MetroCommon × 2050
Policy Recommendations

Inclusive Growth and Mobility
*Improve transportation accessibility
and regional connectivity*

MAPC

Recommendation: Improve accessibility and regional connectivity

Strategy 1

Improve the reliability and affordability of the region's public transit service to promote access to opportunity.

Public transit plays a critical role in bolstering the Commonwealth's economy, connecting workers and residents with jobs, schools, errands, and essential services. With over one million trips taken by train, bus, and ferry in Greater Boston every day, transit plays an even more crucial function in the MAPC region, where many households do not have access to a private vehicle and thus depend on a well-functioning, affordable, and accessible public transportation network. In addition to residents who are less likely to own or have access to a private vehicle, transit is especially important to persons with disabilities, lower-income households, members of immigrant communities, persons of color, older adults, and youth who cannot drive. Besides fostering improved access to opportunity, investments in a robust and reliable public transit system are critical for the Commonwealth to achieve its climate goals, given that approximately 40 percent of Massachusetts' greenhouse gas (GHG) emissions are from the transportation sector. Efforts to improve accessibility and regional connectivity directly complement work to enhance transit-oriented development and reduce single occupancy vehicle travel (see "**Reduce vehicle miles traveled and the need for single-occupant vehicle travel through increased development in transit-oriented areas and walkable centers.**") and reduce transportation emissions (see "**Decarbonize the building and transportation sectors.**")

▶ **Action 1.1: The MBTA should establish a regular public facing process to identify major capital investment needs and programs over a ten-year period in a financially unconstrained manner.** The public process should integrate the capital needs inventory and asset management plan to more clearly highlight the MBTA's state of good repair and modernization needs. The process should also include a transparent system for prioritizing expansion projects that are financially unconstrained, cover a ten-year period, and are based on criteria that include advancing equity and climate goals, among other factors.

The MBTA's long-range transit plan, Focus40, lays out for each mode (bus, commuter rail, subway, water transportation) a vision for 2040, as well as "big ideas" beyond 2040. The next challenge will be determining which specific projects and programs should be prioritized between 2020 and

2030, the amount of additional capital and operating funds the MBTA will need from the Legislature, which then should inform the rolling five-year financially constrained Capital Investment Plan (CIP).

Creating a planning process that bridges the gap between the 25-year, long range Plan for Mass Transit (PMT), and the five-year short-term CIP will enable the public and elected officials to more transparently view the rationale for each capital priority, the planning and design steps/timelines over the ten-year period, and the associated funding needed beyond what the MBTA anticipates its own source revenue will be.

▶ **Action 1.2: The MBTA should establish a means-based fare for low-income riders and the Legislature should support the program with ongoing operating funds.** In the United States, the proportion of expenditure on transportation is inversely correlated with income. The two lowest-earning quintiles of households spend 29 and 22 percent of their income, respectively, on transportation costs, as compared to the national average of 15.9 percent.[1] Additionally, low-income households are the most likely to forego using transit due to cost and the least likely to have alternative travel options.[2] This hinders access to jobs, education, and other services, exacerbating inequitable access to opportunity in the region.

To address the disproportionate transportation cost burden for low-income households, the MBTA should join the ranks of transit providers such as the Metropolitan Transportation Commission (MTC, San Francisco Bay Area),[3] Metropolitan Transit Authority (MTA, New York),[4] and Washington Metropolitan Area Transit Authority (Metro, Washington, D.C.)[5] by offering a means-based fare for low-income households.

