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S T R A T E G Y T W E L V E

Expand Coordinated Transportation

Summary

Adopted in 2008, MetroFuture is Greater Boston's thirty year (2010 to 2040) regional plan. The foundation of the plan is a well-defined vision for the region. Thirteen implementation strategies were included to support progress towards the vision. An extensive community engagement process allowed MAPC to construct a vision and strategies that represented diverse perspectives. In anticipation of an update to the regional plan, MAPC is evaluating the extent to which actors in the region, either intentionally or unintentionally, implemented these strategies.

Strategy #12, Expand Coordinated Transportation, called for a variety of strategies intended to bring about an efficient and affordable transportation network that would respond to meet the evolving needs of the region. Fulfilling these strategies meant that land use policy would allow for and encourage new transportation options that supported the sustainable use goals of MetroFuture. The creation of the Massachusetts Department of Transportation (MassDOT) improved coordination by streamlining transportation planning and consolidating the Commonwealth's seven different transportation agencies into one organization. MassDOT has created incentives promoting infill and transit oriented development (TOD), practices that strongly support MetroFuture's vision.

The state enacted a law in 2013 to fund new transportation options and improvements to existing transportation assets, two critical MetroFuture recommendations. However in 2014 voters struck down a key provision that would have indexed the newly-increased gas tax to inflation, significantly diminishing one source of new long-term transportation revenues. With the 2013 law a good step but falling short of our addressing our vast transportation needs, and the 2014 repeal at the ballot, MetroFuture's expectations for growth and efficiency in transportation have fallen short.

Regional entities have also taken responsibility for advancing coordinated transportation strategies. The Boston Region Metropolitan Planning Organization (MPO) added a criteria to its funding opportunities to encourage cities and towns to plan for transportation that benefits the region and not just the individual municipalities. The Metropolitan Area Planning Council (MAPC) integrated coordinated transportation ideas into our programs, technical assistance projects, and advocacy. Creating equitable TOD plans for municipalities, managing the launch of the Hubway Program, and advocating for many of the aforementioned policies, represent just some of the ways MAPC furthered coordinated transportation.

While cities and towns are investing in multimodal transportation (primarily in bicycle and pedestrian infrastructure and in shuttle services) much more than they were when MAPC released MetroFuture, most municipalities still prioritize planning for automobiles. An appetite for alternative modes of transportation exists, as evident by municipal participation in opportunities created by regional and state entities, but significant barriers persist. Municipalities have limited control over where the Regional Transit Authorities

spend money and municipalities, either together with others or alone, cannot raise taxes dedicated to transportation investments. The result is that municipalities do not have the authority or the capital to make significant improvements to their transportation infrastructure.

MetroFuture did not anticipate the enormous growth in car-sharing and ride-hailing services or the innovation of driverless cars that is now on the horizon. While these modes of transportation may reduce the need for owning a vehicle and could help to curb emissions, they do not necessarily reduce vehicle miles traveled. Policies will need to be put into place to ensure that these technologies lead to better transportation outcomes for the region. Bike-sharing is also an option that eliminates the need for some automobile use. Also not discussed in this strategy is the role that climate change will have on the MBTA, which is vulnerable both to increasing temperatures and rising sea levels. Understanding how these innovations and impacts will change travel behavior in the region will be a significant part of the regional plan update.

Sub-Strategy Review

Sub-Strategy A: Integrate land use and transportation planning

EXAMPLES OF PROGRESS:

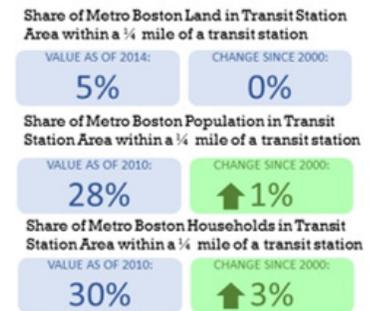
- The [Transportation Reform Bill](#) (2009) created the Massachusetts Department of Transportation (MassDOT), a multi-modal, centralized agency for transportation planning and programming. This important consolidation later enabled MassDOT to create project selection criteria that operate across modes, rather than siloed perspectives.
- MassDOT and the Boston MPO are supporting integrated land-use and transportation planning by funding MAPC to conduct coordinated transportation and land use plans for municipalities.
- The MPO board expanded their membership, adding representatives for cities and towns to ensure that the MPO board structure promotes accountability and diversity of opinion from a greater number of local governments.
- To reflect the MPO's stated vision and goals for the metropolitan region, the [Transportation Improvement Program](#) (TIP) project selection process incorporated land use and economic development criteria, as well as "consistency with MetroFuture" into TIP project assessments.
- MAPC and the MPO further encouraged the integration of land use and transportation planning by making the travel demand model transportation and land use interdependently.
- MassDOT's [Massachusetts Travel Survey](#) (2010) collects information on residents' travel patterns, and preferences. The data is used to determine travel needs, projections of highway traffic, and transit ridership.

