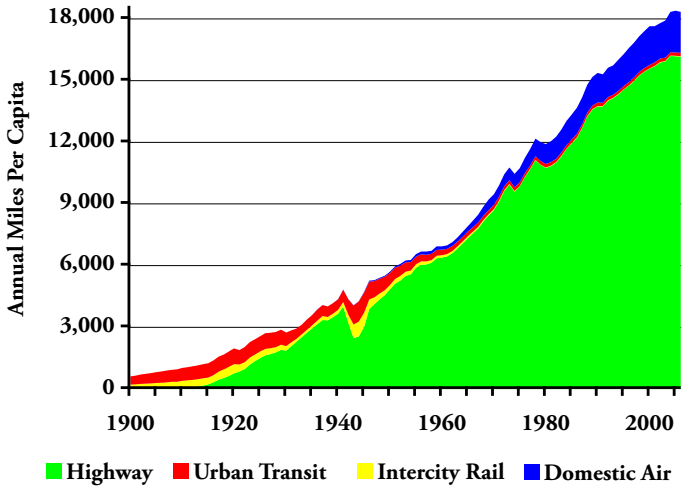
In the debate over the supposed need to "get drivers out of their cars," people often forget that automobiles and highways have provided Americans with enormous benefits. Since about 1925, they have provided more mobility than all other forms of transportation combined. Intercity passenger trains and urban transit at their peaks provided only a tiny fraction of the mobility that Americans get from the automobile today, and most of that mobility was enjoyed mainly by the wealthy.[4]

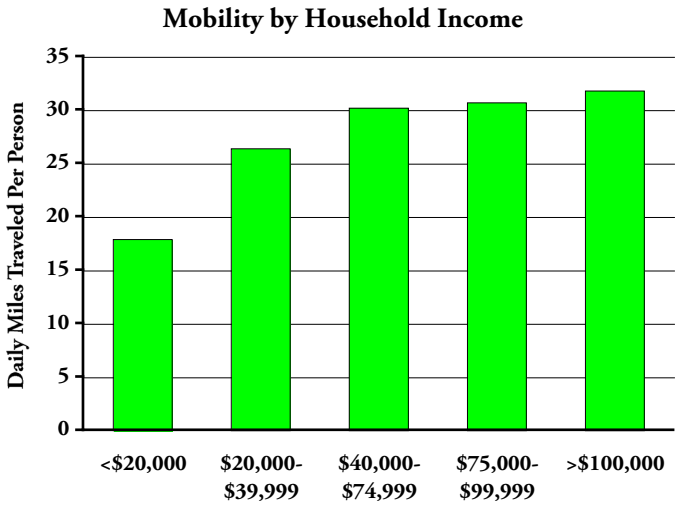
Unlike some forms of transportation, automobiles serve

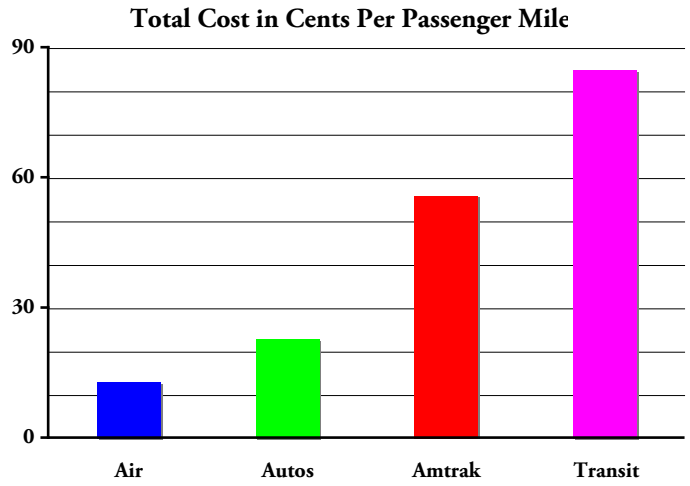
House Transportation Committee Proposal



Mobility in the United States







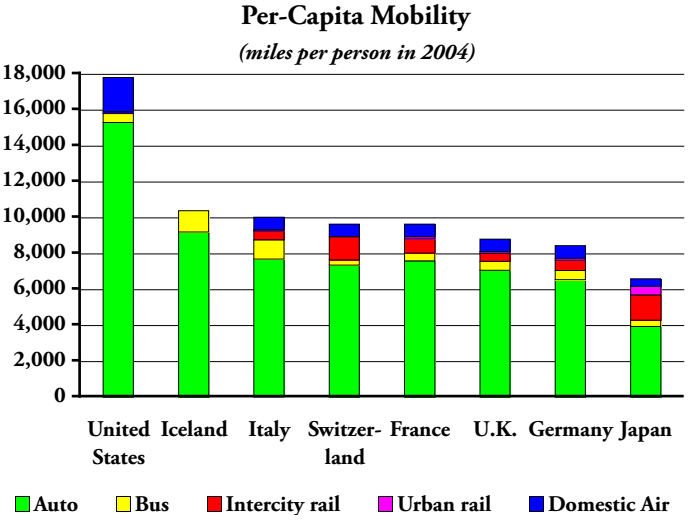
almost all members of American society. The 2000 census found that well over nine out of ten households have access to at least one car.[5] People in households with incomes of more than $100,000 travel only about 75 percent more miles each year than people in households with incomes less than $20,000.[6] Since wealthier households are five times more likely to fly on long trips than low-income households, the distribution of auto travel is more evenly spread than indicated in the above figure.[7]

