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Getting Unstuck

Three Big Ideas To Get Americans Moving Again

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Our nation's surface transportation system is broken and there are few signs it will soon be fixed. Traffic congestion has reached crisis proportions in most of the nation's large metropolitan areas. As drivers sit in traffic, they are losing patience and demanding solutions.

Yet most governments, starting with the Bush administration, are capitulating to congestion. One might expect that cutting congestion would be a top priority of the U.S. Department of Transportation (DOT). Yet DOT's strategic management goal is not to cut congestion, nor even to keep it from getting worse; it is to keep it from growing faster than 1 percent per year. It is not surprising that DOT has such modest goals given that the Bush administration actually cut highway funding this year (even though the spending would help boost a sagging economy) and opposes increasing the gas tax to pay for more roads.[1]

Even though DOT estimates it will take an additional $45 billion per year to cut congestion 1 percent per year, the federal government and most states have been unwilling to either raise gas taxes or advocate toll lanes to finance needed system expansion. Moreover, state DOTs seldom challenge what Montgomery County (Md.) Executive Doug Duncan calls the "congestion coalition" of environmentalists and other anti-road advocates who believe that the solution to congestion is to get Americans to drive less and that roads only make congestion worse. As a result, instead of building or expanding roads to keep up with an expanding economy, state DOTs all too often focus on "system maintenance"—resurfacing existing roads, replacing bridges, and straightening out problematic interchanges. At least one prominent transportation expert counsels us to just get used to congestion, as it can only get worse.[2]

In short, the general view in Washington and state capitals is that congestion cannot be reduced and that commuters should all just buy car CD players and cell phones and learn to "make it part of your leisure life."[3]

Both the analysis of the causes of congestion and the prevailing wisdom on solutions are wrong. With the right policies and incentives we can reduce traffic congestion. But doing so will first require rejecting defeatism and correctly analyzing what is causing congestion. The objective evidence is clear: Our transportation infrastructure has not expanded enough to meet our growing driving population, and a major part of the solution to congestion will be to invest more to expand road capacity. But reducing congestion will also require fundamentally rethinking surface transportation policy to bring significantly more accountability and market forces to bear. As Congress reauthorizes federal highway and transit legislation (Transportation Equity Act or TEA-21) in 2003, the time is ripe to reevaluate. This policy brief offers three big ideas for fixing our surface transportation system:

Invest More in Mobility

- To stimulate the lagging economy, immediately draw down the highway trust fund;
- Significantly increase federal funding on surface transportation;
- Encourage states to invest more by lowering the federal share of highway and transit programs from 80 percent to 70 percent; and
- Require state and regional Metropolitan Planning Organizations to develop contrasting

"Transportation Improvement Plans," one that is "fiscally constrained" and the other based on need.

Pay for Performance

- Allocate federal highway funds to states partly on the basis of relative performance in three areas: reducing congestion, improving safety, and cutting vehicle emissions;
- Consolidate DOT's 70-plus categorical grant programs into just three programs: transit, road and highway, and transportation enhancement; and
- Fund the development of a national highway "info-structure" network capable of collecting and sharing transportation system performance covering the national and state highway system.

Harness Market Forces To Cut Congestion and Manage Roads

- Lower the required state match on road projects involving pricing (e.g., high-occupancy toll (HOT) lanes, congestion pricing, toll truckways) by at least 10 percent;
- Repeal the limitation on tolls for interstate highways as long as automated electronic toll collection systems and their revenues fund expansion;
- Change the tax code to allow private corporations to issue tax-exempt bonds for toll road projects;
- Make receipt of federal highway funding contingent upon states developing a national toll transponder standard and providing free toll transponders to all drivers;
- Create a pilot program to provide states with incentives to adopt public-private models for transportation infrastructure;
- Equalize commuting tax benefits between all modes of transit; and
- Encourage state and local governments to stop subsidizing sprawl.

Taken together, these proposals will go a long way toward reducing traffic congestion and giving time back to Americans that they now waste in traffic. Even adopted separately, many of these individual proposals, particularly those to increase accountability of state DOTs, will make a significant contribution to transportation performance. But make no mistake, special interests will fight these proposals. The anti-highway and anti-car coalition will oppose more investment in roads. Anti-tax conservatives will oppose raising taxes to pay for more roads and transit. Some liberal groups will oppose road pricing as unfair. State highway departments are likely to resist increased accountability measures. Yet, just as passing education reform required Washington to challenge special interests and entrenched education bureaucracies, real surface transportation reform will require similar hard work and leadership. If we are serious about reducing traffic congestion, it is time to face the fact that investing more money, holding states accountable for real results, and implementing market-based approaches are the only viable answers.

How Bad Is Congestion?

Once upon a time, cars and highways represented freedom. Now, for most Americans, they represent constraint, as drivers crawl along in stop-and-go traffic hoping to get home at a reasonable hour. Traffic congestion just keeps getting worse. According to the 2000 census, commuters spent an average of 25.5 minutes to get to work, more than two and one half minutes longer than they did in 1990, and more than double the 40-second rise of the 1980s. While this may not sound like a lot, the increase alone adds up to an additional 10 hours a year stuck in traffic. The problem is even worse in large and mid-sized metropolitan areas. According to Texas A&M's Texas Transportation Institute (TTI), the average commute time during rush hour[4] is almost 40 percent longer in the nation's 75 largest metro areas than during non-rush

periods.[5] This is up from about 15 percent longer in 1982. **Drivers now waste an average of 62 hours per year in traffic, the equivalent of more than one and one-half weeks of work.**[6] TTI estimates the annual cost of congestion in wasted time and fuel spent was $67.5 billion in 2000, or approximately $1,160 per rush-hour traveler. Congestion is essentially a hidden tax on Americans equivalent to more than 0.8 percent of their annual income. Looked at another way, by 2010, when the full impact of the Bush tax cut takes effect, the costs of congestion will outweigh the tax savings to Americans.

TTI sums it up: "In general traffic congestion is worse in the larger urban areas than in the smaller ones. Traffic congestion levels have increased in every area over the history of the study. The congested time is lengthening and now incorporates more roads and more travel than in the past. And congestion levels have risen in all size categories, indicating that even the smaller areas are not able to keep pace with rising demand."[7]

Why Is Congestion So Bad?

Traffic congestion has gotten worse for two reasons: The demand (vehicle miles traveled) has increased while the supply (miles of roads) has stagnated.

Why are people driving more? Opponents of expanding roads and making driving easier like to put the blame on sprawl—lower densities per acre than more traditional forms of urban development. There is no doubt that our nation's metropolitan areas are spreading out and this, coupled with the increased suburbanization of jobs, is one reason why the average commuting distance went up from 8.5 miles in 1983 to 11.6 miles in 1995. However, almost half of the increase in the physical size of metropolitan areas is due to growth of the adult population, not lower densities.[8] The same forces that are driving the New Economy—new industries and jobs, globalization, competition and dynamism, and the information technology revolution—are also allowing our nation's metropolitan regions to become more spread out and less dense. It is not as if somehow with the right policies we can return to the kind of urban form that characterized the old economy.