Transit agencies participating in these means-based fare discounting programs typically reduce the cost of transit trips by 20 to 100 percent for individuals making up to 200 percent of the federal poverty level.3 In many cases, fare discounting is implemented through bulk sales programs in which transit authorities partner with organizations such as nonprofits, government agencies, schools, and convention centers. In these instances, the partner organization is typically responsible for determining income requirements and administering the program. MTC, however, has opted to centrally administer the Clipper START program on behalf of all participating transit operators within the San Francisco Bay Area. Funding for this program is generated by the state sales tax on diesel fuel plus additional revenue from the statewide cap-and-trade Low-Carbon Transit Operations Program.[6]

The MBTA is currently investigating the feasibility of implementing a means-based fare program. Based on an MIT study of transit decision-making by low-income riders provided with 50 percent discounted fare, the MBTA estimates that setting the income requirement at 200 percent of the federal poverty level would result in 50,000 and 90,000 new commuters riding the subway or bus every year and between $23.3 million and $42.3 million in foregone fare revenue each year.[7] As next steps, the MBTA has identified the need to determine an eligibility partner and program

1 https://www.bls.gov/cex/2017/combined/quintile.pdf

2 https://www.wmata.com/about/board/meetings/board-pdfs/upload/3C-DC-Low-Income-Fare-Pilot.pdf

4 https://mtc.ca.gov/our-work/plans-projects/other-plans/means-based-fare-discount-program

5 https://www1.nyc.gov/assets/fairfares/downloads/pdf/Fair-Fares-FAQ-English.pdf

6 https://www.wmata.com/about/board/meetings/board-pdfs/upload/3C-DC-Low-Income-Fare-Pilot.pdf

8 http://equitytransit.mit.edu/

7 https://cdn.mbta.com/sites/default/files/2019-12/2019-12-16-fmcb-21-means-tested-fares-feasibility-study.pdf

administration structure, to understand how to replace the fare revenue and to make IT and customer support upgrades. MAPC should support the MBTA's efforts by researching how other transit agencies have replaced lost fare revenue, coordinating with advocates to support program implementation, and advocating to the Legislature for ongoing operating funding for the program.

▶ **Action 1.3: Adopt a more comprehensive data collection strategy to improve understanding of travel behavior and mode choice, strengthen future planning efforts, and inform funding decisions.** In order to expand the accessibility of our transportation system, it is critical to understand how residents and workers are traveling throughout the Commonwealth today. Today, the state collects travel survey data about once every ten years. There are a few approaches the Commonwealth can pursue to gather more comprehensive travel behavior data. First, the Legislature should provide funding to MassDOT for more frequent ongoing travel survey efforts to understand trip purposes, mode choice, and demographic characteristics of travelers. While new data from mobile devices, sensors, and other sources provide novel, and often real-time information about travel activity, they cannot provide reliable information about traveler motivations, preferences, or characteristics. Many travelers, as well as those who choose not to travel, are invisible to those data feeds, and may therefore be ignored by public actions based on these new data sources. To develop better simulations of investments and policies, and to design policies and projects in ways that advance transportation equity, it is essential to survey travelers about their transportation needs. The Legislature should fund an ongoing travel survey program that utilizes modern practices such as app-based surveys, panel surveys, and stated preference inquiry. MassDOT should also consider an ongoing program similar to the American Community Survey, in which a very small sample of households is surveyed every year and results are pooled over multiple years; this approach will require less one-time expenditure and has the potential to provide better monitoring of changing travel behavior and preferences. Survey efforts will provide an essential complement to data from mobile devices and sensors.

Additionally, the Registry of Motor Vehicles (RMV) should enable regular updates to the Massachusetts Vehicle Census (MAVC) by producing annual and complete exports of registration and inspection records and making these available to MassDOT office of transportation planning and MAPC. The MAVC is a singular resource for understanding the vehicle fleet, EV purchases, GHG emissions, parking demand, municipal revenue and the impact of transportation investments and policies. It is valuable to both actors within Massachusetts and researchers nationally. The Secretary of Transportation or the Legislature should require the RMV to produce the necessary exports on a regular basis with the necessary data security protocols in place.

Strategy 2

Reimagine roadway corridors that connect into downtown Boston to encourage higher-occupancy modes to discourage single-occupancy vehicle travel.

