



Construction Journal

Vol. 114 July 2023





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UPCOMING EVENTS

BOARD OF DIRECTORS MEETING

September 13, 2023

7:30 a.m. - CIM Office
Norwood, MA

BOARD OF DIRECTORS MEETING

Thursday, October 12, 2023

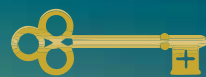
7:30 a.m. - CIM Office
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SAVE THE DATE

101st ANNUAL ROADBUILDERS DINNER

Thursday, November 30, 2023

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Route 44 Over Route 24 | Raynham, MA
MassDOT's First Lateral Bridge Slide



East Street Railroad Bridge | Westwood, MA
Accelerated Bridge Construction



Silver Street Bridge | Monson, MA
Municipal Small Bridge Program



Baltazar Tackles Springfield Transfer and Flow Optimization Project

Baltazar Contractors, Inc. is a family owned and operated company founded in 1992 and based out of Ludlow, Massachusetts. Baltazar specializes in utility and roadway construction in both Massachusetts and Connecticut.

In May of 2022, Baltazar Contractors, Inc. was awarded the Locust Transfer and Flow Optimization Project from the Springfield Water and Sewer Commission for

\$24,950,000.00. This project consists of the installation of 400 linear feet of new 72-inch glass reinforced plastic (GRP) sewer pipe, 2-each 10-foot diameter sewer manholes, and 80 linear feet of 64-inch ductile iron flanged sewer pipe with 64-inch plug valves, tees, and other appurtenances at the Old York Street jail site near the Connecticut River. The goal of this project is to help mitigate combined sewer overflows to the Mill and Connecticut Rivers.





To successfully install the new 72-inch GRP, Baltazar installed hot rolled steel sheeting 40-feet in depth with a vibratory hammer around the perimeter of the trench. The trench was then supported with a mega brace system, which allowed Baltazar to excavate down to the proper depths and install the 72-inch GRP.

Also included in this project is the installation of new 12-inch water main, installation of new 48-inch sewer main, precast concrete structures, sewer lining, milling and overlay, pavement markings, and various incidental items. The project manager for Baltazar Contractors, Inc. is Frankie Baltazar and Project Superintendent is Joel Silva.

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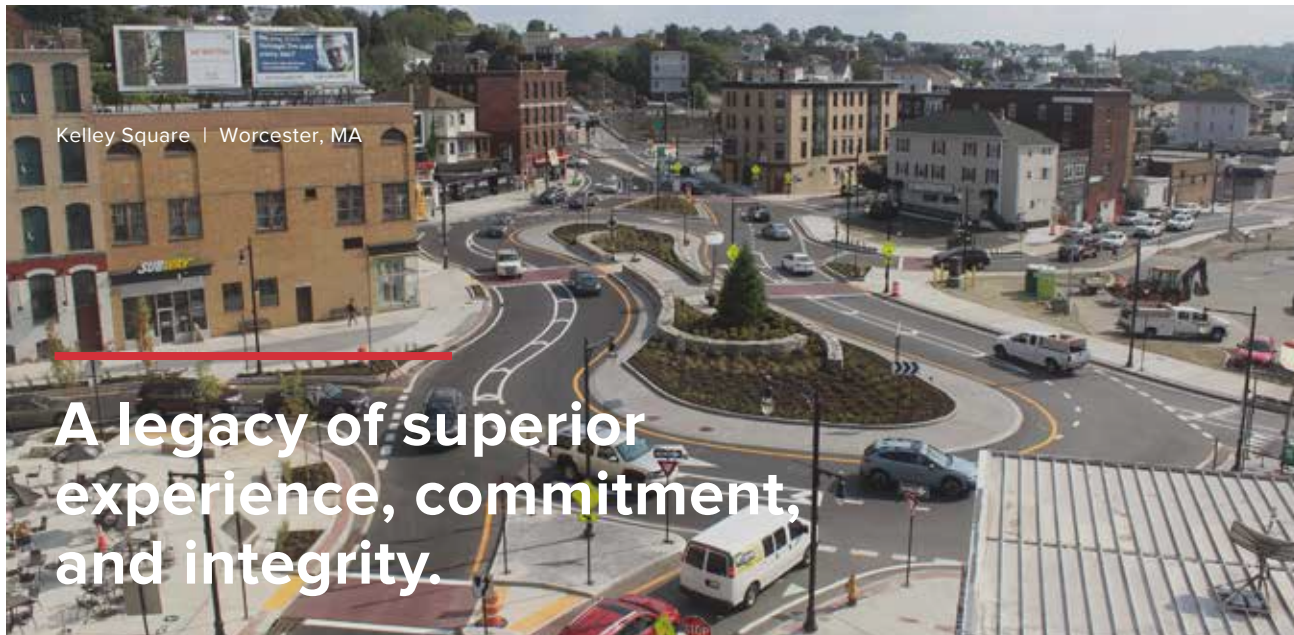
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Construction Industries of Massachusetts is pleased to share select pages from the MassDOT Final 2024-2028 Capital Investment Plan – July 2023.



Massachusetts Department of Transportation Final 2024-2028 Capital Investment Plan (CIP) July 2023

massDOT
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LETTER FROM SECRETARY FIANDACA

On behalf of the Massachusetts Department of Transportation (MassDOT), I am pleased to present this Capital Investment Plan (CIP or Plan) for Fiscal Years 2024-2028. This Plan for MassDOT reflects our commitment to a five-year capital plan investing in equitable, reliable, and safe transportation options for all residents across our Commonwealth.

Capital planning is centered around setting priorities for our system, developing programs to implement those priorities, and selecting projects that meet the goals of our programs.

The CIP is developed in alignment with the development of the five-year State Transportation Improvement Program (STIP) for Federal Fiscal Years 2024-2028 (FFY24-28). The STIP incorporates new federal funding levels and programs included in the federal surface transportation reauthorization legislation (the Bipartisan Infrastructure Law or BIL). The CIP aligns with the STIP¹ to maximize federal funding available to the Commonwealth, the Metropolitan Planning Organizations (MPOs), and transit operators.

BIL provided approximately \$1.8 billion in additional federal highway formula funding for the Commonwealth.

In addition, BIL also provides approximately \$570 million in funding to support our transit network throughout the Commonwealth managed by the MBTA, our Regional Transit Authorities (RTAs) and MassDOT's Rail and Transit Division.

This Plan commits approximately \$15.7 billion in programmed transportation spending for our roads, rails, shared use paths, airports, buses, and bridges over the next five years. Approximately 60% of the investments are focused on improving the reliability and resiliency of the existing core transportation system, with an additional 23% devoted to modernizing these systems to meet the demands of our citizens across the Commonwealth. These investments are crucial as we continue to prioritize our residents' transportation options for years and generations to come.

The Plan incorporates transportation funding from a number of different sources, including federal, state, system-generated revenues, and private contributions consistent with MassDOT's asset management plans, our multi-modal planning efforts, and with our capital priorities.

MassDOT is focused on safety, while improving reliability, accessibility, sustainability and resiliency, and the equity of our network. This plan also incorporates strategies and investments to align with the Commonwealth's goals to reduce greenhouse gas emissions to ensure a more resilient future.

I look forward to continuing to work together toward these shared and important goals and thank our partners and the MassDOT organization for their dedication to our transportation system.



Gina Fiandaca

*Secretary of Transportation and Chief Executive Officer
Massachusetts Department of Transportation*

¹ The STIP programs all Federal Highway and Federal Transit Administration funds available to the Commonwealth for Highway, MBTA and the RTAs.

GLOSSARY OF TERMS

AMERICANS WITH DISABILITIES ACT OF 1990 (ADA)

The ADA is a federal civil rights law mandating equity of opportunity for individuals with disabilities. The ADA prohibits discrimination in access to jobs, public accommodations, government services, public transportation, and telecommunications.

BIPARTISAN INFRASTRUCTURE LAW (BIL)

BIL (Pub. L. No. 117-58) was signed into federal law on November 15, 2021. BIL authorized \$350 billion for highway and \$108 billion for public transportation over fiscal years 2022 through 2026 for highway improvements to roads and bridges and other transportation infrastructure, motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, and rail improvements. BIL also includes new federal formula programs that address climate change (Carbon Reduction and National Electric Vehicle Infrastructure) and resiliency (PROTECT-Promoting Resilient Operations for Transformative Efficient and Cost-Saving Transportation).

