A BETTER CITY

EXECUTIVE SUMMARY

A STATE OF THE BUILT ENVIRONMENT REPORT
TRANSPORTATION INFRASTRUCTURE IN MASSACHUSETTS

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AN UPDATE ON TRANSPORTATION FINANCE

REPORT TEAM

Prepared in consultation with the University of Massachusetts Donahue Institute's Economic & Public Policy Research Group

A Better City is a diverse group of business leaders united around a common goal—to enhance Boston and the region's economic health, competitiveness, vibrancy, sustainability and quality of life. By amplifying the voice of the business community through collaboration and consensus across a broad range of stakeholders, A Better City develops solutions and influences policy in three critical areas central to the Boston region's economiccompetitiveness and growth: transportation and infrastructure, land use and development, and energy and environment.

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INTRODUCTION

In 2016, A Better City released a comprehensive evaluation of metropolitan Boston's infrastructure —the State of the Built Environment report. That report examined the current conditions of the region's transportation, energy, sewer, and waste management systems, and then projected future regional demands through 2030, after considering the impacts of population and economic growth, as well as the consequences of forecasted climate change.

This new working document focuses exclusively on the transportation system in Massachusetts. It examines the cost, the resources available, and the estimated additional resources required just to maintain our transportation system over the next ten years. In addition, it reviews the actions taken to address the state's transportation system since the 2007 Transportation Finance Commission (TFC) reports[1] and highlights both some challenges and opportunities for its future.

Leveraging the asset management reports and capital spending plans, this *Transportation Finance Update* examines the two main drivers of transportation spending—the state's MassHighway Division and the Massachusetts Bay Transportation Authority (MBTA).

The following questions are the central focus of this analysis:

- How much progress has been made in the past decade to reform and improve our transportation system?
- What is the current funding need to achieve our State of Good Repair needs?
- What are the options and challenges ahead to adequately addressing our transportation infrastructure needs?

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KEY FINDINGS

1. **Massachusetts now faces an estimated $8+ billion transportation funding gap over the next 10 years for State of Good Repair needs of the Commonwealth's bridges, roads, and MBTA infrastructure.**

   Based on published Massachusetts Department of Transportation (MassDOT) sources and historical growth factors projected into the future, this Transportation Finance Update estimates that the Commonwealth will experience a $8.4 billion funding gap over the 10-year period between 2019 and 2028.

   This projection **does not address any major expansion projects** beyond MassDOT's current budget plans and was determined by following the methodology set forth by the 2007 TFC report (available funding vs. projected needs to reach a State of Good Repair.) A breakdown of this total shows a MassHighway funding gap of $6.5 billion, which is significantly higher than the $1.9 billion shortfall for the MBTA.

2. **The 2007 TFC report accurately predicted problems associated with the transportation funding gap; Over a decade later, Massachusetts still has not adequately addressed these issues.**

   The 2007 TFC report forecast potential problems that could befall the state's transportation system if the funding gap were not closed and State of Good Repair (SGR) were not significantly improved. At the time, the panel of non-partisan experts wrote: "The Transportation Finance Commission has concluded that our system has been neglected for years, and that the system we take for granted will fail if we do not take prompt and decisive action."[2] The collapse of the MBTA during the blizzards of 2015 served as a vivid reminder of consequences when transportation systems are not fully funded or maintained.

   Continued underfunding of the state's transportation network diminishes the progress that has been achieved through transportation reforms, improved management practices, and expanded oversight. Absent adequate funding, some or all of the following are likely to occur in the coming years:

   - borrowing will increase anew, adding to the financial burdens of future generations
   - system operations will deteriorate at a time of substantial population and economic growth in Massachusetts
   - State of Good Repair (SGR) spending will decline
   - modernization and expansion projects will be delayed further

