



THE MBTA
ADVISORY BOARD

MBTA FY25-29 Capital Investment Program Oversight Report

Recommended by:
Capital Budget Oversight Committee
05/10/2024

Approved and adopted by:
MBTA Advisory Board
05/14/24

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The MBTA Advisory Board is a government body organized under Massachusetts General Law to oversee the finances, operations, and activities of the Massachusetts Bay Transportation Authority. The Advisory Board represents the interests of the 176 cities and towns in the MBTA service district. In FY24 these municipalities will contribute over \$188 million in subsidies via municipal assessments to the MBTA.

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EXECUTIVE SUMMARY

The 176 cities and towns in the MBTA service district broadly support the Massachusetts Bay Transportation Authority's (MBTA or Authority) Fiscal Years (FY) 2025-2029 Capital Investment Program (CIP), and recommend its approval by the MBTA Board of Directors. Advisory Board members applaud the careful analysis and re-analysis of all projects and laud the efforts made by the GM to make the MBTA's bidding process more competitive. We acknowledge that all existing and new projects funded in this CIP went through a careful review and scrutiny process, with some previously approved projects being revised. Based on this, the Authority should articulate the effects of such revisions on overall safety, state of good repair (SGR), service levels, and decarbonization efforts, and other commitments.

While far from ideal, this CIP continues major investments in safety and reliability that can and must continue. While these investments are important, they are far from sufficient. MBTA officials report that departments requested \$11 billion in for new initiatives in this capital budget cycle, of which \$843 million, or 7.7% was funded. This amount is simply insufficient for maintaining existing equipment/infrastructure in a level of good repair, supporting replacement-type capital projects for existing MBTA services, or supporting expansion-type capital projects to add new MBTA service.

Communities and the public also do not understand the strategic vision for our public transportation system. How can anyone tell from this CIP what the MBTA's vision/approach is? There is a concern that the connection between investments and achieving goals and meeting commitments is missing. The CIP is supposed to be based on the Program for Mass Transportation (PMT), which itself is meant to

be based on a strategic vision for the region’s public transportation network. The PMT was due in March of 2024, but MassDOT will not complete it until at least December 2025. Without these basic building blocks to underpin investments and decision making, it remains unclear what the approach behind the investments laid out in the CIP is. It is, however, quite clear that the MBTA needs the freedom to plan its own future, craft its own strategic future, and allow its Board of Directors to shape its future. The MBTA Advisory Board offers its vision for MBTA Transformation as Appendix 1, at the end of this report.

INTRODUCTION

Massachusetts General Law (MGL) chapter 161a, Section 5, Part g, Paragraph 4 requires the MBTA to prepare the CIP annually, and to base it on the PMT, which was approved on March 18, 2019 for the period of 2020-2045. A new PMT is required every 5 years, and one was expected on March 19, 2024 for the period 2025-2050. The Capital Budget Oversight Committee received a briefing in December 2023, where MassDOT Office of Transportation Planning officials reported that the 2025-2025 PMT will not be published until at least December 2025. This current CIP is implementing the now expired 2019 PMT. The MBTA should be drafting the PMT, just like it does its own CIP. The MBTA needs the freedom to plan its own future, and the MBTA Board of Directors should be the body requiring Authority staff to meet statutory deadlines. The MBTA Board of Directors ought to be setting out a vision for public transportation in Massachusetts based on the required statutory approach. This is not happening.

The FY25-29 CIP was published on April 25, 2024 for a 30-day public comment period. It programs \$9.6 billion across 630 discrete capital projects on all MBTA

modes. Basic infrastructure such as tracks, signals, power, bridges, tunnels, and transit vehicles are the largest programmatic recipients of this CIP, while expansion programs such as South Coast Rail, Green Line Extension, and the Red-Blue Connector are also funded.

This oversight report examines the process by which the CIP was provided to the Advisory Board, and the steps the Advisory Board and its committees took to review it. As part of this review, this report also examines the funding sources that support the projects that comprise it, as well as a review of spending by mode. It ends with an analysis of the CIP in general. This report fulfills the charge to the Capital Improvement Program Oversight Committee by the MBTA Advisory Board via its by-laws. The Capital Oversight Committee recommends that the full Advisory Board accept this report and its recommendations, and transmit it to the MBTA Board of Directors.

PROCESS OVERVIEW

The process for publishing this CIP was delayed by at least one month due to internal process changes by the MBTA. This shortened the time the Advisory Board had to review the CIP. The CIP was published by the MBTA following its presentation to the MBTA Board of Directors at its April 25, 2024 meeting. A prior version was shown to the MBTA Board's Audit and Finance Committee on April 11. Usually, the full Advisory Board would meet to receive a presentation of the CIP prior to the Capital Budget Committee beginning its work. However, given the time constraints, the committee began its work immediately. The Capital Budget Oversight Committee received a presentation of the draft 25-29 CIP at its meeting on April 26. MBTA. Chief of Policy and Strategic Planning, Lynsey Heffernan,

presented the CIP, and in conjunction with members of her staff, including Director of Capital Strategy Josh Ostroff and members of the capital programming and capital strategy teams, answered questions from committee members. The Committee is grateful to these dedicated public servants for their efforts.