CHAPTER 90

Chapter 90 is the Commonwealth's municipal grant program that provides funding to municipalities for roadway projects and other eligible work.

ENVIRONMENTAL JUSTICE (EJ)

Established under Federal Executive Order 12898 and reflected in state policy, EJ policies require federal funding recipients to identify and address disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low-income populations.

EXECUTIVE OFFICE FOR ADMINISTRATION AND FINANCE (ANF)

ANF is the budget and planning office for the Commonwealth that administers state transportation capital funding in the form of bonds.

FEDERAL TRANSPORTATION PARTNERS

MassDOT's federal transportation partners on the CIP include the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Federal Railroad Administration (FRA), and Federal Aviation Administration (FAA).

FISCAL YEAR (FY)

FY refers to a specific budgetary year. The United States federal fiscal year (FFY) begins on October 1 of the previous calendar year and ends on September 30. For example, the 2024 FFY is October 1, 2023 to September 30, 2024. The Massachusetts state fiscal year (SFY) begins on July 1 of the previous calendar year and ends on June 30. The 2024 SFY is July 1, 2023 to June 30, 2024.

FIXING AMERICA'S SURFACE TRANSPORTATION ACT (FAST ACT)

The FAST Act (Pub. L. No. 114-94) was signed into federal law on December 4, 2015. The FAST Act authorized \$305 billion over fiscal years 2016 through 2020 for highway improvements, motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail improvements, and research, technology, and statistics programs. Authorization expired September 30, 2020 and was extended for one year until September 30, 2021. New surface transportation authorization was signed into law in November 2021.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA OR AUTHORITY)

The MBTA provides rapid transit, bus transit, and commuter rail service to the Greater Boston region. The agency is overseen by an appointed seven member MBTA Board of Directors.

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT)

MassDOT is made up of four Divisions: Highway, Rail

& Transit, Registry of Motor Vehicles (RMV), and Aeronautics, as well as the Office of the Secretary and the Office of Transportation Planning and Enterprise Services that support all the Divisions. The agency has a Board of Directors, comprised of eleven members who are all appointed by the Governor with the Secretary of Transportation as Chair.

METROPOLITAN PLANNING ORGANIZATION (MPO)

An MPO is a regional transportation policy-making organization consisting of representatives from local government, regional planning agencies, regional transit operators, and state transportation agencies. Federal legislation passed in the early 1970s requires the formation of an MPO for any urbanized area with a population greater than 50,000. The Commonwealth of Massachusetts has 10 urbanized regions designated as MPOs and 3 rural regions known as Transportation Planning Organizations (TPOs) that function like MPOs.

REGIONAL PLANNING AGENCY (RPA)

An RPA serves as a forum for state and local officials to address issues of regional importance, including the development of comprehensive plans and recommendations in areas of population and employment, transportation, economic development, land use, regional growth, and the environment.

REGIONAL TRANSIT AUTHORITY (RTA)

RTAs provide fixed route and paratransit service in communities across Massachusetts. There are 15 RTAs in Massachusetts in addition to the MBTA.

REGIONAL TRANSPORTATION PLAN (RTP)

The RTP is the policy and vision document of a regional MPO. This document results from regional and statewide collaboration to plan a region's transportation system. The document contains a financial plan or budget which guides and shapes the actions an MPO undertakes as they fulfill the region's vision and objectives. This document includes a 20-year vision for

transportation in the region and is updated every four years by each MPO. It serves as an important source of data for the statewide STIP and CIP.

STATE OF GOOD REPAIR (SGR)

A state of good repair condition is achieved when an entity is managing an existing asset functionally, reliably, and safely within its expected life cycle to a predefined level of performance.

STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)

The STIP is a compilation of the thirteen regional Transportation Improvement Programs (TIPs) prepared annually by the state's ten MPOs and three rural Transportation Planning Organizations (TPOs). It is a list of priority (federally funded) transportation projects (roadway and transit) organized by region and fiscal year.

TITLE VI

Title VI of the Civil Rights Act of 1964 is a federal civil rights law which prohibits discrimination against members of the public on the basis of race, color, and national origin in programs and activities receiving financial assistance. Additional federal nondiscrimination categories are contemplated under MassDOT's Title VI Program, including age, sex, disability, and Limited English Proficiency (LEP).

TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

A TIP is a phased five-year program of federally funded capital investments that reflects the needs of the regional transportation system, prepared by each MPO in the Commonwealth on an annual basis. Under federal regulations, a TIP must be constrained to available funding be consistent with the relevant long-range regional transportation plan and include an annual element or list of projects to be advertised in the first year of the TIP. Like the STIP, the regional TIP has a roadway component and a transit component.

EXECUTIVE SUMMARY

One of MassDOT’s key roles is to develop and implement the Commonwealth’s transportation investment strategy—the Capital Investment Plan (CIP)—in coordination with the federal government, the state legislature, municipalities, regional planning agencies (RPAs), regional transit authorities (RTAs), other state agencies, and the public.

WHAT IS THE CIP?

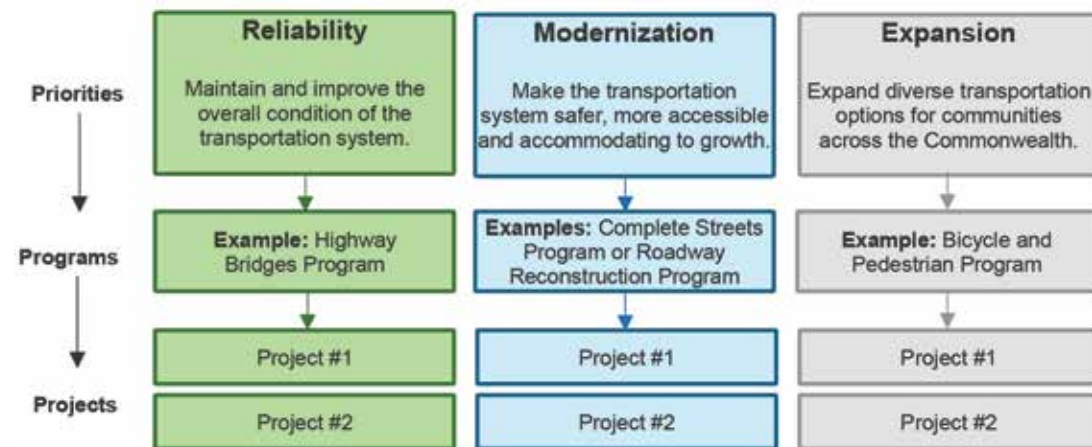
The proposed 2024–2028 Capital Investment Plan (CIP) for MassDOT is a budget and policy document. It is a

financially constrained investment plan that programs state and federal funds to pay for all of our capital expenditures.

WHAT IS ITS PURPOSE?

It funds the planning, construction, and capital maintenance of and improvements to the transportation system. It is a rolling five-year plan, updated annually. The CIP funds all MassDOT’s transportation investments including roadways, bridges, bicycle and pedestrian facilities, transit investments, aeronautics, rail, and the Registry of Motor Vehicles.

HOW IS THE CIP BUILT?



KEY HIGHLIGHTS OF THE 2024-2028 CIP

The 2024-2028 CIP programs approximately \$15.7 billion for over 1,700 different projects throughout the Commonwealth. Each of the projects has been selected to advance the goals and performance targets of our 63 different CIP investment programs. Appendix A to this document details the list of proposed investments over the five years and Appendix B provides a one-page description for each of the CIP investment programs. It should be noted that the MBTA has published its own

standalone CIP and the MassDOT v CIP includes only the funding provided by the Commonwealth to support some of the MBTA’s major infrastructure projects including the Green Line Extension, South Coast Rail, and Red Line/Orange Line Infrastructure and Vehicle Replacement.

