



An Agenda for Transportation Reform and Revitalization

To address the Commonwealth's transportation challenges today and in the decades ahead, we must embrace an agenda of reform and revitalization. This white paper, submitted as public comment to the [*Governor's Commission on the Future of Transportation in the Commonwealth*](#), offers long-term goals to ensure our transportation system supports economic growth, improves quality of life and social equity, and is prepared for an uncertain future. Tied to each of these long-term goals are immediate actions that are implementable by MassDOT and the Legislature within the next year.

Long-Term Goals Leading to 2040	Immediate Actions To Take Within the Next Year To Advance Long-Term Goals
Provide a Robust, Connected Transit Network	<ul style="list-style-type: none"> • Increase Funding for Regional Transit Authorities • Advance Concept of Regional Rail and Rail to Disconnected Regions • Commit to Fully Fund MBTA Revitalization
Prioritize Equity and Accessibility	<ul style="list-style-type: none"> • Ingrain Equity into MassDOT's Approach to All Projects
Harness Market Forces to Limit Carbon Emissions	<ul style="list-style-type: none"> • Make Massachusetts a Leader in Advancing the <i>Transportation and Climate Initiative</i> • Design and Create a "Mass Save for Vehicles"
Reduce Traffic Congestion	<ul style="list-style-type: none"> • Pilot Smarter Tolling with Off-Peak Toll Discounts
Make Our Streets and Roads Safer	<ul style="list-style-type: none"> • Enact a "Hands-Free" Law for Drivers
Use Complete Streets and Innovation to Prioritize the Most Efficient Modes	<ul style="list-style-type: none"> • Pilot Bus-Only Lanes on Limited Access State Highways with High Bus Usage
Empower Cities and Towns to Build Strong Communities	<ul style="list-style-type: none"> • Pass Regional Ballot Initiative and Value Capture Legislation
Borrow Best Practices from the Public Utility Model	<ul style="list-style-type: none"> • Pilot a Vehicle-Miles-Traveled Program
Lead on New Mobility	<ul style="list-style-type: none"> • Increase TNC Fees to \$0.50 Per Trip While Incentivizing Shared Trips • Pilot a Vehicle-Miles-Traveled Program for TNCs



An Agenda for Transportation Reform and Revitalization

I. A System in Need of Reform and Revitalization

Transportation is the backbone of our statewide and local economies, connecting people to jobs, healthcare, family and friends, places of worship, and educational advancement. Transportation is also key to the environmental health of the Commonwealth and the personal health of our residents. Despite its importance to our quality of life, the Commonwealth's transportation system is not working well for those who need it. In 2017, [*US News & World Report*](#) ranked Massachusetts as the #1 overall state in the country (including a #1 ranking in education) yet ranked us #45 in the category of transportation. On a daily basis, drivers and other roadway users face traffic congestion and navigate potholes, transit riders wait for delayed trains and crowded buses, and pedestrians and cyclists feel unsafe crossing the street or biking in their own neighborhoods.

Our overburdened transportation network imposes large costs on residents; transportation is the largest household cost after housing. The average two-driver household in Greater Boston wasted [\\$330 per month from traffic congestion alone in 2017](#) (up from \$300 per month in 2016), on top of an average of more than \$700 per month on car and insurance payments and fuel. Some workers turn down higher-paying jobs because the commute is unmanageable. Others have limited employment options because their communities are disconnected from public transportation. Residents and businesses statewide are missing out on the opportunities and superior quality of life that come with a strong, efficient, and affordable transportation system.

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Transportation is also the largest emitter of air pollution of any sector of the Massachusetts economy. Because our transportation policies have trailed behind the electricity sector in reducing pollution, the Commonwealth is not on track to meet its legal commitments for reducing greenhouse gas emissions by 2050. Air pollution from transportation has broad-reaching public health impacts: one in nine people in Massachusetts has asthma, and Springfield was given the unfortunate title of “[Asthma Capital of the United States](#)” by the *Asthma and Allergy Foundation*.

As bad as things are now, by 2040, they could get much worse. New technologies such as autonomous passenger and freight vehicles, ride-hailing apps, and electric vehicles promise some benefits, but also threaten to increase traffic congestion, socioeconomic inequity, sprawling development patterns, and emissions, while simultaneously undermining the current funding streams available to maintain and improve our transportation system. For example, autonomous vehicles could require less curbside parking, a significant revenue source for many local governments.

We need to be prepared for a range of likely scenarios made possible by forces both within and outside of the Commonwealth's control. Thankfully, there are some opportunities for reform and revitalization that will both address today's challenges *and* prepare our state for what lies ahead. These changes will make our transportation system work more efficiently and equitably, without requiring significant new financial resources to be levied by state government. If we get things right, we have the ability to vastly improve the quality of life for the more than six million people who move around Massachusetts every single day. Our transportation system can and should be a point of pride for residents of the Commonwealth.

Reform is critical. For decades, we have defined reform too narrowly, with a focus on operational cost savings and productivity improvements within the transportation bureaucracy. Operational reform is necessary and praiseworthy, but it is not sufficient to deliver a transportation system that works for everyone. We need to define transportation reform more broadly: it must include reform of the governance, financing, and social (e.g., public health) impact of our transportation system. Extending and expanding transportation reform will not be easy because it will require change. And it will require tough decisions and roll-up-your-sleeves leadership from the Commonwealth's elected officials, who are ultimately responsible for ensuring these reforms benefit everyone.

A transportation agenda for 2040 must also include revitalization. Upgrades of our core transportation assets across the state, reinvestment in neglected transportation links, and an embrace of smarter, more equitable policies that make our economy, communities, and neighborhoods stronger and more vibrant. This white paper does *not* attempt to address all the challenges facing our transportation system, nor does it offer views on particular transportation projects that will be needed to improve or advance our system.

Instead, this transportation reform and revitalization agenda is built on principles that are broadly shared across the Commonwealth, across political ideologies, and across our transportation system's diverse stakeholders:

Support Economic Development: Prior generations of Massachusetts leaders made investments that supported today's economic growth. From the MBTA's first-in-the-nation subway system, to the Massachusetts Turnpike, our transportation network has connected regions and created a foundation for them to prosper. Strategic investments in transportation will fuel our economy today, and will pay dividends for generations to come.



Strengthen Our Communities: Most trips start and end on local roads. With the right transportation plans and investments, any neighborhood can be made more walkable, bikeable, and inviting for residents, businesses, and visitors. Improving local streets with "Complete Streets" designs that serve all modes of travel leads to economic vitality and will support small businesses.