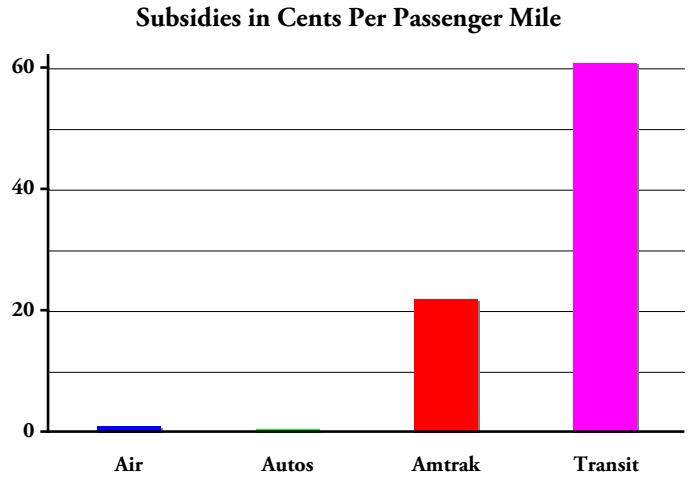
Thanks to their automobiles and highways, Americans are the most mobile people on earth. Due to taxes on fuels that average around $4 a gallon, people in other developed nations do not drive nearly as much as Americans. But, despite large subsidies to high-speed rail and urban transit, they don't make up for reduced driving by taking trains more. For example, the average American rides on urban rail transit 88 miles a year. Though Europe has far more cities with rail transit than the United States, the average western European rides urban rail transit only 96 miles a year. France and Japan have each spent many tens and even hundreds of billions of dollars on high-speed rail, yet the average residents of those countries ride high-speed rail less than 400 miles per year, and rail's share of travel has steadily declined while the auto's share has increased.[8]

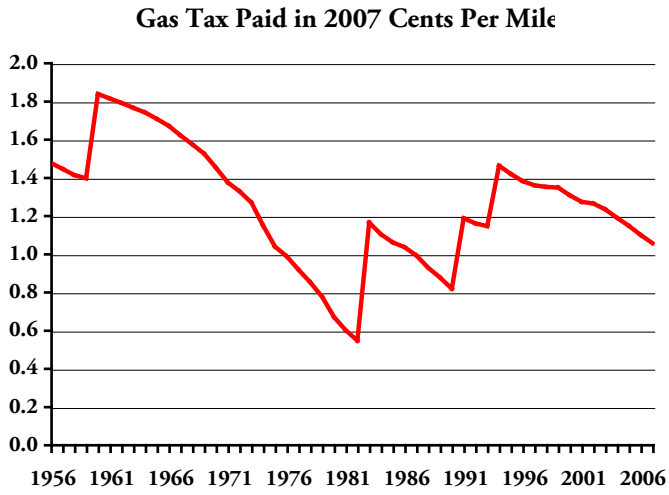
Automobiles are popular because they are an inexpensive way of reaching work, school, retail shops, and social and recreational opportunities that would not be available to most people without cars. Studies show that increased mobility means higher worker productivities and incomes because employers have access to a larger pool of workers, and lower-cost consumer goods because retailers know that unhappy customers can simply drive somewhere else.

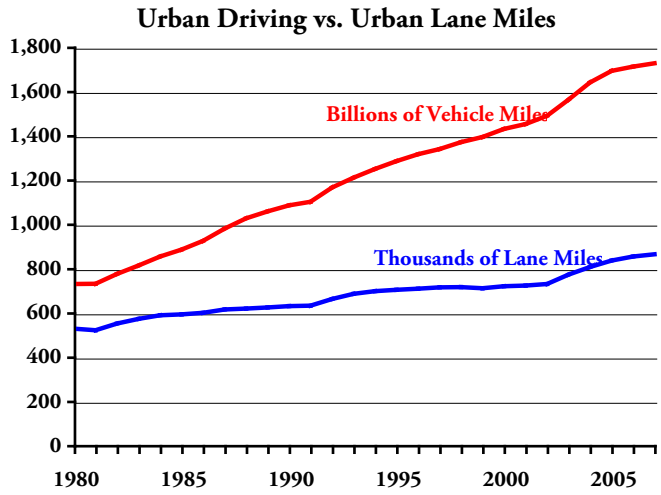
Autos are far less expensive than other modes of travel. Counting costs to both users and taxpayers, Americans spend about 24 cents per passenger mile on driving compared with 56 cents on Amtrak and 85 cents on public transit.[9] While air travel costs less on average, the above chart assumes an average of 1.6 people per car; intercity auto trips have an average of 2.4 people per car, which makes the cost comparable to air travel.

Because most of the cost of highways are paid out of gas taxes, subsidies to driving are very low and are mainly by local governments for local roads, not the interstate or state highways. Most airport costs are also paid by air travelers in ticket taxes and fees. So subsidies to both autos and air travel average a penny or less per passenger mile, while subsidies to Amtrak are more than 20 cents per passenger mile and subsidies to transit are more than 60 cents per passenger mile.[10] Even counting social costs such as pollution, says University of California economist Mark DeLucchi, autos are far less expensive than









transit.[11]

Although the gas tax paid for most of our highways, it is a crude proxy for a true user fee in many ways. For one thing, a cents-per-gallon tax does not keep up with inflation or shifts to more fuel-efficient cars. As a result, the average road user today pays little more than half as much inflation-adjusted federal gas tax, for every mile driven, as motorists in 1961.

Even more important, gas taxes do not give either users or highway managers the right price signals. A true user fee would tell users what roads are more expensive and tell managers what roads people most want to use. Tolls work better as user fees than taxes, but in 1956, Congress restricted the use of most tolls because of the high costs of collection and delays at the tollbooths. Electronic tolling has solved both of these problems, and Congress has lifted some of the restrictions, but needs to remove the rest if user fees are to function properly.

