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Next Stop, Massachusetts

Strategies to Build the Bay State's Transportation Future and Keep our Economy Moving

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INTRODUCTION

Last May, MassINC partnered with the MBTA Advisory Board, the Route 128 Business Council, and the Rappaport Institute for Greater Boston to bring together transit leaders from around the country. The unprecedented challenges facing both the US economy and US transportation systems formed a stark backdrop for this unique gathering.

The economy must create a staggering 8 million jobs to replace those lost in the Great Recession. At the same time, the country's aging public transit systems face an equally daunting climb. They must address a $78 billion backlog in deferred maintenance, sustain current operations with declining revenues, and respond to increasing pressures to attract more riders by expanding service.[2]

While the economic crisis has certainly compounded the revenue shortfalls that make dealing with these challenges so difficult for transportation agencies, state and federal problems in transportation finance were apparent well before the global slowdown. Now the two issues are intertwined. If the nation continues to underinvest in the transportation systems that move people and goods, the US will have difficulty achieving strong growth needed to address long-term budget deficits.

Leaders assembled in Boston for the summit were eager to discuss new ways to demonstrate this critical linkage. With increasing competition from abroad, communicating transportation's vital economic contribution has become all the more imperative. References to countries in Europe and Asia constructing advanced transportation systems to connect regional economies for a new energy-constrained era were frequent throughout the summit.[3]

Not only have we failed to keep pace with the state-of-the-art infrastructure investments that these economic competitors have made, the nation has not been able to address flawed allocation formulas which, experts have long argued, haphazardly distribute spending across the landscape, wasting limited resources and jeopardizing our competitive position.[4]

Despite this deep downturn and the declining state of our transportation infrastructure, consensus around real transportation reform has yet to emerge. The state and federal leaders who came together for the National Transit Summit made important statements regarding the pressing need to begin a serious discussion about the sacrifices and strategic prioritization required to rebuild US public transportation systems. While much of this discussion focused on federal policy and the case for additional federal resources, it was also clear that states

must take action as well.

Facing mounting deficits, Congress is unlikely to deliver the funds needed to solve our transportation woes. Moreover, anticipated reform may empower federal agencies to look to maximize return on limited transportation resources by rewarding states and regions that invest federal dollars wisely and leverage them with a significant local contribution.

Given these realities, Massachusetts must focus on finding new ways to support the 21st-century transportation infrastructure fundamental to our long-term growth and competitiveness. Recent independent reports have concluded that this will require significant reform as well as identifying new revenue sources.[5]

While we are certainly not alone among US states in underfunding our transportation systems, there are several unique aspects to Massachusetts that make neglect of the Commonwealth's transportation infrastructure particularly perilous.

First, the state's high housing costs and low-density development patterns increase our dependency on a strong transportation network. After housing, transportation is by far the highest household expense for most families in the Commonwealth. The typical household in Greater Boston, for example, spends more than half its income on

"We are losing competitiveness at just astronomical levels. We have got to do something major."

Dr. Beverly Scott, Metro Atlanta Rapid Transit Authority General Manager and CEO

Executive Summary

National Context:

- Both at the state and federal level, underfunding threatens the ability to sustain existing transportation systems. Moreover, inefficient methods of allocating transportation spending continue to reduce the public's return on critical transportation investment. As leaders from around the country gathered in Boston for a recent summit on public transit stressed, these longstanding problems seriously jeopardize our ability to sustain and grow a strong economy.

- With near unanimity, participants at this summit attributed these persistent challenges to competition among transportation advocates narrowly focused on their own priorities. As a result—despite years of independent reports sounding the alarm—transportation lacks a broad base of support, and the public is not adequately informed about the urgent need to achieve comprehensive transportation reform to ensure the nation's future economic well-being.

Strategies for Massachusetts:

- To unify transportation stakeholders, leaders in Massachusetts should focus on strengthening advocacy organizations through such actions as building ridership associations with institutional support, staffing transportation advocacy groups, and encouraging the development of stronger legislative caucuses.

- Given the many competing demands for limited public resources, the state must maximize the economic impact of transportation spending by developing comprehensive cost/benefit criteria and establishing an independent office to review transportation plans. Equally important, steps must be taken to optimize transportation investments with integrated land use planning.

- Massachusetts can generate the necessary resources by strategically developing and advancing new revenue sources to support regional multi-modal (trains, buses, roads) transportation systems. The state should look to leverage new technologies and innovative financing approaches to create mechanisms that give regions across the state the ability to raise the funds needed to support regional transportation operating, maintenance, and infrastructure needs.

housing and transportation, according to a recent Urban Land Institute report.[6] Massachusetts needs efficient transportation systems to reduce transportation costs and make communities with affordable housing more accessible.

Second, the state's new economy has made transportation even more vital to our future. The Commonwealth's fastest growing firms rely heavily on specialized knowledge workers who tend to change jobs frequently. Strong multimodal transportation networks concentrate employment, making jobs more accessible and labor markets more flexible for companies seeking workers with these highly specialized skills. Centralizing employers also allows for dense clusters of businesses in related fields, such as health care at Longwood Medical Center or biotechnology in Kendall Square. These clusters facilitate the face-to-face interaction critical for innovation and economic growth.[7]

Transportation's central role for both workers and knowledge industries means Massachusetts cannot afford to neglect transportation infrastructure much longer. Foremost, achieving greater focus on restoring the state's transportation systems means building a broader base of support.