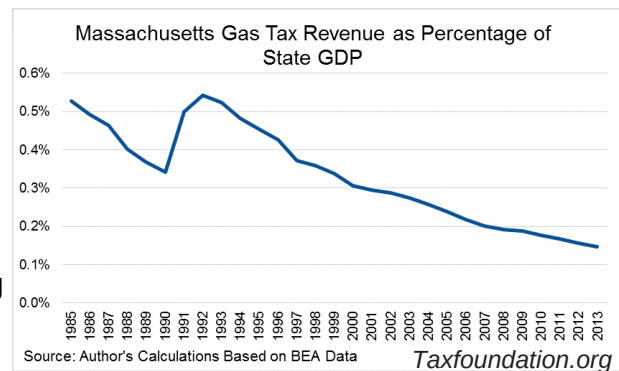
Fund our System Fairly and Sustainably: Many of the core ways that the Commonwealth funds its transportation system are outdated, and are proving insufficient and ineffective.

The threats to these funding mechanisms will only increase between now and 2040. For example, state and federal gas taxes were once mainstays of transportation funding. But the gas tax has lost significant value as construction prices have increased with inflation.

[In 2018, the gas tax buys 40% less infrastructure than it did in the 1990s.](#) This problem is compounded by the increasing fuel efficiency of vehicles, which allows drivers to drive more while paying less into the system that keeps our roads maintained. Our transportation system must be funded fairly and sustainably.

That means rethinking our funding structures and updating them to reflect a changing mobility landscape for both passenger and freight needs. It also means understanding that the federal government is unlikely to significantly increase federal funding for transportation. National experts are urging states to plan for a future where the share of federal transportation funding steadily declines.

Build Social Equity: Our current transportation network makes it too difficult for many residents to access schools, jobs, grocery stores, social engagements, and health services such as substance-use treatment and recovery resources -- creating a negative feedback loop in which those who have the worst transportation options have the least economic mobility, which further limits their transportation options. Investments in transportation should broaden access to opportunity, especially for people who are historically underserved.



Promote Geographic Equity: Our transportation investments are not distributed evenly across the state. In particular, communities and regions outside of Greater Boston feel disconnected from that region’s economic success, or underserved by their transportation options. Transportation solutions must stretch to all corners of the Commonwealth.

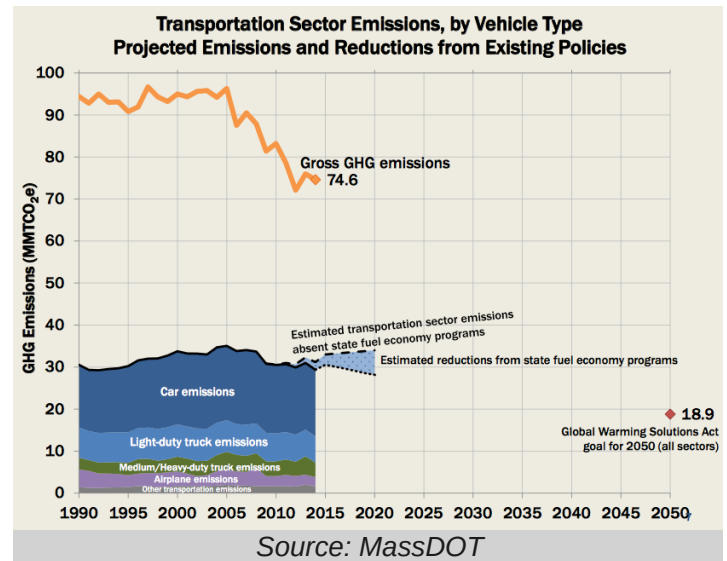
Improve Public Health: Transportation is a social determinant of health, one of the key variables that affects the quality and length of a person’s life. [Transportation was the single most frequently mentioned barrier to health for seniors in a 2017 assessment of community health needs in Massachusetts.](#) A transportation reform and revitalization agenda must reflect this connection to public health. Transportation policies should encourage a shift towards walking, biking, and public transit -- modes that have a direct benefit to users in the form of increased physical activity and lower rates of chronic disease. [Our policies should reduce air pollution; particulate matter found in vehicle exhaust contributes to asthma, lung cancer, and other cardiovascular issues and is responsible for 30,000 premature deaths per year in the United States.](#) And our policies must reduce the injuries and fatalities that result from vehicle-related crashes, which have begun to increase in recent years after decades of steady declines.

Protect Massachusetts from Climate Change:

Transportation is also the source of about 40% of the state’s greenhouse gas emissions.

[The state inventory of carbon pollution, released on August 23, 2018, shows that *all* portions of the state’s CO2 emissions profile decreased *except for* transportation.](#)

Our transportation system is vulnerable to the impacts of climate change, including sea level rise, flooding, and increasingly powerful storms. We need to adapt our transportation infrastructure to meet this new reality. Climate adaptation and resilience must be ingrained as a central part of transportation decision making. Recognizing that we need a big effort to tackle this problem, the Environmental Bond Bill passed by the Legislature and signed by Governor Baker had resources dedicated to climate adaptation, and the state is now required to develop a climate adaptation plan. Reforming and revitalizing the transportation sector should include both climate *mitigation* (reducing pollution from transportation) and climate *adaptation* (making our transportation system more resilient to a changing climate).



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Grow Wisely: Transportation is intrinsically linked to land-use policy and to the form and feel of our neighborhoods. Our post-WWII zoning and planning policies represented a break from earlier development patterns that were centered on the New England village or industrial town. The result was suburban sprawl and the prioritization of cars and driving at the expense of walkable communities with access to public transportation. It is imperative that the Commonwealth’s development and housing goals and transportation goals be advanced in tandem, and that transportation decisions be integrated with land-use decisions.

All of these shared principles -- and other transportation priorities -- can be moved forward before 2040 if we embrace an agenda of reform and revitalization. The Transportation for Massachusetts coalition believes the long-term goals and immediate actions described below will help get us there.

II. Long-Term Goals and Immediate Actions:

Provide a Robust, Connected Transit Network

Transit is a crucial component of our transportation system. Each day, the MBTA serves 1.3 million trips. The state's fifteen regional transit authorities serve another 100,000 per day. And private transit and shuttle providers such as Peter Pan, Paul Revere, Plymouth & Brockton and MASCO serve tens of thousands more. The Massachusetts economy wouldn't work if we didn't have transit.