Massachusetts has long been home to some of the worst traffic congestion in the country. In 2019, INRIX ranked Boston as the most congested city in the country, with drivers spending 149 hours, or more than six days per year, stuck in traffic.[9] MassDOT's "Congestion in the Commonwealth" report highlights the growing burdens of congestion on workers' quality of life.[9] While traffic can be viewed as a sign of a healthy economy, congestion in Massachusetts has been occurring outside peak hours and had worsened to the point where it was hindering access to jobs. In addition to the economic consequences of traffic congestion, this exacerbates the impact our transportation system has on rising GHG emissions. Solving the Commonwealth's congestion woes will be a key tactic needed to reduce emissions from the transportation sector. As the Commonwealth began to reopen, traffic rebounded much more quickly than transit ridership. To achieve an equitable and resilient economic recovery, the Commonwealth must make investments in transit and pursue additional measures to ensure that the congestion crisis is left in the past.

▶ **Action 2.1: The Legislature should require MassDOT to implement a congestion pricing pilot and use the revenue to expand complementary transit services.** Based on data gathered in MassDOT's "Congestion in the Commonwealth" report, the Legislature should require MassDOT to implement a congestion pricing pilot. A congestion pricing pilot would assess the impact that a surcharge on driving during peak demand times has on travel behavior. Based on the report, this would likely be an interstate highway corridor that connects into Boston, as these corridors are among the most congested in the Commonwealth. The report highlights several corridors that would be appropriate for a pilot, and MassDOT should consider what additional projects may be occurring at the same time to determine a suitable pilot location. Additionally, the pilot corridor should have adequate complementary transit services available to facilitate behavior change. Revenue generated from the pilot should be reinvested into transit services along the affected corridor. This includes improving and expanding regional bus service, ensuring appropriate parking availability at key commuter rail stations, and enabling reliable first-mile, last-mile connections to transit. MassDOT should include a reimbursement mechanism to offset the disproportionate financial impact on low-income individuals. Details of the pilot should be devised through the guidance of a commission, which would also advise on a longer-term congestion pricing scheme for the Commonwealth, including strategies to meet the needs of communities underserved by the current transportation system and most directly impacted by congestion.

8 https://inrix.com/score-card-city/?city=Boston%2C%20MA&index=9

9 https://www.mass.gov/doc/congestion-in-the-commonwealth/download

▶ **Action 2.2: MassDOT should incentivize cities and towns to dedicate more roadway space exclusively for buses and cyclists through competitive grant programs funded in the state's Capital Investment Plan.** Most roadway miles in the Commonwealth are owned by cities and towns, so municipalities have a key role to play in reducing congestion by reallocating space on their local roadways. The Complete Streets funding program, which provides municipalities with funds for safe walking, biking, and transit accessibility improvements, enables cities and towns to advance smaller-scale, localized street safety improvements. To complement these safe street interventions, MassDOT should create a new competitive grant program in its CIP that would incentivize municipalities to reclaim roadway space for dedicated bus and cycling infrastructure. The FY2021 CIP, which totals up to $3.7 billion, allocates funds for Complete Streets as well as implementation of the Massachusetts Bicycle and Pedestrian Plans. Additionally, many projects funded under roadway reconstruction include improvements to bicycle and pedestrian space. By creating a competitive grant program in the CIP to encourage more action at the local level around repurposing local street space for dedicated bus and bicycle facilities, MassDOT would achieve several goals - expanding active transportation infrastructure, tackling traffic congestion and reducing transportation emissions. Priority projects for such a program should include those that would serve transit-dependent populations, corridors with high-frequency and high-delay bus routes, and corridors that would provide improved regional cycling connectivity or transit access.

▶ **Action 2.3: Update Massachusetts Environmental Policy Act (MEPA) regulations to include an analysis of induced demand and vehicle miles traveled (VMT) generated by new roadway capacity expansion projects.** MEPA's environmental review of transportation-related impacts focuses on congestion management and auto mobility, rather than on how driving impacts emissions and the lasting health effects of long auto commutes. Replacing the emphasis on the level of service (LOS) metric with vehicle miles traveled (VMT) will align MEPA with the Commonwealth's goals to reduce transportation emissions, which will ultimately influence development patterns and investment decisions. The Executive Office of Energy and Environmental Affairs (EEA) should work with stakeholders to establish a standard methodology for measuring induced demand and estimating VMT to ensure consistency across project analyses.