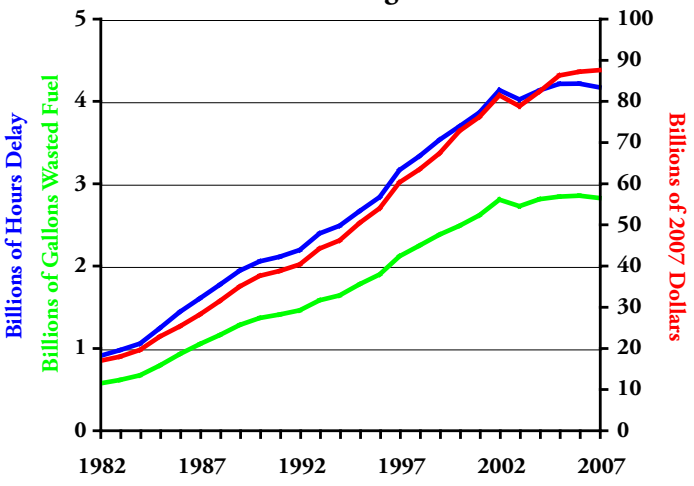
One of the major problems with highways is traffic congestion. The Texas Transportation Institute estimates that, since 1982, when Congress began diverting highway fees into transit and earmarks, the costs of urban congestion have increased by more than five times.[12] Some places have attempted to deal with congestion with a reverse Field-of-Dreams philosophy: if we don't build it, they won't come. But this hasn't worked: almost everywhere, driving has increased far more than the growth of highway miles. Meanwhile, says University of California planning Professor Robert Cervero, the idea that new roads "induce" demand is a myth.[13]

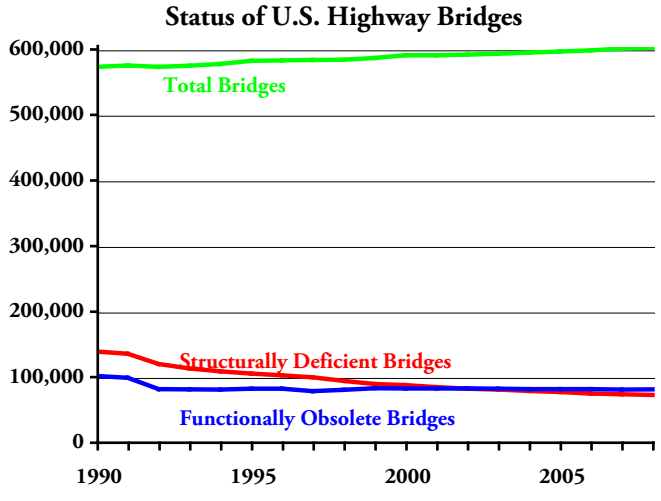
Tolling can help solve congestion while producing revenue to maintain and improve roads. More than half the vehicles on the road during rush hours are non-commuters, so tolls that vary by the amount of traffic can relieve congestion by encouraging some people to drive at other times. Other low-cost solutions to congestion include traffic signal coordination and new technologies such as adaptive cruise control that can increase the capacities of our existing highways.

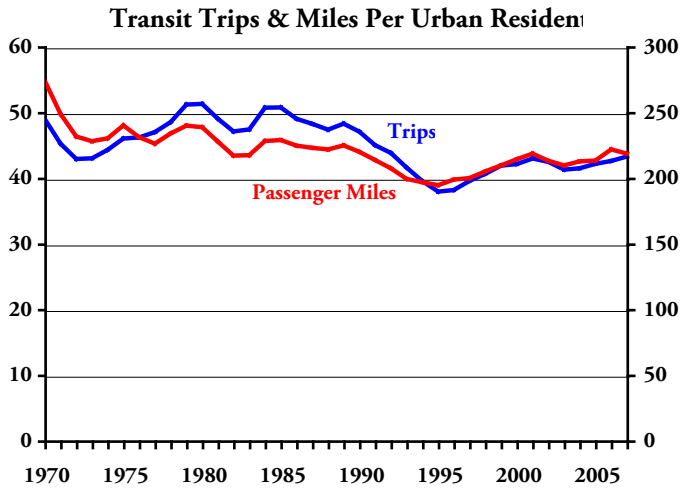
The 2007 collapse of the I-35W bridge in Minneapolis led many people to worry about the state of the nation's highways and bridges. It turned out that the Minnesota bridge suffered from a construction flaw, not a maintenance problem.[14] In fact, the number of bridges that are "structurally deficient" has been steadily declining.[15] These should be distinguished from bridges that are "functionally obsolete," meaning they may have narrow lanes or low overhead clearances but are not in any danger of falling down.[16]

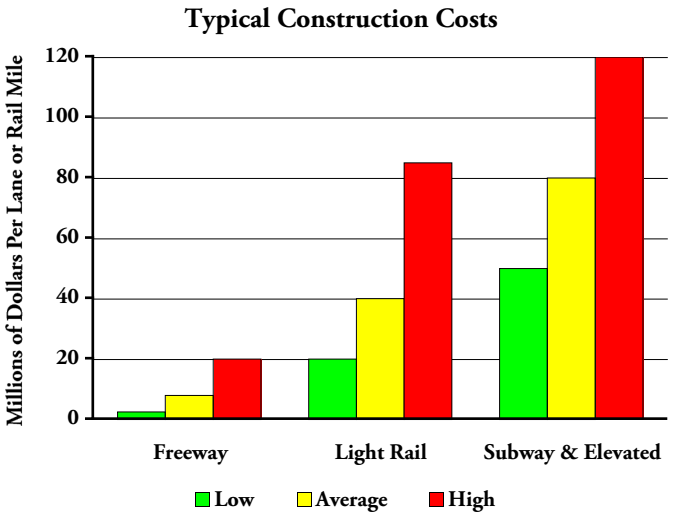
This is not to say there are no infrastructure problems relating to highways and bridges. But the problems that exist are more due to misallocations of resources than to an actual shortage of funds.