RTAs like the PVRTA provide 100,000 trips per day

Some have speculated that new mobility offerings such as transportation network companies (TNCs, e.g., Uber and Lyft) and autonomous vehicles spell the end of traditional public transportation. But transit will remain vital because in cities, transportation needs are a function of *geometry*, not *technology*.

As the transit planner Jarrett Walker has written, "A city, by definition, has little space per person, so the efficient use of space is the core problem of urban transportation. When we are talking about space, we are talking about geometry, not engineering, and technology never changes geometry. You must solve a problem spatially before you have really solved it."

A real-world example of Walker's assertion is the Longfellow Bridge, which carries 28,000 motor vehicles each day, but more than 90,000 people on the MBTA's Red Line. Take those riders off the Red Line and put them into individual (or even shared) autonomous vehicles, and the result would be gridlock. For Massachusetts to continue to thrive as one of the densest states in the country, we need significantly improved public transit -- not just in our largest cities like Boston, Worcester, or Springfield, but also smaller cities like Lowell, Brockton, and Fall River. While lower densities in suburban and rural communities make it harder to provide transit cost-effectively, bus, van, and paratransit service in these areas is often the sole means of mobility for people who cannot drive or afford a vehicle. Transit in suburban communities can also provide key "first-mile" and "last-mile" connections that get single-occupancy vehicles off the road.



The Longfellow Bridge

Our success today and in 2040 depends on a robust, connected, resilient transit network that moves the country's most talented workforce with service that is frequent, affordable, and reliable. Transit service must be expanded and improved in big cities, small cities, and suburban and rural areas across the Commonwealth.

Immediate Action: Increase Funding for RTAs

The Commonwealth's 15 Regional Transit Authorities provide transit service in communities outside of the MBTA's bus service area. The state provided just \$80.4 million to the RTAs in FY 2018, a decrease from the prior year. Even with an increase in total funding to \$88 million in FY 2019, state funding was insufficient to prevent cutbacks in service and fare increases at some RTAs.

The Commonwealth's 15 RTAs have recently completed Comprehensive Service Assessments to identify how each agency can best serve its region. [These reports](#) provide a blueprint for priority service enhancements. A newly formed RTA Task Force on Performance and Funding will also help recommend appropriate measures for accountability to ensure the state is receiving good value for its investment.

The Commonwealth should commit to increased financial support for RTAs to help ensure that high quality public transit service improves and expands across Massachusetts.

Immediate Action: Advance Concept of Regional Rail and Rail to Disconnected Regions

MassDOT's [Rail Vision Study](#), scheduled for completion in 2019, will identify one or more service models that will better leverage the underutilized assets of the MBTA's Commuter Rail network. The study should recommend the incorporation of elements of regional rail that converts the legacy commuter-rail system into a more frequent, reliable, and faster intra-region rail service. Many of the potential benefits of regional rail and opportunities for moving toward such a system are described in TransitMatters's [Regional Rail](#) report.

Cities like Springfield, Fall River, and New Bedford feel disconnected from the state's broader economy because they do not have rail access to Boston. It should be a goal of state transportation plans to make it easier to get between different regions of the state.

Immediate Action: Commit to Fully Fund MBTA Revitalization

As the [Focus40](#) report demonstrates, Greater Boston residents are demanding a modern, efficient, reliable, and expanded public transit network. Reform efforts focused on process improvements and reliability are necessary, but not sufficient, to achieve this goal. The MBTA requires reform and revitalization. The state and the MBTA should commit to funded capital plans that eliminate the state of good repair gap in 15 years, as called for in the MBTA's strategic plan. Achieving a state of good repair in that time frame would be an important achievement, but the Commonwealth and the MBTA have not yet committed to fully funding this plan.

Prioritize Equity and Accessibility

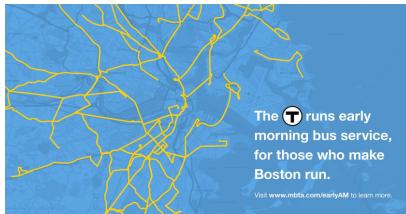
While Massachusetts has made some strides in reducing inequity statewide, the 2017 MAPC “State of Equity” report shows major disparities in health and economic opportunities – and persistent segregation in Metro Boston.

[MAPC's report](#) states that transportation inequities hold “especially true for low-income households who don’t own a vehicle, young people without a driver’s license, and people with mobility impairments. Those individual and household constraints are compounded by historical and ongoing disparities in transit service provision for low-income communities and communities of color.”

In Massachusetts, people of color continue to spend more time commuting than their white counterparts across all modes. When these commute-time inequities are calculated over the course of a year, the disparity is stark. For example, in Boston, black bus riders spend an additional 64 hours per year on their commutes than their white counterparts.

MassDOT must prioritize equitable implementation of existing and new transportation policies, projects, and initiatives. This approach should both attempt to avoid aggravating existing inequities, while also measurably and explicitly reducing harm and expanding opportunity. For example, new transit service can provide access to more jobs, but also sparks legitimate fears of displacement that must be addressed.

Policies focused on improving equity are linked to other state goals like climate resiliency. For example, there is a correlation between the Commonwealth’s vulnerable populations and those most susceptible to the impacts of extreme weather and heat islands (neighborhoods that retain heat). MassDOT can advance multiple statewide objectives while also making Massachusetts more equitable.



It turns out that when our transportation choices reflect the needs of the full representation of Massachusetts residents, they benefit people of all backgrounds and abilities. One high-profile example is the MBTA’s expanded bus service pilots, which are explicitly designed to accommodate late-night and early-morning shift workers. This service also benefits

restaurant patrons and college students. Another example are “curb cuts” at crosswalks: they are designed to accommodate persons with disabilities, but they also benefit parents pushing strollers, seniors tugging grocery carts, or workers making deliveries. Choices like these can be replicated across our transportation policy landscape.



Immediate Action: Ingrain Equity Into MassDOT’s Approach To All Projects

Equitable transportation in Massachusetts means providing a range of transportation options that are affordable, trustworthy, and sustainable in low-income communities and communities of color.

MassDOT should start by setting measurable, time-bound goals to decrease the growing gap in commute times between white commuters and commuters of color across all modes.

MassDOT should also use concrete and measurable equity indicators to prioritize projects. Project selection methods should include identifying potential benefits and negative impacts to marginalized groups.