- The MBTA and MassDOT, encouraged by MAPC, adopted a [TOD policy](#) (2017) for all of its stations and land, which should lead to more affordable housing and increased density at these smart growth locations.

BARRIERS TO PROGRESS:

- Entities that are involved in decision-making surrounding transportation investments are often not the same entities making local decisions about land-use development and housing.
- Not enough incentives exist that encourage municipalities to think and act regionally, which leads municipalities to plan around automobiles rather than mass transit.

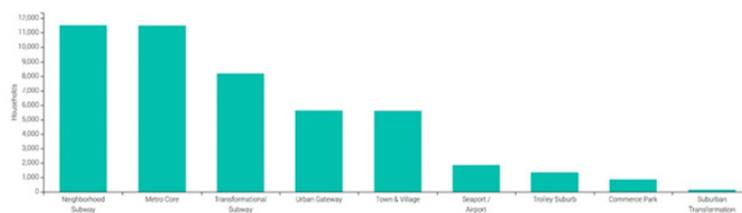
Figure 1: Transit Oriented Development Indicators for Metro Boston



RELEVANT INDICATORS¹:

- Transit station areas, here defined as the area within a ¼ mile radius of a subway or bus stop, comprise a small share of the total land area in Metro Boston. In fact, the vast majority of land in the Metro Boston region (95%) is not near a public transit stop. However, areas that are transit stations areas are densely populated. As seen in Figure 1, 30% of all Metro Boston households are located within close proximity of transit stops, an increase of 3%, or 54,000 households, since the year 2000. Chart 1 shows which types of neighborhoods experienced the 3% increase. The transit share neighborhoods that have most successfully attracted new households to places (Neighborhood Subway, Metro Core, and Transformational Subway Neighborhoods) are defined by a well-developed infrastructure with a variety of transportation options.

Chart 1: Household Growth by Community Type since 2000



¹ While not directly tied to the success or failure of a sub-strategy, indicators show how the region has changed in the face of the aforementioned actions or inactions.

Sub-Strategy B: Prioritize transit and transportation alternatives

EXAMPLES OF PROGRESS:

- MassDOT and the MBTA are investing in projects that expand capacity, such as new Red and Orange Line cars, infill stations such as Boston Landing and Assembly Row, and the extension of the Green Line to Somerville and the Silver Line to Chelsea. Other expected expansion projects are not moving forward because of the MBTA's focus on addressing its large backlog of state-of-good repair needs, a concern that was not addressed during MetroFuture development.
- The Barr Foundation and several cities in MAPC's Inner Core sub-region called for dedicated bus lanes and elements of Bus Rapid Transit (BRT). Everett created a dedicated bus lane, and Boston, Watertown, Cambridge and Arlington are all piloting them. MBTA is also funding more transit signal priority locations outside of Boston. These efforts necessitate coordination between municipalities and the MBTA.
- MassDOT fully integrated the concept of [Complete Streets](#) into its planning processes, in part due to MAPC's strong advocacy. MassDOT awarded \$4.4 million in Complete Streets funding in the 2016 Transportation Bond Bill and \$5.4 million in a second round of funding in 2017. Cities and towns have strongly responded. As of January 2018, 183 municipalities have participated, 145 have approved policies, and 48 have approved projects.
- MassDOT is using [Congestion Mitigation and Air Quality](#) (CMAQ) funds to advance greenways and bike trails. The State will launch the [MassTrails](#) initiative to combine various trail funding sources into one program and increase the overall funding, including support to cities and towns for design. MAPC assisted the Baker Administration in conceptualizing this approach.
- MAPC is the regional coordinator for the [Hubway Bike Share](#) program (now called "Blue Bikes"), a collection of 185 stations and 1,800 bikes that serve Boston, Cambridge and Somerville. MAPC led planning, procurement and coordination among the municipalities that are a part of the program. Expansion in 2018 will result in more bikes in more communities.

BARRIERS TO PROGRESS:

- The MBTA could not overcome the significant financial barriers to expanding the core system.
- Lack of adequate funding and political will to increase funding keeps the MBTA underfunded.
- Lack of coordination and consensus around the best places to add MBTA service slowed expansion.
- Some towns report that the Complete Streets application process is overly burdensome and the amount of funding insufficient to make meaningful change.