The conventional approach to congestion management has relied on expanding roadway capacity. Unfortunately, this method has proven almost entirely ineffective. Research has shown that new roadway capacity in a congested area will become congested again, due to induced demand. As the cost of travel is reduced due to expanded capacity, travelers respond by taking more trips, longer trips, changing their routes, and shifting modes to vehicle use.[10] In addition, adding capacity causes longer-term land use changes near transportation infrastructure. In result, the roadway reaches the same level of congestion but with even more vehicles on the road. Accurately accounting for induced demand in transportation analysis and

10 Hymel, Kent. "If you build it, they will drive: Measuring induced demand for vehicle travel in urban areas."

planning is paramount to effectively addressing the region's traffic woes, reducing air pollution and GHG emissions, and redirecting investments to projects that improve access and mobility.

Best/emerging practice: California recently implemented a similar reform to the California Environmental Quality Act. California's new approach is based on the state's climate goals and provides recommended VMT per capita thresholds for each type of project. Projects that reduce VMT, such as active transportation and public transit projects, are subject to more streamlined review. Projects that increase VMT are subject to more thorough review, including an analysis of induced demand and assessment of measures to reduce VMT.

The California Department of Transportation released draft guidance on measuring induced demand for state highway projects. One recommended method is to use a simple multiplier based on elasticities from empirical studies of the induced demand effect. The multiplier assumes a 1 percent increase in vehicle travel for every 1percent increase in lane miles.[11] This method exposes the futility of roadway expansions for congestion management, as well as the potential environmental and health harms. Having a standard, accurate method for measuring induced demand is also critical to accurately measuring VMT impacts, and thus a central component of successful MEPA reform that focuses on VMT.

Strategy 3

Create safe, accessible, and well-connected network of safe cycling and walking infrastructure.

To decrease congestion and reduce GHG emissions from transportation, more people need to walk and bike. According to the 2014-2018 American Community Survey, only about 8 percent of the MAPC region's residents primarily walk or bike to work, though more bike or walk for a portion of their commute.[12] Building out networks of walking and cycling infrastructure not only increases the utility of these investments by expanding the number of destinations available and routes to choose from, but also increases the appeal of walking and biking for exercise and recreation. These active transportation investments would not only create more mode choice, but also expand access to healthy mobility options, supporting residents' wellbeing and quality of life. Additionally, walking and biking are often the first or last mile of a transit trip. By treating walking and cycling infrastructure as part of the larger transportation system, municipalities and the Commonwealth can improve transit accessibility and further reduce reliance on personal vehicles.

11 https://ncst.ucdavis.edu/research-product/induced-travel-calculator.

12 American Community Survey, 2014-2018.

▶ **Action 3.1: The state should continue to incentivize cities and towns to construct separated bicycle facilities such as trails, greenways, and buffered bike lanes with increased funding programs for design and construction.**
Off-street trails and greenways play a critical role in not only expanding opportunities for safe walking and biking, but also in providing important connections to open space and other destinations. MAPC's LandLine initiative, which envisions connecting 1,400 miles of trails and greenways throughout Metro Boston, has sparked interested across the region. However, in addition to financial concerns around design and construction, tremendous coordination is needed across multiple parties not only to ensure trails and greenways serve local needs, but also support a larger regional network of on- and off-street infrastructure.

In 2017, Governor Baker established an Interagency Trails Team comprising staff from MassDOT, EEA, and the Department of Conservation and Recreation (DCR). This group created the MassTrails funding program, which provided around $5 million in matching grants through FY2020. The state should continue this initiative and increase funding for planning, design and construction, as well as state agency staff support to proactively advance higher quality bicycle infrastructure in the region.