If sprawl isn't the culprit, what is? A big contributor is the growth of the economy. **The 15 percent increase in employment in the 1990s accounts for more than half of the increase in vehicle miles traveled (VMT).** Moreover, because incomes went up so much during the Clinton administration (and cars are lasting longer), driving has become more affordable, especially for poor people. As a result, for the first time in our history, over 90 percent of households own a car.[9] Moreover, because more people face increased time pressures and fewer standard 9-to-5 work hours, car pooling has declined.[10] Put it all together and you get a 28 percent increase in VMT in the last decade.[11] But are public transportation systems helping? In spite of billions spent on transit in the 1990s, the share of work trips actually declined from 5.3 percent to 4.7 percent, the lowest level since the Census Bureau began asking the question in 1960.[12]

Even with an increase in VMT, congestion should not get worse if roads are expanded by an equivalent amount. Unfortunately, **between 1987 and 1998, while VMT on freeways or principal arterials in urban areas increased 42 percent, lane miles increased only about 9 percent.**[13] This is why, even though we added 40 percent fewer drivers in the 1990s than we did in the 1980s, travel times increased three times faster.[14] As any consumer standing in bread lines in Moscow can tell you, when demand increases faster than supply, shortages occur. In this case, the shortages—space on highways—have lead to dramatic traffic delays.

One of the main reasons for this infrastructure shortfall is, while highway funding has increased in the last several years, as a share of miles traveled, **highway expenditures by all levels of government fell from a high of 8.7 cents in the early 1960s to 4.6 cents in 1985 and 3.9 cents in 1997 (in constant dollars)**.[15] Moreover, between 1987 and 1997, the share of federal highway funds going to new construction fell from 34 percent to 27 percent. In addition, while almost all traffic congestion is in large and mid-sized metropolitan areas, only 29 percent of federal

surface transportation funds not allocated to the national highway system are used for this purpose. While spending on system preservation (e.g. repairing bridges, resurfacing roads) increased 45.7 percent from 1997 to 2000 after TEA-21 was passed, investment in system expansion increased only 20.8 percent.[16] Finally, in many major metropolitan areas, a majority of planned capital investment is going to transit, even though it carries a small share of travelers.

Not only have we not expanded roads, but transportation departments have not done enough to incorporate advanced information technologies to manage traffic. Such intelligent transportation systems can help reduce congestion, especially non-recurring congestion from such factors as accidents and weather.

In spite of the obvious answer—expanding the supply of roads and making them operate more efficiently—an anti-highway, anti-car, anti-suburban coalition, spearheaded by the Surface Transportation Policy Project (STPP) has waged a surprisingly effective campaign to convince many decision makers that "sprawl" is responsible for traffic congestion. The STPP contends that new roads just make things worse, that road pricing schemes are unfair, and that only demand reduction strategies (e.g., transit, car pooling, urban growth boundaries) can improve mobility. These road opponents argue that "throwing more money into road-building and streamlining project reviews to curtail consideration of environmental factors won't solve congestion. But better accountability, planning, consideration of alternatives, and support for new smart incentive strategies can help local and state agencies, businesses, and citizens cut their way through the traffic mess and boost transportation equity."[17] When proposals are floated to raise taxes to expand roads, these opponents argue that the revenue should go to highway maintenance and mass transit, and not to new construction.[18]

At the core of the opposition's argument is the notion of induced demand—the fact that as a congested road is expanded or a new road added in a congested area, people may shift their routes, modes (e.g., switch from public transit), or times of travel to utilize the new road. While it is clear that induced demand exists, the significant question for policymakers is whether induced demand wipes out all or most gains to drivers from road expansion. The opponents argue that road building does no good or even makes congestion worse. For example, an STPP study of 70 metro areas found no relationship between building roads and reducing congestion.[19]

Most studies of induced demand fail to adequately control for other factors. First, some studies fail to measure benefits to other roads when a new road is built or an existing one expanded. If drivers shift from adjacent arterials to the newly expanded freeway, congestion may not decrease much on the freeway, but it would on the adjacent arterial. Second, these studies find higher levels of induced demand because they fail to control for the fact that governments tend to build more roads in areas where demand is already going up (e.g., in places with population growth). As a result, what looks like roads inducing vehicle travel demand is actually the opposite; natural growth in travel induces governments to build roads to respond to the growing demand.[20] The STPP study, for instance, failed to control for the fact that places with expanding populations built more roads. When that growth is accounted for, it turns out that, **while adding more lane miles does lead to some increases in driving, it also reduces congestion**.[21] The DOT found that if highway spending were increased by 93 percent, VMT in urbanized areas would increase 2.06 percent per year, compared to 1.68 percent per year if funding were held steady.[22] However, travel time costs (e.g., time stuck in traffic and increased gas consumption) would decline by almost 1 percent per year, compared to increasing over 3.5 percent per year with steady funding.[23] Confirming what the average American would likely see as common sense, the bottom line is best stated by TTI: "Road construction has been shown to play a key role in holding the line against urban mobility decline."

As a result, if we are to move beyond the fashionable pessimism regarding our inability to reduce traffic congestion, Congress, the Bush administration, and state and local policymakers will first need to reject the notion that "we can't build our way out of congestion" and second,

make congestion mitigation the top priority of our nation's surface transportation policy. They can do this by first ensuring that there is adequate funding to make the needed investments.

Three Big Steps To Get Americans Moving Again

Invest More in Mobility

If our nation is to reduce traffic congestion, we will have to invest more money to expand roads and manage them better. Certainly, as detailed in the *Pay for Performance* section below, there are ways to improve the effectiveness of current spending. Devoting a greater share of funds to road expansion instead of maintenance, relying more on private performance-based contracts for road building and maintenance, and holding state DOTs accountable for real results would allow current funds to go further.

Even though these necessary steps will help, if we want to make significant progress in improving the performance of our surface transportation system, we will need to invest more, either through direct federal and state expenditures or tolls, or both. In 2000, DOT estimated that overall highway funding would need to increase 16 percent from $48.7 billion to $56 billion per year (1997 dollars) just to maintain the physical conditions of existing highways and bridges over the next 20 years.[24] Expanding and improving the highway system so that road congestion won't get worse will cost $76 billion per year, a 56 percent increase.[25] **Cutting travel time by 1 percent per year will require annual surface transportation investments of $94 billion per year.** Likewise, maintaining the condition of transit will take an increased investment of 41 percent, while improving the condition significantly will require doubling transit investment.

However, projected amounts of transportation funding will fall significantly short of these levels. Congress did increase funding in TEA-21, largely as a result of diverting gas taxes from the general fund into the highway trust fund, from around $17 billion in the early and mid-1990s to $31 billion in FY2002 (although the Bush administration budget cut funding to $23.2 billion in FY2003). But this increased funding is not enough to meet needs. As a result, it is wrong to believe the oft-repeated statement that, while other federal trust funds may be in deficit, the highway trust fund remains solvent. It is no more or less solvent than the Social Security or Medicare trust funds. All three take in more than they spend, yet, for all three, future expected needs will outstrip expected revenues. In the case of highways, though, the nature of the shortfall is even worse, since money can be spent now to deal with transportation problems five to 20 years in the future.

There are a number of steps policymakers can take to increase transportation investments. These proposals could be adopted in part, or as a whole.

- **Recommendation 1: To stimulate a lagging economy, draw down the highway trust fund more quickly.** Currently, highway trust funds are drawn down when they are spent, but since highway projects typically take five to seven years to complete, money that is earmarked for a certain project remains in the trust fund instead of being spent on other projects. Moving to a pay-as-you-go system would allow immediate improvements and, if done immediately, would help jump-start transportation projects, which in turn would boost economic growth in the current slowdown.[26] More rapidly drawing down the trust fund, now with a balance of $13.2 billion and expected to increase to $19 billion by FY2009,[27] would allow billions more to be invested in 2003 and 2004 when it would do the most to stimulate a lagging economy.[28]

- **Recommendation 2: Significantly increase federal funding on surface transportation.** A key to solving congestion will be to increase federal funding on surface transportation.

