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Finding Solutions To Fund Transit

Combining Accountability & New Resources For World-Class Public Transportation



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Finding Solutions to Fund Transit:

Combining Accountability and New Resources for World-Class Public Transportation

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State legislators face a difficult task in providing funding for future transportation needs. The recent collapse of the Minneapolis Bridge, underscores the need to prioritize maintenance above new road building, and the importance of public transit as a way to reduce the need for both maintenance and new roads over the long term.

The public need and demand for transit will grow sharply in the future and transportation funding must become better targeted to future needs. America has done a great job building a complete road network, but a really insufficient job developing transit networks and investing in maintenance. It's time to put the same effort we put into building new roads to work with a new emphasis.

Transit will be crucial because it helps solve multiple threats to our quality of life such as oil dependence, traffic congestion, and global warming. Enhanced transit will also make America healthier and more competitive. The current U.S. population of 300 million is projected to reach 400 million by 2040.* Many of the metropolitan areas with the fastest projected growth have underdeveloped or under-funded transit systems that need substantial resources to contend with growing challenges such as traffic congestion, oil dependency, and global warming.

This paper explains why lawmakers should turn to new dedicated revenues to provide long-term solutions while increasing market efficiency and reducing social costs. Legislators should avoid short-term band aids from the general budget or one-time gimmicks such as road privatization.

Transportation funding should also be better targeted. The federal government should shift toward "Fix It First" policies that prioritize highway maintenance and reform current rules that are skewed against transit. States should address backlogs of deferred repairs and aggressively expand transit for the 80 percent of Americans that live in urban areas that cover less than 3 percent of America's land area.† Transit agencies themselves will need to step up performance and become more accountable by benchmarking and publicly disclosing route ridership, on-time performance, and average speed.

* U.S. Census, <http://www.census.gov/population/www/projections/projectionsagesex.html>

† USDA Economic Research Service, <http://www.ers.usda.gov/publications/EIB14/eib14g.pdf>

The good news is that Americans are already turning to rail and other public transportation. Public transportation ridership reached 10.1 billion trips in 2006, a growth of 30 percent since 1995. This impressive rate outpaces the 12 percent growth of our population as well as the 24 percent growth in highway travel during this period.[‡] In fact 2006 was the first time in 26 years that drivers cut back on the number of miles they drove on average. Motivated by worsening traffic congestion, high prices at the pump, a desire to cut global warming pollution, or just the pleasure of reading the newspaper on the way to work, Americans have proven ready to use transit when they have the option.

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Definition: Transit, mass transit, mass transportation, public transportation, and public transit are treated synonymously to comprise transportation systems in which passengers ride together on vehicles they do not own and share with others. It includes buses, light rail, traditional trolleys, subways and other forms of heavy passenger rail, monorail, or ferries. It does not include airlines, shared-ride taxis, or inter-city bus service. The type of benefits from inter-city rail such as Amtrak is similar to those discussed in these pages, but generally has different funding mechanisms.

[‡] American Public Transit Association, <http://www.apta.com/research/stats/ridership/>

I. The Need for More and Better Transit

Transit has a broad constituency because it effectively addresses a number of looming social problems while enhancing economic development and mobility.

A. Traffic Congestion

Congestion is a worsening problem on America's roads that wastes both time and fuel. Annual delays per-traveler during rush hour has almost tripled in the United States, increasing from 16 hours in 1982 to 47 hours in 2003.⁴ Traffic congestion delayed travelers by 3.7 billion hours and wasted an additional 2.3 billion gallons of gasoline in 2003. The estimated cost in lost productivity totaled \$63 billion. Studies also show that longer commutes correspond to higher levels of stress and long-term health problems.⁵

Transit decreases congestion by reducing the number of drivers on the road. One bus can take the place of fifty cars; a train can replace hundreds of cars; and a freight train can carry the load for almost three hundred trucks.⁶ According to estimates by the Texas Transportation Institute, which produces the gold standard in congestion data, if transit passengers were part of the general traffic flow, then total congestion would increase 29 percent, creating about one billion hours in additional lost time.⁷

B. Oil Dependence and Global Warming

The acceleration of global warming and our over-reliance on oil comprise a twin threat to our nation's future.

As the recent report of the Intergovernmental Panel on Climate Change demonstrates, there is now little doubt that global warming is happening now, that human activity (particularly the burning of fossil fuels) is the primary cause, and that the world risks devastating changes to our climate if we do not begin to reduce greenhouse gas emissions now and slash them dramatically by mid-century.

At the same time, America's profligate consumption of fossil fuels – and particularly oil – appears increasingly unsustainable. Oil and gasoline prices are rising and increasingly volatile. And a growing chorus of experts warns that worldwide oil production could peak in the foreseeable future.

These two threats intersect at America's transportation system. Transportation accounts for one third of America's carbon dioxide emissions and two-thirds of our oil

⁴ David Schrank and Tim Lomax, *The 2004 Urban Mobility Study* College Station, TX: Texas Transportation Institute, (2005).

⁵ "Home Environment Consequences of Commute Travel Impedance," Raymond W. Novaco, Wendy Kliever, Alexander Broquet, University of California Transportation Center (Berkeley, CA: June 1991) Working Paper No. 77.

⁶ Truck from May 07 Congressional subcommittee overview document.

⁷ David Schrank and Tim Lomax, *The 2005 Urban Mobility Study* (College Station, TX: Texas Transportation Institute (2005).

consumption.⁸ America's transportation system consumes more oil than the entire economy of any other nation in the world and produces more carbon dioxide than any other national economy, except that of China.

Transit conserves oil and reduces emissions of global warming pollution because it is more efficient than the car and truck travel it displaces. A bus with seven passengers is about twice as energy efficient as an average automobile, and a bus with 50 passengers is about ten times as energy efficient.⁹ Rail transit systems tend to be about three times as energy efficient as diesel bus transit.