The Capital Budget Oversight Committee also met on May 3, and May 10 to review drafts of this report and provide direction to staff. In addition, the Advisory Board's Commuter Rail and Ferry Committees each met to consider modal-specific portions of the CIP and offer comments to the Capital Budget Oversight Committee. The full Advisory Board will meet on May 14 to review and take action on this report and its recommendations.

FUNDING

The largest funding source of the \$9.6 billion FY25-29 CIP is the MBTA itself (50%) followed by federal sources (38%), State funds (11%) and finally reimbursable programs (1%). Almost all MBTA funding for the CIP is generated from the sale of debt. Through this process, the MBTA borrows money and repays it over the course of the next 25 to 30 years. To repay this considerable debt, the MBTA uses its operating budget, reducing future funds available to pay for moving people on buses, trains, ferries, and paratransit vehicles.

The MBTA plans to borrow \$600 million annually against future operating revenues in perpetuity. In addition to impoverishing future operations, this approach also ensures the perpetual underfunding of the MBTA's capital needs, as it is clear that \$600 million per year is insufficient. It should be noted that the MBTA is the only large public transportation system in the United States that does not have a dedicated source for its capital or infrastructure needs. Instead, it relies on its

operating budget to support the borrowing used to fund its capital budget.

MBTA Funding:

The MBTA will borrow over \$4.8 billion over 5 years to fund its portion of the CIP, all paid for from the operating budget. Borrowing against future operating revenue is the only source of infrastructure funding the MBTA has. The Authority issues three types of debt: taxable bonds, tax-exempt bonds, and Build America bonds (BABs). Furthermore, there are two different types of Build America loans. The Transportation Infrastructure Finance and Innovation Act (TIFIA) provides credit for public transit bus, heavy rail, and light rail initiatives. The Railroad Rehabilitation and Improvement Financing (RRIF) program offers loans for commuter rail initiatives.

Federal Funding:

Money from the federal government is the second-largest source of funding, accounting for over \$3.6 billion over 5 years. Federal funds include money from the Federal Transit Administration (FTA), Federal Railroad Administration (FRA), Transit Security Grant Program, the Bipartisan Infrastructure Law (BIL) and other grant programs. FTA funds flow to the MBTA under numerous programs generally authorized under a 5-year federal transportation bill. The Transit Security Grant Program is a discretionary grant appropriation providing capital dollars to strengthen the safety and security of the nation's transit systems. Federal grants are the Authority's most predictable source of annual grant funding.

State Funding:

The Commonwealth of Massachusetts has committed nearly \$1.05 billion to this CIP. The State is directly funding South Coast Rail, the manufacture of new Red and

Orange Line cars, procuring 64 bi-level commuter rail coaches, and Green Line Extension (GLX). These funds flow to the MBTA from Massachusetts General Obligation bonds (also known as Bond Cap). 11% of this CIP is funded by the Commonwealth in this manner Figure 1, below highlights that state funding for the MBTA capital program ends at the end of this CIP in FY2029.

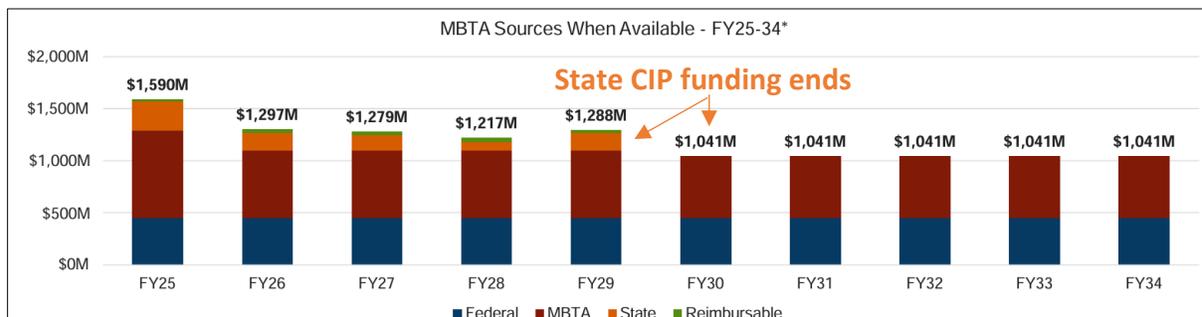


Figure 1: MBTA Capital Funding Sources FY25-34

Reimbursable:

\$96 million are programmed as reimbursable funds. This refers to funding the MBTA receives to mitigate transportation impacts of development projects or as part of a joint development agreement with public or private entities. Reimbursable sources represent less than 1% of the total CIP programming.

SPENDING BY MODE

The FY25-29 CIP consists of 630 discrete capital projects totaling \$9.6 billion over 5 years. Modally, spending is broken out 13 ways, principally based on existing MBTA modes i.e. Red, Orange, Green, Blue and Mattapan Lines plus Commuter Rail, Ferry, Paratransit, Bus, Silver Line. Three larger categories: Multimodal, Systemwide, and Red/Orange are also used to describe spending categories. Figure 2, below details relative spending by mode in the proposed CIP.