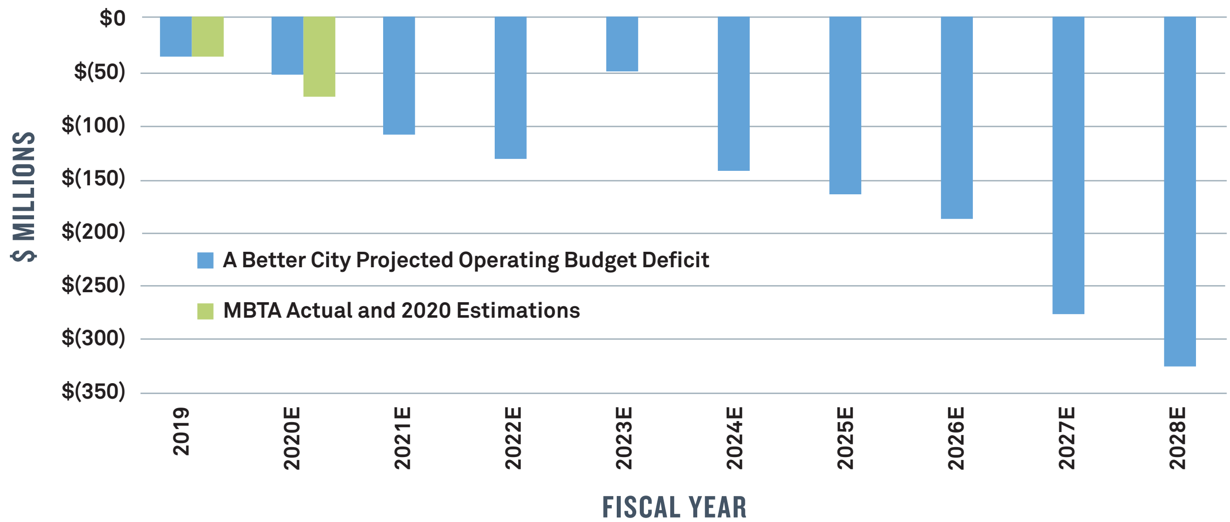
3. **The MBTA will likely need to increase their own borrowing by 2024 to adequately reach their State of Good Repair needs. As a warning, this new borrowing will contribute to large operating budget deficits at the MBTA for each year over the ten-year period and may impact resources available to address pension fund deficits.**

   The Baker Administration's commitment of $8 billion in capital spending over the next five years is a reason for optimism, but this historic funding level is only possible because key projects—such as the Green Line Extension (GLX) and the purchase of new vehicles for the Red and Orange Lines—are largely funded by the Commonwealth's borrowing or through federal funds. In the current MBTA five-year capital plan, only 27% of this $8 billion is supported by new MBTA debt.

   After 2023, when these important projects are completed and the one-time sources of funding are spent, the MBTA will still face another ten years of increased capital spending to address their $7+ billion SGR backlog.[3] If the MBTA is forced to increase their share of the borrowing costs to support SGR spending goals, the impact of higher debt service costs will increasingly squeeze the MBTA operating budget.

   Our modeling finds that if the MBTA borrows at amounts necessary to reach their own Strategic Plan goals, the agency will face growing operating budget deficits over the next ten years. The operating budget deficit would reach $142 million in 2024 and more than $300 million in 2028, even when assuming regular fare increases and favorable borrowing conditions. (See Figure 1.)

FIGURE 1: Projected MBTA Operating Budget Deficits



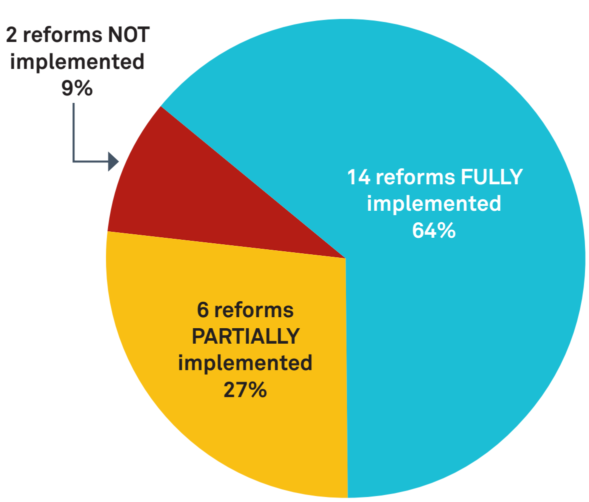
Source: Created by project team using projected MBTA Revenues vs. Expenses. See full report's Appendix 2 for further details on estimates and assumptions.

ADDITIONAL FINDINGS

1. **Massachusetts has taken significant steps to implement reforms by partially or fully adopting 20 of 22 TFC report recommendations.**

   Actions taken since publication of the 2007 TFC report show that Massachusetts has undertaken substantial reforms over the past 10 years and improved the Commonwealth's transportation bureaucracy by fully or partially implementing 20 of 22 recommendations for reforms in the TFC report (shown in Figure 2).[4]

FIGURE 2: Review of TFC Reform Recommendations



Source: *State of the Build Environment: Transportation Infrastructure in Massachusetts* report, A Better City, Chapter 1.

The TFC reforms were estimated to save taxpayers $2.4 billion over 20 years. While only modest financial savings have been achieved to date—we calculate ~$140 million—changes to the MBTA pension and retirement rules and services—contracted out as part of the state's three-year waiver of the "Pacheco Law"—are expected to save more money in the future.

2. **The state's available revenue for transportation remains significantly below amounts recommended by the TFC report.**

   The TFC report made six recommendations to increase transportation revenue, which it forecast would raise $19 billion over 20 years. Our analysis shows that while the Commonwealth has raised additional revenue for transportation in different ways since 2007, it has only resulted in approximately half of the projected revenue needed to sustain SGR and projected growth.