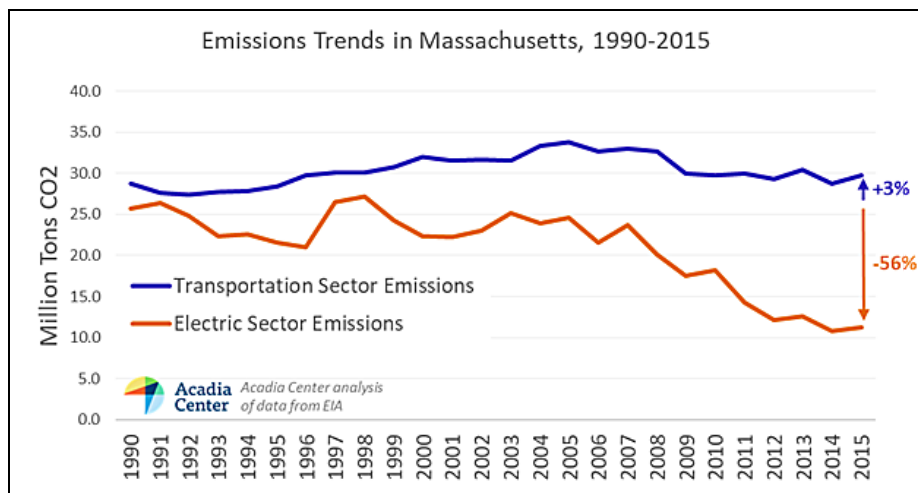
Harness Market Forces to Limit Carbon Emissions

Massachusetts was one of the first states to create a framework for reducing greenhouse gas emissions. The Global Warming Solutions Act, or GWSA, requires that Massachusetts reduce its greenhouse gas emissions (GHG) by 25 percent below 1990 levels by 2020, and 80 percent by 2050. Action in the years between now and 2040 will be critical to achieving our 2050 limits. The GWSA also authorizes Massachusetts to use market-based policies to reduce emissions, and under the *Kain v. DEP* decision by the Supreme Judicial Court, the state is required to set “declining annual aggregate emission limits” for sources of emissions.

On several occasions since taking office, Governor Baker has demonstrated his commitment to meeting these responsibilities. In 2016, he signed [Executive Order No. 569](#), calling for the Executive Office of Energy and Environmental Affairs to mitigate and reduce GHG emissions and to help Massachusetts adapt to the effects of climate change. That Executive Order led to new regulations that build upon Massachusetts’s leading GHG reduction efforts. However, the state has yet to impose significant new limits on emissions from transportation, the largest source of GHGs.

A favorable pathway for action on this issue is the [Transportation and Climate Initiative](#) (TCI), a forum of state governments in the northeast and mid-Atlantic that have agreed to work together to develop a regional approach to transportation emissions. Massachusetts joined TCI in 2010, and recommitted to exploring joint solutions in November, 2017. The Baker-Polito Administration has also hosted listening sessions statewide to solicit input from stakeholders on reducing transportation emissions.

The existing Regional Greenhouse Gas Initiative (RGGI) between nine states in the northeast and mid-Atlantic provides a particularly promising market-based model for working across state lines to reduce emissions. Created in 2008, RGGI was the first market-based program in the United States to reduce greenhouse gas emissions from power plants that run on fossil fuels. Under this program, power plants with a capacity greater than 25 megawatts are required to purchase allowances through quarterly auctions for each ton of carbon dioxide they emit. Auction proceeds are then invested in energy efficiency programs (like the popular Mass Save program). As a result, power sector carbon emissions in RGGI states have declined by more than 40 percent since 2005. In addition to its success in reducing carbon emissions, this program has also generated more than [\\$4 billion](#) in economic benefits in the participating states. Economists have estimated that from 2012-2014, RGGI’s economic benefits to Massachusetts totaled [\\$243 million](#) and the program created 2,718 jobs.



A regional, market-based approach similar to RGGI could work by requiring the petroleum companies that import transportation fuels into the region to purchase permits equivalent to the emissions that those fuels will create when burned. This type of market-based approach has broad support, including from utilities like [National Grid](#).

Proceeds generated from the sale of allowances in this system could be used for three key areas of transportation revitalization. First, funding to repair and modernize road and bridge infrastructure, with a focus on climate resiliency where the roadway network is particularly vulnerable to the impacts of climate change. Second, to invest in low-carbon forms of transportation like public transportation, walking, and biking. This program would fund increased support for the regional transit authorities and the MBTA, and could also include the electrification of our public transportation system and the expansion of public transit in areas that are currently underserved. Third, the Commonwealth could significantly enhance rebates and incentives for the purchase of electric vehicles (EVs) by residents and businesses. Importantly, any or all of these three program areas can be designed explicitly to increase social or geographic equity. New investment in transportation solutions provides an opportunity to support better health outcomes, robust public transit, and living wage jobs for residents in historically marginalized communities.

Immediate Action: Make Massachusetts a Leader in Advancing the Transportation and Climate Initiative

Massachusetts must play a lead role in advancing TCI with other northeast and mid-Atlantic states. To meet our transportation and environmental goals, we must move toward implementing a regional, market-based framework that generates proceeds for transportation revitalization. In the GWSA, the legislature already authorized the state to create a market-based program covering transportation emissions, and to work with regional partners to expand the Regional Greenhouse Gas Initiative into additional sectors (see GWSA Sec. 7(a) and Sec. 7(c)). A market-based program would also meet the Kain v. DEP requirement to set “declining annual aggregate emissions limits”. Governor Baker should publicly pledge his support for this critical transportation reform, and ask MassDOT and the Executive Office of Energy and Environmental Affairs to have a regional regulatory framework designed by the end of 2019, if not sooner.

Immediate Action: Design and Create a “Mass Save for Vehicles”

Massachusetts should create a “Mass Save for Vehicles”, which could mirror the popular and successful Mass Save energy efficiency program. Mass Save, partly funded by RGGI proceeds, provides subsidized energy improvements for homeowners and businesses in the form of rebates, incentives, zero-interest loans, and more. Massachusetts has been named the most energy efficient state in the nation by the American Council for an Energy-Efficient Economy (ACEEE) for the past seven years because of the program’s overall success.