A 2007 study by ICF International estimated that public transportation currently conserves 1.4 billion gallons of gasoline every year.¹⁰ That's the equivalent of 3.9 million gallons of gasoline a day. These conservative estimates do not take into account the added oil savings stemming from the fact that public transit encourages more compact land-use patterns that facilitate shorter vehicle trips and trips without a vehicle. Nor do these calculations take into consideration transit's additional oil savings from improved fuel efficiency that autos obtain by avoiding "stop-and-go" driving in more urban areas where most transit is located.

The advantages of public transit are increasing all the time. Freight rail moves 80 percent further on a gallon of diesel than it did in 1980.¹¹ In many transit systems, new buses run on cleaner technology such as natural gas.

C. Health and Safety

Of the 43,443 transportation fatalities reported in 2005, only 183 fatalities occurred from transit. Enhancing transit saves lives because it is safer than driving.¹² Buses and rail have lower crash risk per-passenger-trip because professional drivers tend to have lower crash rates, occupants are safer than automobile occupants, and total vehicle traffic is reduced. Bus passengers have about one-tenth the per-mile crash fatality rate as automobile passengers. Rail passengers have a rate about one-quarter that of drivers – higher than bus because of generally higher speeds.

Using conservative estimates to quantify the costs of accidental auto deaths and injuries in financial terms, the National Highway Traffic Safety Administration in 2002 estimated

⁸ Transportation Statistics Annual Report 2006 Bureau of Transportation Statistics, Department of Transportation, Washington, D.C, tables K-1 and K-3.

⁹ Victoria Transportation Policy Institute http://www.vtpi.org/tdm/tdm62.htm#_Toc135020086

¹⁰ "Public Transportation and Petroleum Savings in the U.S.: Reducing Dependence on Oil," prepared by ICFI, January 2007, available at http://www.icfi.com/Markets/Transportation/doc_files/public-transportation.pdf

¹¹ Statement of Edward Hamburger, President of the Association of American Railroads, before the House of Representatives Committee on Infrastructure and Transportation, Hearing on Climate Change and Energy Independence, May 17, 2007.

¹² http://www.vtpi.org/tdm/tdm58.htm#_Toc65190634 See also FTA safety statistics at <http://transit-safety.volpe.dot.gov/Data/samis/default.asp?ReportID=2>

the cost at \$433.5 billion. This total comprises 4.3 percent of GDP, an average social cost of 15.8 cents per vehicle mile.¹³

D. Economic Competitiveness and Mobility

Analysis by the Federal Transit Agency concludes that, “cities with more transit tend to be more efficient than cities with less transit.”¹⁴ Transit enhances economic development and productivity for a number of reasons:

- Enhanced mobility allows for more efficient combination of skills and resources, especially in densely populated areas that could not function efficiently without transit.
- Transit provides significant economic savings. While the average American family spends 19 percent of its income on transportation, families with good access to transit spent just 9 percent of their income on transportation and families in auto-dependent exurbs spent 25 percent of their budget on transportation.¹⁵ Households that use public transportation drive 16 fewer miles per day on average, a \$1,400 savings in annual fuel costs. Two-worker households where one member uses public transportation instead of purchasing a second car have the opportunity to save an estimated \$6,250 per year.¹⁶
- Transit can stimulate depressed urban areas and raise property values in relatively affluent suburbs.¹⁷
- States and localities can harness these kinds of economic potential by adjusting land-use restrictions and creating incentives for transit-oriented development, focused especially on compact mixed-use projects clustered around transit stops.

The most obvious benefit associated with transit is mobility for people without access to automobiles. This includes any household with a car in the shop, an injury that temporarily makes driving difficult, or those who for economic reasons chose not to own a car. On a daily basis, some of society’s most vulnerable people depend most on transit.

¹³ This comes to \$433.5 billion. US NHTSA, 2002. *The Economic Impact of Motor Vehicle Crashes 2000*. National Highway Traffic Safety Administration, US Department of Transportation, Washington, DC.

¹⁴ “A Public Choice Policy Analysis,” Transit Benefits 2000 Working papers, FTA Policy Paper (Office of Policy Development, FTA, 2000)

¹⁵ Center for Transit-Oriented Development, *Realizing the Potential: Expanding Housing Opportunities Near Transit* (Reconnecting America, April 2007).

¹⁶ “Public Transportation and Petroleum Savings in the U.S.: Reducing Dependence on Oil,” prepared by ICFI, January 2007, available at http://www.icfi.com/Markets/Transportation/doc_files/public-transportation.pdf

¹⁷ “A Public Choice Policy Analysis,” Transit Benefits 2000 Working papers, FTA Policy Paper (Office of Policy Development, FTA, 2000), chapter 5. Based on controlled comparisons of a sample of 2,842 commercial property sales in Washington, D.C., an FTA study found that proximity to a Metro station corresponds to higher property values. For every thousand feet closer to a Metro station, properties gained \$70,000 in value. Measured differently, for every 3 blocks closer to a Metro station, properties gained \$2.3 per square foot. Similarly, a U.S. Department of Transportation study of Massachusetts commuter rail found that single-family homes located within a half mile of rail stations were worth 10 percent more than similar homes in similar communities further from a station. By Robert J. Armstrong (U.S. Department of Transportation) and Daniel Rodríguez (Department of City and Regional Planning, University of North Carolina, Chapel Hill) *Transportation*, 33:1 (January 2006)

According to the Federal Transit Agency (FTA), in 1998, 24 million disabled Americans were dependent on transit.¹⁸ An analysis by the FTA on 1995 data estimated that transit provided 2.6 billion trips that year for people who were either too impoverished to own a car, too young to drive, or over 74 years of age.