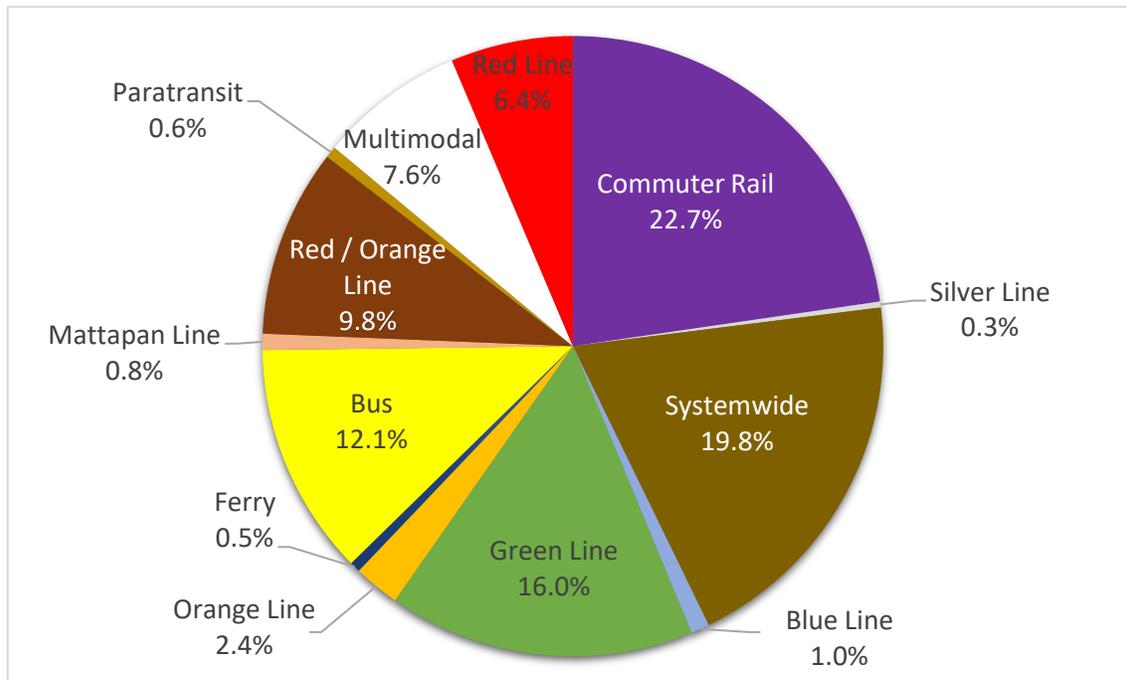


Figure 2: CIP Funding by Mode

Commuter Rail:

Once again, Commuter Rail is programmed for the largest investment in this CIP, with over \$2.2 billion across 129 discrete projects included. The largest Commuter Rail project in this CIP, once again, is funding for the design to replace the drawbridges carrying all northside rail service over the Charles River at North Station.¹ Design is budgeted at \$384.7 million over the five years of this CIP, with a total project cost expected to be in excess of \$1.2 billion. It should be noted that this total project cost has more than doubled since last year's CIP. The second largest Commuter Rail project in this CIP is \$161 million for pre-design services to procure bi-level coaches to replace the 30+ year old existing bi-level coaches. 80 new bi-level coaches are expected as part of this procurement.

¹ Note that the project description for this project in the 23-27 CIP included a pedestrian path across the river as part of the Draw 1 project. The FY25-29 CIP project description lacks any pedestrian path as part of this project. See: <https://www.ctps.org/data/pdf/plans/TIP/FFYs-2023-2027-Draft-TIP-Public-Review.pdf> p. 3-42

In addition, the following are examples of commuter rail vehicle initiatives included in the FY25-29 CIP (dollars in millions):

- \$125.1 to plan mid-life overhauls of 40 legacy diesel locomotives
- \$62.1 to procure 67 bi-level coaches to replace existing single-level coaches
- \$45.2 to plan for procuring 25 electrified/decarbonized rail rolling stock
- \$42.3 to plan for the procurement of 100 bi-level coaches
- \$39.1 to improve rail vehicle procurements, overhauls, etc.
- \$21.9 to overhaul 37 legacy diesel locomotives

The Capital Budget Oversight Committee expresses its strong concern at the need to overhaul 40-year-old diesel locomotives. This suggests that these locomotives will be in use for many years to come, which is at odds with the Commonwealth's commitment to wean itself from fossil fuel propulsion.

At its May 9, 2024 meeting the Advisory Board's Commuter Rail Committee received an update from MBTA Rail Transformation officials about the CIP's proposed investments in this mode. Committee members expressed support for the Authority's plans to make infrastructure improvements such as turn-tracks, interlocking, sidings, triple and quadruple track, and other regional rail no-fault investments into the transformation of Commuter to Regional Rail.