One of the biggest misallocations of funds has been to rail transit construction. Transit is important for those who









lack access to an automobile or prefer not to drive. But the idea that spending billions of dollars on new rail transit lines will significantly relieve congestion or save energy has been disproved by decades of experience.

Since 1970, federal, state, and local governments have spent well over $750 billion subsidizing transit, yet per-capita transit ridership has actually declined. In the past two decades, urban driving has increased by 75 percent and subsidies to transit have increased by nearly 70 percent. But total transit ridership has increased by less than 20 percent, so transit's share of urban travel has declined from 4.0 to 1.7 percent.[17]

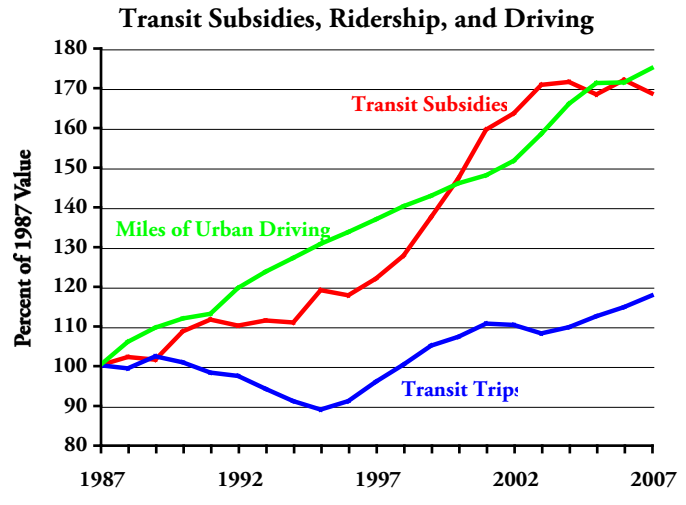
As the late University of California economist Charles Lave observed, "It's uncommon to find such a rapid productivity decline in any industry."[18] A major reason for this decline is that dozens of transit agencies have been bedazzled by the allure of "free" federal money for rail transit and have spent hundreds of millions or billions of dollars on costly projects that have done little to increase transit ridership or improve regional mobility.

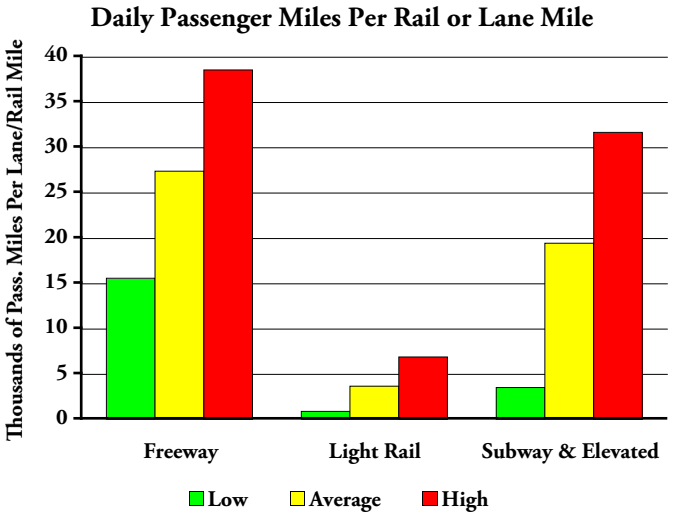
The current federal funding process gives transit agencies perverse incentives to select high-cost solutions to transit problems. This is financially unsustainable because it requires more and more subsidies to move hardly any more people. Since transit carries only about 1 percent of passenger travel, and virtually no freight, it seems unfair and inefficient that it receives more than 20 percent of federal transportation funds.

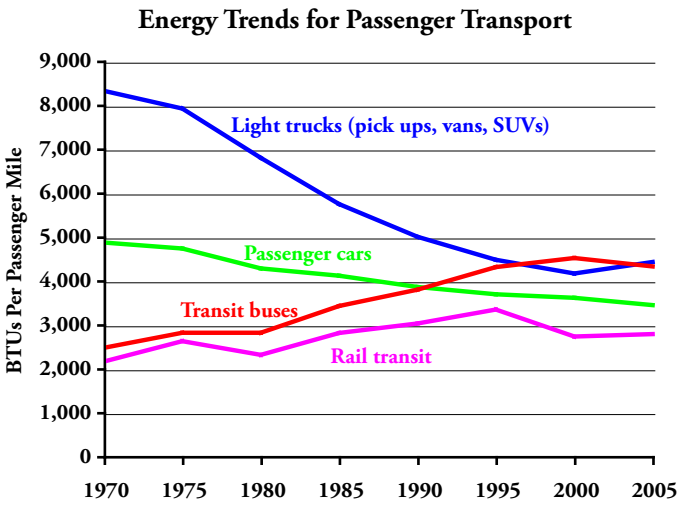
Rail transit is far more expensive than alternatives while the service it provides is inferior to that of buses. The typical light-rail line costs five times as much to build per mile as the typical freeway lane, yet a mile of the most heavily used light-rail lines in the country (which are in Boston and Los Angeles) carry fewer than a quarter as many people per day as the average freeway lane-mile in major urban areas. The only rail transit system in the nation that carries more people than an urban freeway lane is the New York City subway; outside of New York, a mile of the average subway/elevated line moves less than half as many passenger miles as an urban freeway lane-mile.[19]