People who own cars also benefit greatly from access to transit. Trips by passengers with access to an automobile comprise a little more than a third of total transit trips.¹⁹ Many of these individuals with access to automobiles choose to take a bus, rail, or ferry as a way to avoid congestion and parking hassles. Some use transit sporadically on weekends or when their regular automobile is unavailable. Merely having transit as a viable backup option delivers great value. For instance, public transit provides an important alternative during the rare occasions when a car is being repaired, when a commuter will fly out of town after work, or when a large festival or sporting event closes roads or makes parking unavailable.

II. Ensuring Accountability for Transportation Spending

Transportation programs should be held accountable to high performance standards regardless of the mode of travel on which they are spent.

Unfortunately, transportation dollars are too often spent on skewed priorities or questionable projects. One problem has been questionable transportation earmarks, especially at the federal level. The last major federal transportation funding act (SAFETEA-LU), which expires in 2009, included thousands of earmarks totaling \$24.2 billion dollars, including the infamous \$223 million earmark for a “Bridge to Nowhere” connecting an island with 50 people in Alaska.

The recent bridge collapse in Minnesota meanwhile underscores the need to prioritize maintenance above new road building, and the importance of public transit as a way to reduce the need for both maintenance and new roads over the long term. At both the state and federal level, transportation funding rules often encourage construction of new road capacity instead of addressing maintenance and repair of existing infrastructure.²⁰ As a result the nation has aggressively increased road capacity while, the American Society of Civil Engineers (ASCE) graded the overall condition of the nation’s infrastructure a “D.”²¹ The life-cycle costs of new capital projects should be considered and planned for as part of new project allocations so that they will not get squeezed out in the competition

¹⁸ William W. Millar, Testimony of the American Public Transit Association Before the Labor Health and Human Services, Education and Related Agencies Subcommittee of the House Appropriations Committee, Feb. 5, 1998, 1998 WL 8991781.

¹⁹ “A Public Choice Policy Analysis,” Transit Benefits 2000 Working papers, FTA Policy Paper (Office of Policy Development, FTA, 2000), chapter 1.

²⁰ For a discussion of state-level problems, see David Westerling and Steve Poftak, *Our Legacy of Neglect: The Longfellow Bridge and the Cost of Deferred Maintenance*, Pioneer Institute White Paper, No. 40 (July 2007).

²¹ American Society of Civil Engineers, “2005 Report Card for America’s Infrastructure” available at <http://www.asce.org/reportcard/2005/index.cfm> .

for annual operating funds. Deferred maintenance backlogs should not be allowed to grow while new projects move forward. These reforms will extend the useful service life of transportation infrastructure, improve safety, and save money in the long term.

A Brookings Institution study concluded that, “Federal transportation policy is essentially an unfair competition between highways and transit. Despite a number of reforms in the past decade, federal rules remain stacked against transit.”²² Transit programs are generally held to far more rigorous criteria and must compete against other projects in a regional review of alternatives. In its analysis of the federal New Starts program for transit, the GAO notes that, “there are no similar federal requirements for economic analysis of highway projects, because highway projects are funded under a formula program, and there is no federal approval of project economic worthiness.”²³

Federal matching funds for transit often cover a lower portion of project costs than for highways. And actual federal matching money often fails even to meet the lower statutory limits for transit. For example, the American Public Transit Association reports that in fiscal year 2003, the federal share in funding all capital revenue for transit in was 39.9 percent, not the 80 percent statutory level. Similarly, the federal share of all operating revenue for transit in fiscal year 2003 was 5.8 percent, not the 50 percent matching limit.²⁴ As the Brookings study finds, “local governments are faced with major difficulties in obtaining funds for new transit systems. At the same time, highway funding can be obtained with relative ease. This imbalanced playing field can distort decisions at the local level.”

Current federal transportation funding programs are an archipelago of programs that have been layer upon each other without an overarching view of America’s future needs. Federal transportation policy should promote mobility choices and efficiency by increasing transit capacity across metropolitan areas. Four far-sighted reforms would particularly improve the performance of transportation spending:

- **Increase transit funding and reduce obstacles to new projects** – Streamline federal transit review process and make approval of highway funds more rigorous
- **Goals to reduce vehicle miles traveled (VMTs)** – Make reduction of VMTs and increased choice of transportation mode an explicit goal of funding; require planning organizations to establish VMT-reduction goals the way they currently do for pollution reduction
- **“Fix It First”** – Highway spending should better prioritize deferred maintenance. The focus should be on maintaining and rehabilitating existing bridges and roads rather than constructing new lane-miles.

²² Edward Beimborn and Robert Puentes, “Highways and Transit: Leveling the Playing Field in Federal Transportation Policy,” Brookings Institution Center on Urban and Metropolitan Policy, Washington D.C. (December 2003).

²³ <http://www.gao.gov/new.items/d05172.pdf>

²⁴ American Public Transit Association, “APTA Primer on Transit Funding” (February 22, 2006), p. 14.

- **Employer incentives for ridership** – Allow companies to pay for employee transit passes or vanpooling with pre-tax dollars the way they currently pay for parking

Like all public programs, transit programs should be held accountable according to benchmarked performance standards. All transit routes should track their ridership, average on-time performance, and average speed and post this information publicly. These indicators should be expected to continually improve. Their collection is facilitated by current technology for electronic fare systems, bus tracking, and rail signals. Publicized benchmarking will facilitate the identification of capacity bottlenecks and help keep transit agencies accountable to taxpayers.

High-capacity transit may not be appropriate everywhere, but 81 percent of Americans live in metropolitan areas.²⁵ Using alternative definitions, the 2000 U.S. Census found that over 68 percent of the American population lives in urban areas, approximately 2 percent of the county's land area.²⁶ The growing portion of the population in metropolitan areas underscores the need for far-sighted transit projects to both relieve congestion and to focus new growth along existing transportation corridors to reduce infrastructure costs.