There are a number of options to increase federal transportation funding through spending from the general fund. For example, the American Association of State Highway and Transportation Officials proposed the creation of a federally-chartered Transportation Finance

Corporation. The corporation would issue approximately $60 billion in tax-credit bonds between 2004 and 2009. Instead of interest payments, bondholders would get tax credits drawn on the federal treasury. Because $17 billion would be set aside for repayment of principal, the corporation would provide approximately $5.5 billion in additional funds per year. Other steps have been proposed, such as keeping the interest in the highway trust fund and returning payments from a gasohol tax to the trust fund.[29] While all those steps would raise revenues for transportation, they would also either divert revenues from other areas or raise the national debt to even higher levels.

Another way to increase funding would be to increase the gas tax from its current level of 18.4 cents per gallon. Each additional penny would raise approximately $1.7 billion. Because the gas tax is not indexed to inflation, Americans pay fewer taxes in real dollars each year for gas and the trust fund falls further behind the nation's transportation needs.[30] Indexing the gas tax to inflation would raise approximately $850 million in the first year and an additional $850 million each successive year. However, to effectively address transportation infrastructure shortfalls, additional investments are needed. One option would be to create a temporary 15 cent per gallon congestion mitigation surcharge. This could be phased in over five years by raising the tax 3 cents per year to 33.4 cents per gallon in 2008, raising $25.5 billion additional revenues. Congress could sunset the surcharge, perhaps in 2013 or 2018, at which point the gas tax would revert to its current level plus adjustments for inflation. If gas prices increase significantly due to oil supply disruption, such as a conflict in the Middle East, Congress could suspend the increase until the prices at the pump fall back to normal levels.

Opponents of raising the gas tax, which include the Bush administration, make a number of arguments against it. First, they claim that it is already too high. The reality is that, by historical terms, the gas tax is quite low. If the tax had been indexed to inflation since 1959, it would now be almost 24 cents per gallon instead of 18.4 cents. Moreover, given that automobile gas mileage has increased by 50 percent in the last 40 years, Americans pay even less in taxes per mile driven. The gas tax would have to be 33.6 cents per gallon for Americans to pay the same per-mile gas tax today that they paid in 1959 (adjusted for inflation).

Second, some argue against a gas tax increase by claiming that the highway system is more than supported by gas taxes. But gas taxes (and tolls) cover only about 88 percent of the cost of highways. If the costs of maintaining other roads and local streets are factored in, the share of road costs paid by gas taxes is even lower. In short, gas taxes do not come close to paying for the costs of the nation's surface transportation system.

Third, some fear that Americans will not support a tax increase.[31] Considering that congestion costs Americans $67 billion per year in reduced productivity, lost time in traffic, and increased gas consumption, asking drivers to pay $25 billion more per year to help reduce these costs makes economic sense. Americans seem to agree.[32] One survey found that over two-thirds of Americans, and 76 percent living in urban areas, would support a 20-cent increase in the gas tax phased in over 10 years if the money was devoted exclusively to improving roads, bridges, and public transit.[33] While in general Americans don't like taxes, they are more likely to support a dedicated tax increase, especially if they know that the revenues will result in actual improvements.

Fourth, some argue that the gas tax is regressive and that, if any taxes are to be raised for transportation, they should be more progressive income taxes. While it is true that gas taxes are more regressive than income taxes, they are more progressive than some other taxes, such as the Social Security tax. Because on average, higher-income individuals drive more and drive larger, less fuel-efficient vehicles, they pay three to four times more in gas taxes than lower-income individuals.[34] Moreover, about 15 percent of gas tax revenues go to subsidize transit, which is more heavily used by lower-income individuals. In addition, the amounts involved are not overly large. Raising the gas tax by 15 cents per gallon would mean that a person who drove 10,000 miles per year would pay $60 dollars a year more. While

higher gas taxes are not as progressive as income taxes, they have the advantage of sending the right market signals. And, ironically, considering gas taxes are essentially user fees, they are a fair charge. Why should an elderly person on a fixed income who walks and takes mass transit pay higher income taxes to support drivers?

Finally, some, including the Bush administration, reject any increase in the gas tax on what appear to be purely ideological grounds, believing that Americans should be taxed less.[35] For believers in smaller government, such a view would be logically consistent, but only if Americans had other choices in the marketplace on which to spend their transportation dollars. While PPI advocates more road privatization and use of road pricing, for the foreseeable future most Americans have no other choice than to sit in traffic. The public, through their representatives, should be able to choose whether or not to tax themselves to increase their own mobility.

▸ **Recommendation 3: Encourage the states to invest more by lowering the federal share of highway and transit programs from 80 percent to 70 percent.**[36] There is one other way to address the issue of funding: require the states to bear a greater share of transportation funding. As David Luberoff proposes, the ideal solution may be to take a page out of our history and give responsibility for both funding and building highways and transit systems back to states and localities.[37] The federal tax could be cut and states given the opportunity to make up the difference. While such a radical devolution proposal is unlikely to pass anytime soon, Congress could require the states to pay a bigger share of federal transportation projects. Raising the state match from 20 percent to 30 percent would raise approximately $4.8 billion per year from the states, as they would have to invest more in transportation to qualify for federal funding.[38]

▸ **Recommendation 4: Require states and regional Metropolitan Planning Organizations to develop two contrasting Transportation Improvement Plans (TIPs)—one that is "fiscally constrained" and the other based on need.** Under the federal requirement that state and regional transportation improvement plans be "fiscally constrained," multi-year transportation plans cannot include projects unless the funding for them has already been identified. The result is that, in many regions, TIPs are woefully inadequate for addressing congestion.[39] Since it is hard for states and cities to mobilize enough funding for large expansion projects, it is no wonder that so much money goes to maintenance rather than expansion. And, because TIPs not only influence funding levels (plans that lay out what is needed increase the likelihood that regions and states will increase funding) but also fail to anticipate increases in transportation funding (as happened after TEA-21 was passed), these requirements limit investment. Opponents of eliminating this requirement argue that it gives plans credibility.[40] The only credibility is that it reflects how little will be done.

Pay for Performance

Americans might not support increase investments in transportation, especially if supported by a gas tax increase, because they do not believe that the revenues will be used effectively to help reduce congestion. As a result, any proposal to increase funding has to be coupled with strong accountability measures and more flexibility.

States still have limited flexibility on how to use federal money to solve problems. The Intermodal Surface Transportation and Efficiency Act (ISTEA) reduced the number of categorical grant programs and gave states more discretion in dividing money between highways and transit and choosing particular projects to fund. TEA-21, however, still included over 70 separate categorical grant programs, from National Highway System and Interstate Highway Maintenance, to grants for ferry boat terminals and transit planning. For example, under the Surface Transportation Program, states must set aside 10 percent for safety construction activities (i.e., hazard elimination and railway-highway crossing improvements) and

10 percent for transportation enhancements, which encompass a broad range of environmentally related activities. Proponents are advocating even more categorical programs in next year's reauthorization, including incident management, rural road safety, and "bottleneck" relief.

Not only do states have limited flexibility, they have limited accountability. TEA-21 accelerated the process whereby the highway and transit funds have largely devolved into mechanisms to give states back the money their residents pay in. For example, the funding allocations for the major programs (e.g., National Highway System, Interstate Maintenance Program, and Surface Transportation Program) are based largely on formulas reflecting factors such as state lane miles and VMT. As a result, while there is substantial process-based accountability for how federal funds are used, there is woefully little attention paid to results. Performance measurement, evaluation, and benchmarking are notably absent from surface transportation funding. Transportation agencies at all levels of government face virtually no accountability for results. Therefore, people treat congestion like the weather—something you can complain about but not alter—rather than what it is: a failure of government to solve a pressing problem.