Creating the conditions to build and sustain this broad base of support clearly requires new thinking. As a starting point, we must focus on financing a transportation system composed of many different modes (e.g., roads, highways, buses, and trains) as opposed to a distinct system for each individual mode. The 2009 Massachusetts transportation reform law provided an important step forward by consolidating the state's transportation agencies into a single organization and creating a multimodal trust fund.[8]

Beyond this bureaucratic reshuffling, much more is needed to build support for strong multi-modal transportation systems across the Commonwealth. In response to the call to action issued at the Transit Summit, MassINC offers a three-part strategy for broadening the base of support for transportation to achieve optimal levels of investment and long-term sustainability:*

1. Unify transportation stakeholders

Transportation is vital to our quality of life and economic competitiveness, but for a host of different reasons it has difficulty sustaining broad public support. By fracturing transportation interests, geographically and across different modes, we have only compounded this problem. From organizing legislators to empowering riders and engaging the business community, Massachusetts needs new structures to support effective long-term stewardship over this vital resource.

2. Maximize the economic impact of transportation spending

Future economic growth in our increasingly congested state has become even more contingent on smart transportation investments. To create a broad base of support, the state must demon-

NEXT STOP: A NATIONAL SUMMIT ON THE FUTURE OF TRANSIT
Enhancing and Preserving the Nation's Transportation Resources

About the Summit

On May 18, 2010, general managers overseeing a number of the nation's largest public transit systems joined Obama administration officials at the Federal Reserve Bank of Boston to lead a dialogue about the future of transportation in the United States. MassINC partnered with the MBTA Advisory Board, the Route 128 Business Council, and the Rappaport Institute for Greater Boston to organize this convening, attended by more than 250 state, local, and national transportation experts.

US Representative John Olver, US DOT Undersecretary Roy Kienitz, and FTA Administrator Peter Rogoff delivered formal remarks. Participants also heard from three panels. The morning panel included transit system managers: Joseph Casey, Southeastern Pennsylvania Transportation Authority General Manager; John Catoe Jr., former Washington Metro Area Transit Authority General Manager; Richard Davey, MBTA General Manager; Richard Rodriguez, Chicago Transit Authority President; and Dr. Beverly Scott, Metropolitan Atlanta Rapid Transit Authority General Manager and CEO. Afternoon panels presented views from the business community and transportation policy experts.

MassINC appreciates the hard work of so many individuals who made this gathering possible. We extend special recognition to Dan Grabauskas and Paul Regan, who conceived of the summit, and Gordon Carr, who led the steering committee responsible for organizing the event.

Quotes from summit participants are interspersed throughout this paper. Video highlights and transcripts are available online at www.massinc.org.

* The concepts and proposals we offer represent the views of MassINC. Our summit partners and presenters may have differing ideas and perspectives.

strate a new focus on prioritizing transportation investment to grow the Massachusetts economy and create jobs.

3. Pay for transportation with balanced transportation-related revenue

Massachusetts needs growing and dependable revenue streams to sustain transportation infrastructure and services. While there will be legal and other obstacles to overcome, new technologies present innovative opportunities to elicit broader support for transportation spending by putting in place revenue structures that allocate costs more directly to those who use and benefit from the investment.

1. UNIFY TRANSPORTATION STAKEHOLDERS

The issues facing the state's transportation systems rarely reach the point of priority for most elected officials. This is because customers have come to expect poor service quality. When trains are running late, stations are shabby, or roads are full of potholes, too many have come to expect that this is just how things are.

It needn't be this way. While the structural and budgetary challenges have been well documented in the recent Transportation Finance Commission Report and the D'Alessandro Report, there are steps that can be taken to achieve greater efficiency, stronger financial footing, and better customer service.

There is just one key obstacle to achieving such major milestones: state transportation systems lack both disciplined foot soldiers and battle-tested generals needed to win the fight for appropriate levels of funding and support from government at all levels. To build robust and effective structures that can address these deficiencies, Massachusetts should focus on the strategic approaches described below:

Mobilize riders to help them become more effective advocates for the system

Massachusetts would benefit from more robust, coordinated, and comprehensive rider organizations. Currently, there are several groups representing MBTA riders. The T Riders Union has played a strong role advocating for low-income underrepresented riders who are dependent on public transit. But this important focus makes it difficult for it to advocate comprehensively for system-wide needs. The second group, the MBTA Rider Oversight Committee, has a broader focus, but it still lacks representation across the system's full reach. The state's regional transit agencies each have a similar rider oversight committee, but no strong independent ridership organizations to lobby on behalf of their users.

Nationally there is a group called TEN—Transportation Equity Network—that is rallying transit workers and riders to draw attention to the transportation funding crisis and to catalog the myriad service cuts and fare hikes around the country. TEN recently announced that it was convening rallies across the country—in Atlanta, Kansas City, Los Angeles, Minneapolis–St. Paul, San Francisco, St. Louis, and Washington, DC.

Massachusetts is noticeably absent. The state clearly needs a more cohesive voice for transit customers to connect with national organizations like this to help draw attention to the crushing debt and dangerous deferred maintenance that the state is facing.

There are some key elements that could make riders groups more effective:

Institutional Support: There are a number of examples of state or city-sanctioned rider representative organizations that have a seat at the table when funding and policy decisions are made. These groups are created either by act of the legislature, as was done in New York, or by the transit authority itself, as was done in Washington DC. In each case, there was an existing group intended to speak for the riders—the Straphangers Union in New York and Metro Riders in DC. But existing groups were often seen as narrow supporters of a particular mode or transit line, rather than advocates for the entire system.