This CIP reflects the Administration’s priorities to fund investments that address the safety, sustainability, and resiliency of our transportation network, reduce our carbon footprint and ensure equity and access to

transportation for all citizens of the Commonwealth. The majority (over 80%) of the proposed investments in the CIP are programmed under our Reliability and Modernization priorities with the goal of maintaining and improving our existing transportation infrastructure. The CIP does include targeted investments (7%) that expand diverse transportation options throughout the Commonwealth primarily through our Bicycle/Pedestrian and Shared Streets and Spaces programs.

Because the Bipartisan Infrastructure Law (BIL) enacted in 2021 provided the Commonwealth with significant new federal funding sources, MassDOT has been able to increase our spending in particular to address the condition of bridges across the Commonwealth, primarily those in the National Highway System. With the sustained level of investment in bridges, the Commonwealth hopes to achieve our federal performance targets to ensure that the majority of the bridges achieve a state of good repair over the long term (within 10 years). In addition to the increased funding programmed for bridges, BIL also includes new federal funds that will help to reduce our carbon emissions (Carbon Reduction funds) and improve

the sustainability and resiliency of our transportation network: Promoting Resilient Operations for a Transformative, Efficient, and Cost-Saving Transportation Program (PROTECT) and National Electric Vehicle Infrastructure (NEVI). One example of this is that the Highway Division has proposed a new CIP investment program—the Resiliency Improvements Program. This program focuses on resiliency planning and resiliency improvements to existing transportation assets and evacuation routes. It is targeted at highway infrastructure vulnerable to extreme weather and sea-level rise.

Finally, another key focus of the plan is investments in our communities through our multiple municipal investment programs. This CIP includes a new section that highlights each of these programs and their respective goals within the plan. For 2024-2028, the CIP programs approximately \$359.5 million over the five years for the municipal programs in addition to our historical commitment to the Chapter 90 program (\$1 billion over the five years). Together these programs strive to improve the condition of the transportation assets owned or managed by our 351 cities and towns.

INTRODUCTION

One of MassDOT’s key roles is to develop and implement the Commonwealth’s transportation investment strategy—the Capital Investment Plan (CIP)—in coordination with the federal government, the state legislature, municipalities, regional planning agencies (RPAs), regional transit authorities (RTAs), other state agencies, and the public. The 2024-2028 capital plan for MassDOT reflects our commitment to a five-year CIP. It aligns with the 2024–2028 State Transportation Improvement Program (STIP) that is required under the federal 3C planning process that programs funding through the Commonwealth’s MPO regions.

Key Changes for the 2024-2028 CIP

Last year the Massachusetts Bay Transportation Authority (MBTA) developed a separate, standalone Capital Investment Plan for 2023-2027 that was reviewed and approved by the MBTA Board of Directors. The MBTA is continuing to develop its own standalone CIP for 2024-2028 which will be reviewed and approved by the MBTA Board of Directors. The MBTA CIP is available at <https://www.mbta.com/financials/developing-the-capital-investment-plan-cip>.

Although the CIP is specific to MassDOT, it does include the state’s participation in the Capital Investment Program of the MBTA. The Commonwealth has

committed capital funding to a number of large, high-priority MBTA investments, including the extension of the Green Line to Somerville and Medford, the purchase of new Red and Orange Line cars, and expansion of commuter rail service to Fall River/New Bedford through the South Coast Rail program, as well as support for other key initiatives. MassDOT's CIP details the Commonwealth's capital funding that is provided to the MBTA to support those investments. Those funds equal \$877.6 million for 2024-2028. This spending is supported by \$791.8 million in Rail Enhancement Bonds and \$10.3 million in bond cap

from the Executive Office of Housing and Economic Development (\$802.1 million combined), plus \$75.5 million in Commonwealth earmark funds, which includes federal funding from the American Rescue Plan Act. The following diagram illustrates the overlap between the MBTA CIP and the MassDOT CIP. A total of \$15.7 billion is programmed for MassDOT spending over the next five years (2024-2028).

Both the CIP and the STIP incorporate the federal formula funds (along with the corresponding state match funds) that were provided to Massachusetts under the Bipartisan Infrastructure Law (BIL), also known

as the Infrastructure Investment and Jobs Act (IIJA). The STIP programs nearly \$11.9 billion for roadways, bridges, bicycle and pedestrian facilities, and public transportation over the next five federal fiscal years.

Highway formula funds from the BIL include:

- \$1.125 billion in specific formula funding to improve the condition of the Commonwealth's bridges through the Highway Infrastructure Program
- Formula funding to support climate change mitigation (Carbon Reduction and Electric Vehicle Infrastructure) and resiliency (PROTECT)
- Formula funding for our roadway, safety, bicycle/pedestrian, and bridge projects.

BIL also included significant additional authorization for discretionary grant programs (approximately \$110 billion). The CIP does not include any specific assumptions for discretionary grants unless those awards have been received by MassDOT. MassDOT and the MBTA are aggressively pursuing federal discretionary grant funding as notice of funding opportunities (NOFO) have been issued.

TRANSPORTATION AND INFRASTRUCTURE BOND BILLS

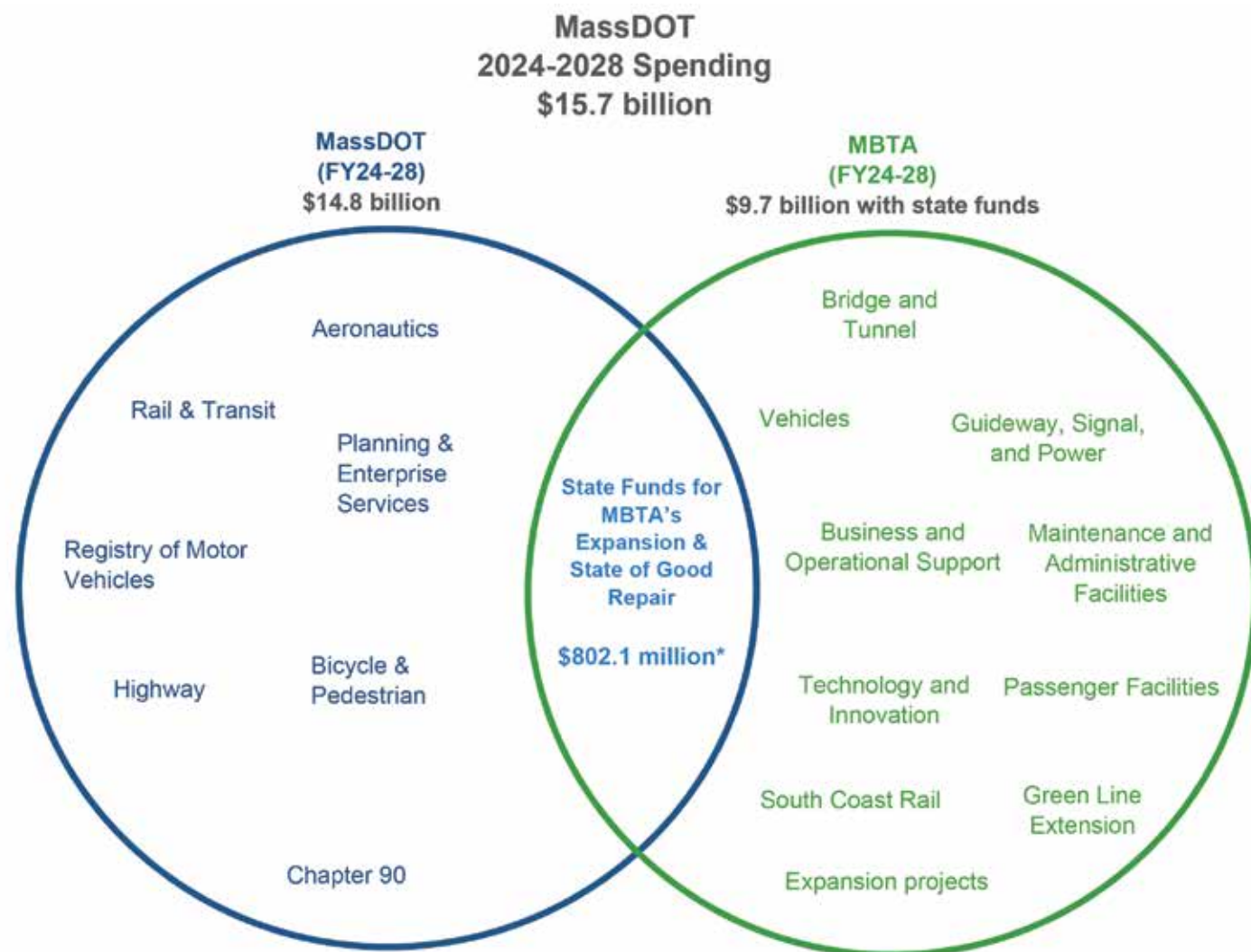
In January 2021, An Act Authorizing and Accelerating Transportation Investment for \$16 billion was signed into law. The TBB continues to accelerate investments in modernizing our transportation system and authorizes several new programs to address asset conditions and congestion at the local level, improve transit access, and provide new funding for the Commonwealth's National Highway System (NHS) bridges. Additional bridge funding was provided in the form of grant anticipation notes (GANs) authorized as Next Generation Bridge GANs (\$1.25 billion).