Systemwide:

The second largest category of projects are systemwide ones. These are projects that span all the MBTA system or multiple lines and/or modes. 233 discrete projects, valued at just under \$1.9 billion over 5 years are in this category. \$781.5 million of this is allocated to investments in technology and innovation, \$373 million is programmed for maintenance and administrative facilities, \$56.4 million to implement a required Asset Management Program, and \$30.1 million for

construction of MBTA facility roofs and roof-related issues.

Also, within the systemwide category, \$234 million is programmed for initiatives such as systemwide bridge inspections, additional bridge replacements, and for the planning and design of other bridges systemwide. Millions more are also programmed for systemwide elevator and escalator maintenance, improvements, and for the design and implementation of redundant vertical transportation elements.

Fare Transformation

\$488.5 million in the systemwide category is allocated towards the ongoing fare transformation initiative. Much more information is needed on this critical initiative. What is the total program cost? What is the implementation plan? What is the expected return on investment? What is going on?

Bus & Bus Rapid Transit:

MGL Chapter 161A, Section 5, part (g) requires the Authority report on specific matters related to buses. The Advisory Board urges the MBTA to carefully study this section to ensure that it meets its reporting requirements.

Bus and the Bus Rapid Transit (the Silver Line) are programmed for 71 total projects valued at over \$1.19 billion over the 5 years of this CIP. In March 2023, the MBTA Advisory Board via its Climate and Clean Energy Committee published “MBTA Bus Electrification Requirements and Procurement Timeline” in conjunction with the Conservation Law Foundation. This report noted that in August 2022, Governor Baker signed into law “An Act Driving Clean Energy and Offshore Wind,” which requires the MBTA to cease the procurement of fossil fuel propelled buses as of

December 31, 2030. To meet these requirements, the Authority announced plans to open a new facility to support battery electric buses (BEBs) in Quincy in 2024, Arborway in 2027, with additional BEB-support facilities opening in Wellington and Lynn to support 50% of its bus fleet propelled by electricity. Quincy did not open in 2023, and this CIP only includes funds for design of Arborway, not construction. There are no funds for new BEB-only facilities in Wellington or Lynn, which would be needed to support their construction in the next 6 years. It is clear that the MBTA will not meet its bus electrification goals by 2030 with the resources available in this CIP. The March 2023 report made it clear that the opening of facilities is the key to procuring and commissioning BEBs.² It is unclear if this CIP will fund the needed BEB facilities to meet the 2030 legal requirements for bus and for the Silver Line.

Bus

\$1.16 billion for 67 discrete projects are included in the CIP for bus. \$352.1 million is included for the relocation and replacement of the Quincy Bus Maintenance Facility to support the introduction of a BEB fleet. As discussed above, this project is significantly delayed, and must be accelerated if the MBTA is to meet its timeline for decarbonization. Millions more funds are programmed including \$9.2 million for the renovation of the North Cambridge carhouse to also support the conversion to BEBs. Millions more is included in this category to support the procurement of BEBs, as well as for the overhaul of existing 40-foot and 60-foot buses. It appears that funding for the rebuilding (as opposed to planning) of the Arborway bus facility to support new, clean, BEBs is not included in this CIP. This CIP does include \$102.7

² See: <https://www.clf.org/wp-content/uploads/2023/03/MBTA-Advisory-Board-FINAL-2023-03-29.pdf>

million to plan for the overhaul of 175 40-foot New Flyer compressed natural gas (CNG) propelled buses that were originally delivered in 2016 and 2017 (CIP project number P0671). Such an action suggests that these buses will remain in revenue service well beyond the 2030 deadline to cease operating fossil fuel propelled vehicles as discussed above. It is also clear that the Authority's inability to construct the Quincy BEB facility requires the overhaul of these CNG's, which is disappointing to say the least.

Silver Line:

4 projects totaling \$29.4 million are programmed for the Silver Line. The largest single project in this category is \$10.9 million to continue funding the procurement of 45 new 60-foot buses to replace the current, aging bus fleet. \$10.5 million is also funded to build out two new headhouse at the Courthouse Station, including flood control.

Multimodal:

Multimodal projects are those that benefit more than one MBTA mode, or type of service. For instance, replacement of electrical substations benefits both heavy and light rail modes. \$724.9 million is programmed in this category across 64 projects. The largest project in this category is \$128 million for the continuation of the Ruggles Station improvement project phase 2. This multimodal station serves the Orange Line, Commuter Rail and is also a major bus station.

Paratransit:

Paratransit refers to the MBTA's "The RIDE" program, which is its federally mandated parallel transportation program for those unable to utilize the fixed route system. \$57.7 million is programmed across 4 initiatives. The largest initiative

is \$51.4 million to fund the ongoing replacement of vans and sedans for The RIDE. Additionally, funds are made available for new scheduling software, and replacement of in-vehicle radios in vehicles.