In New York, the state legislature created the Permanent Citizens Advisory Council (PCAC) to the Metropolitan Transit Authority in 1981. PCAC is the coordinating body and funding mechanism for the three mode-specific riders councils:

- The Long Island Rail Road Commuter's Council (LIRRCC);
- The Metro-North Railroad Commuter Council (MNRCC); and
- The New York City Transit Riders Council (NYCTRC).

This structure gives the riders of all services a unified voice. For the past 15 years, the PCAC has had a permanent non-voting slot on the MTA Board, which gives unprecedented access to information and direct involvement in policy discussions and decisions.

In Washington, the Washington Metropolitan Area Transit Authority

(WMATA) created its own rider organization called the Rider's Advisory Council in 2005 to advise the Board of Directors on ridership issues on all WMATA modes. The Council has 21 members from Maryland, Virginia, and the District of Columbia.

Business Support: A mobilized ridership effort needs the support of businesses and employers whose workers depend on the system for their commutes. Corporate involvement—perhaps by a task force of human resource managers that understand the importance of getting their employees to and from work in a safe and timely fashion—will lend and maintain credibility for a rider advocacy organization. The rider organization should also be proactively expanded to include employees and employers outside the urban core, who often rely on private shuttle services to connect them with the system. The region's colleges and universities should be engaged in strengthening a rider organization as well, since so many depend heavily on the system to get students and faculty to and from campus.

Transportation Management Associations (TMAs) provide one framework for supporting riders. Working on behalf of employers, these groups monitor government policy, market public transportation services, and offer employees incentives to utilize them. They also provide private transportation services to complement the public system.[9] In the late 1990s, a number of these groups banded together to form TransitWorks, an organization that focused on surveying riders and providing feedback to the MBTA. Unfortunately, TransitWorks has not been active in recent years due to funding constraints. But the group provides a model for the type of outlet the business community could use to help empower advocates for a strong multimodal transportation system.

Communication Tools: The rider organization could utilize currently available tools to communicate policy alerts. For example, while the D'Alessandro Report garnered significant attention, it was fleeting. Riders need to be reminded of those recommendations so they can maintain pressure on elected officials and the media not to ignore these problems until there is some catastrophic event.

The MBTA has shown great leadership by making data easily accessible to software developers, who then created applications to deliver schedule information to riders at no cost to the agency. Working with ridership groups, TMAs could help deploy this same technology to build a large informed constituency of rider advocates.

Candidate Outreach: Riders groups elsewhere in the country take a leading role in communications with candidates for city council, the legislature, and state and federal offices. They issue questionnaires on transit issues and hold forums to articulate the priorities and challenges facing transit. Massachusetts would benefit greatly from this sort of effort—extending the message to councilors, selectmen, representatives, and senators—to demonstrate that these issues are important to constituents who rely on public transportation.

Two new groups could be particularly beneficial in helping the state make progress toward these goals. Our Transportation Future is a broad-based coalition made up of member organizations advocating for investment across different modes. Transportation for Massachusetts (T4Mass) is a nascent organization that aims to double, by 2020, the percentage of Massachusetts residents who live in diverse, vibrant, and walkable communities served by public transportation. How much capacity these statewide advocacy groups are able to build as they mature will have important implications for the future of the Commonwealth's transportation networks.[10]

Strengthen the legislative caucuses

Transit supporters need organized legislators representing the interests of public transportation on Beacon Hill. As an advocate for the largest agency, the newly hatched MBTA Caucus in particular requires greater support and active participation from all representatives of the 175 communities served by the T. The caucus currently lacks representation from large portions of the overall

> **"We are constantly infighting and it's not a healthy relationship. It needs to be improved."**
>
> Richard Rodriguez, President, Chicago Transit Authority

system, and its chairs have limited seniority on the Committees on Transportation and Ways & Means. While more seniority would be helpful, legislative caucuses are often led effectively by junior members. These positions provide important opportunities for up-and-coming legislators to establish themselves.

To be successful, the legislative caucus must find issues that unify members. Unfortunately, in contrast to a straightforward priority like holding down water rates, which unites members of the highly effective MWRA caucus, the complexities of transportation policy tend to foster fragmentation. Without a strong caucus that meets regularly and is fully informed about the issues facing the system, the tendency is to simply focus on one particular station upgrade or line expansion. This lack of long-term vision for the transit system as a whole has contributed significantly to the challenge the state now faces.

Caucus leaders must frame and develop issues that will unite members and drive participation. As financial pressures increase in the coming years, the caucus may be able to coalesce behind an effort to identify a new equitable and sustainable revenue stream to support the system. The MBTA Advisory Board is an important resource the caucus could turn to in sorting through potential new revenue strategies.

Climate change is another issue that could unify members of the MBTA caucus. While it may not be the highest priority for voters, public opinion data do show that residents of Massachusetts are more anxious to see their leaders find solutions to global warming than many would expect given the other more immediate challenges we face.[11] Public transportation has a big role to play in curbing greenhouse gas emissions both by reducing driving and facilitating more compact land use.[12]

The state has already committed to aggressive carbon dioxide reduction targets. Unfortunately, financial challenges could severely limit the effectiveness of public transportation in reducing carbon emissions. If they are not addressed, funding shortfalls could lead to service cuts, dropped bus lines, and closed stations, all of which will force more riders back onto the roadways. As Federal Transit Administrator Peter Rogoff said at the National Transit Summit,

"We have to be honest that ignoring

MOBILIZING RIDERS

Transportation leaders tend to be most comfortable in the world of transportation. FFrom scheduling, to maintenance, to capital construction, transportation is a highly technical field. Transportation experts have their own jargon, which too often doesn't portray the full impact of our transportation systems and how this public spending affects individuals in their everyday lives.