Because funding is not based on performance, transportation investments are all too often a result of pork barrel spending, interest group pressures, and bureaucratic inertia. Transportation pork has grown significantly. While the 1982 Surface Transportation Act contained 10 "demonstration projects" worth $362 million, the 1998 Act contained over $9 billion of them. Special interests severely limit decisions. Given the fierce opposition to expanding roads by NIMBY property owners and anti-road interests, it is no wonder that transportation officials often take the easy way out: adding High Occupancy Vehicle (HOV) lanes, repairing roads and bridges instead of building new ones, improving the aesthetics of highways, etc. There is no countervailing force for improved mobility other than a general and diffuse frustration of drivers. Coupled with a reluctance by elected officials to raise taxes to pay for road expansion, the result has been the emergence of a politics of constraint and a dramatic slowdown in road expansion.

Finally, there are few pressures for change within most state DOTs. As public bureaucracies, they are limited by civil service rules in their personnel decisions, and procurement rules in how they can contract with the private sector. Moreover, they are not organized to respond quickly and innovatively to customer needs. For example, most states spend little on intelligent transportation systems (ITS)—even though they could be a relatively low-budget solution to congestion—because they take a new orientation with which many state DOTs are not comfortable.

▸ **Recommendation 5: Tie federal transportation funding to states to actual improvements in transportation system performance.** Ensuring that states break through these political barriers and bureaucratic inertia will require a new approach to transportation funding that holds them accountable for real results. While some have called for the federal government to allocate more funds directly to local governments, this would make accurate assessment of performance difficult, since transportation outcomes are dependent upon the actions of all local and state governments of a region.[41] As a result, under this proposal, states would continue to receive federal funds and also be held accountable for actual performance.

Because congestion is our number one transportation problem, states should be judged principally on progress toward congestion mitigation. However, there are other system goals, most notably safety and air quality, which are also important. As a result, we propose that highway trust funds be allocated to states based on relative progress in three areas: congestion,[42] vehicle emissions, and safety. We propose weighting congestion relief at 75 percent to 80 percent, with safety and vehicle emissions each at 10 percent to 12.5 percent. Funding would be based not on absolute changes in performance, but on changes in all three

factors relative to the national average and controlling for growth in the adult population in each state. States could lose or gain up to 25 percent of their "formula" allocation of highway funds based on their performance relative to other states. The lion's share of funding, including any new gas tax revenues beyond those raised by indexing the tax to inflation, should go solely to this highway fund. Tying funding to real performance will increase the effectiveness of current investments and make limited funds go further.

▸ **Recommendation 6: Consolidate the more than 75 categorical programs to just three large funding streams: highways, mass transit, and transportation enhancement.** If states are to be held more accountable for real results, they should also be given much more flexibility. Moreover, to stimulate innovative solutions, states should be able to spend the highway funds in virtually any way they want. As a result, if anti-road advocates convince a state that transit is the most cost-effective way to reduce congestion, they should be able to use money from the highway fund, the federal transit fund, and its own gas tax revenues for transit. However, if the state doesn't get better results on congestion, safety, and emissions than the national average, its transportation funding would be cut up to 25 percent.[43] Likewise, states could spend money on a variety of different approaches: building more roads; removing major "bottlenecks;" investing in road management systems, including ITS; instituting road pricing; developing reversible express lanes; focusing on regional development to boost growth in less congested smaller and non-metropolitan areas; pursuing compact development strategies;[44] programs to reduce commuting distances;[45] and expanding funding for Metropolitan Planning Organizations. If states can reduce congestion best with a focus on a particular strategy, they should be able to try it. However, if they try solutions that do not produce results relative to the rest of the nation, they should be held accountable with reduced funds.

Because it is difficult to measure the performance of the mass transit system, particularly access and equity issues, and because of the risk that states would divert transit funding to congestion relief, Congress should maintain the current public transit trust fund. Finally, a small share of funds now going to projects like bike paths, historical preservation, and other non-highway projects should be consolidated into a transportation enhancement fund, which states could allocate for a wide range of transportation-related projects not involving road expansion.

The principle reason it is now feasible to consider a performance-based transportation program is that, for the first time, it is possible to accurately measure system performance. While transportation agencies have been able to measure safety for many years, and measurements of ambient air quality are improving, measuring congestion has been more difficult. However, the rise of information and telecommunications technologies, including traffic sensors, means that it is possible to automatically measure congestion in our nation's metropolitan areas in real time.

▸ **Recommendation 7: Fund the creation of a national "info-structure" network, capable of collecting and sharing transportation performance information from national and state highways in metropolitan areas.** Not only would this system allow the federal government to hold state transportation agencies accountable, it would also help reduce traffic. Congestion data could be made available on the Internet in real time to indicate what roads are crowded so drivers could take alternative routes or choose different travel times.[46] Such a system could also help with evacuations in times of national emergency.

In order to be effective, such a performance measurement system would have to take into account factors that are outside states' control, most importantly the growth of the driving age population. It is not fair to expect a state with a growing population to reduce congestion as much as one with a stable or declining population. By controlling for population change, such a system should be able to accurately assess the effectiveness of state efforts to reduce congestion.

Harness Market Forces to Cut Congestion and Manage Roads

For the most part, our nation's roads are publicly provided. America lags behind other nations in getting the private sector involved in the provision of roads.[47] Because states have limited funds, they usually cannot expand road infrastructure to meet growing demands even when the public is willing to pay.

But not only does our current transportation financing system lead to under-investment, in many cases the players involved in shaping transportation outcomes—travelers, real estate developers, and other companies—are actually subsidized for contributing to congestion. TEA-21 should bring significantly more market forces to bear on surface transportation, including road pricing, more reliance on private companies to provide services, and a reduction of subsidies of driving and sprawl.

Electronic Toll Roads. The gas tax simply does not provide enough revenue to make the investments needed to reduce congestion. The problem may get even more acute as cars become more fuel-efficient and gas tax revenues decline. Because many regions spend most of their limited transportation dollars on maintenance, toll roads will be the only way for many regions to finance lane and highway expansions. Tolls accounted for less than 5 percent of total highway revenues in 1997. Expansion of toll systems, including high-occupancy toll (HOT) lanes, value express lanes, truck-only lanes, and congestion pricing of existing lanes, could significantly increase revenues to offset the costs of new construction.[48]

HOT Lanes. The development of HOT lanes can bring new revenues and pricing incentives to road use by essentially auctioning off space on existing HOV lanes. HOV lanes spread throughout most of America's largest metro areas in the 1980s and 1990s as an effort to encourage commuting by car pool and bus. But years later, the common spectacle of little-used HOV lanes adjoining jammed "regular" lanes is creating a backlash, with lane restrictions being loosened or eliminated in five states. A number of regions have come up with a better idea: HOT lanes currently operate in two parts of California (San Diego and Orange Counties) and in Houston, Texas, and additional projects are currently in development in eight other states.[49] The concept is simply to open up existing underutilized HOV lanes to voluntary toll traffic, resulting in a reduction of traffic congestion in the "regular" lanes, generation of revenue for other transportation projects, and an option for commuters who are willing to pay—or who urgently need—to get down the road. HOT lane tolls can and should also be used for the broader purpose of reducing traffic congestion and pollution, while making transportation more affordable. In San Diego, tolls are used to subsidize express bus service in the corridor, which promotes all three purposes.