Ferry:

\$52.6million is programmed for 8 Ferry initiatives. The largest project is \$20.7 million for continued design efforts to replace the floating dock, gangway, walkways, and extended canopy at the Hingham Intermodal Ferry dock. \$12.4 million is also programmed for ferry infrastructure state of good repair upgrades, and for design efforts for the overhaul of the Authority's two catamarans. Funds are also programmed for the procurement of a new ferry vessel for use as a backup for the Lynn Ferry service, as well as for improvements at the Pemberton Point ferry terminal in Hull, and at Lovejoy Wharf in Boston. The Advisory Board's Ferry Committee reviewed the proposed ferry CIP projects at its May 8 meeting and was generally supportive of the plans for this mode in the CIP.

Subway:

\$3.5 billion is programmed for projects on the Red, Orange, Green, Blue, and Mattapan Lines. These 129 projects represent 36% of total spending in the FY25-29 CIP. Over the past year, the Authority has shown success in reducing the number of slow zones throughout the subway system, offering the opportunity to improve safety, reliability, and frequency on the subway system. Via its Track Improvement Plan (TIP), the Authority has made progress in bringing its subway tracks into a SGR.³ Investments such as the TIP are obviously welcome, but questions exist such as what is the relationship between the TIP and ridership? Indeed, as stated above,

³ See: <https://www.mbta.com/projects/track-improvement-program>

Advisory Board members note that overall, there is no connection made between capital investments and meeting targets/commitments for safety, state of repair, service levels and/or environmental performance. The Authority is urged to estimate capital dollars to ridership, or some other measure of success.

Red/Orange:

7 discrete projects in this category are programmed at a value of just under \$1 billion. The single largest project in this category is valued at \$737.7 million for the ongoing procurement of 252 new Red Line and 152 new Orange Line vehicles. Funds in this category will also support the replacement and upgrade of signal equipment on the existing red and orange line rights of way to allow for the improved operation of the new heavy rail fleets. Funds are also programmed for vertical improvements at Downtown Crossing Station (DTX), and for other infrastructure improvements at DTX.

Green Line:

There are 48 individual Green Line projects in the CIP, valued at over \$1.5 billion. The single largest Green Line project is the continued design of 102 new Green Line Type 10 vehicles to replace the existing type 7 and type 8 fleets. This \$484.5 million project will allow the design of these new vehicles to continue apace. Funds are also programmed across all 4 branches and all Green Line communities, including accessibility improvements at 14 street level stops in Boston and Brookline. There are also funds programmed for accessibility improvements to Symphony Station, Newton Highlands, and Hynes Station. There are also millions programmed for power, signal, track, maintenance facilities, roadway grade crossings, and for work along the surface and in the Green Line's central tunnel.

Red Line:

The FY25-29 CIP includes \$609.9 million for 36 individual Red Line projects. The single largest initiative programmed is \$169.7 million towards the construction of the full rebuild of Cabot Yard, the principal support yard for Red Line trains, including the new cars manufactured by CRRC. Funds are also programmed for the Codman, and Von Hillern yards. Millions more are programmed for ongoing Red Line track improvements, and station improvements at Alewife, Andrew, Braintree, Central Square, Harvard, Kendall, Park Street, Quincy Adams, Quincy Center, Savin Hill and Wollaston stations.

Orange Line:

\$229.6 million is programmed across 19 projects for upgrades to Orange Line track, power, station elevators, technology, and overall station amenities. The largest single project in this category is \$86 million for continued implementation of the Orange Line track improvement plan to remove speed restrictions. Funds are also programmed to rebuild Wellington Yard to support new Orange Line heavy rail cars, and improvements to Forest Hills, Jackson Square, and Oak Grove stations. Funds are also proposed for power, track, tunnel, and vertical transportation improvements across the line.

Blue Line:

\$92.5 million over 5 years is programmed for the Blue Line across 16 projects. Funds are programmed across State of Good Repair initiatives along the line, including flood protection, communication room upgrades, emergency egress, track, power and signal upgrades, vehicle facility improvements, as well as station upgrades to Wonderland, Aquarium, Suffolk Downs, and elsewhere. Funds are also included for the study of trip stops along the Blue Line, which require

modernization.

Mattapan High Speed Line:

The Mattapan High Speed Line is a light rail line connecting Ashmont and Mattapan Stations in Boston and Milton. This CIP includes \$80.5 million for 3 projects. The largest, at \$76.8 million is to support the design efforts related to the Mattapan Transformation Initiative. Pre-design efforts for state of good repair, accessibility improvements, track, power and signal upgrades, and other related infrastructure investments across the entire line from Milton to Dorchester. This is in addition to the ongoing overhaul of the line's President's Conference Commission (PCC) cars dating from the 1940's.