Dr. Beverly Scott, the General Manager of the Atlanta Regional Transit Authority (MARTA), provided a good example of how leaders can communicate their value to the public. At the Summit, she was referred to as the "Red X" lady by Federal Transit Administrator Peter Rogoff. In her remarks, Dr. Scott explained how she gained that title.

Atlanta's Transit system faced a ballooning budget deficit and Dr. Scott was having an extremely difficult time getting the attention of city and state leaders to help resolve the issue. Without some relief, Atlanta Transit announced it would be forced to make drastic cuts in service, but even these warnings failed to get traction with public officials. Dr. Scott's solution was simple. She had a large red X painted on every bus that would be pulled from service — approximately 30 percent of all the buses in the system. Not long after people saw that their bus had a red X, and city and state leaders realized the magnitude of the cuts, the Georgia legislature passed a long stalled transportation finance bill.

The strategy is novel, compelling, and instructive for a couple of reasons. First, all it took to generate change was a simple message. Second, MARTA was able to respond quickly and effectively because transit stakeholders were organized and collaborative. The red Xs were painted by Atlanta Transit personnel volunteering their time and supported by riders and transit advocates from the Transit Equity Network and local groups. They all came together for a huge rally at the busiest transit stop in Atlanta, and the event captured the attention of national media. Dr. Scott was able to tap into an informed, motivated, and mobilized customer/rider group to help get her message out. This group got it. They understood the consequences of ignoring the problem and aided Atlanta Transit to get results.

deteriorating conditions at our transit systems runs the very real risk of losing riders."

It should be a prime mission of the legislative caucuses to engage the Joint Committee on Global Warming and Climate Change to make the case that investments in public transportation are critical for positioning the Commonwealth to be competitive in a new carbon-constrained era.

Many of the issues likely to unify the MBTA caucus would also earn support from members of the RTA caucus, which has been an active and effective advocate for the regional agencies in recent years. There has been talk of combining the groups into a statewide public transportation caucus. It would be beneficial to develop some formal structure to unite legislators representing communities served by public transportation across the state.

2. MAXIMIZE THE ECONOMIC IMPACT OF TRANSPORTATION SPENDING

Both residents and businesses are eager to see public investment generate economic growth. Transportation systems have great potential to spur growth, but they are costly to maintain and operate. In order to generate real return on public investment, transportation dollars must be spent well. Unfortunately, too many residents believe transportation dollars are more likely to go to pork-barrel spending projects than projects that result in broadly shared economic growth. To renew trust, the state must work to place greater focus on maximizing the economic impact of transportation spending.

Below we outline several approaches to demonstrate a new commitment to maximizing the economic impact of transportation spending:

Develop straightforward cost/benefit criteria and communicate them clearly

Getting the most from transit investment means tallying the costs and comparing them to benefits. Unfortunately, this is difficult because both the costs (e.g., long-term operating and debt service expense and environmental impact) and the benefits (e.g., increased productivity, higher quality of life) can be complex and difficult to quantify.

The US Department of Transportation recently announced an effort to broaden the criteria used to weigh investments so that, in addition to commute time saved and operating efficiencies, they will now weigh land use efficiency and economic development benefits. As a state, we need to follow the federal government's lead and work to identify comprehensive cost/benefit criteria to better compare and prioritize investments across different modes.[13]

Fortunately, new techniques for capturing and analyzing data will enable this type of analysis. Innovative projects underway around the nation will also provide new data for useful comparisons.[14] Taking advantage of these new opportunities to perform rigorous costs/benefit analysis will lead to more informed choices. By communicating the important role these criteria play in making investment decisions, the state can marshal broader public support for smart transportation spending.

Achieve better integration between transportation and land use planning and give communities strong incentives to implement plans

The economic benefit from transportation comes largely from the way it optimizes land use. Unfortunately, we plan for land use and transportation independently. Zoning, subdivision regulation, and land taxation are all independent powers subject almost exclusively to the longstanding home rule tradition. In some regions, including Boston, the regional agency responsible for transportation investment is independent of the regional planning agency.

Massachusetts has already taken some important steps to achieve better integration of land use planning. Large corridor studies, such as the recent South Cost Rail plan, is one example. Sustainable Communities grants recently awarded to Boston, Springfield, and the Berkshires may also provide an important boost. But without real incentives to make these plans actionable, it will be difficult to translate plans into development that truly maximize return on our transportation investment.

Massachusetts has put in place some innovative programs to encourage communities to pursue smart growth with financial incentives. These initiatives include Chapters 40R and 40S, Commonwealth Capital, and the Community Preservation Act. Unfortunately, these efforts all fall short of what is truly needed to maximize the economic impact of major transportation investments.[15]

The state should look at opportunities to use tax increment financing schemes—which ordinarily use incremental local property tax growth from new development to finance bonds—

as a way to redirect portions of state revenue (sales tax, corporate excise tax) collected in a transportation corridor to communities that rezone these districts consistent with regional plans.

While such an approach will not be revenue neutral for the state in the near term, if implemented properly, the long-term growth and productivity gains this could produce should not be overlooked. Moreover, this type of land use planning is critical to success in meeting the aggressive greenhouse gas reduction targets the state has committed to achieving.