▶ **Action 3.2: Cities and towns should adopt local policies to add separated bike facilities as part of most roadway reconstruction or repaving projects unless analysis recommends otherwise.** One opportunity to advance safe cycling infrastructure is to work in coordination with other construction or utility projects that require opening roadways. To limit disturbances and to advance cycling projects more efficiently, municipalities should adopt requirements that separated cycling facilities be incorporated into roadway reconstruction or repaving projects unless engineering analysis recommends otherwise. Some municipalities have already implemented such policies. For example, the Cambridge Safety Ordinance requires the City to add a permanent separated bicycle lane when doing reconstruction on any roads that have been previously identified in the Cambridge Bicycle Plan.[13] This minimizes disruption to all roadway users, reduces costs by limiting construction, and provides a clear pathway toward implementation of a local bicycle plan.

Strategy 4

Shape new and emerging mobility services to support local and regional transportation goals, including safety, reduced traffic congestion, lower GHG emissions, and equitable access for all people.

Over the past decade, there has been a surge of innovation in the transportation sector. From new personal micro-mobility vehicles to on-demand transit options, there are more ways to get around than ever before. At the same time, the COVID-19 pandemic has accelerated what was already rapid growth of the e-commerce industry. Nationwide, transactions from services such as DoorDash, Grubhub, Uber Eats, and Postmates increased approximately 200 percent between 2015 and 2020, generating an estimated $26 billion in revenue in 2020.[14] Online

13 http://cambridgema.iqm2.com/
Citizens/Detail_LegiFile.aspx?-
Frame=&MeetingID=2353&Media-
Position=&ID=8828&CssClass=

grocery sales for home delivery and pickup reached $5.9 billion in November 2020, a threefold increase from August 2019.[15]

In response to rapid innovation in the transportation sector and the broader impact of transportation on the economy, land use, and the environment, Governor Baker established the Commission on the Future of Transportation, which considered several future transportation needs and challenges. Included in the Commission's analysis was guidance around creating a 21st-century mobility infrastructure to prepare for and capitalize on emerging changes in transportation technology and behavior. While this wave of innovation has created a tremendous opportunity to reimagine how to get around without depending on a personal vehicle, certain changes can actually add to traffic congestion and increase GHG emissions if not managed properly. The Commonwealth and cities and towns should prepare for a future that embraces new transportation technologies but plans for them in accordance with the goals of providing a safe, reliable, and affordable transportation system for all.

▶ **Action 4.1: Municipalities should develop flexible curb use policies to accommodate an influx of new mobility options and increased demand for curb space.** Today, the curb is a dynamic space, no longer reserved solely for parking private vehicles. In many locations, there is escalating pressure on the curb by competing uses, such as loading pick-up/drop-off activities, bicycle parking, bus pick-up/drop-off, ride-hailing, taxi services, and private parking. To manage demand, cities and towns should develop flexible curb use policies based on mobility option, street type, and population served. These efforts should focus on downtown streets where demand for on-street parking is the greatest and include regular data collection to ensure permitted uses are aligned with local demand. Developing such a policy should include input from the business community, which cares deeply about consumer access to storefronts, and residents that use new mobility services.

Cities elsewhere have begun experimenting with permitting various curb uses for various streets. Seattle's Flex Zone/Curb Use Priorities defines the curb lane as a "flex zone" and allocates ranked curb use priorities (mobility, access for people, access for commerce, activation, greening, and storage) according to street types. Comprised of guiding principles, policies, and tactics, Toronto's Curbside Management Strategy is a holistic policy approach and implementation plan that manages curbside space that supports mobility and access for people and goods.

▶ **Action 4.2: Require transportation network companies (TNCs) and e-commerce to share trip-related data with government planning entities and establish standards for doing so.** Data are a critical component for effective planning and policymaking, as well as for advancing effective design, operation, and maintenance of transportation networks. However, local governments and regional and state agencies are not necessarily equipped with data that provides a clear enough picture of how various mobility services are impacting our transportation system. This is most evident in the case of TNCs such as Uber and Lyft. Much of the data that we have about

13 http://cambridgema.iqm2.com/Citizens/Detail_LegiFile.aspx?-Frame=&MeetingID=2353&Media-Position=&ID=8828&CssClass=

14 Statista, "Online Food Delivery," (2021), https://www.statista.com/outlook/dmo/eservices/online-food-delivery/united-states; and Business of Apps, "Food Delivery App Revenue and Usage Statistics (2021)," https://www.businessofapps.com/data/food-delivery-app-market/#1.1.