With the passage of the federal Bipartisan Infrastructure Law (BIL), additional bond authorization was needed to fully utilize the additional funding provided to the Commonwealth. An Act Relative to Massachusetts's Transportation Resources and Climate (MassTRAC) was filed to ensure the Commonwealth could fully utilize the funding authorization provided under BIL. The Legislature passed the bill and the \$11.4 billion MassTRAC bill signed into law in August 2022. MassTRAC provides MassDOT and the MBTA the necessary authorization to take advantage of the federal highway and transit funding under BIL.

The 2024-2028 CIP includes a significant number of bridge projects programmed with the Next Generation Bridge GANs authorized in the 2021 TBB along with the additional bridge funding (\$1.125 billion) provided under BIL. The combination of both GANs and BIL

funding provides significant resources over the next five to seven years to address the condition of the bridges throughout the Commonwealth and help MassDOT achieve the federal and state long term condition targets for our bridges.

The 2024-2028 CIP includes projects supported by PROTECT formula funds. FHWA formula funds authorized for the Carbon Reduction Program are programmed in the 2024-2028 STIP and specific projects will be identified for this funding program in coordination with applicable MassDOT Divisions and the MBTA. Similarly, National Electric Vehicle Infrastructure funds are incorporated in the 2024-2028 STIP with projects to be identified in coordination with MassDOT and the Executive Offices for Energy and Environmental Affairs and the Commonwealth's new Climate Office. FHWA approved the Commonwealth's plan for deployment of the NEVI formula funding provided under BIL in September 2022.



* MBTA total excludes \$75.5 million in Commonwealth earmark funds.



Candidate resiliency project under development: Flood relief on Route 20 / Route 122 interchange, Worcester

NEW PROGRAMS

Highway Resiliency Improvements

Program Spending: \$25.2 million

Description: Provides funding to help the Commonwealth focus on resilience planning; makes resilience improvements to existing transportation assets and evacuation routes, and addresses highway infrastructure that are vulnerable to extreme weather and sea-level rise.

Highway Safe Routes to School (SRTS)

Program Spending: \$36.6 million (projects previously programmed under the Highway | Roadway Reconstruction program)

Description: This program works to increase safe biking and walking among elementary, middle, and high school students by using a collaborative, community-focused approach that bridges the gap between health and transportation. SRTS utilizes the six E's to implement its program—Education, Encouragement, Engagement, Evaluation, Engineering, and Equity.

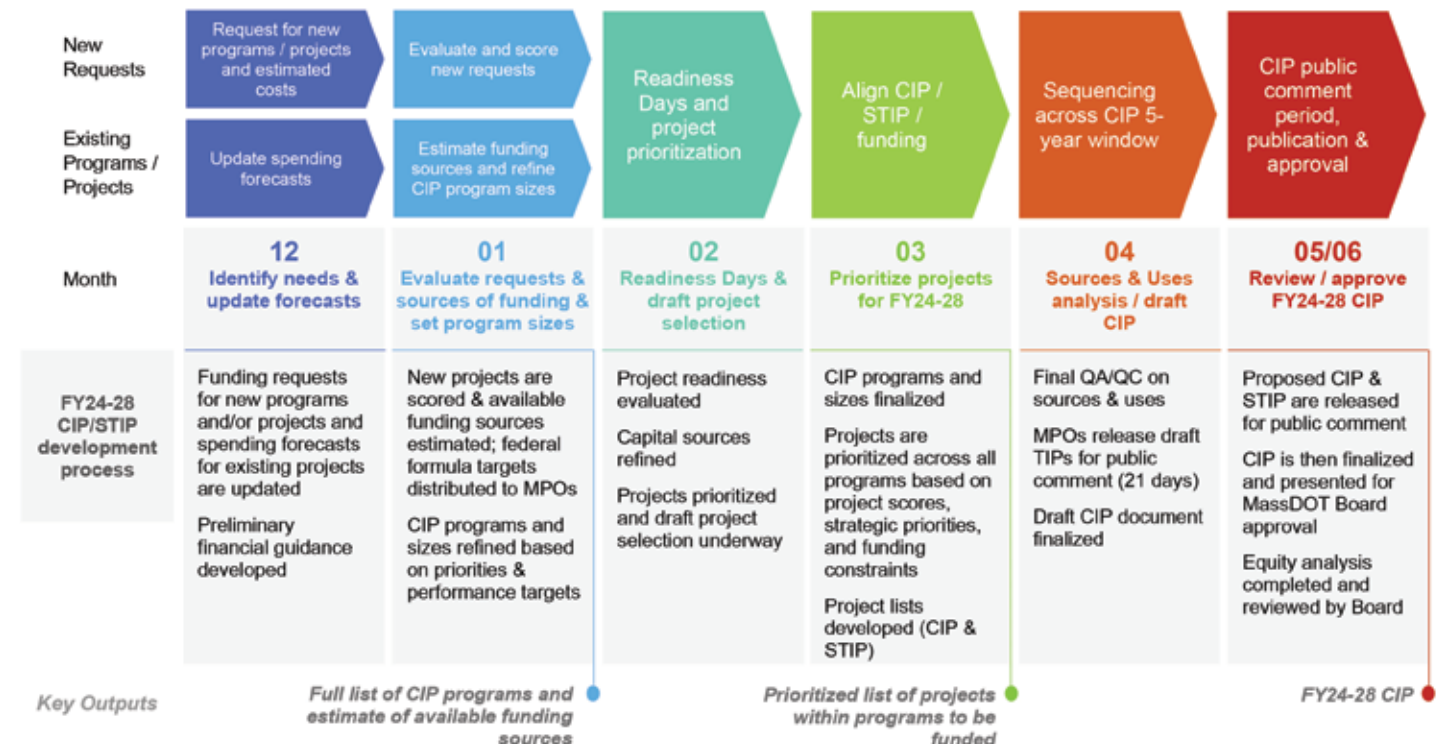


Safe Routes to School project at Ashley and Lincoln Elementary Schools in New Bedford created curb bump-outs, ADA-compliant accessible ramps, bike lanes, and replaced school zone flashers.

CIP Development Cycle

Each year the CIP development process starts with each Division revisiting CIP programs, including their purpose, need, and sizes. Proposed investments (projects) are then prioritized based on alignment to

goals, readiness, and funding. In May, the draft CIP, including existing projects and new investments, is considered for public release by the MassDOT Board of Directors. Upon release the CIP is refined further and submitted to the MassDOT Board in June for final review and approval.



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Priorities → Programs → Projects

This CIP is informed by a strategic vision influenced by public and stakeholder input collected throughout the development process. MassDOT’s organizational priorities are built around funding programs within which projects are selected based on objective and comparative evaluation.

INVESTMENT PRIORITIES

The three priorities for CIP investment are, in order of importance: Reliability, Modernization, and Expansion. These priorities express the broadest goals for MassDOT and MBTA investments.

