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## **Fixing Surface Transportation in Massachusetts** **A Path Forward under a Devolved Federal Funding Scenario** By Marc Scribner\*

Federal surface transportation policy is in disarray, having suffered from a chronic lack of vision since the first surface transportation reauthorization following the completion of the Interstate Highway System in 1991.<sup>1</sup> Recent actions, such as the failure to keep spending in check with revenues, have compounded the problems, forcing states, regional authorities, counties, and municipalities to fund an increasing share of highway maintenance and construction.

Meanwhile, congressional debate over multiyear reauthorization of federal surface transportation programs has reached an impasse. As the Senate and House offer irreconcilably different legislative proposals regarding length, funding, and revenue collection, inadequate revenue and excessive spending have pushed the Highway Trust Fund to the brink of insolvency.

The Highway Trust Fund's highway account (a separate mass transit account also exists) is expected to be unable to meet its outlay obligations by early Fiscal Year 2013, according to 2011 estimates from the nonpartisan Congressional Budget Office.<sup>2</sup> This is not to say the trust fund will incur negative balances, which is forbidden under current law. Rather, when projected revenue is expected to fall short of outlays, the U.S. Secretary of Transportation must begin rationing funds to the states.<sup>3</sup> If projects are delayed due to unpredictable funding, construction costs will naturally balloon because of the costs associated with getting labor, equipment, and materials back in place.

The federal government's highway outlays are paid for primarily through revenue raised from federal excise taxes on gasoline and diesel fuel. These accounted for nearly 90 percent of total Highway Trust Fund revenue in FY 2011.<sup>4</sup> Projected highway account outlays exceeded projected revenue by 15 percent, but leftover funds from previous years kept the programs operating.<sup>5</sup>

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Over the past few years, every state and the District of Columbia receive more in federal highway funding than the various federal excise taxes on highway activities within the state generated, according to the Government Accountability Office.<sup>6</sup> During FY 2005–2009, the funding return on highway taxes ranged from \$1.03 for every dollar collected in Texas to \$5.85 in Washington, D.C.<sup>7</sup> Massachusetts, on the low end of the scale, received \$1.17 for every dollar collected.<sup>8</sup>

While the vast majority of Massachusetts highway funding comes from non-federal sources, if all highway funding responsibility were to be devolved to the states—as a growing number of fiscal conservatives in Congress advocate—additional revenue must be found. This issue brief examines the current funding realities and offers several potential mechanisms that could be used in Massachusetts to close the funding gap under a devolution scenario.

However, there is a way forward. Maintaining the “user-pays/user-benefits” funding principle should be of the utmost importance to transportation policy makers seeking to address the nation’s growing transportation challenges. User-pays offers a number of advantages over general revenue funding:

1. **Fairness:** Highway users benefit from the improvements their user taxes or fees generate.
2. **Proportionality:** Users who drive more pay more. Users who impose disproportionate costs, such as heavy trucks, are charged more.
3. **Funding Predictability:** Highway use and therefore highway user revenues do not fluctuate wildly in the short-run.
4. **Signaling Investment:** Revenue roughly tracks use, which provides policy makers with an important signal as to how much infrastructure investment is needed to maintain a desired level of efficiency.

New technologies can help create novel approaches to transportation funding. To get there, we also need to turn away from existing failed policies.

**The Increasingly Inadequate Gas Tax.** Much of the funding gap—at least at the federal level—from user-based fuel taxes can be attributed to costs associated with construction increasing at rates greater than corresponding tax rates. Therefore, the increasing inadequacy of fuel taxes as highway-user revenue sources is a long-term problem that must be addressed.

Consumer preferences and federal regulation, namely the Corporate Average Fuel Economy program, are driving more fuel efficient vehicle designs.<sup>9</sup> While this may reduce air pollution externalities, it will have little to no impact on other external costs associated with vehicle use, such as congestion and infrastructure damage. This creates two long-term issues that are troubling to transportation policy makers: 1) Virtually all taxes on fuel are collected on a fixed per gallon basis, so revenue raised per vehicle mile traveled (VMT) will fall as the U.S. vehicle fleet becomes more fuel efficient; and 2) newer vehicles will be most fuel efficient, so wealthier individuals who can more easily afford them will incur fewer charges associated with the cost of their use—thus, the burden of fuel taxes will likely shift toward lower-income drivers of older, less fuel efficient vehicles.