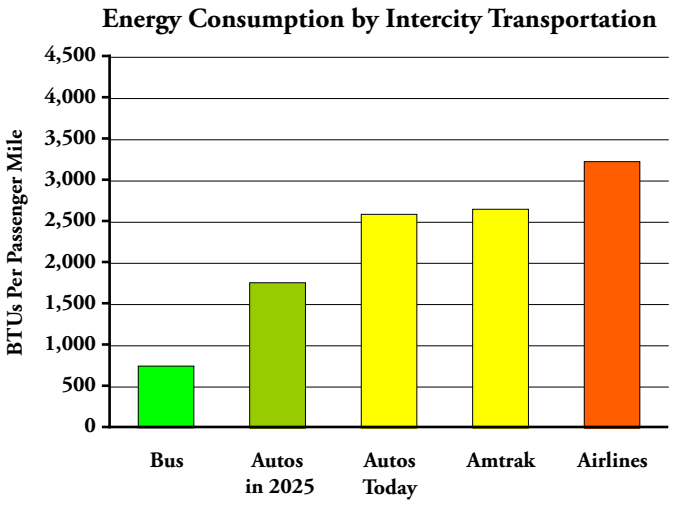
On top of the high construction costs, rail lines cost at least as much to operate, per passenger mile, as buses running in similar corridors. Sadly, many cities have cut bus service to transit-dependent neighborhoods in order to fund expensive rail service to upper-middle-class neighborhoods.

In addition, rail lines must be completely rebuilt about every 30 years. The June, 2009, accident that tragically killed nine people on the Washington MetroRail system, which is just over 30 years old, was a direct result of inadequate









maintenance.[20]

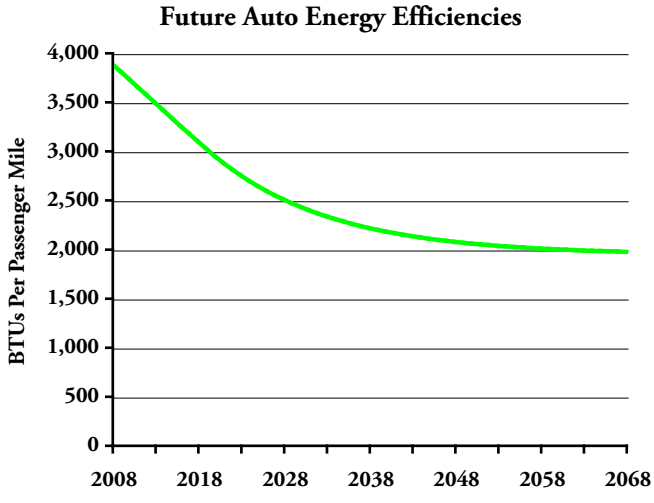
The truth is that, outside of a few very dense cities that already have rail transit, such as New York and Chicago, buses can do almost anything rail transit can do at a far lower cost. Buses are more flexible and can more easily provide neighborhood-to-neighborhood or even door-to-door services than trains that require the support of a feeder bus system. For safety reasons, trains must operate several minutes apart, while buses on a highway can safely operate only seconds apart, so buses on exclusive bus lanes can move far more people per hour than any light-rail line. Further, when there are too few buses to fill a highway lane, the spare capacity can accommodate other high-capacity or toll-paying vehicles.

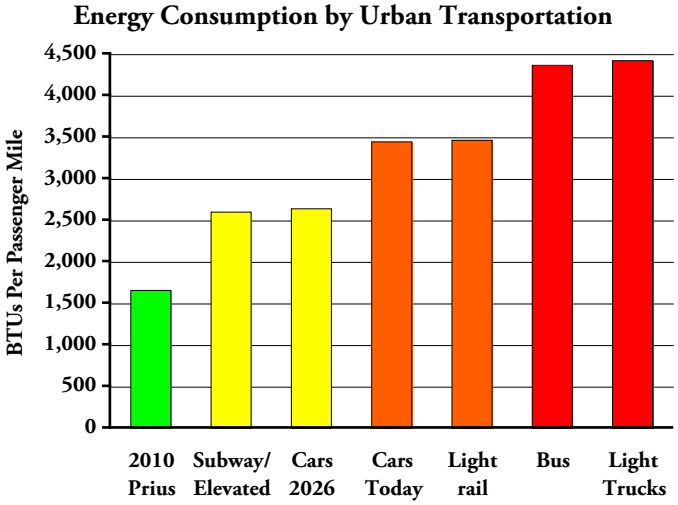
Cities that want to improve transit and relieve congestion could build high-occupancy/toll lanes in existing highway corridors. Express buses, bus-rapid transit, and other buses could use the lanes, while low-occupancy vehicles could pay a toll to use them. Electronically collected variable tolls could ensure that the lanes would almost never get congested, so the buses could be as fast or faster than light rail (whose speeds average about 20 mph) or subway/elevated lines (whose speeds average about 35 mph). The tolls would offset at least part of the cost of construction, so the cost to taxpayers would be far lower than for a rail line, yet the lanes would both relieve congestion and improve transit service.

Portland, Oregon, is often cited as an example of a city with a successful rail system, yet the truth is Portland's light rail has been a disaster for commuters. In 1980, before Portland began building light rail, the Census Bureau reported that 9.8 percent of Portland-area commuters took transit to work. By 2000, Portland had two major light-rail lines, yet the census found that only 7.7 percent of the region's commuters took transit to work.[21] By 2007, Portland had opened two more light-rail lines and a streetcar, and the Census Bureau found that only 6.5 percent of commuters took transit to work.[22]

Despite the new streetcar and light-rail lines, the number of people taking transit to work actually declined between 2000 and 2007. Meanwhile, Portland-area employment growth added more than 60,000 new commuter cars to the road every day—more *new* cars than the *total* number of transit commuters. Even in downtown Portland, the heart of transit commuting, the number of workers who commute by transit declined.[23] The Field-of-Dreams "build it and they will come" notion is as wrong for rail transit as it is for highways.