III. Principles for Selecting Revenue Sources

Typically, the biggest obstacle to improving public transportation is how to pay for it. Not all revenue sources, however, equally serve the public interest. This section describes the basic principles that should underlay consideration of alternative funding mechanisms. Ideally, mechanisms for funding transit would have all the qualities listed below. In practice, some taxes or fees may be strong in some ways but weak in others.

1. Enhance market efficiency

Markets work best when the costs individuals face accurately reflect societal costs. In economists' jargon, total social welfare is improved when external costs get internalized for decision makers.

Automobile drivers bear some of the costs they generate, but do not fully cover social costs. According to the U.S. Department of Transportation, motorists cover only three-quarters of the costs they generate from congestion, pollution, accidents and noise even after accounting for the gas taxes, registration taxes, sales taxes, and other fees that drivers pay on their vehicles. According to the analysis, federal highway monies subsidize driving to the tune of 0.8 cents per mile for automobiles and over 20 cents per mile for the heaviest trucks.²⁷ In urban areas autos impose almost three cents per mile, while heavy trucks create social costs of almost 70 cents per mile in social costs. Some estimates put the average external cost of driving on society at over 40 cents per mile, not

²⁵ http://www.unfpa.org/swp/2007/presskit/pdf/sowp2007_eng.pdf

²⁶ http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=01000US&-box_head_nbr=GCT-P1&-ds_name=DEC_2000_SF1_U&-format=US-1

²⁷ FHWA, 2000, table 4

including land-use effects.²⁸ According to the Federal Highway Administration, “With the exception of their own travel time, vehicle operating costs, and perhaps risks of having a crash, highway users normally do not consider many of these marginal costs when deciding whether to make a trip. In general, economic efficiency would be enhanced if users had to pay those marginal costs they do not consider in trip-making decisions” (FHWA, 2000).

Thus, taxes and fees that discourage vehicle trips by requiring drivers to consider those external costs are therefore market correcting. And fees that higher fees on vehicles that impose higher-than-average external costs on society are even more market correcting. They do an even better job of improving market efficiency. Similarly, social welfare is improved when developers must pay the otherwise-invisible social costs of sprawl. Taxes and fees that help accurately reflect the true cost of driving and sprawling development are preferable ways to support transit.

2. Low collection costs

As is the case with all government funding sources, the costs incurred by collecting, monitoring, and enforcing taxes and fees are a drain that should be minimized. Revenue that is easier and cheaper to collect is preferable to those that require elaborate and costly mechanisms to implement.

3. Reliability

Transit agencies require reliable funding in order to plan long term. Doing so allows public transit to grow as the economy grows while also reducing traffic congestion.

Public service agencies are often subject to fluctuations in budget outlays that correspond to shifts in the political winds. Public transportation, though, is too important to leave to this ebb and flow. With so much at stake, lawmakers must ensure that transit receives guaranteed, stable, and sufficient funding from sources that do not require annual allocations from the state.

4. Diverse Funding

Having multiple sources of funding for transit is preferable to just one large source. Diversifying agency revenue sources protects transit systems from fluctuations in the economy that might hit one particular revenue source harder than others.

5. Fare Increases are Self Defeating

Passenger fares do not advance transit goals. They are not akin to user fees for socially costly activities such as polluter fines to fund environmental cleanup. Transit ridership is

²⁸ <http://www.vtpi.org/tdm/tdm82.htm> ; Ian W. H. Parry, Margaret Walls and Winston Harrington, in a study by Resources for the Future calculate \$1.57 per gallon in costs to others – not including costs associated with global warming, oil dependency, noise, sprawl, highway maintenance, parking subsidies, or automobile disposal costs. See “Automobile Externalities and Policies,” Resources for the Future discussion papers DP-06-26 (June 2006).

a public good, and increasing the price of fares discourages riders. It makes poor economic sense to operate expensive transit systems but then discourage ridership through high fares. The net social benefits of additional transit riders tend to outweigh whatever additional fares might be paid.

Transit systems therefore should not have designated minimum farebox recovery ratios. Transportation officials should not approach fare policy from the perspective of, “What can we recoup at the fare box?” Instead, they should ask “What can we charge before we lose significant numbers of riders?”

Larger transit systems with high ridership can generate enough fares to cover a significant portion of operating expenses. On average, fares from transit agencies across the country cover a third of operating expenses for transit systems. More extensive systems tend to cover more of their costs through fares because they benefit from economies of scale and tend to be located in denser communities where commuters more prefer transit over the congestion and parking hassles of driving.

III. State and Local Revenue Options

Despite its vital importance and growing popularity, investments in transit are stymied because states have difficulty committing the resources.

Funding for transit can come from a variety of sources. State legislatures can choose to appropriate operating and capital funds in each yearly budget. They can also dedicate revenue streams from particular funding sources. Among the 25 largest transit agencies in the nation, the GAO reports that a total of 23 received funds from dedicated funding sources. These funds, moreover, averaged 70 percent of the total state and local share of revenues.²⁹ Two or more sources of dedicated funding were reported in 18 of these transit systems. As the GAO reports, using a diverse basket of revenue sources protects transit systems from fluctuations in the economy that might hit one particular revenue source harder than others.

Most transit systems receive at least some funding from the state legislature’s general budget. In 2004 the General Fund was the chief source of funding for transit in 19 states.³⁰ The shifting winds of budgetary politics, however, can make this source of transit funding unstable. Passengers need service to be dependable and investors issuing bonds to transit agencies need to know that payments will be made. States’ general budgetary funds are also increasingly squeezed by growing costs from Medicaid, federal No Child Left Behind requirements, new homeland security mandates, and other factors.