- Overall, options for biking and walking increased (via new accommodations on the region’s roadways) and are safer, but many traffic engineers and local officials continue to prioritize automobile travel and parking, which prevents more extensive progress from being made.
- The adoption of ride-hailing services needs to be carefully monitored, because research shows that it negatively impacts transit ridership and increases congestion

RELEVANT INDICATORS:

- The MBTA remains one of the largest and most-used transit systems in the United States averaging over 32 million unlinked passenger trips per month, up 4.4M riders since 2002, but as a share of total commuters it was stagnant between 2009 and 2014. Of the country’s ten largest urbanized regions, the Boston region ranks fourth in terms of ridership per capita (FY2014 data), behind New York, San Francisco, and Washington, DC.
- In the Boston region in 2009-2013, just over 6% of the workforce commuted to work on foot or by bike, which represents a 0.4% increase from 2000. The Boston region currently ranks 13th in the rate of bike and pedestrian commuting among the top 70 metro areas in the country with a population over 200,001.
- The condition of MBTA vehicles is critically important for the safety and convenience of the riders making 32 million trips per month. More than 2/3 of the MBTA fleet is old enough to be considered ‘beyond useful life’ as of January 2015. While many of these vehicles have been upgraded or rebuilt during their tenure in the MBTA fleet, outdated vehicles are at a greater risk of mechanical failure, overconsumption of resources, and having a negative environmental impact.
- Several miles of roadway in the MBTA transit shed exist as “Exclusive Fixed Guideways” for the exclusive use of buses. There has been no change to the current 7.8 miles in dedicated bus lanes in the MBTA system between 2010 and 2013. The Silver Line extension, which will connect Boston to Chelsea via five miles of BRT lanes, was the first additional dedicated bus right-of-way miles since the MBTA introduced Silver Line service in 2000.

Figure 2: Transit Usage Indicators



Figure 3: Percent of Commuters Walking or Biking to Work



Figure 4: MBTA Vehicles Beyond Useful Life



Figure 5: Dedicated Bus Lane Miles



- Unfortunately, transportation spending in the last five years has not been in line with the Metro Boston priorities, and has been heavily skewed towards spending on highways. In federal fiscal year 2015, 77% or \$135 million of the region's transportation dollars were spent on highways, while only 23% or \$49.6 million was spent on local roadways, transit expansion, and dedicated bicycle and pedestrian investments

Figure 6: Multimodal Transportation Investment as a Share of Total Transportation Investments



Sub-Strategy C:

Establish stable and sufficient financing for all modes

EXAMPLES OF PROGRESS:

- The [Transportation Finance Bill](#) (2013) raised state gas tax, tobacco, and business taxes and dedicated sales tax from motor vehicles to transportation to raise revenue for transportation agencies and initiatives. Rededicated unused funding from the Underground Storage Tank Program has also been allocated to transportation.
- The [Reliable, Sustainable MBTA Act](#) (2015) established the Fiscal Management and Control Board to oversee MBTA operations and finances through 2020, create capital plans, introduce reporting and audit requirements, and modify procurement restrictions.
- MBTA Fare Increase Act (2016): Ensured that no individual MBTA fare will increase by more than 7%. It also limited fare increases to once every two years.
- MassDOT stopped using capital funds on operations.
- Regional Transit Authorities (RTA) received modest increased funding and were forward funded, but continue to struggle to meet demand due to lack of resources.
- Transportation Bond Bill (2014) authorized major capital resources for Green Line extension, bridge improvements, MBTA state of good repair, and highway capital. Commonwealth borrowing now funds a significant portion of transportation capital.
- MassDOT implemented [All Electronic Tolling on the Mass Pike](#) and tolled tunnels and bridges, which allows for better revenue capture and the ability to implement more innovative and robust funding strategies.
- The MBTA successfully decreased some of its costs through cost-reduction strategies.
- The legislature passed "[Parking Benefits Legislation](#)" in 2016, which allows cities and towns to dedicate revenue from a "parking benefit district" into improvements in that district that are not necessarily parking related. The same legislation allowed revenue from parking meters to be used for other uses, prompting many communities to create more smart parking systems.