Even if investments in rail transit could get people out of their cars, doing so would not do much to reduce energy consumption, pollution, or greenhouse gas emissions. The Department of Energy reports that the energy-efficiency of





the average car on the road has improved enormously in the last 40 years, while the energy efficiency of public transit has actually declined.[24] Moreover, under Obama's fuel-economy standards, the average car on the road will be more energy-efficient in 2025 than the most energy-efficient transit systems in the nation.[25]

Rail transit has low greenhouse gas emissions when the electricity used to power it is generated from renewable sources. But most electricity comes from burning fossil fuels, so rail systems in Dallas, Denver, Salt Lake City, Washington, and many other cities actually emit more greenhouse gases per passenger mile than the average car on the road.[26] By 2025, cars will generate far less greenhouse gases than they do today, yet, once built, rail technologies are locked in for many decades.

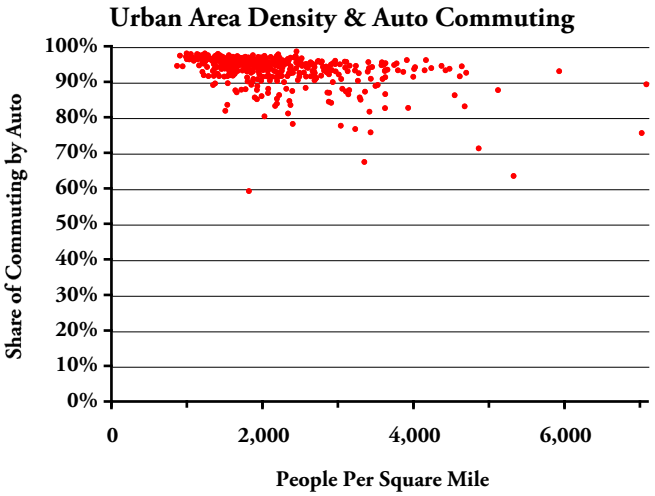
In regions that get most of their power from renewable sources, it makes more sense to encourage people to use electric cars or plug-in hybrids that can be recharged overnight, when the demand for electricity is low. This will free up the renewable energy for non-transportation purposes during the day, when demand for those uses is higher.

The same considerations apply to high-speed rail. Amtrak says that its trains are more energy-efficient than cars, but it presumes that cars carry an average of 1.6 people, which is only appropriate for urban travel.[27] In intercity travel, cars carry an average of 2.4 people.[28] Recognizing this, the Department of Energy estimates that intercity autos are already as energy efficient as Amtrak. Boosting trains to higher speeds, the Department adds, will require lots of energy and probably reduce the energy efficiency of those trains below that of the average intercity auto.[29]

If we really want to save energy using mass transportation, it is worth noting that intercity buses use far less energy per passenger mile than trains.[30] Intercity buses do much better than urban buses because private bus owners have an incentive to fill seats, while public transit agencies are politically obligated to provide service to neighborhoods whose residents pay transit taxes but rarely ride transit. The solution is not to subsidize more intercity buses but to make public transit more competitive and more reliant on user fees.

One reason rail transit works so poorly in most American cities is that, at least since 1920, our cities have been built for auto users with both housing and jobs increasingly spread out. So some people argue that the way to save energy and reduce greenhouse gas emissions is to completely rebuild our cities to higher densities that can be served by rail transit. While such compact cities can significantly increase congestion, there is little evidence that they will greatly reduce auto driving.

Data from the 2000 census reveal that the densest urban area in the United States is seven times denser than the least-dense areas, yet the percentage of people who use autos to get to work in the densest area is only about 8 percent less than the least-dense areas.[31] Some urban areas do have low rates of auto commuting, but these are due more to age (many are university towns) or concentration of downtown jobs (such as



in Manhattan or San Francisco) than to residential densities.

Advocates of high-density transit-oriented developments rarely mention that most of them have been supported by tax breaks or other subsidies to developers and that vacancy rates tend to be high unless they provide plenty of parking—suggesting that they are not really transit oriented.

If the United States is to reduce greenhouse gas emissions, it must do it in a cost-effective manner. McKinsey & Company estimates that the nation can cut its emissions in half by 2030 by spending no more than $50 per ton of reduced greenhouse emissions.[32] Traffic signal coordination and lighter automobiles will both reduce emissions and save consumers money. But rail transit and compact development, if they reduce emissions at all, would do so only at a cost of thousands or tens of thousands of dollars per ton. Spending $5,000 to reduce one ton of emissions means foregoing reducing 99 more tons at a cost of $50 a ton.

Questions to Ask

Here are some questions to ask about proposals related to reauthorizing federal transportation funding.

- Who wins and who loses? Are we robbing Peter to pay Paul? Who is Peter? Who is Paul?
- What is the cost per passenger-mile, vehicle-mile, hour of reduced congestion, ton of reduced greenhouse gas emissions, or other objectives compared with the cost of alternative projects?
- What share of the total cost is paid by users, and what benefits do other taxpayers get from their share of the costs?
- Are proponents using actual realistic values or best-possible-situation estimates? What is the track record of cost/use estimates for similar projects?
- Is the public sector doing something the private sector should be doing—or the converse?
- Is this project part of a slippery slope leading to further needs and expenditures?
- Is this a nice-to-do expenditure that detracts from the

ability to meet must-do needs?