As with many energy efficiency technologies, investments in clean vehicles require an up-front cost in return for long-term fuel savings. Increasing incentives could help make these vehicles more affordable for Massachusetts consumers, allowing more residents of all income levels to benefit from these new technologies. Although Massachusetts drivers already have a handful of electric vehicle incentive and rebate options available to them, EV adoption is hampered by the relatively small amount of subsidy, and a cumbersome administrative process. Further, the federal tax credit for electric vehicles will begin to expire this year for some leading EV manufacturers. At the same time, Massachusetts’ main EV rebate program, MOR-EV, is on pace to run out of funding. —————>

Some of the components of “Mass Save for Vehicles” could be modeled after existing incentive and rebate programs that have been successful in other states. For example, Massachusetts residents purchased just 13,834 EVs between 2011 and 2017. California residents purchased 356,241 EVs over the same period -- 4.5 times as many per-capita. Programs such as the Enhanced Fleet Modernization Project (EMFP) allow significant rebates to low-income California drivers who trade in an internal-combustion vehicle for an electric vehicle. California’s incentive programs are well marketed and advertised (just like Mass Save is in Massachusetts).

A Mass Save for Vehicles program should not be limited to electrification of passenger sedans, but should include options for different vehicle classes and different kinds of customer needs. Drivers of pickup trucks and large SUVs can see significant fuel and emission savings by switching to increasingly efficient hybrid vehicles, such as the 25 mile-per-gallon F-150 Hybrid or the 29 mpg Toyota Highlander Hybrid. Incentives to trade-in existing SUVs and pickup trucks for these newer models would save customers money and reduce emissions.

In addition, both California and New York offer incentives for heavy duty vehicles, such as buses, delivery vans, and trucks. California’s Hybrid and Zero-Emission Truck & Bus Voucher Incentive Program (HVIP) offers \$150,000 off the purchase of an electric bus – which increases to \$165,000 for EV buses in environmental justice communities. These programs are one reason Los Angeles and New York City transit agencies have been able to make commitments to move towards an all-electric transit fleet.

Mass Save for Vehicles would include incentives for commercial entities, especially those that own and operate large fleets. Because their routes are more predictable and they are often centrally managed, commercial fleets can be especially good candidates for electric vehicle adoption.

While broadly popular, the existing Mass Save program for energy efficiency has been criticized for its struggles to extend energy-efficiency benefits to low-income communities, where more residents tend to be renters and where the “down payment” needed for energy efficiency projects can be a hurdle. Mass Save for Vehicles must aim to address these equity shortcomings and ensure broad and tangible benefits for low-income residents and communities. For example, a Mass Save for Vehicles could also pilot electric-vehicle community car-sharing, as is already being implemented in San Francisco Bay Area and Sacramento neighborhoods with high exposure to air pollution. This could help make use of EVs an option for residents that do not have driveways or garages.

Reduce Traffic Congestion

Drivers across the state face traffic congestion that reduces their productivity, raises the costs of the goods they buy, and impacts their quality of life. This problem is particularly acute in Greater Boston, which by one metric has the worst traffic in the entire country, with drivers spending a higher percentage of their commutes in traffic than drivers in any other region. [In 2017, congestion cost Boston \\$5.7 billion \(and cost the United States \\$305 billion overall\).](#) Massachusetts drivers are stuck in their cars.

Too often, we accept traffic congestion like we do the weather: a fact of life in New England. But there are proven methods for reducing traffic that departments of transportation around the country are using to improve commutes. MassDOT has tools in its toolbox to reduce the Commonwealth’s traffic crisis, but, so far, it has been reluctant to use them.

Somewhat counterintuitively, [adding more roadway capacity is *not* an effective strategy for reducing traffic](#). The new road capacity [just attracts new drivers](#), and congestion quickly returns to an expanded road. Those new drivers only exacerbate bottlenecks elsewhere in our road network.

Long-term studies of traffic consistently demonstrate that better pricing of tolled roads -- also known as “smarter tolling” -- is the single most effective tool for reducing congestion. While there are a few different forms of road pricing, they all follow the same principle: giving drivers incentives to change if, when, or how they make a trip on a traffic-clogged corridor.

Smarter tolling provides drivers incentives to either 1) drive at different times, 2) to combine or reduce the number of trips they take, or 3) to switch to a different mode, such as a bus or a train. These types of incentives are used widely across the United States and around the world, but have never even been tried here in Massachusetts.



Traffic is a non-linear function, which means that each new car on a road creates more congestion than the car that came before it. Because of this dynamic, it does not take many additional cars for a highway to go from “free flow” to gridlock. Luckily, the reverse is also true. Getting a relatively small number of cars off the road during the peak period can lead to significant reductions in traffic. While each road is unique, the rule of thumb used by traffic experts is that getting 5% of cars off the road at peak times can reduce congestion by 20%.

Tolling is a fraught subject. Commuters on the state’s existing tolled roads question why some highways are tolled, while others are not. Frustration with this inequity -- caused by historical and political circumstance, not sensible transportation policy -- is legitimate and justified. It was once true that the Turnpike offered a superior pavement quality to non-tolled highways in Massachusetts, but that ceased to be the case many years ago. MassDOT’s inability to demonstrate that a tolled road can provide a consistently superior experience to a toll-free road has generated cynicism about tolling as a beneficial public policy. But public polling also shows that drivers are open to creative tolling solutions that reduce congestion, with [60% of Massachusetts voters supporting off-peak discounts](#). Drivers on Massachusetts’s tolled roads deserve a better commute than the one they are getting today. Smarter tolling presents a clear opportunity to deliver that superior service.

Immediate Action: Pilot Smarter Tolling With Off-Peak Toll Discounts

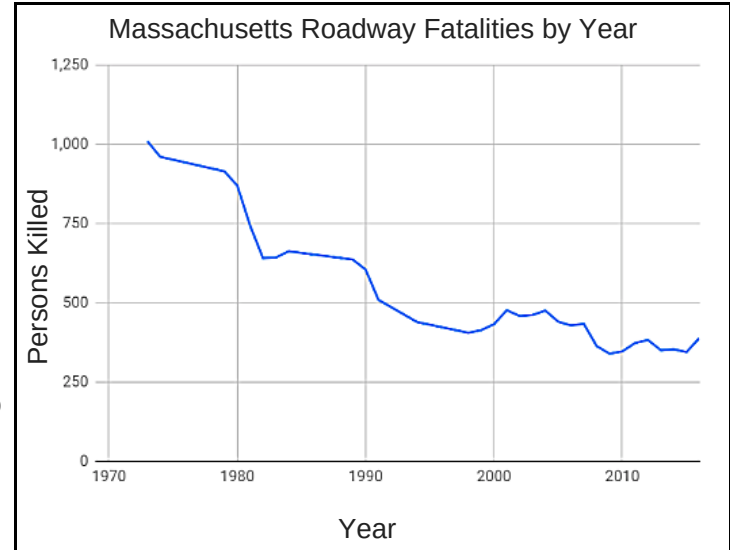
The FY 2019 state budget approved by the Massachusetts House and Senate included a provision requiring MassDOT to conduct a pilot of smarter tolling on existing tolled roads, providing pilot participants with a discount of at least 25 percent for off-peak travel. Sponsored by Senate Minority Leader Bruce Tarr and co-sponsored by Senate Transportation Chair Joe Boncore, this amendment received support from a wide spectrum of stakeholders, including the Pioneer Institute, AAA Northeast, A Better City, ACEC-MA, NAIOP, Construction Industries of Massachusetts, the Greater Boston Chamber of Commerce, and the Massachusetts Business Roundtable. Unfortunately, Governor Baker vetoed this provision, instead calling for a broader study of congestion.