Perform an independent review

Long-term transportation planning depends heavily on estimates and forecasts. Even a small variation in prediction, such as regional population growth, can have large consequences for the performance of an investment. Given the resources at stake, independent analysis is crucial. Projects up for consideration must be debated based on cost/benefit data that all sides can trust as coming from a neutral source.

Independent review would help ensure that forecasts are not built on rosy projections produced by entities with a vested interest. External review could also help make certain that budget projections fully account for the maintenance, equipment, and operational subsidies needed to operate new services.

Developing an independent review process will be particularly crucial as transportation agencies explore value capture, joint development, and cross-subsidies—complex financing schemes (described in the next section) that transportation agencies lack the capacity to analyze and negotiate.

There are useful models for this type of independent analysis. California's Legislative Analyst's Office, which has a division responsible for transportation-related legislation and ballot measures, is one noteworthy example. Transportation agencies, most notably Washington state, are developing more sophisticated processes to identify and model the uncertainties around cost and time estimates for capital projects to produce robust and realistic budgets. An independent agency should have the expertise to perform these new risk assessments.[16]

Whatever form of independent agency the state creates, it does not need veto power over projects. The agency's mission should be certifying project forecasts and, where uncertainty exists, helping to communicate the assumptions made and the potential variability in both operational and financial performance associated with these factors. This type of skilled analysis will help maximize return on public investment and build public confidence.

3. PAY FOR TRANSPORTATION WITH BALANCED TRANSPORTATION-RELATED REVENUE

Massachusetts needs growing and dependable revenue streams to sustain transportation infrastructure and services. The state can elicit broader support for our transportation systems with revenue structures that allocate costs more directly to those who use and benefit from transportation. Tying revenue to transportation through this "point of service" approach can also make the system more efficient.

Unfortunately, Massachusetts is moving in the opposite direction. Transportation revenue is increasingly disconnected from transportation usage. Inflation and fuel efficiency have eroded both the state and federal gas taxes, which had been a principal source of revenue for both public transit and highways. The state has responded by relying on sales tax revenue for public transit and depending more heavily on debt to pay for both roads and public transit. While this has proven to be more politically acceptable in the short term, these actions undermine the system in the long term.

Funding transportation with the sales tax is problematic for a number of reasons. First, the sales tax is less efficient than paying for transportation with a user fee like the gas tax, which increases fuel efficiency and reduces congestion and pollution.[17] Second, the sales tax is more volatile during economic cycles. And third, increasing transportation's dependence on the sales tax takes this source of revenue away from other public services for which user fees are not desirable (e.g., education and public safety).

In addition to creating inefficiencies, relying on the sales tax erodes support for public transportation; residents who live outside of the MBTA service area resent disproportionately paying for Greater Boston. The state's inability to respond with a solution to declining transportation revenue demonstrates the need to resolve this geographic imbalance.

In the absence of a new approach, revenue shortfalls have forced us to rely more heavily on debt to pay for both roads and public transit. This creates additional interest expense, which drives up costs and compounds the challenge.

Over the long term, Massachusetts will underinvest in transportation, both inside and outside of I-495, if a more sustainable revenue structure is not found.

Below we outline an approach to generate balanced transportation-related revenue that could help build and sustain a broader base of support for the state's transportation networks.

First, a few caveats. It should be noted that these are long-term strategies that will require a decade or more to implement. Before they could occur, considerable progress would need to be made unifying transportation stakeholders and maximizing return on transportation investment, as described in the previous sections. In the interim, stopgap measures, such as an increase in the gas tax, will be necessary.

Finance multi-modal transportation networks regionally

Nationally, states have been shifting transportation financing to regions for a number of years.[18] This approach to transportation finance could prove more popular with voters because regions in different parts of the state would have the ability to determine the optimal level of investment in both roads and public transit necessary to support their economies and as well as their aspirations for economic growth.

Beyond generating more support for transportation in different corners of the state, such a move would have other important advantages. As federal dollars become more limited, there has been discussion of rewarding regions that contribute local dollars. Establishing a system for regional financing would better position Massachusetts for these competitive federal grants. Regionalizing transportation finances would also help Massachusetts move toward more regional cooperation in general, particularly around integrated land use planning.

Use technology to tie regional transportation fees to regional transportation usage

While the gas tax is relatively inexpensive to collect and it is almost invisible to drivers, who don't see a breakout when they purchase fuel, one major limitation has been the difficulty involved in varying tax rates by region. As you create more regional borders with varying tax rates, more filling stations are impacted by border crossing drivers looking for savings. Technology presents a range of options to address this problem.

The simplest would be a straight tax per vehicle mile travelled (VMT), an approach that was recently piloted in Oregon with success.[19] The VMT tax rate could vary depending on where the vehicle is registered. A more complicated alternative would be to use GPS technology to develop a system of open road tolling or TDP (time, distance, place) pricing. The major advantage this technology affords is assessing users different fees according to when they use the roads, how many miles they drive, and where they travel. Though drivers have become accustomed to location aware sensors like the FAST LANE transponder, there are both legal issues and perceived privacy issues that would make this technology more difficult to adopt.[20] Still, because it has greater potential from an efficiency perspective, it is the ideal solution.