Value Express Lanes. The concept of road pricing can go beyond HOT lanes to value express lanes, whereby new roads or lanes are built and supported in all or part through the use of tolls.[50] These new roads and/or lanes would offer reliable, free-flowing travel throughout metropolitan areas for a fee. As roads continue to get more congested, an increasing number of people would gladly pay extra to drive on uncongested roads. By adjusting the fee in real time, a free flow of traffic could be maintained. Transportation experts Ken Orski and Robert Poole have proposed value express lanes throughout metro areas. These "HOT Networks," or priced lanes, would have the added advantage of allowing buses to travel on these lanes for free, providing a reliable system of rapid bus transit, at a much lower cost than light rail transit.

The Orange County, Calif. 91 Express Lane is an example of such a value express lane project. Opened in late 1995, it is one of four private toll road ventures permitted by legislation passed in 1989. Project development and operating procedures are delineated in a franchise agreement signed by the state and the facility's operator, the California Private Transportation Company. Four lanes (two in each direction) were built in the median of State Route 91, an extremely congested, six-lane highway. The toll amount varies by time of day to ensure that traffic flows smoothly. To keep the lanes free of congestion at rush hour, ex-

press lane tolls have been raised more than once a year since 1995. The current cost of traveling the entire 10-mile span of HOT lanes ranges from $1.00 to $4.75, and it is estimated that drivers save an average of 12 minutes in commuting time.

Toll Truckways. Another version of value express lanes is the concept of truck-only toll roads that has recently been proposed by the Reason Foundation.[51] The foundation proposed the construction of separate toll roads for trucks in selected interstate corridors. These truckways would be financed through bonds backed by toll revenues and built and operated by private companies under long-term franchise agreements or by state toll road authorities.[52] The special lanes would boost the productivity of the nation's trucking industry by reducing congestion and speeding truck travel. However, relaxing limits on the size of tractor-trailers would also increase productivity. In 1991, responding to safety concerns, Congress limited truck weight to 80,000 pounds and limited longer tractor-trailer combinations even though they are able to carry several times the payload of ordinary trucks and offer significant productivity benefits.[53] Separate truck tollways would allow trucking companies to use these larger trucks safely. Drivers on adjacent lanes would benefit from reduced truck traffic and reduced pavement damage.

Objections to Road Pricing. Opponents of road pricing make a number of objections, charging that it is inefficient, unfair, and represents double taxation.

It is true that paying tolls at staffed toll booths is inefficient and costly. However, electronic toll collection systems that use vehicle-mounted electronic transponders to automatically debit funds from drivers' pre-paid accounts enable road pricing without slowing traffic or requiring toll collectors. This technology also enables governments to easily institute a variety of road pricing approaches, including pricing based on time of day, level of congestion, number of passengers, and type of car (e.g., electric-gas hybrid cars ride for free).

Some oppose tolls because they believe that drivers have already paid for roads through gas taxes and that tolls represent a form of double taxation. However, as explained earlier, gas taxes do not cover the full costs of driving nor the costs of adding lanes or expanding roads. One study found that the average construction costs for adding lanes in urban areas is over 30 cents per mile driven during peak periods, yet gas taxes amount to only about 2 cents per lane mile.[54] Likewise, drivers pay nowhere near the total cost of driving when they use roads during peak congestion periods.[55] Educating Americans that their gas taxes do not cover the full costs of adding new road capacity would help increase support for road pricing.

Finally, road pricing is opposed by some, particularly on the left, who believe that roads are a public good which should be provided equally to all. For example, some liberal groups have criticized HOT lanes as unfair, calling them "Lexus lanes." They argue that all Americans should be treated equally and that charging some for premium service creates a two-tiered society with the privileged getting to cruise along at 65 mph while everyone else sits in traffic. There are three problems with this view.

First, studies have shown that HOT lanes are used by a representative mix of commuters, not just the wealthy.[56]

Second, everyone benefits from charging those willing to pay for special lanes, since that means there will be fewer drivers in the free lanes. In addition, road pricing can be explicitly designed to address these equity concerns. For example, some of the revenue generated can support transit, and people who take transit could get credits (through smart cards) that let them use toll lanes on days they need it most.[57]

Finally, we can ask Americans to wait until the gas tax is finally increased on all drivers so it raises enough revenues to add new capacity, or we can just move ahead now and expand capacity-drawing revenues from those that are willing to pay. In most cases, arguing that roads should be funded solely by the gas tax means that new roads will simply not be built.

Recommendations to Boost Road Pricing. While a number of new road pricing projects have emerged in the last decade, overall

progress is slow. In 1997, Congress created an Interstate Toll pilot project and a road pricing pilot program within DOT. No funds were devoted to the former project and the road pricing program received just $11 million per year for FY2000 to FY2003 to support up to 15 new state and local value pricing programs. In spite of energetic efforts by DOT program managers, the results have been disappointing largely because the incentives for states to try a new and potentially controversial proposal were minimal. Moreover, DOT itself has been ambiguous about road pricing. As a result, if Congress wants to kick-start new road pricing projects it will have to provide much stronger incentives.

▸ **Recommendation 8: For a limited period of time, raise the required federal share on road projects involving pricing by at least 10 percent.** Currently, the federal government provides 80 percent of funds for most road projects. To jump-start road pricing projects, Congress should provide a 90 percent match on these projects; unless Congress lowers the overall match to 70 percent, in which case the federal government should pay 80 percent of toll road projects.[58] While this will not provide additional funds to states, it will let them stretch their own state funds further. Some will argue that since road pricing projects raise revenue, federal funds should be used instead for maintenance and construction of roads that are not priced. However, the revenues from the road can be used to support other transportation projects in the state. Moreover, the evidence suggests that states need incentives to overcome inertia and opposition in order to build toll roads. As a result, until toll roads become more widespread, it makes sense for the federal government to provide incentives for their creation.

▸ **Recommendation 9: Repeal the limitation on tolls on interstate highways, as long as toll collection is electronic and the tolls are used to support road or lane expansion or major rebuilding.**[59] To enable states to generate more revenues for road expansion, Washington needs to remove the regulatory barriers to road pricing. In order to ensure that states do not simply slap tolls on sections of interstates that carry large numbers of out-of-state drivers, any new tolls should be allowed only on new roads or expanded lanes.

▸ **Recommendation 10: Change the tax laws to allow private corporations to issue tax-exempt bonds for toll roads as long as they get approval from the state DOT.** Under current law, certain types of privately funded projects, such as public transportation facilities, airports, waste disposal facilities, and water and sewage facilities, are eligible for tax exempt financing with private activity bonds.[60] However, privately built toll roads are not eligible. In contrast, publicly funded and operated road projects can obtain tax exempt bonds. Additionally, the fact that a private operator cannot own a publicly funded project reduces the incentive for private companies to operate roads. Moreover, private toll roads compete against publicly provided roads. Changing the tax laws to enable private toll roads to be eligible and raising the state cap on private revenue bonds to reflect this change would enlist new innovative public-private partnerships.