Fortunately, MassDOT does not need legislation to test this concept, as it is within its existing authority. The Commonwealth should undertake a smarter tolling pilot in 2019.

Make Our Streets and Roads Safer

Massachusetts' roads are increasingly deadly. Roadway fatalities steadily declined through the 1980s and 1990s, hitting a three-decade low of 340 in 2009. But since then, the number of deaths has crept back up -- possibly related to an increase in distracted driving. 389 people died on Massachusetts roads in 2016. Across the country, the economic cost of traffic crashes is estimated to be an eye-popping [six percent of the gross domestic product](#).

Perhaps particularly concerning is the recent rise in injuries to pedestrians and cyclists. Too many local streets are designed and engineered to move vehicles as quickly as possible, with wide lanes that encourage high speeds and put non-drivers at increased risk. Unprotected and inadequate bicycle facilities put people who bike in conflict with motor vehicles. In 2016, 80 pedestrians and 10 cyclists were killed on Massachusetts roads, accounting for 23% of traffic deaths in that year. In 2017, the City of Boston alone was home to more than 1,100 pedestrian and cyclist crashes, resulting in the deaths of eight pedestrians and two cyclists. Because traffic crashes disproportionately impact people of color, focusing on fixing this problem can also improve the equity of our transportation system.



Vision Zero is a campaign to reduce these tragic and costly deaths to zero. As of August 2018, three Massachusetts municipalities have adopted Vision Zero goals: Boston, Cambridge, and Somerville. A commitment to Vision Zero shifts the priority of transportation policies and projects from speed to safety, with the philosophy that crashes can be avoided if streets are designed to protect all people. To prevent traffic deaths, greater collaboration among local traffic planners, engineers, law enforcement, policymakers, and public health professionals is needed. Vision Zero brings together diverse and necessary stakeholders to address the complex problem of road safety. Legislation [enacted in 2016](#) allows cities and town to lower the statutory default speed limit from 30 mph to 25 mph, and to also establish special safety zones with 20 mph limits. Building on this law, in the 2017-2018 legislative session, advocates and dozens of lawmakers came together to support a strong bill (*An Act to Reduce Traffic Fatalities*) that would reduce the default speed limit of state roads to 25 MPH in densely populated areas, require safe vehicle passage around vulnerable road users, introduce limited usage of automated enforcement cameras, incentivize the use of truck side guards and safety mirrors, ban handheld device usage, and more. These steps, which integrate road design, vehicle design, and driver behavior, would make our roads safer for all users.

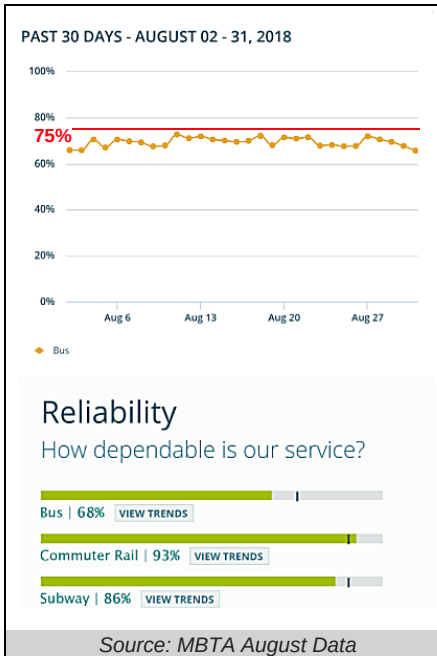
Immediate Action: Enact a “Hands-Free” Law for Drivers

Because distracted driving is the cause of many road crashes, the Vision Zero campaign places a high priority on updating our state's outdated distracted driving laws for the era of the smartphone. The ban on texting while driving passed in 2010 was a positive step, but it didn't foresee the rapid boom in smartphones and other devices that has occurred since then. The current law is rarely enforced, partly because it is difficult to do so, as “texting” and other smartphone actions are banned but dialing, programming a GPS, and holding a phone for a call are not. This bill would send a strong and unambiguous message about distracted driving. There is widespread legislative support for a requirement that drivers use their phones in hands-free mode, and Governor Baker has endorsed this legislation. While there are legitimate concerns around racial profiling, we hope that the bill can be passed with language that enables reporting of traffic stop data.

Use Complete Streets and Innovation to Prioritize the Most Efficient Modes

A “Complete Street” is one that has been designed to efficiently support all travel modes for various ages and abilities, often including enhanced accommodations for people walking, biking, and taking the bus. The Commonwealth has provided significant support to cities and towns statewide for implementing Complete Street designs on their local roads. A successful Complete Streets program, created by the Legislative bond bills and implemented by the Baker Administration, has approximately \$10 million in funding available per year. There are an impressive 211 municipalities across the state that are participating in the program. In 2016, Smart Growth America recognized seven Massachusetts cities and towns (out of 13 across the country!) for their efforts in embracing complete streets in the redesign of important corridors.

In Massachusetts, the movement for Complete Streets has sparked an appreciation for the need to improve bus service. From Arlington, to Watertown, to Everett, and to the Roslindale neighborhood of Boston, communities



are acknowledging that buses are a critical component of moving people efficiently. For example, on Mount Auburn Street in Cambridge, [buses move about 50% of the people on the corridor, in just 2% of the vehicles](#). The #39 bus, the MBTA's busiest, [moves more people each day than 9 of our 12 commuter rail lines](#). Elected leaders and transportation officials in communities served by buses are providing traffic-signal priority to move buses more quickly through intersections, and upgraded stops with platforms that make boardings faster and easier.