²⁹ Government Accountability Office, *Mass Transit: Issues Related to Providing Dedicated Funding for the Washington Area Metropolitan Transit Authority* (May 2006), GAO-06-516, available at

³⁰ American Association of State Highway Transportation Officials, *Innovative Finance Web Site – Other Revenue Sources*, at http://www.innovativefinance.org/topics/revenue_sources

Cities, counties, and transportation districts increasingly fund new transportation projects through taxes or fees that apply only in their own local jurisdiction.³¹ Fifteen states authorize local-option fuel taxes, though these tend to be used for road maintenance. Communities in many states levy local impact fees on developers or real-estate transfer fees. Thirty-three states authorize some sort of local license or registration tax, which are assessed based on weight in Hawaii and parts of Virginia. Local or county sales taxes exist in 33 states. And unlike most other local-option taxes, sales taxes have often been designated for new transit projects.³²

Local-option taxes have benefit and drawbacks. Residents tend to be more supportive of paying for services in their own area. The disadvantage of localized taxation is the narrow base for these taxes makes it more difficult to raise significant revenue without high rates; but high rates prompt people to cross local jurisdictions when making purchases to avoid the tax. The revenues discussed below could be applied either state-wide or only in the jurisdictions near transit.

Regardless of whether they are collected at the state or local level, significant dedicated revenues can insulate transit budgets from short-term shocks. It may also be more politically popular to dedicate funds: taxpayers often feel better about paying an extra fee for a distinct public service such as transit rather than to the general budget where benefits are harder to perceive.

A. Sales Taxes

Sales taxes are the most common form of dedicated transit revenues for transit agencies. A GAO study of the nation's 25 largest transit systems found 15 systems received dedicated sales tax funds, totaling \$4.5 billion in 2003, or 43 percent of dedicated funds for these systems. Among a broader sample, sales taxes have a similar though slightly smaller role. The National Transit Database of approximately 600 transit agencies reporting to the Federal Transit Administration shows that, after federal funds, sales taxes comprised the largest source of revenues for capital spending (38 percent) and the second largest source of operating expenses (27 percent) after fares (32 percent).³³

Sales taxes are often more politically popular than other broad taxes such as income or business taxes. Despite the fact that these taxes fall harder on lower income residents who tend to spend a greater portion of their income on taxable consumption goods, the simplicity of sales taxes gives citizens confidence that they will be collected fairly.

Sales tax revenues are a relatively stable but declining source of revenue. People decrease their purchase of consumer goods relatively little during a recession compared to other taxes capital gains, real estate, income, or payroll. On the other hand, sales taxes are

³¹ Todd Goldman and Martin Wachs, "A Quiet Revolution in Transportation: The Rise in Local Option Transportation Taxes," *Transportation Quarterly*, 57, 1 (Winter 2003), pp. 19-32.

³² Fifteen states authorize local payroll or income taxes. One city in Ohio voluntarily earmarks a portion of its local-option income taxes for transit and localities in four states designate local-option payroll taxes for transit.

³³ All data are from 2002. See the Central Broward East-West Transit Analysis, Financial Feasibility Study, Appendix.

unlikely to keep pace with the economy over the long term because sales taxes only apply to goods – not services – which comprise a shrinking portion of the economy. Sales taxes also do not apply to the growing number of transactions made through mail-order catalogs and online orders.

B. Transportation-based revenues

Auto-based revenues to finance transit make double sense. These taxes or fees internalize the social and environmental costs imposed by driving while helping fund alternatives.

1. Gas taxes

Gas taxes are the staple of transportation spending in most states but are restricted to highway and road purposes in 30 states, 22 of which by constitutional restriction. Gas tax funds contribute to transit funding in 15 states.³⁴ According to GAO analysis of the 25 largest transit systems in 2003, dedicated gas taxes contribute to transit in only 7 of these systems, providing only about 3 percent of dedicated funds in those systems. Gas taxes completely fund transit systems in Rhode Island, South Carolina, and Tennessee.

The advantage of gas taxes are that they are a relatively fair user fee that discourages driving.³⁵ One problem with funding transit with gas taxes is that while rising gas prices are likely to increase future demand for transit, those price increases will simultaneously reduce gas sales and therefore transit's source of revenue. More fuel-efficient cars will also decrease the revenue available for transit. Some have called for an indexing gas taxes to inflation or pegging gas taxes to a constant portion of gas prices. Seven states have some variability in their rate linked to inflation.³⁶

“The gas tax,” actually includes several types of motor vehicle fuel taxes on different types of fuel. Oregon became the first state to establish a gas tax in 1919 and other states all followed suit during the next ten years. States vary in the way they tax diesel and gasoline, and they vary about which point in the distribution chain they impose the tax (importation into state, fuel distribution, into storage tanks, etc). Only nine states also levy sales taxes on gasoline – California, Delaware, Georgia, Hawaii, Illinois, Indiana, Michigan, New York, and West Virginia. The federal gas tax was created temporarily in 1932 and became permanent in 1956 as part of formation of the Federal Highway Trust Fund.

³⁴ US DOT, Survey of State Funding for Public Transportation (2004). See also http://www.fhwa.dot.gov/ohim/hwytaxes/2001/tab6_toc.htm

³⁵ In a technical sense, gas taxes are not a direct user fee because the tax is levied on the first distributor, wholesaler, or refiner, who then passes the cost onto consumers who indirectly bear the tax.

³⁶ FL, IA, KY, ME, NE, NY, NC.