Adopting either approch will not be easy or immediately popular given current levels of distrust in government and distaste for anything perceived as a new tax. There are also important legal complexities that must be better understood. And the technology still needs large-scale tests in order to work out all the technical challenges. While it might be a decade or more before Massachusetts could actually implement this approach, the state should begin planning by exploring the following issues that will need to be addressed:

Defining geography: Before Massachusetts can regionalize the state's transportation finances, a system of geography must be created.[21] Regions must by definition be large enough to represent the flows of commuters using the trans-

WHAT'S HAPPENED TO OUR TRANSPORTATION DOLLAR?

Massachusetts has not adjusted the state gas tax since 1991; Congress has not increased the federal gas tax since 1998. Over the years, inflation and increasing fuel efficiency have eroded these important sources of transportation revenue. As a result states have turned to "innovative financing"—borrowing, to replace lost revenue. Often this means we pay more in interest than in principal for our transportation investment. We have even turned to using long-term debt to pay the salaries of workers responsible for day-to-day operations. This is highly inequitable to future generations saddled with debt. It's particularly hard on these generations because much of our borrowing has been against future federal funds.

portation infrastructure. But expansive regions could prove unpopular with communities at the borders, where residents will generally rely on the transit system less intensively and utilize roads more.

Unfortunately, a regional tax will not be successful if these communities can easily opt out. At the same time, it will be ineffective if a large number of communities do not benefit or are unsupportive. By requiring a supermajority for passage, such as a two-thirds vote or a majority vote in two-thirds of jurisdictions in the region, plans would need to include balanced multi-modal investments to achieve broad public support. Requiring a large majority could also lead to increased scrutiny and lead to greater truth in budgeting. But this will only occur where scrutiny from an independent agency is successful in steering support toward the best investments. Otherwise, requiring supermajorities could help unnecessary investments advance simply because they are needed to win additional support for a package of multimodal projects.

Granting price setting authority: The state's metropolitan planning organizations (MPOs) could determine capital and operating needs for their regional multi-modal systems and set TDP prices accordingly, but this approach would likely be more difficult to adopt in Massachusetts, where residents have limited experience with regional government.[22]

Giving voters the power to determine TPD prices through a ballot measure is perhaps the more viable solution. States are increasingly granting communities the power to use local option taxes to fund transportation.[23] Regional funding approved by voters at the ballot box offers regions a more direct channel to put in place the transportation services they need.

Regularly turning to voters encourages transportation advocates to demonstrate the benefits of transportation services and enhancements. Ballot initiatives also place greater pressure on transportation agencies to deliver the infrastructure and services described in the ballot measure.

While relying on ballot initiative to make complex decisions can be problematic, this approach could help overcome several obstacles that have encumbered transportation policy at the State House. Political leaders are notorious for approving expansion projects without identifying sources for operating funds. They are also reluctant to raise taxes and fares.

In contrast, voters have been overwhelmingly supportive of good transportation projects at the ballot box. In 2008, for example, citizens approved 70 percent of transportation ballot measures, imposing $75 billion of new taxes on themselves to support infrastructure, operations, and maintenance.[24] Even in California, where ballot initiatives require a two-thirds supermajority for passage, these efforts have been very successful.[25] Handing this responsibility over to voters, informed by analysis from an independent agency, may result in higher levels of investment and the ongoing revenue needed to support expanded service.[26]

Reallocating sales tax revenue: In proposing a switch to regional financing, reallocating sales tax revenue would likely become a hotly contested issue. How this point is handled could determine the fate of any effort to transition to regional pricing.

The state could simply phase out support for transportation from the sales tax and lower the sales tax accordingly.

Another approach would be to keep the sales tax in place to support a transportation capital investment fund. At least sales tax instability would not be as serious since capital investments can often be delayed. This might also help the state self-finance transportation infrastructure and reduce reliance on debt. Keeping some sales tax revenue in place to support public transit might reduce the burden on drivers, who cer-

> "We have to be honest that ignoring deteriorating conditions at our transit systems runs the very real risk of losing riders. Discomfort, inefficiency, unreliability, and worries about safety drive people away."
>
> Peter Rogoff, Federal Transit Administrator

tainly benefit from the reduced congestion public transit provides (and the incentive to use public transit taxing driving creates) but should not necessarily shoulder the full responsibility for generating the necessary public transit subsidies.

If the state keeps some sales tax in place to support transportation, it should consider directing sales tax capital funds to settle the MBTA debt first. This might be a fruitful negotiating point since Greater Boston would be giving up statewide sales tax revenue with a switch to regional financing.

Gaining acceptance for congestion pricing: The ability to charge users a different price at different times is a major advantage TDP pricing affords. Experience shows congestion pricing can significantly increase efficiency and reduce costs by ameliorating the need to expand capacity on congested roadways and transit lines.

However, congestion pricing is not without critics and this debate will only add to the controversy surrounding TDP pricing. Some see congestion pricing as privatizing public roads for those with the highest income. Others argue TDP is no less equitable than the current reliance on the sales tax, and technology would enable policies to reduce rates for low-income drivers.[27]

Overcoming legal constraints: Depending on how a local option tax by ballot initiative is structured, a number of legal questions could arise. First, the state's constitution does not allow appropriations through voter referenda. There is some uncertainty about how far this prohibition extends. For instance, if MPOs put together spending packages and voters simply approved a tax rate to support this spending, it might meet constitutional muster. Second, there are currently prohibitions in federal law against charging road users traveling on interstate highways fees that support transit. A straight VMT tax, however, may not be an issue since drivers are not paying for the use of a specific roadway.