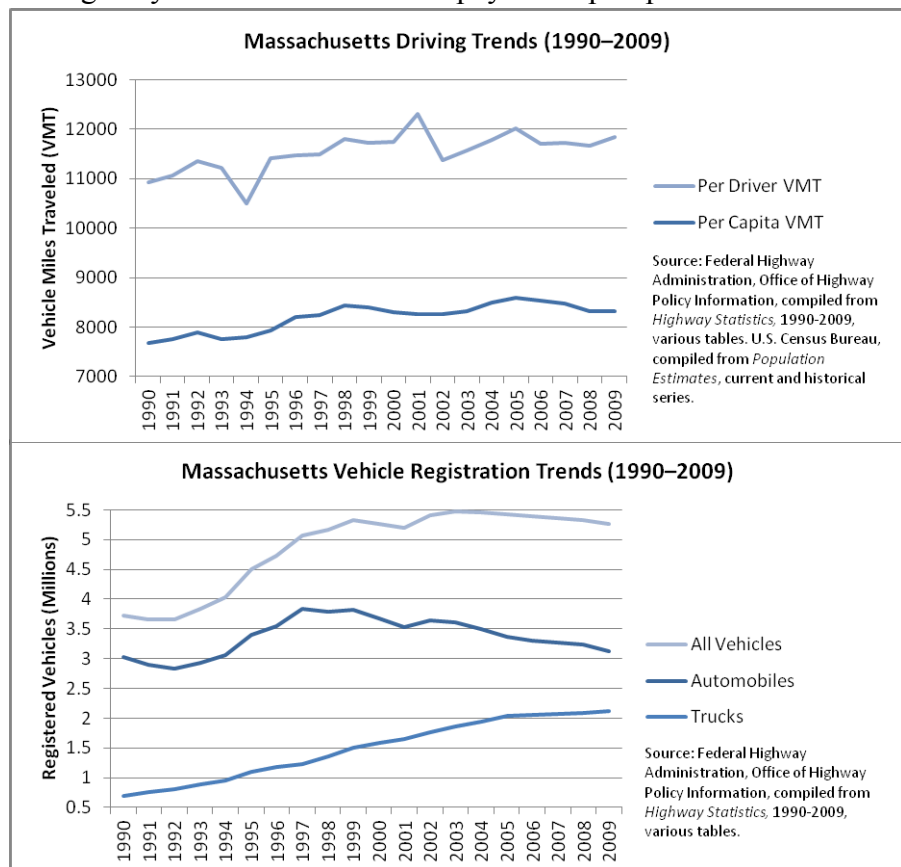
With the future of the fuel tax plagued by efficiency and equity problems, the purpose of maintaining such a revenue collection mechanism should be revisited. As of 2008, only 49 percent of total revenue for highways in Massachusetts was collected from users (from federal and state fuel taxes, vehicle taxes, and tolls).<sup>10</sup> The remainder primarily comes from non-user state taxes and bonds.<sup>11</sup>

Massachusetts ranks 29<sup>th</sup> for highest fuel taxes in the nation—and the taxes keep on rising. As of January 1, 2012, the Commonwealth of Massachusetts imposed fuel taxes of 23.5 cents per gallon for both gasoline and diesel, making no attempt to charge more to heavy trucks.<sup>12</sup> Future capital improvements and current deferred highway maintenance will require further and significant fuel tax increases if fuel taxes are to continue to provide their present share of total revenue for highway projects.<sup>13</sup> Political realities, however, render these tax increases difficult or nearly impossible (assuming raising fuel taxes to fund improvements is desirable when compared to other alternatives—a dubious proposition at best).