TABLE: Gas Taxes by State 37

State	Total state gas tax	State	Total state gas tax
Washington	34	<i>Average state tax</i>	20.3
Wisconsin	32.9	Illinois	20.1
West Virginia	31.5	Louisiana	20
Pennsylvania	31.2	Minnesota	20
Rhode Island	31	Texas	20
North Carolina	30.15	Vermont	20
Nebraska	28	Kentucky	19.7
Ohio	28	New Hampshire	19.625
Montana	27	Michigan	19
Maine	26.8	New Mexico	18.875
Connecticut	25	Mississippi	18.4
Idaho	25	Alabama	18
Nevada	24.805	Arizona	18
New York	24.6	California	18
Utah	24.5	Indiana	18
Kansas	24	Missouri	17.55
Oregon	24	Virginia	17.5
Maryland	23.5	Oklahoma	17
Delaware	23	Hawaii	16
North Dakota	23	South Carolina	16
Colorado	22	Florida	15.3
South Dakota	22	Georgia	15.2
Arkansas	21.5	New Jersey	14.5
Tennessee	21.4	Wyoming	14
Iowa	21	Alaska	8
Massachusetts	21		

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Gas taxes are far higher in other countries than in the United States. Gas taxes exceed three or four dollars per gallon in the United Kingdom and much of Continental Europe, compared to about 40 cents in the United States.

In America the value of gas taxes have eroded over time because they are not indexed to inflation. Since 1993, the federal gas tax has remained unchanged at 18.4 cents per

³⁷ From the Federation of Tax Administrators, as of January 1, 2007, available at http://www.taxadmin.org/FTA/rate/motor_fl.html . Listed taxes are in some cases officially called inspection or environmental fees. In a few states localities also levy taxes on gasoline. These are: Alabama, 1 - 3 cents; Hawaii, 8.8 to 18.0 cents; Illinois, 5 cents in Chicago and 6 cents in Cook county; Nevada, 4.0 to 9.0 cents; Oregon, 1 to 3 cents; South Dakota and Tennessee, one cent; and Virginia 2 percent. Florida local taxes for gasoline and gasohol vary from 10.2 cents to 18.2 cents, plus a 2.07 cent-per-gallon pollution tax. Calculations for Kentucky and North Carolina are based on the average wholesale price and are adjusted quarterly. The actual rates are: KY, 9 percent; and NC, 17.5 cents plus 7 percent. In Virginia, large trucks pay an additional 3.5 cents. Idaho rate assumes maximum blended ethanol of 10 percent, which reduces rate.

gallon, 2.86 cents of which is allocated to mass transit.³⁸ States' own gas taxes also have not kept up with inflation, losing 43 percent of their value during the 1970s, 80s, and 90s.³⁹ State gasoline taxes averaged 20.3 cents per gallon among the fifty states, ranging from a low of 7.5 cents per gallon in Georgia to a high of 30 cents per gallon in Rhode Island.⁴⁰ Taking state and federal gas taxes together on a per-mile basis, their inflation-adjusted value have declined by about 40 percent since 1960. The failure of nominal gas tax rates to keep pace with inflation is responsible for half this decline, with fuel-economy improvements during the 1970s and 1980s responsible for the other half.⁴¹

2. Rental car tax

Thirty-eight states levy taxes on rentals of motor vehicles. Rental car taxes are largely paid by out-of-staters. This makes economic sense because visitors in rental cars would not otherwise pay the many fees that in-state drivers pay to defray the costs of driving and road infrastructure. Proponents framed the issue in terms of requiring tourists who clog the roads to contribute to transportation infrastructure in ways that would also relieve congestion. Places like Orlando where a substantial portion of drivers are tourists are, moreover, disadvantaged by current funding formulas that are allocated on the basis of residential population.

3. License, registration or title fees

All states require vehicle owners to pay for the privilege of driving within a state. Local governments in at least 34 states assess vehicle license and registration taxes; 20 have state-level version of these taxes dedicated for transit.⁴² Collectively, states license over 200 million drivers. Fees commonly differ according to the type or class of license issued, and sometimes the age of driver or other factors. Increasing these fees can provide a dependable source of revenue. Most states also charge fees to register a vehicle's certificate of title. These fees provide highly reliable revenue sources because they are relatively unaffected by economic downturns.⁴³

³⁸ The federal gas tax is distributed back to states based on various formulas. Some states receive more federal gas tax revenue than they collect while others are net donors. The Mass Transit Account was created within the Highway Trust Fund in 1983 when Congress increased the tax from 5 cents to 9 cents per gallon.

³⁹ Robert Puentes and Ryan Prince, *Fueling Transportation Finance: A Primer on the Gas Tax* (Brookings Institute, March 2003).

⁴⁰ From Martin Wachs, *A Dozen Reasons for Raising the Gasoline Tax*, Institute of Transportation Studies, University of California at Berkeley, Research Report UCB-ITS-RR-2003-1 (2003).

⁴¹ Ian W. H. Parry, Margaret Walls and Winston Harrington, "Automobile Externalities and Policies," Resources for the Future discussion papers DP-06-26 (June 2006).

⁴² Todd Goldman, Sam Corbett, and Martin Wachs, *Local Option Transportation Taxes in the United States* (Berkeley, Calif: Institute of Transportation Studies, UCal Berkeley, March 2001)

⁴³ Fees should not be so high, however, as to encourage low-income drivers from avoiding the licensing process.

Additional registration or title fees can be targeted according to how much vehicles are driven and how much each model type pollutes. Pollution fees create an incentive to reduce pollution by internalizing some of the costs imposed on society by gas guzzlers and those who drive a lot.

Since July 2006, new car dealers in New Jersey have paid a 0.4 percent surcharge on the sale or lease of vehicles with an EPA fuel efficiency rating of less than 19 miles per gallon. Since 1978 the federal government has levied a “gas guzzler tax” on inefficient new cars based on a sliding scale of how far they fail to reach combined fuel efficiency of 22.5 miles per gallon. That tax was created at a time when SUVs, pickups, and minivans were a small portion of the market, and it still exempts these vehicles.⁴⁴

4. Tire tax

Some states place a tax on the sale of new tires. It can be administered either as a percentage or flat fee on sales. This tax makes sense because tires clog public landfills and the bottom of public waterways. Proper disposal of tires in government waste sites is also expensive. The federal government imposes its own tax on the purchase of tires over 40 pounds.