   The decision to increase the gas tax by 3 cents (starting in 2013) was made in response to the TFC recommendations to increase the gas tax by 11.5 cents in 2008, and to index future increases to inflation. However, Massachusetts voters repealed inflation indexing of the gas tax via a 2014 ballot referendum vote.

   Taken together, the implemented reforms (see Key Finding #1, p. 4) and the revenue shortfall (see Additional Finding #2) mean the underlying structural funding gap for transportation identified in the 2007 TFC report remains.

A Better City/Tom Nally

3. **The Commonwealth made significant progress on transportation infrastructure in the areas of bridge and pavement conditions through additional borrowing while adding to the state's debt burden.**

   According to the TFC report, Massachusetts faced a projected deficit of $15–19 billion over a 20-year period (2007–2027). The state reduced this funding gap by approximately $5 billion during the past decade, resulting in improved bridge and pavement conditions on the state's roadways and a substantial increase in the Commonwealth's long-term debt burden.

   One example is the Accelerated Bridge Program (ABP), a signature infrastructure effort in recent years that was funded through approximately $3 billion in borrowing for statewide bridge repairs. The number of bridges rated "Structurally Deficient" (SD) declined significantly, but these borrowing costs are now coming due, and there is not sufficient funding available to address the remaining 482 SD bridges in Massachusetts.

   There was no ABP or equivalent funding program for the MBTA, and the state is now playing "catch up" with limited financial ability to make these necessary investments.

4. **MassDOT Asset Management Reports show the funding planned in the five-year capital plan (FY19 -23) will not achieve SGR for MassHighway pavement and bridges.**[6]

   The two principal metrics used to assess the condition of the roadway system are measures of pavement and of bridge condition. Pavement condition is assessed for Interstate (including toll roads) and non-Interstate roadways. The MassDOT Asset Management reports show interstate pavement is overwhelmingly in good or excellent condition, but the non-interstate roads are expected to fall below the federal targets for good or excellent condition.

   MassDOT estimates that the funding amounts in the current CIP dedicated to non-interstate pavement will result in an increased portion of these roads being classified as Poor Condition.

   For state-owned bridges, FHWA standards proclaim there can only be a maximum of 10% bridge deck area considered Structurally Deficient (SD).[7] Yet, the MassDOT Asset Management reports forecast statewide bridge deck area will not meet these targets as a result of the CIP, and 12% of state bridges will continue to be rated Poor and SD status.[7]

   The state's ability to increase spending beyond the current CIP to meet these SGR goals for pavement and bridges is limited without new sources of funding. The debt-financing nature of transportation spending in Massachusetts has put a heavy burden on both the Commonwealth and MBTA that may even jeopardize current spending plans.

   One borrowing program is already experiencing this fiscal constraint. In 2014, the Commonwealth created a borrowing program to finance major rail improvement projects outside of the MBTA regular capital program. This program was promoted as a way to support the state's share of the Green Line Extension, new vehicles and upgrades to the MBTA's Red and Orange lines, and potentially, the South Coast Rail project. The state initially described this as a $2.1 billion program based on projected future revenue,[8] such as the indexing of the gas tax. When the cost-of-living adjustment indexing was repealed by voters in 2014, that "future revenue" shrank significantly, thus limiting the program's borrowing capacity. Today, the estimated cost of the promised infrastructure projects is already greater than the funding expected to be available.

5. **Massachusetts lacks funds to implement important expansion projects.**

   At a time when the state's economy has become increasingly dynamic (particularly in the Boston metro region), with faster growth than in the nation as a whole, new transportation infrastructure is needed to accommodate increased population levels. Apart from the MBTA's Green Line Extension to Somerville, no significant highway or transit expansion projects are currently funded, despite a backlog of capital projects. Some of these unfunded capital projects projects are listed below:[9]

- South Coast Rail
- Allston Interchange
- West Station (Allston Commuter Rail Station)
- East-West High Speed Rail Service
- Red-Blue Connector
- Blue Line Extension to Lynn
- Southeast Expressway Capacity Improvements
- New Cape Cod Canal Transportation Plans
- Route 1 Widening from Rte. 60 to Rte. 99
- Silver Line Phase III
- South Station Expansion
- North-South Rail Link
- Regional and Urban Rail
- System Modernization and Improved Bus Service
- Expanded Water Transportation

Areas for future investment must also include the decarbonization and resiliency improvements to our transportation system as noted in the Governor's Future of Transportation Commission Reports from 2018.

6. **The Commonwealth can generate billions in the next decade to address the projected transportation budget gap to reach a state of good repair and fund new projects through a variety of options detailed in Table 1.**

Enactment of any combination of the revenue estimates would generate new revenue through transportation sources and user fees and thereby eliminate the predicted $8.4+ billion transportation funding gap.