Compounding the fiscal difficulties of continuing highway funding through fuel taxes, VMT are no longer increasing at historical rates—due in part to vehicle saturation, congestion, fuel prices, and demographic and population changes—while the vehicle fleet is growing increasingly fuel efficient. Further complicating matters, a greater proportion of total vehicle registrations and VMT now belongs to heavy trucks, which do a disproportionate amount of damage to roads.

The long-held assumption that highway users will continue to pay at the pump for the costs associated with their highway activities is becoming ever more tenuous. The importance of maintaining the “user-pays/user-benefits” funding principle justifies transitioning to other user-based revenue collection mechanisms.

**Expanding User-Pays through Technology.** The ongoing breakdown of the link established by fuel taxes between highway use and highway-user revenue presents an opportunity as well as a challenge. Fuel taxes are a poor proxy for true user charges, but the superior



alternative—tolling—was for many years a disfavored form of revenue collection. However, today it appears that many past criticisms of tolling, such as queuing at toll plazas, no longer hold due to technological improvements.

Modern electronic tolling can eliminate the congestion and reduced speeds that became commonplace at human-staffed toll plazas. With current technology (not all of it widely deployed), a driver can install on his vehicle a low-priced transponder that automatically charges the driver's pre-paid account or credit card for highway use. The Massachusetts FAST LANE program is a good example of this technology in action. If the driver's vehicle lacks a transponder or his account balance is insufficient, license plate scanners identify the vehicle and the turnpike authority will send the owner a bill for the toll plus a penalty.<sup>14</sup> Furthermore, electronic tolling makes it quite easy to implement a variable rate structure to better price road use under different traffic conditions to ensure that a desired level of vehicle throughput—the number of vehicles moved through a corridor in a given period of time—is consistently achieved.<sup>15</sup> This is known as congestion pricing or value pricing.

Massachusetts, like many other states, has already implemented electronic tolling systems on its turnpike. In 2009, the Massachusetts Department of Transportation's (MassDOT) electronic tolling network handled 66.7 percent of total toll transactions and raised 65.9 percent of total turnpike revenue.<sup>16</sup> In 2010, 69.3 percent of transactions and 68.5 percent of collected revenue were processed electronically.<sup>17</sup> By 2011, those figures had increased to 71 percent and 70.2 percent, respectively.<sup>18</sup> Moving to an electronic-only system would arguably be superior, but phasing in electronic tolling while retaining manual toll collection has been largely successful in Massachusetts.

Another high-tech method of charging highway users for the costs of their activities is VMT taxation, which is currently being considered by transportation policy makers. This typically involves requiring vehicle owners to install Global Positioning System (GPS) receivers that track not only total vehicle miles traveled, but which roadways were used at which times of day (a cellular network triangulation system could also be deployed). This would allow for variable pricing much like tolls, except that *all* roads would presumably be covered under such a scheme.<sup>19</sup>

Critics of VMT taxes argue that the technology is error-prone and subjects drivers to additional privacy risks and potential double-taxation if fuel taxes are to remain in place. Government mandates regarding location data deserve serious scrutiny, but a properly designed system need not sacrifice user privacy. It has been demonstrated that GPS location information can be appropriately segregated from the information provided during the payment transaction. For instance, in Oregon's VMT tax pilot program, real-time location or travel history was never transmitted. Rather, users were assessed charges at the pump based on the zones and times in which they traveled that were stored by the onboard device.<sup>20</sup>

Technological limitations that reduce accuracy, particularly in dense urban areas,<sup>21</sup> and phase-in challenges such as double-taxation are still of some concern, but solutions are being developed. However, the movement toward the market provision of roads would be dealt a major setback as

concession projects would likely be forbidden from independently collecting revenue through tolling if VMT taxes are in place, which would reduce their general appeal.