These fees also make sense as a kind of transportation user charge because people who drive more must change their tires more frequently. Although no state does so presently, the fee could be waived for high-efficiency tires that improve fuel efficiency if they ever become commercially available.

5. Vehicle battery tax

As with tires, this tax is a kind of disposal fee. The acid-lead batteries used in cars, trucks, boats, and aircraft are toxic and expensive to dispose of. Florida levies \$1.50 per new or remanufactured vehicle battery.

6. Weight-mile truck fee

Germany uses global positioning systems (GPS) to levy fees on trucks for using the national motorway system. In America there is currently a system [confirm] that charges trucks exceeding 26 thousand pounds a fee according to their weight and distance traveled in the state. These factors are typically already recorded at weigh stations for trucks beyond this weight threshold. This tax is economically efficient because it precisely targets heavy vehicles that put the most wear on roads.

7. Toll roads and congestion pricing

Tolls have many of the advantages of gas taxes and some disadvantages that can perhaps be eliminated with the proper technology and incentives. Tolls are a reliable revenue source for charging drivers for road use. When combined with congestion-pricing, they may encourage drivers to see the costs of driving and congestion; and they could provide

⁴⁴ <http://www.epa.gov/fueleconomy/guzzler/420f06042.htm>

a framework in which excess congestion can be managed rather than simply relieved through new highway capacity.

States' income from road tolls totaled \$5.9 billion in 2005, up from \$4.1 billion in 1998. Ten additional states have begun the process of adding tolls on new or existing roads.⁴⁵

Unfortunately tolls have a number of disadvantages. Traditionally, tolls require drivers to slow down and the costs of collection have high. Even new electronic tolling technologies such as E-Z Pass and FastTrack have significant costs to maintain and operate and require cars to slow down at toll booths.⁴⁶ Another problem with toll charges is that because they are only levied on some roads, drivers may be prompted to take less efficient routes as a way to avoid paying tolls. Thus, high tolls can divert traffic onto local roads causing gridlock and air pollution problems in nearby communities.

Another problem with tolls is that, unlike gas taxes, fuel-efficient cars pay no less than gas guzzlers. While per-gallon gas taxes make it cheaper to drive more fuel-efficient vehicles, toll-based road pricing technologies do not yet include any of these beneficial forms of variable pricing. Similarly, if new road-pricing technologies such as GPS-based road fees replace gas taxes, they could eliminate some existing incentives for fuel efficiency.

A recent study by an MIT economist based on data at 123 tolling facilities around the US finds that electronic tolling results in governments raising tolls more quickly.⁴⁷ Automated tolling results in tolls that rise at a rate 75 percent faster than manual tolling would over time. Presumably this is because drivers don't notice the tolls as much, reducing the public backlash against elected officials. Although this effect may help raise revenue, the study also finds that electronic toll hikes do not create as effective disincentives to driving as manual toll hikes. The same toll increase with electronic toll collection reduces driving only about 11 percent as much as an increase in manual collection would.

Some projects such as the SR-91 project in Southern California have introduced new tolling by creating new premium-price lanes or roads with separate premium-price lanes that would require a large toll but would allow drivers paying more to face less congestion. These arrangements might simply make congestion problems less pressing for higher-income drivers who drive in "Lexus lanes." A more favorable variant of this approach, as in SR-91, makes the new lanes free to high-occupancy vehicles (HOVs). Travel in these lanes is permitted for single drivers who pay a premium that is adjusted with demand to ensure that HOV drivers still enjoy less congestion.⁴⁸ Money from tolls

⁴⁵ "Fuel Efficient Cars Dent States' Road Budgets," Wall Street Journal, April 25, 2007.

⁴⁶ "Innovative Toll Collection System Pays Off for Motorists and Agencies." Prepared by the National Associations Working Group for the USDOT, Report No. FHWA-SA-97-088. Washington, D.C.

⁴⁷ Amy Finklestein, "EZ-Tax: Tax Salience and Tax Rates," National Bureau of Economic Research Working Paper no. 12924 (February 2007) , available at <http://www.nber.org/papers/w12924> .

⁴⁸ For extended discussion of road pricing, see FHWA conference proceedings [http://knowledge.fhwa.dot.gov/cops/hcx.nsf/All+Documents/9C1501C3320F3FE485257067004941E3/\\$FILE/TRB%20CP34%20Road%20Pricing.pdf](http://knowledge.fhwa.dot.gov/cops/hcx.nsf/All+Documents/9C1501C3320F3FE485257067004941E3/$FILE/TRB%20CP34%20Road%20Pricing.pdf) and Environmental Defense, No More Just Throwing Money

could, as in San Diego, be used to fund transit in the travel corridor.⁴⁹ Transit can also benefit if public buses utilize the HOV lanes that single-occupancy drivers can only use at a premium price.

Following the successful examples of London, Singapore, and Scandinavian countries, New York Mayor Michael Bloomberg proposed a plan to charge \$8 per day to drive during peak hours in downtown Manhattan and to use the money to support transit service. In London, fees for entering the central business district have reduced traffic by 30 percent, increased traffic speed by almost 40 percent, and financed a large increase in transit ridership.

C. Development Fees

Linking development fees to transit makes sense because of the close relationships between land-use patterns and transit use. Development near transit stops increases ridership on transit lines, and the property value of real estate benefits from proximity to transit infrastructure.

1. Development impact fees

These are charges paid by developers for the “impact” their new development places on a community.⁵⁰ These fees make sense as a way for growth to pay its own way. These charges can be assessed locally or on a state-wide basis. Properly targeted, impact fees can internalize the burdens that developers place on the transportation system to accommodate increased traffic flow or to offset the sewage, electrical, or other infrastructure costs imposed on the public by low-density development.