Use value capture in new transit corridors to generate revenue for capital investments

If the regional revenue sources described above were authorized to finance operating costs associated with new transportation investments, this could open up opportunities to pay for capital costs using land value capture techniques.[28] These financing methods generate revenue from the increase in property value associated with transportation improvements. The approach can range considerably with the debt risk assumed by government, in some instances, and private property holders in others. While land value capture has not been used extensively in the US, it has been a successful tool for financing between a quarter and half of the capital costs for new projects in Portland, San Francisco, Seattle, and Washington, DC.[29]

Preparing strong corridor plans that lead to integrated land use regulation (as described previously) would be central to any land value capture strategy. As noted previously, land use planning, coupled with local incentives to carry out plans, leads to more efficient land assembly that maximizes return on transportation investments. This translates into larger increases in land value. Having plans and consistent zoning in place is particularly critical for transportation agencies negotiating special assessments with holders of key income-oriented parcels, a common method of land value capture financing.

Develop supplementary revenue generators

Paying for multi-modal transportation networks in a new era of reduced state and federal spending will require creative new approaches. A single revenue stream will not be sufficient. As regions become a more equal state partner, more opportunities for creative financing should be explored. These will range from straightforward options, such as parking fees, to more complicated approaches, such as cross-subsidizing transportation with revenues generated by other assets that benefit from transportation. Airports are one common target for producing cross-subsidies, but many facilities, including proposed casinos, provide logical targets.

4. CONCLUDING THOUGHTS

The strategies proposed in this paper would lead to broader and more sustainable public support for transportation along with more, and more efficient, investment in this vital infrastructure. Developing these new approaches to transportation revenue would also take pressure off the state budget, which faces other long-term structural challenges associated with health care, pensions, and education.

It will take time to implement these strategies. Unfortunately, responding to transportation shortfalls requires real urgency. Billions of dollars must be found over the next decade just to maintain

current transportation services. Identifying short-term solutions, while working to implement these deeper longer-term financing reforms, will require an unprecedented strategic effort from our transportation leaders.

In thinking about the economic imperative for this long-term campaign, it is worth reflecting on the historical context. Massachusetts has a long tradition of investing in transportation infrastructure for economic growth. The Blackstone Valley Canal, a waterway linking Worcester and Providence, gave life to more than a thousand industrial mills and triggered the birth of the American Industrial Revolution. Incredibly, this wasn't the only massive infrastructure project underway in the 1830s. Construction workers in Massachusetts were simultaneously laying track for one of the nation's first railroads, a line connecting Boston and Lowell. By mid-century, this railway had helped Lowell become the largest industrial complex in the United States, fuelling growth throughout the Merrimack Valley.

The Great Recession forces us to revaluate our economic choices. In many respects, our institutions and knowledge industries ideally position Massachusetts to compete over the long term. If, however, we fail to bet on our collective future by investing in transportation infrastructure, we will almost certainly squander this unique opportunity.

While roads and bridges need obvious improvements, what is required most is a new vision for public transportation. Public transit can no longer be thought of as a low-cost, low-quality service for those without other options. In this increasingly congested state, preserving a quality of life that allows us to attract talented and entrepreneurial workers requires robust, multi-modal, 21st century transportation networks built around public transit. With the right tools and incentives, the state can empower regions across the Commonwealth to invest efficiently in these systems.

NOTES

1. Gordon Carr runs GMC Strategies, a Boston-based economic development and public policy consulting firm that specializes in assisting businesses, organizations, and state and local governments nationwide.

2. "National State of Good Repair Assessment," (Washington, DC: Federal Transit Administration, 2010).

3. China, for example, focused its stimulus spending on transportation, allocating $88 billion to high speed rail versus just $8 billion here in the US.

4. See Robert Puentes, "A Bridge to Somewhere: Rethinking American Transportation for the 21st Century," (Washington, DC: Brookings Institution, 2008).

5. According to the Transportation Finance Commission estimates, the cost to maintain the state's transportation systems would exceed revenues by $15 billion to $19 billion between 2007 and 2017. Roughly $10.5 billion is associated with bridges and roads, and between $4.8 billion and $9 billion with transit. See "Transportation Finance in Massachusetts: An Unsustainable System, Findings of the Massachusetts Transportation Finance Commission," March 28, 2007. See also David F. D'Alessandro and others, "MBTA Review," November 1, 2009; and Brian Kane, "Born Broke: How the MBTA found itself with too much debt, the corrosive effects of this debt, and a comparison of the T's deficit to its peers," (Boston, MA: MBTA Advisory Board, 2009.)

6. The study found the typical household spends 34 percent of their income on housing and 19 percent on transportation. See "The Boston Regional Challenge: Examining the Costs and Impacts of Housing and Transportation on Area Residents, their Neighborhoods and the Environment," (Washington, DC: Urban Land Institute, 2010).

7. For example, see "Connecting with Our Transportation Future: A Transportation Investment Strategy for the Life Sciences Cluster," (Boston, MA: A Better City, 2007) and "Moving Forward: Transportation and the Massachusetts Economy," (Boston, MA: Our Transportation Future, 2010).

8. It is important to note that the 2009 legislation did not fully accomplish all of the cost saving reforms necessary to ensure efficient operation and regain public trust. While acting on the reform agenda remaining would certainly go a long way toward building broader support, we do not include this in our discussion because these items have been well documented elsewhere. Moreover, while the potential for additional cost savings is significant, it is relatively modest compared to the need to identify net new resources.

9. Examples in Massachusetts include the Charles River Transportation Management Association serving major employers in Kendall Square, CommuteWorks serving Longwood Medical Area institutions, ABC TMA serving business downtown, and the Route 128 Business Council serving companies and universities located in the western suburbs.