Bus service is a cost-effective and flexible relative to rail transit, but buses suffer from something trains don't: getting stuck in roadway traffic. For example, the MBTA's #111, which connects Revere and Chelsea with Downtown Boston and serves [more than 12,000 riders per day](#), sometimes averages a speed of less than five miles per hour, as it gets caught in clogged traffic on the Tobin Bridge. Buses are the MBTA's least reliable service. MBTA administrators set an unambitious bar for bus service performance of just 75% on-time -- but even that low bar is rarely met. In fact, systemwide, MBTA bus service did not meet its 75% on-time goal for even a *single day* in August, 2018.

Bus rapid transit (BRT) holds the promise of vastly improved bus service at a fractional cost to rail. Elements of BRT include pre-board payment, level boarding platforms, dedicated bus lanes, transit signal priority, and more frequent service. Perhaps the most effective way to get buses moving more quickly is to establish dedicated bus-only lanes, the most defining feature of BRT. Reserving exclusive space for buses to travel can make an enormous difference in the quality, speed, and reliability of bus trips, not to mention overall traffic flow which is no longer hindered by buses pulling in and out of shared travel lanes. Communities like Boston, Cambridge, Watertown, Everett, and Arlington have been working with the MBTA, the Barr Foundation, ITDP, Livable Streets, and MAPC to bring dedicated bus lanes to priority corridors. This practice must be brought to other corridors and regions across the state. Municipalities control most of the streets on which MBTA and RTA buses operate, but MassDOT, Massport, and the Department of Conservation and Recreation control others. MassDOT must coordinate with these parties and show leadership by bringing bus-only lanes to roads it controls.



Immediate Action: Pilot Bus-Only Lanes on State Highways with High Bus Usage

We need to get buses -- one of the most efficient and flexible transportation modes -- moving faster. To complement and build on the ongoing work to develop bus-only lanes on municipally-controlled surface streets, MassDOT and the MBTA should pilot a bus-only lane on a state-controlled limited-access highway that has high bus ridership, such as the Tobin Bridge or Interstate 93. This includes public MBTA and RTA buses, but also buses operated by private companies like Peter Pan, C&J, and Plymouth & Brockton that are a critical link in our transportation system.

Empower Cities and Towns to Build Strong Communities

Municipalities have few tools to fund and build local transportation projects, and the tools they do have are both inadequate and not future-ready. As the [Conservation Law Foundation has reported](#), [new technologies place these funding sources at risk](#). For example, if autonomous vehicles (AVs) become shared, centrally-managed fleets, local revenue from vehicle excise taxes and parking fees would both decline.



Municipalities need more revenue options for transportation, especially when traditional revenue sources are under threat and the federal role in transportation funding is uncertain. The Commonwealth should allow cities and towns more freedom to generate the resources needed to make and keep their communities vibrant and strong. Two of these local funding options are particularly promising:

- **Regional Ballot Initiatives (RBIs)** [are allowed in 41 states, but not Massachusetts](#). RBIs enable voters to weigh in on raising revenue that is dedicated to specific transportation investments or other projects at the local level. Across the country, in rural, suburban, and urban regions, in conservative and liberal states, and for all modes of transportation including rail, bus rapid transit, trails, and road and bridge repair, approximately 70% of these ballot questions pass. When the funding sunsets, the subsequent renewals usually pass by even greater margins. With RBIs, voters generally have confidence in how these funds will be used, because they trust local governments most, and the investments are closer to the voters. [MassINC Polling Group surveys](#) have repeatedly shown that nearly three-quarters of Massachusetts voters would like the state to enable this option for local voters.
- **Value Capture**, or value sharing, is another funding tool commonly used in other states, but underutilized in Massachusetts. With value capture, future incremental tax revenue is used to finance transportation improvements that generate value for local communities and landowners. The state should create new opportunities for value capture and make the current ones easier to use. One specific idea that merits strong consideration is Supplemental Infrastructure Financing for Transportation (SIFT), which would allow cities and towns to partner with the state and MBTA to use anticipated increased property taxes to finance roadway and transit improvements.

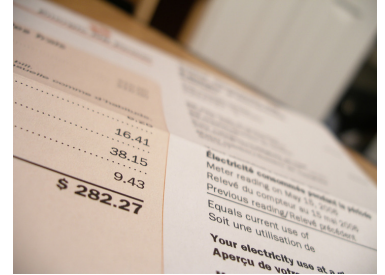
Immediate Action: Pass Regional Ballot Initiative and Value Capture Legislation

The Legislature should pass laws enabling both regional ballot initiatives and value capture in 2019. For two straight legislative sessions, the Senate has passed regional ballot initiatives language and the House has passed value capture language. These two local-option mechanisms will help empower local communities and regions that want to invest in their transportation priorities.

Borrow Best Practices from the Public Utility Model

Public utilities -- like the Massachusetts Water Resources Authorities (MWRA) -- are an imperfect equivalence for our transportation system. However, there are some advantages of public utility governance and operations that, if applied to transportation, could offer significant benefits.

For one, public utilities send bills to their customers based on how much they use. Nobody enjoys paying these bills. But the alternative to electric, water, and sewer bills -- these services being provided for “free” --would be much worse. Without usage charges, there would be little incentive to conserve energy, purchase more efficient appliances, or turn off lights when not in use. The result would be the need for many more power plants and transmission lines, which would be financially costly for society and harmful to the environment.



When supported and encouraged by thoughtful regulation and other public policies, utilities have the ability to expose system costs to consumers, which can be an important tool for balancing broader benefits and costs for society and incentivizing behavior change. The bills that customers receive for water and electricity relate to the use of the system and to the costs of providing it. In transportation, the relationship between how much a driver uses a road and how much they pay remains weak, and most drivers have little concept of what their monthly transportation “bill” is.

Our transportation system suffers from many of the problems that any utility system would face if it did not charge appropriately for usage: the users of the system over-consume it, and the result is insufficient funding, poor service, and a lack of reliability for those who depend on it. Unlike our water or electricity systems, our transportation system fails on a daily basis, as roads across the region are jammed with too many vehicles trying to drive on the same road at the same time.

If we want to make transportation more environmentally responsible, more equitable, more efficient, and more financially sustainable, we need to borrow best practices from the public utility model.