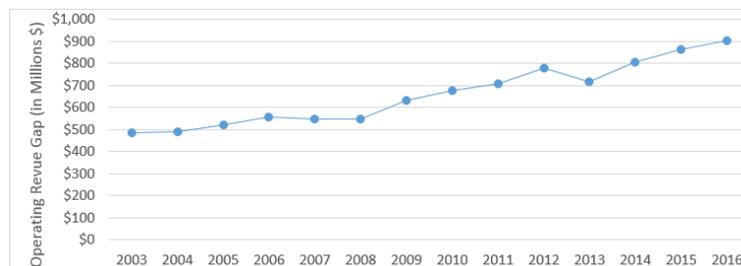
BARRIERS TO PROGRESS:

- For a large part of the last decade, establishing stable and sufficient financing was held back because the legislature could not be convinced to act aggressively. In 2013 they did act, passing the Transportation Finance Bill, but unfortunately the voters undid a key feature, gas tax indexing, which would have tied the tax to inflation and prevented the erosion of the purchasing value of this revenue.
- State agencies lack financial flexibility. They are not allowed to meld funding pools nor are they allowed to raise bonds. Increased flexibility, especially if the state turns to congestion pricing, will help ensure that resources make their largest possible impact.
- The current gubernatorial administration is focused on creating more effective spending practices and have not been supportive of efforts to increase funding.
- Tolls on the region's highways and tunnels remain at 2009 levels. Innovative and/or higher pricing strategies have not received the political support needed to pilot, much less implement these strategies.
- Federal transportation dollars are primarily used for maintaining the transportation infrastructure assets, with little remaining for modernization or expansion of the system. States have to become more reliant on new sources of revenues in order to properly address additional transportation needs stemming from population growth and economic development.
- In 2016, the Legislature passed a bill calling for a pilot program to investigate vehicle miles traveled (VMT) fees, a possible long-term alternative to the gas tax, which is eroding over time due to more efficient vehicles. The Governor vetoed this provision of the legislation.
- Regional Transit (RTA) funding levels are not keeping up with demand as well as the increases in labor and operating costs.

RELEVANT INDICATORS:

- It is no secret that MassDOT, and to a greater degree the MBTA, is not financially sustainable. Keeping on top of the details of the MBTA's finances is important not just for the future of MBTA services, but for maintaining efficiency in day-to-day MBTA operations. The MBTA's operating revenue gap has doubled since 2001.

Chart 2: MBTA Operating Revenue Gap: 2003-2016



Sub-Strategy D: Promote an efficient and transparent project delivery system

EXAMPLES OF PROGRESS:

- The [Transportation Reform Bill](#) (2009) restructured transportation bureaucracy to streamline procurement, contracting, planning, and needs assessments through the creation of MassDOT. One tangible product of this change has been the creation of an on-line performance dashboard called MassDOT Tracker. MAPC worked with coalition partners to shape this legislation.
- The Boston Region MPO developed more specific criteria to ensure implementation of its transportation priorities. It continues to work on supporting municipally-led projects that complement the state-owned transportation assets.
- MassDOT created [a performance based planning tool](#), based on the MPO's project evaluation process, which should help prioritize projects based on transparent criteria. MAPC served on the advisory committee to develop this tool.
- The MBTA built several new stations using Public Private Partnerships (e.g. Assembly Row and Boston Landing) and is undertaking a one-year pilot extending commuter rail to Foxborough that is funded partially by the Kraft Group.
- The last two federal transportation authorizations (MAP-21 and the FAST ACT) increased focus on performance measures and management.

BARRIERS TO PROGRESS:

- While there has been a national focus over the past several years on project delivery and performance management which has extended to MassDOT and the MBTA, changing the culture of the organizations to daylight decision making and creating a system of accountability continues to be a significant challenge.

Sub-strategy E: Establish a comprehensive maintenance program for safety and future cost savings

EXAMPLES OF PROGRESS:

- MBTA and MassDOT focused on asset management and improved their systems for tracking repair needs.
- Additionally, federal requirements to implement the practice of performance-based planning and programming is guiding state transportation agencies, transit providers, and MPOs to track the condition of assets and set performance targets.
- The amount of structurally deficient bridges greatly decreased, in part due to federal stimulus funding.

BARRIERS TO PROGRESS:

- MassDOT and the MBTA created maintenance programs that focus on life cycle costs. However, the MBTA's procedures are complicated and still based on reports from staff in the field rather than a more automated system.
- The MBTA does not have a system to monitor and fund preventative maintenance, which can be more efficient and cheaper than reacting to issues that arise.

RELEVANT INDICATORS:

- MBTA officials have identified a list of necessary repairs to vehicles, tracks, signals, and other essential parts of the system to bring them up to a state of good repair. Identifying the list of backlogged projects, the MBTA set a goal for \$5.1 billion in capital spending planned between 2011 and 2015, towards which only \$2.7 billion was actually spent. Between 2009 and 2015 the MBTA spent, on average, \$389 million, well below the level needed to keep the state of good repair backlog from increasing.

Emergent Themes

- A more specific and rigorous approach to transportation equity is needed. MetroFuture envisioned a region where all residents share the same opportunities and many strategies, this one included, offer recommendations to increase access for under-served communities.