Reliability

Maintain and improve the overall condition, safety, resiliency, and reliability of the transportation system (approximately 60% of all investments):

- Necessary routine and capital maintenance to ensure the safety of the system
- State of good repair projects designed primarily to bring asset condition up to an acceptable level
- Asset management and system preservation projects

Modernization

Modernize the transportation system to make it safer, more accessible and accommodate growth (approximately 23% of all investments):

- Compliance with federal mandates or other statutory requirements for safety and/or accessibility improvements
- Projects that go beyond state of good repair and substantially modernize existing assets
- Projects that provide expanded capacity to accommodate current or anticipated future demand on existing transportation systems

Expansion

Expand diverse transportation options for communities throughout the Commonwealth (approximately 7% of all investments):

- Projects that expand highway, transit, and rail networks and/or services

- Projects that expand bicycle and pedestrian networks to provide more transportation options and to address health and sustainability objectives

The remaining investments support our transportation needs through our planning work and studies and our municipal partners through the Chapter 90 reimbursement program.

INVESTMENT PROGRAMS

Investment programs fall under each of the three priorities (reliability, modernization, and expansion). These programs encompass the most important capital responsibilities and goals of the agency.

The sizing of programs is developed using asset management systems and tools to determine need. Through the finalization of the federally required plans— Transportation Asset Management Plan (TAMP) for the Highway Division and the Transit Asset Management (TAM) Plans for the RTAs— MassDOT has a better understanding about the condition of our assets over a ten-year timeframe. This data was used as input into the 2024-2028 CIP. MassDOT filed an update in December 2022 to its 2019 TAMP which is under review for approval by FHWA.

Along with our asset management goals and performance targets established in the 2021/22 Tracker, Divisions utilize existing condition reports and surveys to identify and prioritize investments over the short and long terms. Tracker is MassDOT’s annual report that reviews progress to achieving our goals. It is a tool and resource for each Division to identify key activities and measures and to select appropriate targets that are crucial to tracking progress.

Finally, how proposed investments may mitigate the impact of climate change and/or improve the resiliency of our transportation network to better withstand natural hazards continues to evolve. BIL provided new federal formula fun (Carbon Reduction, PROTECT, and Electric Vehicle Infrastructure) to fund investments that can mitigate the impacts of climate change and/or address the resiliency of our transportation assets.

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PROJECT SELECTION

Individual investments are selected into each program by using MassDOT’s set of scoring criteria established by eac Division to whom the project applies. As previously mentioned, reliability investments are not

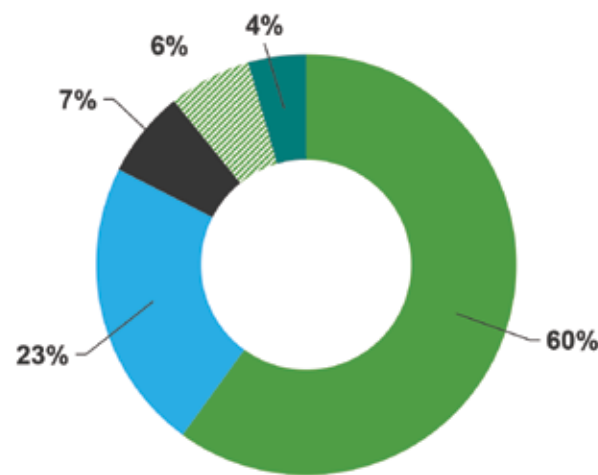
scored using the criteria, but instead are prioritized using performance target and asset management planning.

The following table details the funding programmed in the 2024-2028 CIP.

Program investments by division

	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 24-28 Total
Reliability	\$473.1 (millions)	\$8,226.6	\$46.8	\$145.2	\$317.1	\$1.0	\$210.1	\$ -	\$9,419.9
Modernization	\$10.1 (millions)	\$2,866.6	\$64.3	\$440.1	\$38.1	\$15.8	\$96.3	\$ -	\$3,531.1
Expansion	\$ - (millions)	\$742.1	\$ -	\$292.3	\$14.3	\$ -	\$ -	\$ -	\$1,048.7
Division/Total	\$483.2	\$11,835.3	\$111.0	\$877.6*	\$369.5	\$16.8	\$306.4	\$ -	\$13,999.7

Overall Program Spending Breakdown



(millions)	SFY 2023-27	SFY 2024-28	Difference
Reliability	\$7,691.3	\$9,419.9	+\$1,728.7
Modernization	\$3,870.1	\$3,531.1	-\$339.0
Expansion	\$1,332.1	\$1,048.7	-\$283.4
Chapter 90	\$1,000.0	\$1,000.0	\$ -
Planning & Enterprise Services	\$979.6	\$699.8	-\$279.8
Total	\$14,873.1	\$15,699.5	+\$826.4


Totals may not add due to rounding.
* MBTA total includes \$75.5 million in Commonwealth earmark funds.

FINDING SOURCES

The CIP is funded from a mix of federal, state, MassDOT, and other funding sources, each of which varies with respect to its flexibility. Some funding sources must be spent on specific policy goals or modes while others

may be applied across the transportation system.

The 2024-2028 CIP reflects federal, state and other funding sources made available to MassDOT for inclusion in the CIP.




Federal Funding

Formula Funds

- Federal Highway Reimbursements
- Federal Transit funds
- Federal Aviation Administration funds
- Federal Railroad funds

Discretionary Funds


- Competitive processes run by federal agencies. Funds included in the CIP after award.



State Funding

Bonds / GANs


- State Bond Cap
- Accelerated Bridge Program Bonds (ABP)
- Grant Anticipation Notes (GANs)
- Rail Enhancement Program (REP) Bonds



MassDOT Sources

Tolls (pay-go capital)

- Metropolitan Highway System (MHS) pay-go
- Western Turnpike (WT) pay-go
- Tobin Bridge (Tobin) pay-go



Others

- Municipal and local funds
- Reimbursable and 3rd Party funds
- Volkswagen (VW) Funds
- Other Commonwealth funds
- Central Artery Tunnel Project Repair and Maintenance Trust Fund (CARM)

About MassDOT Funding Sources

STATE FUNDING

The primary source of state transportation capital funding comes through bonds issued by the Commonwealth. Debt is issued to investors and paid back with interest over the course of a bond’s life, like a mortgage for the purchase of a house.

The two main types of bonds issued for infrastructure spending are General Obligation bonds or GO bonds (backed by the full taxing authority of the Commonwealth) and Special Obligation Bonds or

SOBs (backed primarily by gas taxes and Registry fees), both of which are administered by the Executive Office for Administration and Finance (ANF). Additional state sources include grant anticipation notes (GANs) and Accelerated Bridge bonds.

STATE BOND CAP

Commonwealth General Obligation bond proceeds (state bond cap) are allocated to specific projects, primarily for federal-aid match, project design/development, project management, capital maintenance, and other construction support provided to the Aeronautics, Highway, Registry of Motor Vehicles, and Rail and

Transit Divisions, MassDOT Planning and Enterprise Services and the MBTA South Coast Rail program.

GRANT ANTICIPATION NOTES (GANs)

Grant anticipation notes (GANs) are notes issued by the Commonwealth and repaid with future federal highway obligation authority. Funds will be used to improve the condition of the Commonwealth’s bridges. Next Generation Bridge GANs funding was authorized in the 2021 Transportation Bond Bill.

ACCELERATED BRIDGE BONDS

Commonwealth Special Obligation bond proceeds are allocated to specific bridge projects, primarily for project capital maintenance and construction.

RAIL ENHANCEMENT BONDS

The Commonwealth Rail Enhancement Program (REP)

is a dedicated \$2.1 billion initiative for reliability, modernization, and expansion initiatives at the MBTA, including the State’s share of the Green Line Extension (GLX) program and a portion of the South Coast Rail program and Red Line/Orange Line vehicles and other infrastructure investments.

MassDOT Sources

OPERATING FUNDS

Pay-go capital funds are net toll revenues after operating expenses and debt service and used to fund capital investments on the respective toll facility. For FY24-FY28, the pay-go capital funds continue to reflect an increase (over previous estimates in the 2023-2027 CIP) as traffic and revenues have rebounded along the toll facilities.

METROPOLITAN HIGHWAY SYSTEM (MHS)

PAY-GO

Projected annual revenues available for capital expenditures for the toll facilities and tunnels east of I-95, including any existing projected reserve balances.

WESTERN TURNPIKE (WT) PAY-GO

Projected annual revenues are available for capital expenditures for the toll facilities west of I-95, including any existing projected reserve balances.