▸ **Recommendation 11: Make the receipt of federal highway funding contingent upon the states adopting an interoperable national toll system so that any toll transponder can be used anywhere.**

▸ **Recommendation 12: Allow states to use federal highway funds to offer free transponders to all drivers when they register their vehicles.**[61] Toll roads will expand if it is easier to use electronic toll transponders. While a number of East Coast states adopted a shared E-ZPass standard, other states use different systems.[62] But even for states with the same standard, unless they are linked to the same system, drivers cannot use one transponder on another. For example, a commuter in Washington, D.C. would have to get a "Smart Tag" to drive on the Dulles Toll Road in Virginia and an E-ZPass for the Chesapeake Bay Bridge in Maryland, not because the transponders are different, but because Virginia is not linked into the E-ZPass system. As a result, transponder interoperability is needed. In addition, to en-

courage the use of toll transponders, it needs to be much easier for Americans to get low-cost transponders.[63]

▸ **Recommendation 13: Create a pilot program within DOT to provide states with incentives to embrace new public-private models, including design-build-maintain models and innovative financing programs.** States need to embrace market models not just for building roads, but also for maintaining them. Traditionally, state DOTs contract with private vendors to build roads on the basis of the lowest bid for construction. That makes a state's limited construction funds go farther, but it often means low-quality pavement that costs far more to maintain over its useful life. This separation of construction from maintenance ignores life-cycle costs. However, increasingly states are experimenting with new design, building, and management models.

For example, Koch Industries entered into an agreement with the state of New Mexico to design, build, and maintain for 20 years a 118-mile, four-lane highway all for a fixed price. Because Koch had an incentive to build the road to be durable and use cost-effective maintenance techniques, the state estimates that it will save $89 million over the 20-year period. The key to such projects is the ability of the state to accurately and cheaply measure the quality of the road so it can assess how well the company is meeting its contractual obligations. Luckily, new technology has made this much easier. Devices known as prophilographs and prophilometers can measure the smoothness of pavement (the criteria most important to state DOTs) at highway speeds.[64] States should embrace such technology-enabled, performance-based contract models.

Get Market Signals Right. While most Americans choose to drive and live in single-family homes in the suburbs there is no reason for public policy to subsidize this behavior. Yet federal tax policy subsidizes driving to work, while state and local governments subsidize dispersed development.

▸ **Recommendation 14: Make federal commuting tax subsidies mode-neutral, and equalize commuting subsidies between all modes: driving, van pool, bus, taxi, bike, walking and working at home.** In addition, Congress should allow them to be part of "cafeteria" plans or flexible spending accounts.

Many employers provide paid parking, but let their employees pay the monthly fee with pre-tax dollars, up to $185 dollars per month.[65] Commuters who take transit and van pools are eligible to receive only $100 per month or the actual amount of transit expenses, whichever is less. Moreover, those who bike, walk, or telecommute are not eligible for a subsidy. To reflect actual social costs, these subsidies would be less generous for drivers in order to provide an incentive for commuters to take other modes. Legislation has been introduced to raise the transit subsidy to the same level as parking.[66] In addition, Congressman Earl Blumenauer (D-Ore.) has introduced legislation (H.R. 1265) that would make bicycle commuters eligible. While these are important steps, ideally all modes should be eligible for the subsidy, and the pre-tax subsidy should cover not just the out of pocket costs, but $185 of income per month.

There will likely be two main objections to equalizing the subsidies. The first is, given growing budget deficits, we can't afford it. One obvious way to address this would be to lower the parking subsidy to make it equal to transit. However, this is politically difficult. An easier solution would be to freeze parking subsidies at their current level until non-parking mode subsidies catch up as they are increased regularly to account for inflation.[67] Second, some argue that people should not be able to claim more in expenses than they actually incur. In other words, why should walkers get a tax break since they don't spend anything to walk to work? But besides the fact that walkers and bikers do not spend money to get to work,[68] the point is not to be "fair," but rather to provide incentives that reflect overall social costs. Drivers contribute to congestion, not to mention air pollution, while walkers and bicyclists do not.

▸ **Recommendation 15: Encourage state and local governments to stop subsidizing sprawl.** Governments don't just subsidize

parking, they subsidize sprawl. The Congressional Office of Technology Assessment estimated that sprawled development raises infrastructure development costs as much as 20 percent. Because most of these costs are not borne by developers but rather by governments (or by utilities that are prohibited from charging more in dispersed development), sprawl is exacerbated.[69] Urban planning researcher Robert Burchell estimated that sprawled development increases the total cost of development an extra $10 billion per year in excess of that needed to finance more compact growth. One-quarter of this is paid by all residents, not just the new homeowner.[70] An array of mechanisms, including marginal cost pricing of utilities and other services, development levies and impact fees, and full cost recovery regulations, can use the market's own signal mechanism price to encourage a more cost-effective urban development pattern. Tools like Adequate Public Facilities Ordinances, which require that infrastructure be fully paid for before new development moves forward, can ensure that new development is not subsidized.[71]

Conclusion

With the reauthorization of TEA-21, Congress and the Bush administration have an historic opportunity to change the direction of our nation's surface transportation policy. If they do not want to see even higher levels of congestion when they revisit the TEA-21 in 2009, incremental change in 2003 will not be enough. As they consider the first major federal transportation legislation of the 21st century, Congress and the administration need to go beyond the status quo and embrace fundamental reform, including increasing surface transportation funding, demanding real accountability for results from states, and harnessing market incentives to solve congestion.

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Endnotes

[1] It is striking that of the twelve major "core principles and values" to guide reauthorization articulated by Mary E. Peters with the Federal Highway Administration, none focused on reducing congestion. ("America's Surface Transportation Programs: Meeting New Challenges," U.S. Department of Transportation, May 2002, *http://www.fhwa.dot.gov///////reauthorization/mtnc.htm#coreprin.*)

[2] Anthony Downs of the Brookings Institution epitomizes the view in his testimony to the House Committee on Transportation and Infrastructure. He stated, "there is no way to prevent traffic congestion from intensifying even more in the future. This is a problem without a solution." (Anthony Downs, Testimony before the House Transportation and Infrastructure Committee, Subcommittee on Highways and Transit, March 21, 2001, *http://www.house.gov/transportation/highway/03-21-01/downs.html*.)

[3] *Ibid*.

[4] The term "rush hour" is a hold over from a prior era. It is more accurate to refer to "rush hours," since the period of congestion can last as much as three hours each morning and night in some metro areas.

[5] Schrank, David and Tim Lomax, "2002 Urban Mobility Study," Texas Transportation Institute, June 2002, *http://mobility.tamu.edu/ums/.*

[6] Congestion isn't just bad on the roads, it is also bad for some rail transit. For example, the Washington Metro rail system is running at capacity and badly needs to add new rail cars and expand stations.

[7] Schrank, David and Tim Lomax, "2002 Urban Mobility Study," Texas Transportation Institute, June 2002, *http://mobility.tamu.edu/ums/.*

[8] A study by the Brookings Institution found that, while population grew 17 percent in the nation's metropolitan areas between 1982 and 1997, urbanized land grew 47 percent; however, during this period the adult population grew about 30 percent faster than the total population, suggesting that the forces for growth (adult households) was larger than 17 percent. Fulton, William, Rolf Pendall, Mai Nguyen and Alicia Harrison, "Who Sprawls Most? How Growth Patterns Differ Across the U.S.," Center on Urban & Metropolitan Policy, The Brookings Institution, July 2001, *http://www.brookings.edu/dybdocroot/es/urban/publications/fulton.pdf*.

[9] Pisarski, Alan E., "A review of the Journey to Work data findings from the 2000 Census Supplementary Survey, Prepared for the Subcommittee on Highways and Transit of the Committee on Transportation and Infrastructure U.S. House of Representatives," Richmond Regional Planning District Commission, *http://www.richmondregional.org/Census/A_review_of_the_Journey_to_Work.pdf.*

[10] The number of workers commuting to work alone in a car increased faster than the total number of commuters, as car pooling and walking to work declined.