Impact fees are quite common. As of 2006, impact fees existed in 271 jurisdictions, though were generally dedicated to other forms of infrastructure.⁵¹ In fact a GAO study found that 59 percent of communities with populations over 25,000 used these fees.⁵² Moreover, impact fees have often been assessed based on transportation impacts. In fact, many jurisdictions base impact fees at least in part based on the number of new transportation trips that would need to be accommodated by transportation infrastructure as a result of a development.

One simple and forward-looking criterion for assessing transportation impact fees would be to ensure that new development creates no net increase in vehicle-miles traveled. The process would begin with the common planners’ method of calculating the number of new auto trips that a development would generate. Next the state or locality would assess the corresponding costs of absorbing those trips through expanded public transportation

Out the Window: Using Road Tolls to Cut Congestion, Protect the Environment, and Boost Access for All (June 2006).

⁴⁹ New toll lanes in Minnesota will also dedicate half of net revenue to transit.

⁵⁰ For a review of their effects, see <http://www.brookings.edu/es/urban/publications/nelsonimpactfees.htm>

⁵¹ <http://impactfees.com/>

⁵² General Accounting Office. 2000. Local Growth Issues—Federal Opportunities and Challenges.

Washington, DC: U.S. Government Printing Office. For a primer on impact fees, see <http://www.huduser.org/periodicals/cityscpe/vol8num1/ch4.pdf>

ridership. Such a system would simultaneously encourage transit-oriented development because development near transit sites would generate fewer new auto trips and would correspondingly be assessed at lower rates.

A similar approach was tried when San Joaquin Valley Air Pollution Control District in California introduced environmental construction fees in March 2005. The San District requires developers to use energy-efficiency and traffic reduces techniques and to pay into a pool for pollution control as a way to offset the effect of their construction on emissions and congestion.⁵³ The fees are reduced if builders make design changes to reduce the project's effect on air quality. For residential development, reductions are granted for features such as bike paths, sidewalks on both sides of each street, higher density, greater energy efficiency, and location near jobs and retail. The building industry has sued against the measure.

An alternative approach would be to require large-scale developers and employers to either provide private shuttle service, contribute to a larger pool for private shuttle service, or to offset their burden on the state transportation system by contributing to a state fund for public transportation.⁵⁴

2. Storm water fees

These are special charges applied to impervious surfaces (pavement and buildings) to fund storm water management systems. Unlike gardens, yards, and undeveloped land, impervious surfaces prevent rain water from returning to the water table and therefore impose public costs by creating the need for enhanced public infrastructure to provide drainage systems, treatment facilities, and other water projects. This is a major environmental cost of sprawl that is normally pushed onto the general taxpaying public. Such fees exist in many cities and range from about \$5 to \$20 per 1,000 square feet, or about \$1-7 annually per off-street parking space.⁵⁵

3. Real estate transfer fees

Real estate transfer taxes require the purchase of stamps based on the value of the property to be attached to the transfer document for almost any real estate transfer except wills or trusts. They are akin to real estate brokers' six percent levy on home sales for clients. But, as the table below illustrates, these taxes exist in many states at different rates.

⁵³ Exempted from the fee are residential developments of fewer than 50 units, commercial buildings under 2,000 square feet and office space of less than 50,000 square feet.

⁵⁴ See Mafuza Khan, *Missing the Bus: How States Fail to Connect Economic Development with Public Transit* (Good Jobs First, Sept. 2003), available at <http://www.goodjobsfirst.org/pdf/bus.pdf>.

⁵⁵ For a list, see http://www.vtqi.org/parking_tax.pdf page 8.

TABLE: Real Estate Transfer Taxes (state taxes per-capita) ⁵⁶

Dist. of Columbia	\$485.20
Delaware	\$118.74
Florida	\$111.99
New Hampshire	\$111.82
Washington	\$103.17
Minnesota	\$69.08
Connecticut	\$50.18
Virginia	\$45.66
Nevada	\$41.41
Massachusetts	\$38.32
Pennsylvania	\$37.95
Vermont	\$33.43
Maryland	\$32.96
Michigan	\$31.39
Tennessee	\$29.52
New Jersey	\$28.34
New York	\$26.55
Maine	\$22.31
Hawaii	\$14.59
Kansas	\$14.59
Wisconsin	\$12.04
South Carolina	\$12.03
Rhode Island	\$11.70
Alabama	\$9.95
Arkansas	\$9.43
North Carolina	\$6.43
West Virginia	\$5.58
Nebraska	\$5.27
Iowa	\$4.69
Oklahoma	\$3.42
Kentucky	\$0.83
South Dakota	\$0.18
Georgia	\$0.05
Arizona	Not Available
Colorado	Not Available
Illinois	Not Available
Ohio	Not Available

⁵⁶ Federation of Tax Administrators, available at <http://www.taxadmin.org/fta/rate/Realtytransfer.html#Table> with detailed description. States without a tax are not listed

New York and New Jersey's have found an innovative way to ensure that real-estate transfer fees do not make middle-class housing less affordable. These states impose an additional one percent levy that applies only on personal residences valued at more than \$1 million.

IV. Conclusion

By 2040, the American population is expected to reach 400 million people, up from its current level of 300 million. The quality of our lives and that of our planet will depend substantially on the public transit commitments we make today.

Revenue can be found to expand and improve America's transit systems. Better targeting of transportation programs and the creation of new dedicated revenue sources will be required. The most promising revenue sources are those that improve markets by helping drivers and developers to consider indirect social costs.

Enhanced transit will play a leading role to ensure that future growth does not create crippling traffic congestion, devastating pollution, and dangerous dependence on scarce oil reserves. New and improved transit can instead make America healthier and more competitive.