TOBIN BRIDGE (TOBIN) PAY-GO

Projected annual revenues are available for capital expenditures for this toll facility including any existing projected reserve balances.

Other Sources

CENTRAL ARTERY TUNNEL PROJECT REPAIR AND MAINTENANCE TRUST FUND (CARM)

Funds are used for certain eligible MHS projects and are subject to FHWA approval.

MUNICIPAL AND LOCAL FUNDS

Funds are provided by municipalities to match federal-aid sources and/or to pay for construction items.

REIMBURSABLE AND 3RD PARTY FUNDS

This funding source comprises funding from private sources that MassDOT may receive to mitigate the transportation impacts of development projects or as part of a joint development agreement.

OTHER STATE FUNDS

Additional funds used for clean transit vehicles (Volkswagen (VW) settlement funds), transportation improvements in Boston’s Seaport District (funds provided by other state agencies), and other Commonwealth earmark funds available for the MBTA.

Federal Funding

Massachusetts receives federal funding to improve our transportation system from several U.S. Department of Transportation agencies, including the Federal Aviation Administration (FAA), the Federal Railroad Administration (FRA), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

FEDERAL HIGHWAY (FHWA) FUNDS

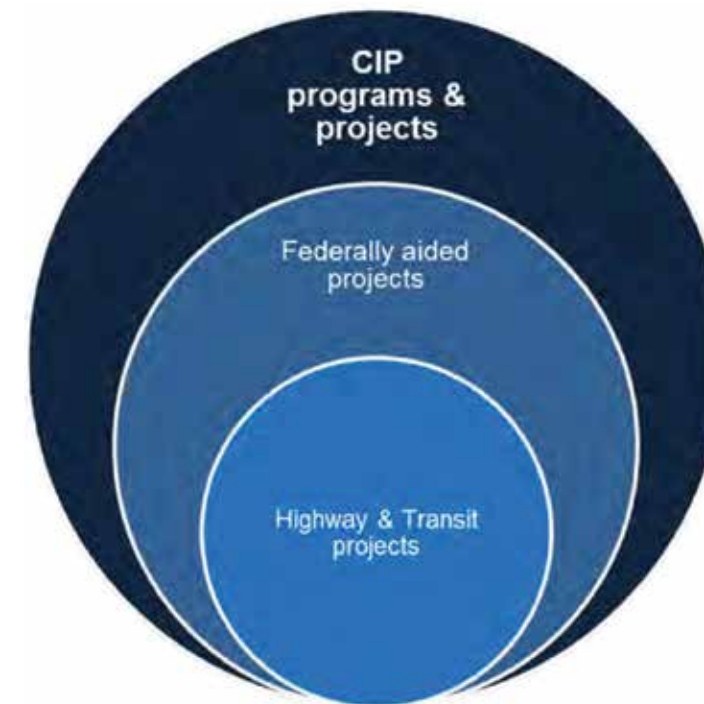
MassDOT obligates available FHWA funds every federal fiscal year. This funding category involves MassDOT requesting FHWA to reimburse the Commonwealth for programmed (obligated) funds for actual federally eligible expenditures on Highway and Rail & Transit Division projects.

FEDERAL TRANSIT (FTA) FUNDS

MassDOT obligates available FTA funds (Section 5310) every federal fiscal year. This funding category involves MassDOT drawing down obligated amounts to reimburse the Commonwealth for Rail & Transit Division project spending. The spending by source tables that follow do not include FTA funds available to our Regional Transit Authority partners.

FEDERAL AVIATION (FAA) FUNDS

MassDOT applies for FAA grant funds every federal fiscal year. This funding category involves MassDOT drawing down those approved grant amounts to pay for the Aeronautics Division’s project spending.



FEDERAL RAILROAD (FRA) FUNDS

This funding category has MassDOT draw down approved grant amounts to pay for Rail & Transit Division, MBTA, and Office of Transportation Planning project spending.

CIP AND THE STIP

MassDOT annually produces another multi-year capital planning document called the State Transportation Improvement Program (STIP). While similar, the STIP and CIP are not the same. The STIP is a federally required planning document that lists all federally funded transportation projects, both highway and transit, by region of the Commonwealth and by federal fiscal year. The STIP reflects programmed obligations (committed funds) while the CIP incorporates the projected spending of those obligations over time. Further, the STIP is subject to approval by the U.S. Department of Transportation and the U.S. Environmental Protection Agency, as well as by the Massachusetts Department of Environmental Protection. The STIP is developed in part by compiling the individual Transportation Improvements Programs (TIPs) from the 10 federally recognized transportation planning regions of the



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Commonwealth referred to as metropolitan planning organizations (MPOs) and the 3 rural transportation planning regions known as transportation planning organizations (TPOs).

By comparison, the CIP includes all sources of funding

available to MassDOT Divisions. While different, the CIP and STIP are related because the STIP makes use of the priorities / programs / projects framework that the MassDOT Divisions use to build the annual CIP. Further, all projects programmed in the STIP are incorporated into the CIP.

MassDOT Spending by Source

Projected Spending by Source*	SFY 2023-27	SFY2024-28
Federal Sources of Funds		
Federal Highway (FHWA) reimbursements	\$5,528.9	\$6,137.1
Federal Transit (FTA) reimbursements	\$33.7	\$63.7
Federal Aviation (FAA) reimbursements and grant draws	\$251.7	\$364.8
Federal Rail (FRA) reimbursements and grant draws	\$10.6	\$4.8
Subtotal of federal spending	\$5,824.8	\$6,570.3
Bond cap	\$5,344.5	\$5,655.0
Grant Anticipation Notes (GANs)	\$595.0	\$827.9
Accelerated Bridge bonds	\$8.7	\$4.5
Rail enhancement bonds	\$1,280.2	\$811.3
Metropolitan Highway system (MHS) pay-go	\$792.8	\$818.9
Tobin Bridge (Tobin) pay-go	\$139.0	\$183.9
Western Turnpike (WT) pay-go	\$505.4	\$511.1
Central Artery Tunnel Project Repair and Maintenance Trust Funds (CARM)	\$133.0	\$174.1
Municipal, reimbursable and local funds	\$19.5	\$53.6
Other State Funds	\$230.2	\$88.9
Subtotal of non-federal spending	\$9,048.3	\$9,129.2
Total Spending	\$14,873.1	\$15,699.5

*Totals may not add due to rounding

INVESTMENT PRIORITIES

Please note that all reliability, modernization, and expansion programs by Division, include total projected spending in the 2024-2028 CIP, descriptions of each program, and descriptions of any asset- and performance management-based data used for setting program sizes are detailed in Appendix B.

Reliability Investments

About 60% of the \$15.7 billion in proposed capital spending for 2024-2028 is for “priority one” investments, meaning those that improve the reliability of the current transportation system. The goal of reliability investments is to maintain and improve the overall condition of the transportation system. Reliability investments include:

- Necessary routine and capital maintenance and to improve the safety of the system
- State of good repair projects designed primarily to bring asset conditions up to an acceptable level
- Asset management and system preservation projects

Investments such as runway reconstruction projects at our public use airports, bridge replacement projects such as the Rourke Bridge in Lowell, the Sumner Tunnel Rehabilitation, the Newton-Weston I-90/I-95 Interchange/Bridge Reconstruction project, track and right of way replacement for the Berkshire Line, and purchase of replacement buses and vehicles for the RTAs are examples of projects that fall under the reliability or “state of good repair” priority.

Modernization Investments

About 23% of the \$15.7 billion in proposed capital spending for 2024-2028 is for “priority two” investments that help achieve the goal of modernizing the transportation system to make it safer, more accessible, and to accommodate growth. Modernization investments include:

- Compliance with federal mandates or other statutory requirements for safety and/or accessibility improvements

Reliability Spending by Division for 2024-2028 (millions)	
Aeronautics	\$473.1
Highway	\$8,226.6
IT	\$46.8
MBTA	\$145.2
Rail	\$317.1
RMV	\$1.0
Transit	\$210.1
Total	\$9,419.9

Modernization Spending by Division for 2024-2028 (millions)	
Aeronautics	\$10.1
Highway	\$2,866.6
IT	\$64.3
MBTA	\$440.1
Rail	\$38.1
RMV	\$15.8
Transit	\$96.3
Total	\$3,531.1

Expansion Spending by Division for 2024-2028 (millions)	
Highway	\$742.1
MBTA	\$292.3
Rail	\$14.3
Total:	\$1,048.7

- Projects that go beyond routine maintenance and substantially modernize existing assets
- Projects that provide expanded capacity to accommodate current or anticipated demand on existing transportation systems

Examples of modernization investments include the I-495/I-90 interchange reconstruction project in Hopkinton/Westborough or capital improvements for the public use airports throughout the Commonwealth.