[11] Bureau of Transportation Statistics: *http://www.transtats.bts.gov*.

[12] Transit served about 4 percent of the new commuters, less than its traditional overall share of 5 percent. While it is true that transit trips probably declined significantly in the first part of the decade and then increased in the last half, the fact remains that they account for few work trips. But even the share of trips on transit had gone up, would it have had a significant impact on congestion, given that 87.9 percent of Americans drive to work. Car and road opponents like to point out that if all trips are counted, not just work trips, about 30 percent of Americans have taken a transit trip or walked in the last month. But the real measure is not the number of trips but their length and frequency. People may walk their children to school or bike once in a while to the local store. But for longer trips, especially to work, that account for the vast share of local travel miles, cars still predominate.

[13] The actual increase was 13.1 percent expansion, but over 30 percent of this is due to reclassifying rural counties as urban.

[14] Source: Alan Pisarski, personal communication.

[15] "Highway, Bridge and Transit Finance," Chapter 6 in "1999 Status of the Nation's Highways, Bridges, and Transit Conditions and Performance Report," U.S. Department of Transportation: Federal Highway Administration, *http://www.fhwa.dot.gov/policy/1999cpr/index.htm*.

[16] Statement of Mary E. Peters, Administrator, Federal Highway Administration, Department of Transportation, before the Committee on Transportation and Infrastructure Subcommittee on Highways and Transit, House of Representatives, Hearing on the Status of the Nation's Highway and Transit Systems, September 26, 2002.

[17] "Highway Congestion Relief Reviewed By House Panel," press release from TEA3.org, May 21, 2002, *http://www.tea3.org/news.asp?id=2.*

[18] "Stop Sprawl: Transportation Issues," Sierra Club's online Environmental Update, July 30, 2002, *http://www.sierraclub.org/sprawl/transportation/.*

[19] State lane miles are the total number of miles of a highway multiplied by the number of lanes. "Easing the Burden: A Companion Analysis of The Texas Transportation Institute's 2001 Urban Mobility Study," Surface Transportation Policy Project, May 7, 2001, *http://www.transact.org/report.asp?id=185.*

[20] For example, a study by University of California, Berkeley professors Robert Cervero and Mark Hansen found that road investments do induce some travel demand, but that traffic growth also induces road investments. Robert Cervero and Mark Hansen, "Road Supply-Demand Relationships: Sorting Out Causal Linkages," University of California, Berkeley, October 2000, *http://www.uctc.net/papers/444.PDF*.

[21] Author's calculation based on STPP data. "Easing the Burden: A Companion Analysis of The Texas Transportation Institute's 2001 Urban Mobility Study," Surface Transportation Policy Project, May 7, 2001, *http://www.transact.org/report.asp?id=185.*

[22] The DOT study found that VMT in urbanized areas would increase 2.06 percent per year, compared to 1.68 percent per year if funding were held steady. "Impacts of Investment: Highway and Bridge," chapter of Executive Summary in "1999 Status of the Nation's Highways, Bridges, and Transit Conditions and Performance Report," U.S. Department of Transportation: Federal Highway Administration, *http://www.fhwa.dot.gov////policy/1999cpr/es/cpes_16.htm.*

[23] *Ibid.*

[24] Preliminary data from the 2002 Conditions and Performance Report indicate that a 17 percent increase in highway spending, from $64.6 billion to $75.9 billion per year (2000 dollars), will be needed just to maintain the physical conditions of existing highways and bridges over the next 20 years. Source: Statement of Mary E. Peters, Administrator, Federal Highway Administration, Department of Transportation, before the Committee on Transportation and Infrastructure Subcommittee on Highways and Transit, House of Representatives, Hearing on the Status of the Nation's Highway and Transit Systems, September 26, 2002.

[25] Preliminary data from the 2002 Conditions and Performance Report indicate that a 65 percent increase in highway spending, from $64.6 billion to $106.9 billion per year (2000 dollars), will be needed to improve the system. *Ibid*.

[26] There is one other reason to move to pay as you go: Cutting federal expenditures when the economy slows goes against all the current wisdom of economics, which says federal expenditures should increase during downturns to be a countercyclical force.

[27] Orski, Ken, "Financing Future Transportation Needs, Part II: The Next Six Years," *Innovation Briefs*, vol. 13, no. 5, September/October 2002, *http://www.innobriefs.com/abstracts/2002/sep02.html#1*.

[28] The American Road and Transportation Builders Association, "Two Cents Makes Sense," Testimony of the American Road and Transportation Builders Association before the Subcommittee on Highways and Transit, July 16, 2002.

[29] For example, Senator Max Baucus' (D-Mont.) MEGA TRUST Act bill would take a number of measures to divert money now going to the general treasury is highway trust fund, including requiring that all ethanol taxes go the trust fund and that the interest earned stayed in the trust fund.

[30] At least one state, Florida, currently adjusts its gas tax according to inflation.

[31] Sponsors of proposed legislation making changes in gas tax accounting tout its benefits by saying "Nothing in the bill increases any tax." That may be, but it also does little to increase funding significantly.

[32] There was limited support for the Clinton administration proposal to impose an energy tax in 1993 partly because the funding was designed to reduce the deficit, not to be targeted specifically to transportation.

[33] "Results from Zogby American Poll," American Road And Transportation Builders Association, July 11, 2002, *http://www.artba.org/pdf/zogby_poll_results_report.pdf.*

[34] The Congressional Budget office found that the 1993 gas tax increase of 4.3 cents per gallon would mean that a person with an annual income of $7,800 per year would pay $17 per year more, while a person with an average household income of $82,100 would pay $61 per year.

[35] For example, a centerpiece of the 1996 Dole presidential campaign was to repeal the 4.3 cent a gallon increase in the gas tax instituted in the Clinton administration's first term.

[36] "Financing Federal-Aid Highways," Appendix I in "1999 Status of the Nation's Highways, Bridges, and Transit Conditions and Performance Report," U.S. Department of Transportation: Federal Highway Administration, *http://www.fhwa.dot.gov/reports/fifahiwy/ffahappi.htm.*

[37] Luberoff, David, "The Triumph of Pork Over Purpose," *Blueprint Magazine*, September 10, 2001, *http://www.ndol.org/ndol_ci.cfm?contentid=3765&kaid=141&subid=299,*

[38] The FY2002 DOT conference agreement raised the required match for transit projects from 20 percent to 40 percent, yet kept it at 20 percent for roads. This creates an uneven playing field leading states to prefer road projects over transit. Federal policy should be neutral with regard to match requirements for different modes.

[39] For example, see the Washington, DC region TIP plan: "The 2000 Update to the Financially Constrained Long-Range Transportation Plan for the National Capital Region," Metropolitan Washington Council of Governments Department of Transportation Planning, *http://www.mwcog.org/trans/clrp_2000_index.html.*

[40] "Testimony of Michael Gray on behalf of the Association of Metropolitan Planning Organizations, before the House Transportation and Infrastructure Committee Subcommittee on Highways and Transit," September 19, 2002, *http://www.house.gov/transportation/highway/09-19-02/gray.html.*

[41] The anti-highway coalition is pushing strongly to devolve transportation funding and decisions even more to the metropolitan level. And while this sounds promising, it is actually a strategy by which these interests hope to advance their demand reduction strategies. They want to "move more funding decisions closer to where people live" knowing that the biggest opposition to road expansion is not from the tens of thousands of travelers who benefit from it, but from the few local people who live near it. Highway opponents readily admit their true goal in devolution: "It is certain that if we devolve more program responsibility to the local level, we will see different investments and a broader range of transportation improvements, from traffic calming, improvements for non-motorized travel, context sensitive solutions, flexing of funds from highway capacity to transit improvement, clean fuel buses and new technologies." (Testimony of Jacky Grimshaw, on behalf of the Surface Transportation Policy Project Before the

House Subcommittee on Highways and Transit Hearing on "Transportation Solutions in a Community Context: The Need for Better Transportation Systems for Everyone," July 25, 2002, *http://www.tea3.org/testimony/grimshaw.asp.*)

[42] This measure could include both changes in total congestion and non-recurrent congestion. In other words, it is not just mobility that people value, but its predictability, knowing that it will take a certain length of time to take a trip.