Spending By Type:

In addition to breaking out spending by mode, programmed funds can also be broken out by program type. Spending on vehicles, including procurements and overhauls is the largest spending category. Guideway, Signal, and Power spending is the next largest category, which includes spending on the ongoing track improvement program, as well as work on power and signal systems for all modes, and certain commuter rail infrastructure projects such as double tracking. \$1.4 billion is programmed in the maintenance and administrative facilitates category for improvements and projects at vehicle garages, depots, and yards. Employee-facing infrastructure such as parking lots, locker rooms, showers and other related initiatives are also included in this category. Projects in the structure category relate to bridges, culverts, dams, flood protection initiatives, and related infrastructure. This includes inspection, design, replacement, and all such related activities. Over \$800 million is programmed for such infrastructure projects. Nearly

\$800 million is also programmed for technology and innovation initiatives, including fare collection upgrades. Business and Operations Support projects include funding for bus lanes, transit signal priority, and related projects to improve bus transportation. Energy efficiency projects, certain on-call initiatives, security programs and other related spending are also included in this \$438.7 million category. The final three program types relate to expansion programs. The close out of the Green Line Extension program, the continued construction of South Coast Rail, and other expansion initiatives such as planning for the red-blue connector, knowledge corridor, and early regional rail transformation initiatives are also included in these categories. Figure 3, below details the relative size of spending by type.

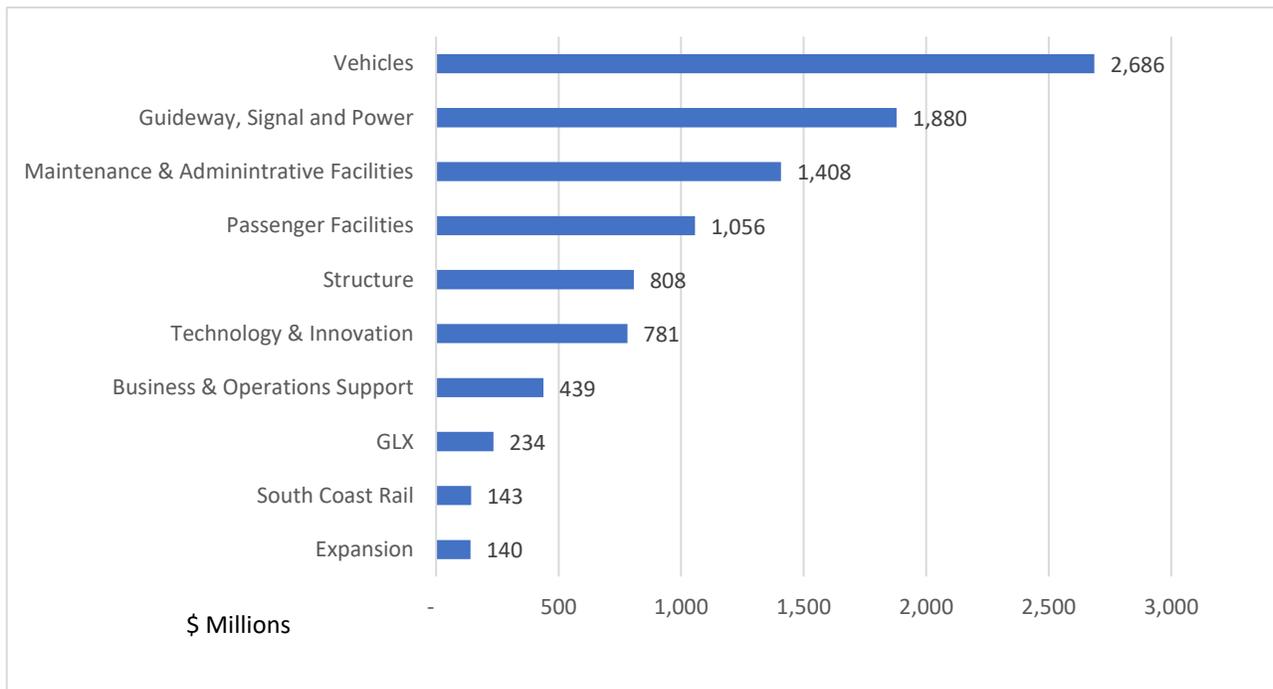


Figure 3: CIP Funding by Type

Vehicles:

Spending on vehicles is the largest spending by type, at \$2.7 billion over the 5 years of the FY25-29 CIP. Spending in this category includes both the procurement of new

vehicles, overhauls of existing vehicles, and related components such as HVAC or engine components. Vehicle spending by mode includes the following categories:

Red & Orange Line (CRRC):	\$738.0 million
Commuter Rail:	\$530.5 million
Green Line:	\$525.6 million
Bus:	\$502.1 million
Multimodal:	\$129.7 million
Systemwide:	\$ 65.6 million
Paratransit:	\$ 57.3 million
Red Line:	\$ 52.3 million
Ferry:	\$ 31.6 million
Blue Line:	\$ 29.9 million
Silver Line:	\$ 10.9 million
Orange Line:	\$ 8.9 million
Mattapan High Speed Line:	\$ 3.8 million

Figure 4 details the relative size of vehicle funding in this CIP.