**Innovative Facilities Management Practices and Reforming MassDOT.** Tolling in many respects remains the most attractive option and it is not limited to traditional turnpikes. Across the country, high-occupancy vehicle (HOV) lanes on highways are being converted to high-occupancy toll (HOT) lanes with much success. After HOV lanes became popular with policy makers in the 1980s and 1990s, it quickly became apparent that ridesharing is not popular enough to justify dedicating significant capacity exclusively for multi-passenger private vehicles and buses. As a result, HOV lanes will not likely achieve their congestion mitigation targets.<sup>22</sup> HOT lanes price away the excess capacity by charging drivers a toll for the privilege of achieving faster average speeds than often congested general purpose (GP) lanes, which reduces congestion and improves speeds in the GP lanes as well.<sup>23</sup>

Both the I-93 North and I-93 Southeast Expressway HOV lanes in the Boston metropolitan area should be converted to HOT lanes and integrated with the FAST LANE system. While the I-93 Southeast Expressway HOV lanes provided a 116.5-percent increase in hourly passenger throughput relative to the GP lanes in 2010,<sup>24</sup> the I-93 North lanes provided only a 22.6-percent increase,<sup>25</sup> which suggests significant underutilization.

Robert Poole, director of transportation studies at the Reason Foundation, helped create and popularize the HOT lane and later HOT network concepts. HOT networks are linked HOT lane systems designed to connect entire urban areas with premium toll lanes that can also support Bus Rapid Transit (BRT) service.<sup>26</sup> Poole's latest tolling innovation is the "managed arterial."<sup>27</sup> Arterial roads are typically six or more lanes punctuated by signaled intersections. To address reduced speeds and congestion caused by traffic queuing at signalized intersections, Poole proposes creating tolled underpasses and overpasses that bypass the intersections altogether.<sup>28</sup> This would improve traffic flows not only for premium-paying private automobiles and BRT service, but for GP lane users as well.

To minimize waste and best align the incentives of facility managers with those of facility users, tolling authorities should remain independent of regional and state governments and be financially self-sufficient. This includes keeping revenue segregated and within the facilities and preferably leasing turnpikes to private-sector partners. In 2007, Massachusetts ranked dead last in turnpike efficiency as measured by the "cost-take"—the fraction of toll revenues used to cover operating and maintenance costs.<sup>29</sup> With a cost-take of 79 percent, Massachusetts sets itself apart from the rest of the nation, with second to last West Virginia coming in at 64.5 percent and the national average being 42.6 percent.<sup>30</sup> In contrast, the average cost-take of private toll road concessionaires was 27.6 percent.<sup>31</sup> Were the Massachusetts turnpike operated in a more efficient manner, capital improvements could be made and debt related the Central Artery project could be more quickly retired—and done without toll increases.

Tolling facilities are best built and managed by private firms under concession agreements. These firms have a strong incentive to control costs and can access private capital markets for project financing, which shifts fiscal burdens and project risk away from taxpayers and toward

the private concessionaires.<sup>32</sup> A number of states, particularly Virginia,<sup>33</sup> have enjoyed great success with public-private partnerships and there is little reason to believe Massachusetts is incapable of joining them. Lawmakers in the Commonwealth should immediately begin work on public-private partnership authorizing legislation, using Virginia's law as a model.<sup>34</sup>

If widely implemented, tolling "free" roads and new roads and better management of existing tolling facilities can help close the funding gap if Congress were to devolve the remaining federal surface transportation fiscal responsibilities to the states. However, the transformation of Massachusetts transportation policy should not end there.

Governor Deval Patrick's 2009 consolidation of a number of transportation entities into the new MassDOT was a flawed and grandiose reaction to very serious issues. True reform is now in fact less likely because the larger department will have more flexibility in cross-subsidizing various programs, shielding wasteful projects from fiscal realities.

MassDOT consolidation was driven in part by the dire financial position that had plagued Boston-area transit provider Massachusetts Bay Transportation Authority (MBTA) for years. The complete failure of MBTA's 2000 Forward Funding Financial Plan underscores this. Virtually every cost was underestimated and benefit overestimated.<sup>35</sup> Fare box collections accounted for 28.3 percent of total revenue in FY 2010,<sup>36</sup> slightly below the national average of 32.1 percent.<sup>37</sup> Much like highways, relying on non-transit-user revenue to fund transit improvements runs serious financial risks. Dedicated sales tax revenue, which makes up the largest component of MBTA funding, grew at one-third the rate initially projected for 2000–2009.<sup>38</sup> The MassDOT consolidation has neither improved MBTA's fiscal position nor addressed any of the core problems facing the transit agency.