The Vehicle Miles Traveled (VMT) fee was an original TFC recommendation and at a rate of 1.31 cents per mile could raise $8.8 billion alone. The TNC surcharge for rides on Uber and Lyft could be increased so that the fee is equal the cost of an MBTA bus fare. This would generate over $800 million in the next decade.[10] Many other combinations of carbon pricing and smarter tolling could be solutions to our current transportation needs.

TABLE 1: Summary of Revenue Raising Options

REVENUE RAISING OPTION	POTENTIAL REVENUE, 2019–2028
Further increase the gas tax	$3.9 billion
Assess the sales tax on gasoline purchases	$6.1 billion
"RGGI for Transportation" carbon price	TBD
Implement congestion pricing during peak periods	$2.9 billion
Impose border tolling	$3.8 billion
Expand in-state tolling	$1.9 billion
Increase base tolls on existing toll facilities	$350 million
Implement a Vehicle Miles Traveled (VMT) fee	$8.8 billion
Increase RMV fees	$500 million
Increase TNC fees	$800 million

Additional reforms recommended by this report—several of which were also made by the TFC—include:

- Continue full implementation of data-driven asset management systems to assure unified, consistent interaction among systems used for highways and transit.
- Rebuild staff capacity in the Highway Division of MassDOT, and implement innovative contracting methods at the MBTA to improve contractor management.
- Increase use of innovative financing and construction techniques, including Public Private Partnerships (P3s) and Design Build contracting.
- Continue full implementation of the state's new project prioritization system.

7. **The MBTA will need to examine new approaches to improve project development and management.**

With the MBTA having $8 billion available over the next five years to update and enhance the system, the spending rate will need to exceed $1.6 billion per year by the end of that period.

Today, the MBTA is spending close to $1 billion per year. Without dramatic changes to their project development and delivery system, this funding may go unspent.

8. **The Commonwealth needs a blueprint for addressing the underlying structural funding gap over the next 10 years.**

Solutions offered by the 2007 TFC report provided a blueprint for addressing the structural deficits in Massachusetts's transportation network from 2007 to 2027. Given that revenue targets were not fully addressed, and some reform ideas were not fully implemented, an updated reform and revenue plan is needed for the next 10-year period and beyond.

ENDNOTES

1 In 2007, 13 leaders from various civic, business, and transportation organizations studied the Commonwealth's transportation policies and infrastructure, and reported their findings and recommendations in two volumes of a Transportation Finance Commission (TFC) report. Volume 1, *Transportation Finance in Massachusetts: An Unsustainable System—Findings of the Massachusetts Transportation Finance Commission*, was published in March 2007. Volume 2, *Transportation Finance in Massachusetts: Building a Sustainable Transportation Financing System—Recommendations of the Massachusetts Transportation Finance Commission*, was published a few months later in September 2007. For the purposes of this report by A Better City, the two volumes are treated as, and referred to, simply as "the TFC report."

2 Transportation Finance Commission Report, Volume 1, *Transportation Finance in Massachusetts: An Unsustainable System—Findings of the Massachusetts Transportation Finance Commission*, 2007, p. 1; *https://www. masstaxpayers.org/sites/masstaxpayers.org/files/07_TFCreport.pdf.*

3 MBTA FMCB Strategic Plan. Approved by MassDOT Board in April 2017. Information on "SGR Spend Plan To Eliminate Backlog in 15 Years" shown on page 23, *https://cdn.mbtace.com/sites/default/files/fmcb-meetingdocs/reports-policies/2017-mbta-strategic-plan.pdf.*

4 Analysis on TFC reforms and revenue recommendations were calculated by project management staff at A Better City during this project and are detailed in the full version this report.

5 This report does not conduct an analysis of needs for municipally-owned roads and bridges, but the SGR backlog at the municipal level is substantial.

6 MassDOT Presentation on Highway Division FHWA TAMP Update (April 18, 2018), *https://www.mass.gov/files/documents/2018/04/23/E_TAMP_Update_2018Apr2018.pdf*.

7 MassDOT Initial Transportation Asset Management Plan MassDOT Highway Division, July 31, 2018.

8 Information on the Rail Enhancement Bond Program, Massachusetts General Obligation Bond Transportation disclosure Pg. A-89, January 28, 2014, *https://www.massbondholder.com/sites/default/files/downloads/MA%20GO%202014%20Series%20A%20and%20B%20Refunding%20(SIFMA)%20OS.pdf.*

9 Analysis includes projects in the FY2019–2023 CIP and 2018–2022 CIP Unfunded Projects List, *https://www.mass.gov/files/documents/2017/10/13/CIP_050817.pdf*.

10 Revenue estimates projected by project management staff and are detailed in the full version of this report.

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