15 Brick Meets Click, "November 2020 Scorecard: Customer & Sales Mix Shift Toward Delivery & Pick-up" https://www.brickmeetsclick.com/nov-2020-online-grocery-scorecard--customer—sales-mix-shift-toward-delivery---pickup.

the impact of TNCs on the transportation system summarizes their activity in broad terms and provides generalized statistics about travel patterns and mileage. Lack of detailed information about TNC trips means we cannot determine the true extent to which these trips contribute to congestion and GHG emissions, whether all neighborhoods are receiving equitable access, and to what extent ride-hailing complements or competes with more sustainable modes of transportation. These same dynamics will continue to be true as new technologies become available and rapidly proliferate.

A similar case holds true for e-commerce companies. Warehouse and logistics facilities continue to proliferate throughout the Commonwealth. While traditional retail employment has remained relatively stagnant in Massachusetts from 2010-2019, transportation/warehousing employment has grown 31 percent.[16] The rise of online retailing and e-commerce shifts the responsibility of getting goods in the hands of purchasers from residents to private companies, which means more trips from employees as well as delivery vehicles. This results in longer trips taking place over a larger portion of a 24-hour day and on more of our roadways. However, without any data to assess the impact of the growth of e-commerce on our transportation system, devising targeted policy solutions to reduce congestion and emissions while enabling efficient delivery is challenging.

The Legislature should require companies that provide new mobility services to share trip level data to state and local governments, regional planning agencies, and other entities involved in transportation planning. TNCs are an appropriate place to start, and similar requirements should be instated for other new mobility services that may become more widely available in the future, such as micromobility services or autonomous vehicle fleets. With more granular data from the public and private sectors and the capacity for analysis, municipalities and transportation agencies will be well-positioned to make decisions based on actual travel behavior to advance policies and investments. A similar data-sharing framework should be established for the e-commerce sector. Any data sharing legislation must include the most robust data privacy standards, including limiting the number of entities that are allowed to receive data and explicitly identifying permitted uses (see Action 4.3 below). Legislation should identify a pathway for the appropriate state entity to develop further data sharing regulations and model user agreements, as needed.

▶ **Action 4.3: Establish a cross agency task force to consider issues around transportation data ownership and privacy.** Along with the proliferation of new transportation technologies comes the opportunity to collect more data about mode choice, travel behavior, and more. While this data can provide valuable insight for planning and policy making, the appropriate safeguards must be in place to ensure the data remains secured and solely used for these purposes. To develop a comprehensive framework for managing new and emerging mobility data concerns, the Commonwealth should establish a task force to consider the privacy and data ownership issues associated with new streams of information from TNCs, the RMV, AFC 2.0, mobile applications, sensors, and other sources. This task force

16 Bureau of Labor Statistics, 2010-2019.

should be charged with inventorying current practices with regard to data ownership and sale; identifying risks associated with storage and sharing of traveler data; enumerating public policy needs for traveler data; and making recommendations for new regulations, intermediaries, and policies that would ensure that the Commonwealth can benefit from new data sources while also ensuring travelers can have reasonable expectations and control about how their personal information is stored, shared, and used. At the same time, MassDOT, municipal governments, regional planning entities, new mobility companies, and other stakeholders should simultaneously explore ways to establish transportation data repositories. These serve as platforms to give the public and private sectors necessary information to make informed decisions to improve the accessibility and efficiency of transportation networks by managing congestion, reducing GHG emissions, and advancing safety. Two examples of such models are the SharedStreets initiative hosted by the National Association of City Transportation Officials (NACTO) and the Open Transport Partnership and the Transportation Data Collaborative hosted by the Washington State Transportation Center (TRAC).