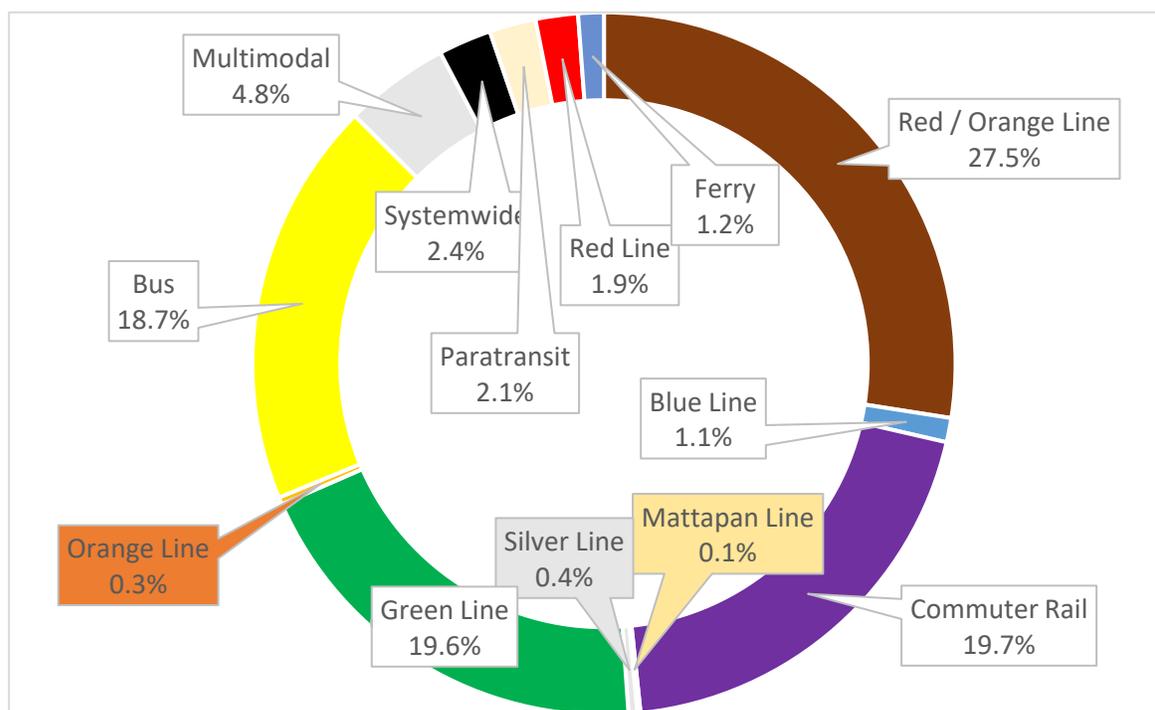


Figure 4: CIP Relative Funding for Revenue Vehicles

ANALYSIS

As noted above, investments in vehicle overhauls and new vehicle procurements are the largest single area of investment type in this CIP at \$2.7 billion. New cars

are needed on every MBTA mode and line which are needed to support safety initiatives, increase system-wide reliability, and support transition to Green Initiative options, and this CIP makes needed investments in many required areas. This CIP also proposes to allocate needed funding to begin modernizing the yards, garages, and depots needed to maintain these new vehicles, as well as the power, signal, and other related infrastructure needed to operate them well. The Authority deserves praise for revamping its approach to scoring and selecting CIP projects. The General Manager's approach to scouring existing projects for available funds, and scrutinizing requests is a positive development that should be continued.

CONCLUSION

Budgets and spending plans are an expression of priorities and values. This FY25-29 CIP expresses the MBTA's commitment to passenger and employee safety, and continued reliability improvements. Continued funding in new Red and Orange Line vehicles, Commuter Rail vehicle overhauls, and ongoing investments in other transit vehicles are laudable. So too is the General Manager's commitment to the TIP, designed to eliminate all slow-zones on the subway system.

Regarding new vehicles, it should be noted that the new Red and Orange Line cars are being built by CRRC MA Corp. with final assembly in Springfield, Massachusetts. This procurement was initiated in 2013 and the administration at that time decided to fund it without federal funds, but instead through a combination of state and MBTA funds. Usually, transit vehicle procurements that utilize a federal process receive 80% of the cost from the federal government. In this case, this 80% would equal \$800 million in 2024 dollars. Instead, to build these cars in Springfield the Commonwealth and MBTA took on 100% of their cost, foregoing \$800 million that

could be spent elsewhere. Recent extensions to the contract require the MBTA to pay an additional \$184 million to CRRC for the final delivery of the Red and Orange Line cars. It can only be hoped that CRRC will meet its contractual obligations; it is clear that the MBTA and the riding public need new Red and Orange Line cars.

While many of the investments programmed in this CIP deserve praise, the overall condition of MBTA infrastructure, and the funding structures in place to support the maintenance and replacement of such infrastructure is woefully inadequate. It should be noted that MBTA departments requested \$11 billion in new funds via this CIP process, of which \$843 million, or 7.7% is programmed. 50% of these funds will be borrowed and repaid from future operating budgets, putting pressure on future day-to-day operations. The MBTA's financial structure is a failure and has not produced a balanced budget, or surplus cash for pay-go capital spending ever—despite these being among the stated goals of Forward Funding in 2000. Our region depends on an infrastructure that supports the safe, reliable, frequent, and punctual movement of people, goods, and ideas to support its economy, ecology, and way of life. The MBTA is one of the linchpins of this infrastructure, and it needs urgent investment to maintain its ability to facilitate such movement. To meet its required maintenance needs, support its efficient operation, and ensure safety, the MBTA needs a financial transformation.