- Are claims that a project or projects are "efficient" based on a full analysis of the alternatives? What do proponents mean by the word "efficiency"? Are users penalized in order to make the system work better?
- What share of available resources are being used to address what share of our problem?
- Does a plan depend on forcing a large segment of the population to accept a costly change in their behavior? Is that rational if there are no compensating benefits? Would a technological solution solve the problem at a lower cost than behavioral solutions?

Recommendations

When Congress created the highway trust fund in 1956, it planned for it to expire when the Interstate Highway System was completed. Today, Congress continues to charge a federal gas tax and other road user fees and spends that money on increasingly political grounds that have little to do with mobility or even, in some cases, transportation. Federal grants to states and metropolitan areas come with numerous strings attached, many of which make transportation more expensive.

In 2007, New Jersey Representative Scott Garrett introduced H.R. 3497, which would let states take over federal transportation programs by reducing federal gas taxes by any amount that the states increase their gas taxes. In 2008, Texas Senator Kay Bailey Hutchison and Arizona Representative Jeff Flake introduced the "Highway Fairness and Reform Act," which would allow states to opt out of paying into the federal highway fund and take over transportation programs.

If Congress is unwilling to devolve transportation policies and funding to the states, it should incorporate three important principles in the next reauthorization:

- **Mobility:** Congress should recognize that mobility is a valuable social goal, and discourage states and metropolitan areas from spending money on things that reduce mobility.
- **Efficiency**: While it might be pleasant to think that every city and town could have its own streetcar or light-rail line, the truth is that resources are limited and should be spent on the most cost-effective means of providing mobility and reaching other social goals such as safety and a quality environment.
- **Equity**: Those who get the benefits of transportation facilities should be the ones to pay for those facilities. In large part, that means facilities should be paid for out of user fees, not taxes.

To achieve these principles, Congress should:

- Replace the many apportionments and complicated formulas for distributing federal funds with a simple and transparent formula that is based on the population and land areas of each state and the user fees collected from transportation users in each state. States could spend their share of federal money on highways, transit, high-speed rail, or other surface transportation projects with the knowledge that their future shares of federal funds will depend on the user fees they collect. "User fees" would be defined to include gas taxes, tolls, transit fares, or any other fees collected from transportation users that are dedicated to those users. Gas taxes diverted to transit or transit fares spent on highways would not count as user fees.
- Federal transit funds in particular should be distributed to states and metropolitan areas strictly on a formula basis, with no "open bucket" funds like New Starts, small starts, and congestion mitigation/air quality (CMAQ) fund.
- Earmarks should be eliminated as they reduce the efficiency of transportation spending.
- Encourage states to adopt quantifiable performance standards that transportation programs should meet and to require state auditors to audit state and metropolitan transportation programs to ensure that they meet the adopted standards.
- Encourage state and local governments to ensure that transportation user fees should cover all costs of transport, and that people get the facilities they are prepared to pay for.
- Eliminate all constraints on toll roads, reject proposals to create a federal overseer over toll authorities, and promote toll roads with private concessions or regional toll road authorities.
- Reform public transit by encouraging states and metropolitan areas to open up transit to private competition. Transit subsidies should be targeted to people who, for reasons of income, age, or disabilities, lack access to automobiles.
- Provide incentives for states and metropolitan areas to cost-effectively meet environmental goals such as saving energy or reducing greenhouse gas emissions, such as policies or projects that save energy or reduce emissions at the lowest cost per gallon of fuel or ton of emissions saved.

Further Readings

- "Federal Transportation Programs Shortchange Motorists: Update of a USDOT Study," by Wendell Cox and Ronald D. Utt, Heritage Foundation Backgrounder no. 2283, 2009, chart 2, tinyurl.com/l3wkl8.
- "The California High Speed Rail Proposal: A Due Diligence Report," by Wendell Cox and Joseph Vranich, Reason Foundation Policy Study 370, 2008, www.reason.org/ps370.pdf.
- "Reforming State Transportation Policy: Washington State's Efforts to Implement Performance-Based Policies," by Michael Ennis, Heritage Foundation Backgrounder

no. 2189, 2008, tinyurl.com/mrj5mq.

- "Building Roads to Reduce Traffic Congestion in America's Cities: How Much and at What Cost?" by David Hartgen and Gregory Fields, Reason Foundation Policy Study 346, 2006, reason.org/files/ps346.pdf.
- "17th Annual Report on the Performance of State Highway Systems," by David Hartgen and Ravi Karanam, Reason Foundation Policy Study 369, 2008, tinyurl.com/kq397o.
- "Does Rail Transit Save Energy or Reduce Greenhouse Gas Emissions?" by Randal O'Toole, Cato Institute Policy Analysis no. 615, 2008, tinyurl.com/kpaw7r.
- "Debunking Portland: The City That Doesn't Work," by Randal O'Toole, Cato Institute Policy Analysis no. 596, 2007, tinyurl.com/285qcw.
- "Getting What You Pay For—Paying For What You Get: Proposals for the Next Transportation Reauthorization," by Randal O'Toole, Cato Institute Policy Analysis (forthcoming), 2009.
- "High-Speed Rail Is Not 'Interstate 2.0,'" by Randal O'Toole, Cato Institute Briefing Paper (forthcoming), 2009.
- "Commuting in America III," by Alan Pisarski, Transportation Research Board, 2006.
- "Reducing Congestion in Atlanta: A Bold New Approach to Increasing Mobility," by Robert Poole, Reason Foundation Policy Study 351, 2006, tinyurl.com/nfnlfo.
- "Congress Undermines Americaís Infrastructure by Looting the Highway Trust Fund," by Ronald D. Utt, Heritage Foundation WebMemo no. 2046, 2008, tinyurl.com/mv2krj.