Expansion Investments

About 7% of the \$15.7 billion in proposed capital spending for 2024-2028 is for “priority three” investments that expand the diverse transportation options for communities throughout the Commonwealth. Expansion investments include:

- Projects that expand highway, transit, and rail networks and/or services
- Projects that expand bicycle and pedestrian networks to provide more transportation options and address health and sustainability objectives

The Green Line Extension and South Coast Rail programs and new bicycle and pedestrian connections are examples of investments under this priority.

Municipal Programs and Investments

Historically, the capital needs of the Commonwealth’s 351 cities and towns were addressed primarily through the annual distribution of Chapter 90 funds. MassDOT has increasingly established and funded a number of investment programs aimed at addressing targeted infrastructure needs in municipalities to improve asset conditions, add multi-modal options and/or address local congestion. Many communities have found these funding opportunities to be critical in achieving local transportation goals. In addition to the Chapter 90 program, MassDOT has the following programs:

- Complete Streets
- Local Bottleneck Reduction
- Municipal/RTA Electric Vehicle Fleets
- Municipal Pavement
- Municipal Small Bridge



- Shared Streets and Spaces

See Appendix B for more details on each of the programs.

CHAPTER 90

MassDOT administers an annual legislative authorization of State Aid to the 351 cities and towns in the Commonwealth through the Chapter 90 Program, which supports highway construction, preservation, and improvement projects; pedestrian and bicycle facilities; road-building machinery and equipment; and consulting services for transportation planning.

Chapter 90 funds both pavement and bridge projects. The annual legislative authorization is apportioned to municipalities based on roadway mileage, population, and employment. Municipalities apply for reimbursement on a project-by-project basis, and eligible work activities are reimbursable on any town-accepted roadways, including those on the NHS. Starting in SFY22, MassDOT provided municipalities with a geospatial online project intake system with guidance, including a planning toolkit and a quick-start guide.

COMPLETE STREETS

The Complete Streets Funding Program encourages municipalities to integrate Complete Streets principles into regular planning and design practices through its three-tiered program that incentivizes municipals to adopt a local Complete Streets policy; develop a prioritization plan; and implement construction projects. The program provides technical assistance to eligible municipalities for the construction of facilities that enhance pedestrian, bicycle, and transit travel for roadway users of all ages and abilities.

LOCAL BOTTLENECK REDUCTION

This grant program provides funding for municipalities to address congestion bottlenecks at local signalized intersections to improve traffic flow while addressing safety, bicycle, transit, and pedestrian needs with preference to projects near transit-oriented development and multifamily housing. The program funds design and construction of signal modifications such as retiming, new vehicle detection, and wireless coordination as well as lane restriping, adding or removing turn lanes, and intersection reconstruction.

MUNICIPAL/RTA ELECTRIC VEHICLE FLEETS

This new program will provide grant funding to municipalities and regional transit authorities (RTAs) for the integration of electric vehicles (EV) into their vehicle fleets. Eligible costs include the purchase of electric vehicles for municipal or RTA vehicle fleets, electric vehicle charging stations, related trainings as well as studies and plans for the integration of EVs.

MUNICIPAL PAVEMENT

This program focuses on the improvement and preservation of municipally owned State Numbered Routes to support the long-term condition of this important network, contribute to NHS pavement performance, and assist municipalities in the management of local infrastructure. The Massachusetts State Numbered Route system supports mobility in 310 Massachusetts cities and towns. Fifty percent of state numbered routes are on the National Highway System, which underscores the importance of these roadways. NHS roadways contribute to Massachusetts roadway





conditions at the Federal level.

This program is unique in that MassDOT provides selected municipalities with design support as needed at no cost to the municipality. Projects are also constructed by MassDOT contractors, making the implementation process as simple as possible for municipal staff.

MUNICIPAL SMALL BRIDGE

This program provides financial support to cities and/or towns for the replacement, preservation, or rehabilitation of small bridges. Eligible bridges are those on public ways with spans between 10 and 20 feet that are structurally-deficient or load posted. These structures are not eligible for federal funding under existing bridge programs.

Municipalities may receive either a design or

construction award each fiscal year. New in SFY 2023, design grant awardees are connected directly to a MassDOT-led small bridge design consultant. This helps make the design process easier and more cost efficient for communities.

SHARED STREETS AND SPACES

Launched during the COVID-19 pandemic, this program provides grants to municipalities and RTAs to expand or repurpose sidewalks, curbs, streets, and on-street and off-street parking in support of public health, safe mobility, and renewed commerce. Projects may focus on pedestrian and bicycle improvements, outdoor dining or programming, and transit related improvements.

Communities can use grant funding to implement unique solutions to their local needs with both permanent and temporary installations.

Selected Major Investments and Programs

BOSTON – BRIDGE REPLACEMENT - STORROW DRIVE OVER BOWKER RAMPS

The project proposes to reconfigure the ramp system to better manage traffic patterns, maximize parkland, and day light the Muddy River—eliminating a long-term environmental issue.

The scope will also strive to reconnect the Emerald Necklace and increase the number of connections from Beacon Street to the Esplanade. The project will create separated bike and pedestrian lanes on the Esplanade and eliminate the blind corner/pinch point in the Esplanade and Dr. Paul Dudley White Bike Path while also restoring usable open space along the Charles River.

HAVERHILL – BRIDGE REPLACEMENT - BRIDGE STREET (ROUTE 125) OVER THE MERRIMACK RIVER AND THE ABANDONED B&M RAILROAD (PROPOSED BIKEWAY)

The project will consist of a full replacement of Basiliere Bridge. All feasible alternatives will be considered for the proposed bridge replacement giving due consideration to National Historic Register Eligibility, Context Sensitive Solutions and the goals and objectives of the bridge program. Prefabricated and/or pre-cast elements will be utilized to the maximum extent feasible. In addition, accelerated construction techniques that allow for expedited construction and reduced costs will be utilized.





**LOWELL – ROURKE BRIDGE REPLACEMENT
-WOOD STREET EXTENSION OVER THE B&M
RAILROAD AND THE MERRIMACK RIVER**

MassDOT proposes to replace the Rourke Memorial Bridge (L-15-088) which carries the Wood Street Extension over the Boston and Maine Railroad (B&M) and the Merrimack River in Lowell. The southern approach of the proposed bridge will be in a similar alignment as the current bridge. The northern approach of the proposed bridge will be located westerly of the current bridge near the intersection with Old Ferry Rd and Pawtucket Boulevard.

The current bridge (circa 1983) consists of a nine-span structure with eight spans of galvanized steel Acrow Panelized Modular trusses and one reinforced concrete slab approach span which will be removed as part of the project. The signals at the intersection with Pawtucket Boulevard and Old Ferry Road will be reconstructed to accommodate the proposed alignment. The existing signalized intersection, roadway, and roadside for the existing northern bridge approach will be demolished and Pawtucket Boulevard will require reconstruction to remove the turn lanes to the existing bridge.

**BOSTON – I-90 ALLSTON
MULTIMODAL PROGRAM**

The I-90 Allston Viaduct has reached the end of its useful life and is structurally deficient. However, this critical component of the Commonwealth’s roadway infrastructure must be kept open for the movement of

goods and freight, particularly to Logan Airport.

Similarly, the adjoining Allston Interchange is functionally obsolete. Its general configuration is no longer needed and the way it connects to local streets causes recurring congestion that, under some circumstances, impedes traffic on the I-90 mainline.