APPENDIX 1: PROPOSED MBTA TRANSFORMATION:

Climate Resiliency:

Improve resiliency to rising sea levels, and climate change for rights-of-way, stations, maintenance facilities and all infrastructure through ruggedization and elevation where practical. The MBTA is part of the mitigation to climate change, and by expanding capacity and providing more non-emitting trips, it contributes to climate resiliency region wide.

Accessibility:

Complete the transformation of all subway stations to 100% accessible ones. Continue the efforts of the Plan for Accessible Transit Infrastructure (PATI) at all transit stops/stations by removing accessibility barriers and constructing long, high-platform boarding areas at all Commuter/Regional Rail Stations. Increase vertical transportation uptime to as close to 100% as possible, and where feasible ensure redundant elevators are available. Commit to 100% low-floor, accessible transit vehicle procurements with modern, larger capacity onboard areas for wheeled-mobility devices. Maintain and upgrade in-station wayfinding, information screens (in stations and on vehicles), tactile platform edges, audio announcements (in stations and on vehicles), braille signage, and other accessibility requirements and passenger amenities systemwide. Consider multilingual signage/station attendants/announcements where applicable along with platform screen doors.

Frequent, Punctual Headway Management:

Manage personnel, vehicle availability, cover-lists, maintenance programs, and headcount to ensure the consistent, punctual, and even distribution of transit vehicles at all times on all modes. Eliminate employee-created dropped trips and

headway gaps.

Right-Of-Way, Stations, Maintenance Facilities:

Continue renovating, ruggedizing, and upgrading passenger and employee-facing infrastructure modern infrastructure improvements systemwide and regionwide. Utilize infrastructure innovations such as platform screen doors, new signal systems, level and minimal gap platforms, automation and other technological improvements in static infrastructure and onboard vehicles to improve frequency and reliability, reduce dwell times, and decrease barriers to access public transportation.

Fare Transformation:

Deploy the long-planned, and longer-promised next generation of fare collection on all modes systemwide capable of accepting multiple forms of payment media, and facilitating access to all doors of all transit vehicles to reduce dwell time, and potential conflicts between passengers and operators.

Regional Rail:

Transform the existing Commuter Rail system into one more similar to rapid transit, offering all day, frequent service with at least 15-20 minute headways in high density areas via smaller, electricity or battery-powered train sets. Eliminate single-track zones systemwide, and expand the amount of triple and greater track segments as much as possible. Expand South Station berthing spaces, and replace Draw 1 at North Station as soon as possible including the required bike and pedestrian connections over the Charles River.

Red Line:

Increase capacity by at least 10% to support peak 3-minute-or-better trunk headways. Currently peak headways are 7-11 minutes.

Orange Lines:

Increase capacity by at least 25% to support 4.5 minute-or-better headways at peak. Current peak headways are 7-10 minutes.

Red/Blue Connector:

Build, operate, and maintain the long-studied connection of Red and Blue Lines.

Blue Line:

Increase capacity by 25% to support 6-car (or larger) train sets at all stations operating at 4.5 minute-or-better peak headways. The current peak headways are 5-6 minutes. Replace trip stops north of Airport Station with a modern signal system. Begin the procurement of the Type 6 fleet to support a seamless transition from the existing Type 5 fleet within a decade. Consider extending the Blue Line to Lynn.

Green Line:

Increase capacity by 50% to support new, modern, and larger Type 10 vehicles. Consider station consolidation on all branch lines.

Silver Line:

Increase capacity by at least 10% to support at least 5-minute headways in dedicated rights-of-way (where practical) between Nubian Station and Downtown; South Station and Logan Airport; and Logan Airport and Sullivan Square. Consider platform screen doors at sub-surface stations, extending the existing tunnel under D street, running as much service in dedicated bus-only lanes as possible, and

expanding the extension from Sullivan to Kendall Square.

Bus:

Grow capacity by at least 25% by increasing the number of buses, operators, and maintenance facilities to support improved frequency on existing routes and the creation of new routes based on demand. Continue the procurement of battery-electric buses, and operate these in dedicated rights-of-way with signal priority wherever practical. Construct new facilities capable of storing 100% of the new fleets indoors, and equipped with modern maintenance facilities sufficient to maintain vehicle availability, and improved charging capacity. This new fleet should also support greater connectivity east-west, and north-south to major employment, housing, and similar dense areas of the region.

Ferry:

Replace the current fleet with a larger fleet of modern, emissions-free, 100% accessible ocean-going ferries operating in an integrated network connecting more communities to each other, to the airport, and to downtown Boston by water. Via a combination of smaller and larger ships, the reach of the ferry network should be expanded to induce as much increased ridership as is feasible. Sufficiently maintain all docks and dock-side facilities.

Paratransit:

In consultation with the Commonwealth of Massachusetts and the Federal Transit Administration, migrate The RIDE from an MBTA-only service to a statewide, public paratransit system eliminating the need for transfers, improving connectivity, and increasing flexibility for all customers of paratransit statewide.