Most of these documents and many more may be found in the references and experts sections of the Guide to the American Dream*, available at americandreamcoalition.org/welcome.html.*

References

1. Ronald Utt, "A Primer on Lobbyists, Earmarks, and Congressional Reform," Heritage Foundation Background no. 1924, table 1, tinyurl.com/2jfkhu.
2. Safe, Accountable, Flexible, Efficient Transportation Equity Act, Public Law 109-59.
3. "The Surface Transportation Authorization Act of 2009: A Blueprint for Investment and Reform," House Committee on Transportation and Infrastructure, June 18, 2009, tinyurl.com/ldocdn.
4. Historic transportation data are from *Historical Statistics of the United States: Colonial Times to 1970* (Washington: Census Bureau, 1975), pp. 711, 729; *Highway Statistics Summary to 1995* (Washington: Federal Highway Administration, 1996), table VM-201; *2008 Public Transportation Fact Book* (Washington: American Public Transportation Association, 2008), part 2, p. 1.
5. *2000 Census*, Census Bureau, 2002, table QT-H11, "Vehicles Available and Household Income in 1999."
6. John Pucher and John L. Renne, "Socioeconomics of Urban Travel: Evidence from the 2001 NHTS," *Transportation Quarterly*, vol. 57, no. 3, Summer, 2003, p. 55.
7. "Long Distance Transportation Patterns: Mode Choice," Bureau of Transportation Statistics, 2006, table 13, tinyurl.com/lzd2e5.
8. *Panorama of Transport* (Brussels: European Commission, 2007), pp. 103, 108–111; "Summary of Transportation Statistics," Ministry of Land, Infrastructure and Transport, 2008, tinyurl.com/mqkjq8.
9. *Highway Statistics 2007*, table HF-10; *National Transportation Statistics 2008* (Washington, DC: Bureau of Transportation Statistics, 2008), tables 3-07, 3-27a, and 3-27b; *2006 Annual Report* (Washington, DC: Amtrak, 2007), p. 20; *2006 National Transit Database* (Washington, DC: Federal Transit Administration, 2007), "Capital Use," "Operating Expenses," "Fare Revenues Earned by Mode," and "Service" spreadsheets.
10. Ibid.
11. Mark DeLucchi, "Should We Try to Get the Prices Right?" *Access*, Spring, 2000, p. 12, tinyurl.com/lr3x5t.
12. David Schrank and Tim Lomax, *The 2009 Urban Mobility Report* (College Station, TX: Texas Transportation Institute, 2009), p. 1.
13. Robert Cervero, "Are Induced Travel Studies Inducing Bad Investments?" *Access*, Spring, 2003, pp. 22ñ27, tinyurl.com/m3bx98.
14. "Collapse of I-35W Highway Bridge, Minneapolis, Minnesota, August 1, 2007," National Transportation Safety Board, 2008, p. xiii, tinyurl.com/cbd7g9.
15. *National Transportation Statistics*, table 1-27.
16. *2006 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* (Washington: Federal Highway Administration, 2007), p. 3-15, tinyurl.com/brvl62.
17. *2008 Public Transportation Fact Book*, part 2, tables 1, 33, 35, 36, and 40; *Highway Statistics Summary to 1995*, table VM-201; *Highway Statistics 2007*, table VM-1.
18. Charles Lave, "It Wasn't Supposed to Turn out Like This: Federal Subsidies and Declining Transit Productivity," *Access*, Fall, 1994, p. 21.
19. *Highway Statistics 2007*, table HM-72; *2007 National Transit Database*, "Transit Way Mileage" and "Service" spreadsheets.
20. "NTSB's Third Update on Metro Red Line Crash," Washington Post, July 23, 2009, tinyurl.com/llrptq.
21. *2000 Census* (Washington: Census Bureau, 2002), "Journey to Work: 2000, Portland, OR-WA Urbanized Area," tinyurl.com/pavuck.
22. *2007 American Community Survey* (Washington: Census Bureau, 2008), "Commuting Characteristics by Sex: Portland, OR-WA Urbanized Area," tinyurl.com/lxfgxo.
23. "2007 Downtown Portland Business Census & Survey," Portland Business Alliance, 2008, pp. 3, 11, tinyurl.com/m7my6v; 2005 Downtown Portland Business Census & Survey," Portland Business Alliance, 2006, pp. 3, 11, tinyurl.com/29l38p.
24. Stacy C. Davis and Susan W. Diegel, *Transportation Energy Data Book: Edition 27* (Oak Ridge, TN: Department of Energy, 2008), tables 2.13 and 2.14.
25. Calculated assuming auto makers will meet Obamaís 2016 efficiency standards on a straight line between now and then, make no further improvements after 2016, and that Americaís auto fleet continues to turn over every 18 years.
26. Randal O'Toole, "Does Rail Transit Save Energy or Reduce Greenhouse Gas Emissions?" Cato Institute Policy Analysis no. 615, 2008, tables 1 and 5.
27. Pat S. Hu and Timothy R. Reuscher, *Summary of Travel Trends: 2001 National Household Travel Survey* (Washington: DOT, 2004), p. 31, tinyurl.com/2xsqa6.
28. *California High-Speed Rail Final Program EIR/EIS* (Sacramento, CA: California High-Speed Rail Authority, 2005), appendix 2-F, p. 2-F-1.
29. *Scenarios for a Clean Energy Future* (Oak Ridge, TN: Department of Energy, 2000), appendix C-3, p. C-3.4.
30. "Comparison of Energy Use and CO_2 Emissions from Different Transportation Modes," M. J. Bradley & Associates, Manchester, NH, 2007, p. 4.
31. 2000 Census, table P30, "Means of Transportation to Work for Workers 16+ Years, Urbanized Areas."
32. Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost? (Washington: McKinsey, 2008), pp. ix, xiii.