Politics usually trump efficiency, so minimizing political interference in the transportation sector is imperative to achieving socially desirable outcomes. Decentralization, concessions, and adhering to the user-pays/user-benefits principle is the only sensible market-oriented, fiscally conservative path forward for transportation in Massachusetts.

**Conclusion.** There is much to be done in this area in terms of additional research, but the themes discussed above offer a new vision for Massachusetts' surface transportation system. While the current Congress is unlikely to devolve all federal funding responsibility to the states, it appears likely that revenues and expenditures will remain flat or decrease in real terms. In practice, this acts as a form of devolution as aging infrastructure across the country must soon be replaced. That means state, regional, and local governments will bear an increasing share of this funding responsibility.

In the transportation realm, Massachusetts has often lagged behind other states—and, indeed, most states—in adopting innovative technologies, practices, and institutions. Adopting some or all of the suggestions in this brief will go a long way toward improving Massachusetts' standing among the states while greatly enhancing mobility for residents and businesses.

## Notes

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<sup>1</sup> This was the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Public Law 102-240 (December 18, 1991).

<sup>2</sup> Testimony of Joseph Kile, Assistant Director for Microeconomic Studies, Congressional Budget Office, before the Committee on Finance of the United States Senate, “The Highway Trust Fund and Paying for Highway,” May 17, 2011, p. 8, <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/121xx/doc12173/05-17-highwayfunding.pdf>.

<sup>3</sup> Two mechanisms discipline Highway Trust Fund highway account spending: the Byrd Test and Revenue Aligned Budget Authority (RABA). For brief descriptions of how the Byrd Test and RABA function, see Testimony of Phillip R. Herr, Director of Physical Infrastructure Issues, Government Accountability Office, “Highway Trust Fund: Options for Improving Sustainability and Mechanisms to Manage Solvency,” Before the House Subcommittees on Oversight and Select Revenue Measures of the Committee on Ways and Means, GAO-09-845T, June 25, 2009, pp. 8-9, 10-13, <http://www.gao.gov/new.items/d09845t.pdf>.

<sup>4</sup> Kile, p. 4.

<sup>5</sup> *Ibid.*, p. 5.

<sup>6</sup> Government Accountability Office, “Highway Trust Fund: All States Received More Funding Than They Contributed in Highway Taxes from 2005 to 2009,” Report to Congressional Requesters, GAO-11-918, September 8, 2011, <http://www.gao.gov/assets/520/511454.pdf>.

<sup>7</sup> *Ibid.*, p. 11.

<sup>8</sup> This outcome occurred as a result of the Equity Bonus Program, which was created to address donee-donor state rate-of-return issues. However, due to general revenue infusions to the Highway Trust Fund, considerably more funding was available for apportionment than actual revenue raised by the states through federal taxes on highway activities. Equity Bonus was established by 2005’s SAFETEA-LU (Sections 1104 and 1102) surface transportation reauthorization, which replaced the similar Minimum Guarantee Program originally established by 1998’s TEA-21 reauthorization. Typically, most funding credited to the Highway Trust Fund’s highway account is distributed through a number of FHWA highway programs under strict apportionment formulae. Both Minimum Guarantee and Equity Bonus use an addition formula created to address equity concerns that were held by certain states. Unfortunately, lower highway-user revenues led Congress to initiate general revenue transfers from the Treasury, which resulted in state disbursements exceeding state revenues as Congress failed to exclude general funds allocated to the highway account from the binding Equity Bonus apportionment.

<sup>9</sup> See, e.g., *BP Energy Outlook 2030*, London: BP p.l.c., January 2012, p. 66, [http://www.bp.com/liveassets/bp\\_internet/globalbp/STAGING/global\\_assets/downloads/O/2012\\_2030\\_energy\\_outlook\\_booklet.pdf](http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/O/2012_2030_energy_outlook_booklet.pdf).

<sup>10</sup> Federal Highway Administration, “Revenues Used by States For Highways – 2008,” *Highway Statistics 2008*, Washington, D.C.: U.S. Department of Transportation, March 2010, <http://www.fhwa.dot.gov/policyinformation/statistics/2008/pdf/sf1.pdf>.