10. Our Transportation Future coalition involves more than 20 member organizations spanning a broad range of interests including environmental and consumer advocates, regional planning agencies, labor unions, community-based organizations, and associations representing construction industries and municipalities. The T4Mass coalition, which is still recruiting members, currently includes 19 organizations. The membership encompasses a number of local community development corporations as well as statewide environmental, public health, and social justice nonprofits.

11. Ana Villar and Jon Krosnick, "American Public Opinion on Global Warming in the American States: An In-Depth Study of Florida, Maine, and Massachusetts," (Stanford, CA: Woods Institute, 2010).

12. With more than one-third of greenhouse gas emissions, the transportation sector is currently the state's largest and fastest growing emitter. Because alternatives to reduce carbon content in fuel, such as building more fuel efficient vehicles, often lead to more miles driven, reducing transportation emissions will ultimately require greater use of public transit. See "Statewide Greenhouse Gas Emissions Level: 1990 Baseline and Business as Usual Projection," (Boston, MA: Massachusetts Department of Environmental Protection, 2009).

13. See Alex Roman, "New Starts/Small Starts Shift to Focus on Livability," *Metro Magazine* (February 2010).

14. In Washington, DC, for example, the city is installing new street car lines using revenue generated from tax increment financing. The experience will provide a strong example of the fiscal impact of the public investment and its ability to support the associated transportation infrastructure and service.

15. Chapters 40R and S encourage higher density development and compensate communities for associated school costs. Commonwealth Capital gives communities that adopt smart growth strategies priority for certain state grants. The Community Preservation Act provides state matching funds to communities that assess a property tax surcharge for affordable housing, open space preservation, and other smart growth investments. While these programs are relatively new, they have had only a limited impact on local planning and development decisions.

16. The Washington State Department of Transportation has developed two models — Cost Estimate Validation Process (CEVP) and Cost Risk Assessment (CRA). See "Risk Assessment and Allocation for Highway Construction Management," (Washington, DC: Federal Highway Administration, 2006).

17. However, also note that decentralized development patterns are making drivers less sensitive to the gas tax. At least in the short term, achieving significant reductions in driving would now require a sizeable gas tax increase. See Jonathan Hughes and others, "Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand," *NBER Working Paper W12530*, September 2006.

18. While in the aggregate local contributions are still relatively small compared to state and federal spending, they have become particularly important to the success of new capital investments. See Todd Goldman and Martin Wachs, "A Quiet Revolution in Transportation Finance," *Transportation Quarterly* 57 (1) (2003).

19. "Oregon's Mileage Fee Concept and Road User Fee Pilot Program: Final Report," (Salem, OR: Oregon Department of Transportation, 2007).

20. For more on privacy issues, see Saquib Rahim, "Tax on vehicle miles traveled gains support, but raises Orwellian questions," *Climate Wire*, October 7, 2010.

21. Existing definitions to explore include current MPO and regional planning agency geographies as well as the service areas for the MBTA and RTAs.

22. As a baseline, each region could be required to set a TDP price sufficient to support existing roadways and forward funding for existing public transportation services. Regions could then vote to adjust the TDP price to support expanded infrastructure or services.

23. See Todd Goldman and Martin Wachs (2003). According to this study, 18 states allow local option vehicle registration fees, 17 allow local option sales taxes, and 9 allow local option gas taxes. Goldman and Wachs found 16 states with local option taxes dedicated exclusively to public transit. In Washington, for example, there are 14 transit districts spanning 10 counties (87 percent of the state's population). The average resident in a district pays $82 annually in local option transit taxes.

24. For full catalogue of ballot measure results, visit Center of Transportation Excellence website.

25. For example, the Sonoma-Marin Sales Tax, Measure Q was approved by nearly 70 percent of voters in 2008. It imposed a 1/4-cent sales tax for 20 years to support provide two-way passenger train service every 30 minutes during weekday rush hours, weekend service, and a bicycle/pedestrian pathway linking stations, and connections to ferry and bus service. Because it relied on sales tax, the sluggish economy has jeopardized the sustainability of the service. See "SMART train to arrive two years late in central Sonoma County," *Press Democrat*, January 20, 2010; Amber Crabbe and others, "Local Transportation Sales Taxes: California's Experiment in Transportation Finance," Public Budgeting and Finance 25(3) (2005).

26. David Luberoff emphasized the value of analysis from an independent agency in an op-ed noting the lessons Massachusetts can glean from experience in other states with transportation bond referenda. See David Luberoff, "Transit projects taxpayers can trust," *Boston Globe* (December 13, 2008).

27. Genevieve Giuliano, "An assessment of the political acceptability of congestion pricing," *Transportation* 19(4) (1992); "Curbing Gridlock: Peak-Period Fees to Relieve Traffic Congestion," (Washington, DC: Transportation Research Board, 1994).

28. For a summary of the land value capture literature, see Jeffery Smith and others, "Financing Transit Systems through Value Capture," (Victoria, BC: Victoria Transportation Institute, 2010); see also "Value Capture and Tax-Increment Financing Options for Streetcar Construction," (Washington, DC: Brookings Institution, 2009); and Christopher Leinberger, "Here comes the neighborhood," *The Atlantic*, June 2010.

29. "Federal Role in Value Capture Strategies for Transit Is Limited, but Additional Guidance Could Help Clarify Policies," *GAO 10-781* (Washington, DC: Government Accountability Office, 2010).

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