Immediate Action: Pilot a Vehicle-Miles-Traveled (VMT) Program

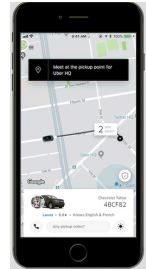
The Commonwealth should pursue a revenue-neutral, opt-in pilot program of road usage charges for up to 500 volunteer Massachusetts drivers. Other states, including Oregon and California, have undertaken VMT pilots from which we can learn. But studying pilots in other states is not sufficient for understanding how road-use charges could work in Massachusetts. MassDOT must learn by doing. A pilot would help the Commonwealth begin tackling the important and legitimate privacy, equity, and technology questions that must be better understood and addressed.

The federal government provides funding for states to test and pilot a VMT charge in the Surface Transportation System Funding Alternatives (STSFA) program. Pursuing a grant through this program does not commit the state to further action beyond a pilot. We acknowledge Governor Baker's veto of this proposal in 2016, but respectfully urge reconsideration, in light of the growing recognition that our transportation financing mechanisms are unsustainable, and that drivers would benefit from a more transparent system.

Lead on New Mobility

In 2016, Transportation for Massachusetts released “[Fast Forward](#): The Technology Revolution in Transportation and What it Means for Massachusetts.” The report outlined the ways in which technology changes in transportation such as ride-hailing and autonomous vehicles have the potential to impact our transportation as a whole, both positively and negatively, and what we should do to ensure better outcomes. In just the two years since, there have been significant changes in the transportation landscape, but the policy principles in “Fast Forward” are intended to apply to all types of transportation technologies:

- Protect people and the environment
- Serve everyone; encourage innovation
- Share data
- Modernize oversight and address gaps in regulatory coverage for emerging services
- Plan for our future infrastructure needs
- Improve and expand our public transportation, walking, and biking network.

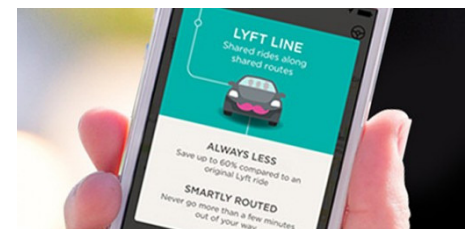


In 2016, the Legislature enacted a strong regulatory structure -- which the Administration has implemented -- for TNCs like Uber and Lyft. But the pace of change in “new mobility” has made it clear that we need to do more to continue to refine our regulations to address today’s challenges and prepare us for the future.

Specifically, as more and more trips are provided by TNCs, it will be particularly important to balance the benefits of TNCs with the costs they impose on our roads and environment. TNCs should not be made into a scapegoat for the Commonwealth’s congestion problem. There was traffic before TNCs, and there would be traffic without them. But TNCs do not seem to be reducing overall vehicle trips in ways that transportation planners once hoped they would. And TNCs and other nascent forms of transportation will be crucial contributors to transportation reform and revitalization; they provide an opportunity to both better manage our transportation system and help the transition to a more fair and sustainable funding model.

New transportation services produce significant data. This data, including trip origins and destinations, is invaluable for transportation modelers and planners. The state should work with transportation providers, including TNCs, AV companies, private shuttles, and others, to create a framework for anonymous data sharing, while protecting customer privacy and business competitiveness.

The great potential of TNCs and other forms of new mobility is based on the concept of sharing, which can mean the more efficient use of space and other limited resources. But today, our TNC regulations treat a shared ride and an exclusive ride equally: both riders must pay the same fee. A more sophisticated regulatory structure would incentivize a rider to take a shared trip.



Finally, TNCs could provide another important opportunity for testing out the concept of a vehicle-miles-traveled fee, which will be needed as more trips are served by vehicles that are electric and shared. TNC drivers interact with ride-sharing apps in three different statuses, or “phases”: in Phase 1, the TNC driver is logged into the app and is available to accept passenger(s); in Phase 2, the TNC driver has accepted a request from a passenger (a “match”) and is in route to pick up the passenger; and Phase 3 starts when a passenger enters the vehicle and ends when the passenger fully exits the vehicle. Phases 2 and 3 require TNC vehicles to drive on our roads. We need to provide TNCs with incentives to reduce these vehicle-miles-traveled, while also promoting shared vehicles. Charging a VMT helps with both issues.



Immediate Action: Increase TNC Fees to \$0.50 Per Trip While Incentivizing Shared Trips

Advances in transportation technology will require nimble policy-making. We recommend the short-term step of increasing TNC fees from the current 20 cents per ride to at least 50 cents per ride, increasing with inflation. This higher fee would be in line with the fee structure in New Orleans and Portland, Oregon (both are 50 cents), but less than Chicago (67 cents, rising to 72 cents in 2019) and much less than New York (\$2.75 below 96th Street in Manhattan). Another option is a percentage-based fee, which some jurisdictions apply, ranging from under 1 percent to nearly 9 percent. Per-rider fees should be less for shared trips. Even with a high number of TNC rides in Massachusetts (55 million), the current fee only raised \$11 million in 2017, and it is spread thin across hundreds of cities and towns, the state, and a fund supporting the taxi industry. Raising the fee will not solve all of our transportation funding needs, but it could be an important source of funds and more accurately price the impact that TNCs have on our transportation system.

Immediate Action: Pilot a Vehicle-Miles-Traveled Program for TNCs

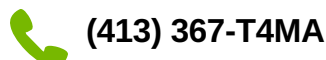
In addition to the VMT pilot for passenger vehicles proposed earlier in this white paper, the state should explore a VMT charge pilot program for miles driven by TNC vehicles in Phase 2 and Phase 3 of operation. Because of the rich data already collected by TNCs, and because of the expected growth in TNC trips as a share of overall travel, this industry is a good candidate to test the concept of a per-mile charge.

Acknowledgements:

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The Transportation for Massachusetts advocacy coalition is guided by an [Executive Committee](#) of [member organizations](#). **Statements made by the coalition do not necessarily reflect the views of each individual member of the Executive Committee or of the coalition.** A complete list of the more than 70 members and partners of the T4MA coalition is available on [our website](#).

T4MA Executive Committee Member Organizations:



About Transportation for Massachusetts:

Transportation for Massachusetts (T4MA) is a diverse coalition of more than 70 member and partner organizations with a stake in improving transportation across the Commonwealth. Our coalition advocates at the state, federal, and local levels for transportation policies that are innovative, sustainable, and environmentally friendly. We want a transportation system that strengthens our economy and our communities, while also being safer, healthier, more affordable and reliable.

For more information about Transportation for Massachusetts, visit our website at www.t4ma.org.