<sup>11</sup> *Ibid.*, from Table SF-3, “Revenues Used By States For State-Administered Highways – 2008,” March 2010, <http://www.fhwa.dot.gov/policyinformation/statistics/2008/pdf/sf3.pdf>.

<sup>12</sup> American Petroleum Institute, “Notes to State Motor Fuel Excise Tax Report,” January 1, 2012, [http://www.api.org/Oil-and-Natural-Gas-Overview/Industry-Economics/~media/Files/Statistics/State\\_Motor\\_Fuel\\_Excise\\_Tax\\_Update.ashx](http://www.api.org/Oil-and-Natural-Gas-Overview/Industry-Economics/~media/Files/Statistics/State_Motor_Fuel_Excise_Tax_Update.ashx). The 23.5 cents per gallon (cpg) effective tax rate on both gasoline and diesel fuel includes the 21 cpg excise tax and the 2.5 cpg tax that supports the Massachusetts Underground Storage Tank Program.

<sup>13</sup> A 2007 study from the Massachusetts Transportation Finance Commission “found a transportation funding gap in Massachusetts of \$15 [billion] to \$19 billion [over 20 years] to bring our existing assets to a state of good repair. These estimates include operating as well as capital needs. These numbers do not include ANY expansions or enhancements.” *Transportation Finance in Massachusetts: An Unsustainable System*, Findings of the Massachusetts Transportation Finance Commission, March 28, 2007, p. 57, [http://www.eot.state.ma.us/downloads/tfc/TFC\\_Findings.pdf](http://www.eot.state.ma.us/downloads/tfc/TFC_Findings.pdf).

<sup>14</sup> Massachusetts Department of Transportation, “Frequently Asked Questions - FAST LANE Program,” MassDOT website, <http://www.massdot.state.ma.us/highway/TrafficTravelResources/FASTLANEProgram/FrequentlyAskedQuestions.aspx>.

<sup>15</sup> For a fairly comprehensive list of variable tolling facilities, see Texas A&M University professor Mark Burris’s Web document, “Variable Priced Highway Facilities,” <https://ceprofs.civil.tamu.edu/mburris/pricing.htm>.

<sup>16</sup> Massachusetts Department of Transportation, “Monthly Summary of ETC and MLT Transactions & Revenue 2009 vs 2010,” MassDOT website, [http://www.massdot.state.ma.us/portals/0/docs/infoCenter/financials/toll\\_reports/etcmtl\\_tr\\_09\\_10dec.pdf](http://www.massdot.state.ma.us/portals/0/docs/infoCenter/financials/toll_reports/etcmtl_tr_09_10dec.pdf).