[43] The issue of the proper time horizon is a critical one. It would not be effective to institute a system that based funding on performance in the next year. It takes several years for state investments to have an impact. As a result, it makes sense to provide a limited window, perhaps four years, before state funds would be based on accountability. However, the ability to use funds flexibly would begin immediately. Some might press for even longer periods before states are held accountable, but four years would be enough time for states to get things done while moving the process expeditiously.

[44] For example, in California SB1262 requires county transportation commissions in the more densely populated areas of California to use a portion (5 percent) of their transportation capital funding as fiscal incentives and financial rewards for local governments that are building new compact housing and retail developments in "infill" locations. Cities and counties that qualify for the incentive grant are then free to fund a transportation project with the revenue they are awarded.

[45] One Seattle program focused on trying to get employers with multiple locations to allow employees to transfer to the company facilities closest to where they live: "Proximate Commute Assistance," Center for Urban Transportation Research, *http://www.cutr.usf.edu/tdm/376-04.htm*.

[46] Some places are already installing such systems: *http://www.wsdot.wa.gov/PugetSoundTraffic.*

[47] The World Bank reports that in the 1990s, $61 billion of private funds were invested in toll roads in 26 developing countries: Silva, Gisele F., "Toll Roads: Recent Trends in Private Participation," *Public Policy for the Private Sector*, The World Bank Group: Private Sector and Infrastructure Network, November 2000, *http://rru.worldbank.org/viewpoint/HTMLNotes/224/224summary.html.*

[48] Other nations are further ahead than the United States. For example, the Netherlands recently instituted a comprehensive mobility plan to keep traffic moving in the areas of Amsterdam, Rotterdam, The Hague, and Utrecht. They plan to institute a two-year road pricing test period and construct new toll roads with express toll lanes. Several cities in Norway, including Trondhiem, Oslo, and Bergen, instituted tolls to build new roads and widening existing ones.

[49] These include Arizona, Colorado, Florida, Georgia, Minnesota, Oregon, Virginia, and Washington. Prior to Governor Glendening's veto of the idea, Maryland was also on the list.

[50] Orski, Ken, "Financing Future Transportation Needs, Part III: Long Term Alternatives—New Funding Concepts," *Innovation Briefs*, vol. 13, no. 5., September/October 2002, *http://www.innobriefs.com/abstracts/2002/sep02.html*#2.

[51] Poole, Robert and Peter Samuel, "Toll Truckways: A New Path Toward Safer and More Efficient Freight Transportation," The Reason Public Policy Institute, June 2002, *http://www.rppi.org/ps294.html.*

[52] It is not clear that tolls would be adequate to finance the construction of such highway lanes, but if they are, it is worthwhile to pursue such projects.

[53] Orski, Ken, "Toll Truckways: Toward a Model 21st Century Freight Highway System," *Innovation Briefs*, vol. 13, no. 5, September/October 2002, *http://www.innobriefs.com/abstracts/2002/sep02.html.*

[54] DeCorla-Souza, Patrick and Anthony Kane, "Peak Period Tolls: Precepts and Prospects," *Transportation,* vol. 19, no. 293, p. 311, 1992, Kluwer Academic Publishers.

[55] While the cost to each additional driver on a congested road increases, the cost to the rest of the drivers from the incremental addition of more cars increases even more. As a result, drivers on congested roads do not pay the full social costs.

[56] Analysis by Edward Sullivan and Joe El Harake of the 91 express lanes in southern California found that while upper-income drivers use lanes more, the difference is not too pronounced. Fifty percent of households with incomes of higher than $100,000 stated that they rarely or never use the lanes, while 25 percent of individuals with incomes below $25,000 use them frequently.

[57] DeCorla-Souza, Patrick and Anthony Kane, "Peak Period Tolls: Precepts and Prospects," *Transportation,* vol. 19, no. 293, p. 311, 1992, Kluwer Academic Publishers.

[58] If Congress lowers the federal share to 70 percent, the share for road pricing projects should be at 80 percent.

[59] Section 1216 of Transportation Equity Act for the 21st Century (TEA-21) says that with the exception of a limited pilot program, states cannot put new tolls on interstate highways. States should be able to add new lanes to interstates and charge all electronic tolls on them.

[60] "Issue Brief: Private Activity Bond Volume Caps," June 2002, *http://www.gfoa.org/flc/briefs/062702/volcaps.06.02.pdf.*

[61] Transponders cost anywhere between $15 and $35, and are often free since they save the toll road authority money by avoiding the use of expensive human toll collectors.

[62] For example, Florida, South Carolina, Texas, and Kansas use a different standard.

[63] Most likely, the next generation of transponders for which there is an agreed North American standard will be built into vehicles by the manufacturers. In addition to permitting automatic tolling, they could support a wide range of new applications, such as allowing police to download license and registration data if they pull a car over, give the driver a dashboard display of the fog warning one-half mile ahead, and download a movie at the gas station for the kids in the backseat. (Source: interview with Peter Samuel, editor, Toll Roads Newsletter)

[64] This equipment uses lasers to measure the pavement surface in varying intervals. These measurements are then run through a computer algorithm to determine the general smoothness of the pavement. Lasers, however, are not particularly effective when measuring cracks. Cracking used to be measured visually from a DOT car driving on the shoulder of the road. Now the vans carrying the prophilometers will take a close up video of the road, and the video will be inspected in a lab later. The video is calibrated to where a crack is observed, so it can be pin-pointed on a map.
[65] For 2002, IRS Code Section 132(f) limits the amount of qualified parking that may be excluded from an employee's taxable income to $185 per month for a pre-tax parking deduction.
[66] S.2083, introduced in 2000 by Sen. Chuck Robb (D-Va.) would amend the IRS code to raise the transit fringe benefit limitation to equal the amount permitted for qualified parking.
[67] Lost tax revenues due to parking subsidies are said to cost the Treasury $17 billion per year. ("Testimony of American Public Transportation Association before House Transportation and Infrastructure Committee Subcommittee on Highways and Transit," September 19, 2002, *http://www.house.gov/transportation/highway/09-19-02/millar.pdf.*) Assuming a rate of inflation at 2 percent, the savings from eliminating the COLA increase on parking subsidies would be approximately $3.6 billion per year.
[68] Walkers actually spend money on their transportation, if the added time of walking to work compared to driving is considered. Bicyclists spend money on their bicycle, related equipment, and maintenance.
[69] For example, in 1995, Phoenix subsidized new suburban dwellings by more than $12,000 each.
[70] Burchell, Robert W. and David Listokin, "Linking Vision with Capital: Challenges and Opportunities in Financing Smart Growth," Research Institute for Housing America, September 2001, *http://www.housingamerica.org/docs/RIHA01-01.pdf.*
[71] In some places, such as Arizona, rather than imposing development fees to make new development pay its way, governments have chosen to simply buy open space. This is somewhat akin to running ads against smoking, while subsidizing tobacco growers.