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- <sup>17</sup> Massachusetts Department of Transportation, “Monthly Summary of ETC and MLT Transactions & Revenue 2010 vs 2011,” MassDOT website, [http://www.massdot.state.ma.us/Portals/0/docs/infoCenter/financials/toll\\_reports/etcmtl\\_toll\\_reports\\_2011vs2012.pdf](http://www.massdot.state.ma.us/Portals/0/docs/infoCenter/financials/toll_reports/etcmtl_toll_reports_2011vs2012.pdf).
- <sup>18</sup> *Ibid.*
- <sup>19</sup> See James M. Whitty, “Final Report: Oregon’s Mileage Fee Concept and Road User Fee Pilot Program,” Oregon Department of Transportation, November 2007, [http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP\\_finalreport.pdf](http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP_finalreport.pdf).
- <sup>20</sup> *Ibid.*, pp. 9-10.
- <sup>21</sup> *Ibid.*, p. 35.
- <sup>22</sup> Gordon J. Fielding and Daniel B. Klein, “High Occupancy Toll Lanes: Phasing in Congestion Pricing a Lane at a Time,” Los Angeles: Reason Foundation, *Policy Study* No. 170, November 1993, <http://reason.org/files/22b593c21e642143157e65dc5223ce9a.pdf>.
- <sup>23</sup> Robert W. Poole, Jr. and C. Kenneth Orski, “Building a Case for HOT Lanes: A New Approach to Reducing Urban Highway Congestion,” *Policy Study* No. 253, Los Angeles: Reason Foundation, April 1999, <http://reason.org/files/d9a8a29899b8f5bba4a5eb1f78707db7.pdf>.
- <sup>24</sup> Boston Regional Metropolitan Planning Organization, “Southeast Expressway: Comparison of HOV and General-Purpose Lanes,” MPO website, [http://www.ctps.org/bostonmpo/3\\_programs/6\\_mms/4\\_hov/i93se.html](http://www.ctps.org/bostonmpo/3_programs/6_mms/4_hov/i93se.html).
- <sup>25</sup> Boston Regional Metropolitan Planning Organization, “I-93 North: Comparison of Southbound HOV and Southbound General-Purpose Lanes,” MPO website, [http://www.ctps.org/bostonmpo/3\\_programs/6\\_mms/4\\_hov/i93n.html](http://www.ctps.org/bostonmpo/3_programs/6_mms/4_hov/i93n.html).
- <sup>26</sup> Poole and Orski, “HOT Networks: A New Plan for Congestion Relief and Better Transit,” *Policy Study* No. 305, Los Angeles: Reason Foundation, February 2003, <http://reason.org/files/536de94066a3400358dfe2ccf7c84403.pdf>.
- <sup>27</sup> Poole, Thomas A. Rubin, and Chris Swenson, “Increasing Mobility in Southeast Florida: A New Approach Based on Pricing and Bus Rapid Transit,” *Policy Study* No. 400, Los Angeles: Reason Foundation, March 2012, [http://reason.org/files/mobility\\_southeast\\_florida.pdf](http://reason.org/files/mobility_southeast_florida.pdf).
- <sup>28</sup> *Ibid.*, pp. 19-20.
- <sup>29</sup> Poole and Peter Samuel, “Pennsylvania Turnpike Alternatives: A Review and Critique of the Democratic Caucus Study,” *Policy Brief* No. 70, Los Angeles: Reason Foundation, April 2008, p. 6, <http://reason.org/files/cd52022e2d52ff1d17fd6423645c6642.pdf>.
- <sup>30</sup> *Ibid.*
- <sup>31</sup> *Ibid.*
- <sup>32</sup> Marc Scribner, “The Limitations of Public-Private Partnerships: Recent Lessons from the Surface Transportation and Real Estate Sectors,” *Issue Analysis* 2011 No. 1, Washington, D.C.: Competitive Enterprise Institute, January 2011, pp. 6-8, <http://cei.org/issue-analysis/limitations-public-private-partnerships>.
- <sup>33</sup> *Ibid.*, pp. 11-12.
- <sup>34</sup> See Public-Private Transportation Act of 1995, Va. Code § 56-556 *et seq.*
- <sup>35</sup> David F. D’Alessandro, Paul D. Romary, Lisa J. Scannell, and Bryan Woline, “MBTA Review,” Report to Governor Deval Patrick, November 1, 2009, p. 15, [http://www.mbtareview.com/MBTA\\_Review\\_2009.pdf](http://www.mbtareview.com/MBTA_Review_2009.pdf).
- <sup>36</sup> Massachusetts Bay Transportation Authority, “Financial Statements and Required Supplementary Information: June 30, 2011 and 2010,” MBTA website, November 2, 2011, p. 5, [http://www.mbta.com/uploadedfiles/About\\_the\\_T/Financials/MBTA%20Audited%20Financial%20Statements%20June%2030%202011-FINAL.pdf](http://www.mbta.com/uploadedfiles/About_the_T/Financials/MBTA%20Audited%20Financial%20Statements%20June%2030%202011-FINAL.pdf).
- <sup>37</sup> American Public Transportation Association, “Appendix A: Historical Tables,” *Public Transportation Fact Book*, March 2012, p. 89, <http://www.apta.com/resources/statistics/Documents/FactBook/2012-Fact-Book-Appendix-A.pdf>.
- <sup>38</sup> D’Alessandro *et al.*, p. 12.