The deficiencies of the viaduct and interchange are the reason behind the I-90 Allston Multimodal Program, which will replace the viaduct and reconfigure the interchange. Changes to the interchange will include flattening the curve of I-90 as it passes through Allston and connecting I-90 to Cambridge Street and Soldiers’ Field Road via a new urban street grid. These changes provide MassDOT with the opportunity to enhance parkland along the Charles River; introduce bicycle and pedestrian connections around and through the former Beacon Park Yard (BPY) site; and invest in improved commuter rail through the construction of West Station.

The current interchange, with sweeping ramps that terminate at congested intersections, will be replaced with an urban-style, split diamond interchange. This interchange configuration will include both eastbound and westbound collector-distributor roadways/ramps that transition connections to a series of north-south oriented urban streets with signalized intersections. These new streets will be designed to deliver safe operations for both motorized and non-motorized



users while providing sufficient intersection capacity to ensure local neighborhoods will not be negatively affected by “cut-through” traffic. The resulting ramp and street grid network will also serve as the framework to support large scale planned economic development within BPY as well as the ongoing development just to the north of Cambridge Street.

The 2024-2028 CIP includes the interim repair and preservation project for the viaduct. This work is necessary for both the near-term safety of the viaduct and to support longer term goals as the Commonwealth continues to work with stakeholders on the design, mitigation, financing and permitting for the preferred alternative.

The 2024-2028 CIP also includes funding for design and permitting for the preferred alternative.

WEST-EAST RAIL

MassDOT continues to advance a program of projects to improve passenger rail connections between Western Massachusetts and Boston. The 2024-2028 CIP includes \$8 million to support track improvements

at Pittsfield station and \$4 million for the study and design of Palmer Station. In addition, a \$1.75 million federal grant was awarded for preliminary engineering and environmental work for the Springfield Track Reconfiguration Project. Once constructed, this project will add capacity and operational flexibility for current and future passenger rail services. MassDOT also acquired a parcel in Springfield for an eventual rail layover/maintenance facility.

In partnership with Amtrak, and with the support of CSX which owns the right-of-way, MassDOT submitted a federal grant application to make improvements between Springfield and Worcester. Once constructed, this \$135 million project will result in two round trips between Boston and New Haven, via Springfield for Inland Route service.

MassDOT submitted both the Boston-Albany Corridor and the Boston-New Haven Corridor via Springfield to the Federal Railroad Administration for its Corridor Identification and Development Program to ensure these corridors are eligible for future federal rail funding.



**BOURNE & SAGAMORE –
THE CAPE COD BRIDGES**

When the Sagamore and Bourne bridges were built in 1933, they changed the relationship between the Cape and the rest of Massachusetts. The bridges allowed for cars to make their way across, which opened up an entire tourism industry, and also made it more possible for Cape residents to have jobs on the mainland. In many ways, the bridges are responsible for shaping the Cape that we know today.

Moving forward, the bridges must be able to meet today’s needs and expectations, which include being brought up to modern standards; helping to improve travel operations; and being more flexible for all modes of travel, including biking and walking.

In April 2020, the United States Army Corps of Engineers (USACE), owner of the two bridges, and the Assistant Secretary of the Army for Civil Works announced their recommendation to replace the current Sagamore and Bourne bridges as the most feasible alternative.



USACE is aggressively pursuing federal discretionary grant funding authorized under BIL for the costs associated with the replacement of the two bridges. MassDOT’s current efforts are focused on the preliminary design and engineering of the roadway approaches to align with the final configuration of the bridges.

The 2024-2028 CIP includes funding to support the Commonwealth’s commitment of \$700 million towards the construction of the project.



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APPENDIX B: INVESTMENT PROGRAMS

RELIABILITY

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Aeronautics	Airport Pavement Program	This program addresses the quality of all pavements "inside the airport fence" to achieve long term pavement condition goals and is necessary to continue safety and maintenance programs at public airports and is required to help keep our airports in compliance with the FAA grant requirements.	FAA Airport Improvement Program Handbook (Table G-2) and MassDOT Airport Pavement System (APMS) Study	Compliance with FAA airfield compliance standards and FAA National Priority Rating (NPR) System	Pavement Condition Index (PCI) and FAA Standards	\$264.7 million
Highway	Bridge Program	This program maintains, reconstructs, and replaces state and municipally owned bridges across the Commonwealth.	MassDOT Transportation Asset Management Plan (TAMP)	Selected through Bridge Prioritization System	Bridge condition by count and bridge condition by NHS area	\$5,231.5 million
Highway	Chapter 90 Program	Chapter 90 funds are for local capital improvement such as highway construction, preservation, and improvement projects. These projects create or extend the life of capital facilities.	Chapter 90 legislation & policies	Municipalities propose projects; MassDOT confirms eligibility	N/A	\$1.0 billion
Highway	Equipment Program	The Highway Equipment program makes annual purchases of replacement vehicles, heavy equipment, telecommunications equipment, and various other highway capital assets. The program is essential to conducting highway operations throughout the Commonwealth.	N/A	Prioritized based on operational needs and fleet life cycle	N/A	\$172.5 million
Highway	Facilities Program	The Highway Facility Improvement program provides for the design and execution of facility repair and replacement projects including but not limited to office buildings, maintenance operations buildings, garages, and salt sheds.	N/A	Projects drawn from District and Headquarters' (HQ) priorities	N/A	\$197.1 million
Highway	Interstate Pavement Program	This program maintains the Interstate Highway system, a central network for MA & New England mobility and commerce, through projects which preserve or rehabilitate pavement and invest in ancillary corridor systems (i.e., Safety, Bridge, Drainage, Bridge, Intelligent Transportation Systems).	MassDOT Transportation Asset Management Plan (TAMP)	Projects prioritized through pavement management system	State Pavement Serviceability Index (PSI) – State & Federal Pavement Condition Measure	\$481.5 million
Highway	Municipal Pavement Program	A program focused on the improvement and preservation of municipally owned State Numbered Routes to support the long-term condition of this important network, contribute to NHS pavement performance, and assist municipalities in the management of local infrastructure.	MassDOT Transportation Asset Management Plan (TAMP)	Projects prioritized for selection by MassDOT pavement management data	State Pavement Serviceability Index (PSI) – State & Federal Pavement Condition Measure	\$125.0 million
Highway	Municipal Small Bridge Program	This program provides financial support to cities and towns for the replacement, preservation, and rehabilitation of small bridges. Eligible bridges are those on public ways with spans between 10' and 20' that are structurally deficient, or load posted.	State Bond Bill Language; Program Guidance/Website	Municipalities propose projects; MassDOT confirms eligibility and awards grants via competitive selection process	N/A	\$75.0 million

RELIABILITY

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Highway	Non-Interstate Pavement Program	Investments maintain MassDOT-owned non-interstate roadways. This program includes projects on freeways (e.g., Route 24) and local roadways owned by the state. In addition to addressing pavement conditions, these projects also incorporate bicycle and pedestrian facilities where practicable.	MassDOT Transportation Asset Management Plan (TAMP)	Projects prioritized through pavement management system	State Pavement Serviceability Index (PSI) – State & Federal Pavement Condition Measure	\$656.5 million
Highway	Resiliency Improvements Program	This program provides funding over the next five years to help the Commonwealth focus on resilience planning, making resilience improvements to existing transportation assets and evacuation routes, and addressing highway infrastructure that is vulnerable to extreme weather and sea-level rise.	Bipartisan Infrastructure Law (BIL)	Project selections are based on addressing known issues; integrating resiliency improvements into existing projects; and identifying new projects based on forthcoming Climate Adaptation Vulnerability Assessment (CAVA) and Resiliency Improvement Plan (RIP)	Measures are in development: Number of modernized structures (bridges/culverts) and roadway segments where risks posed by extreme weather or climate related vulnerability have been mitigated or eliminated	\$25.2 million
Highway	Roadway Improvements Program	This program supports general state of good repair of MassDOT-owned roadways through drainage, fencing, guardrail, sidewalk repair, and vegetative management projects, and includes federally funded storm water retrofit projects which improve sustainability and resiliency of state-owned drainage systems.	N/A	Projects drawn from District and HQ priorities	N/A	\$328.0 million
Highway	Safety Improvements Program	This program provides systematic repair and upgrade of safety systems on state-owned roadways through traffic signal, highway lighting, impact attenuators, traffic signs, and pavement markings projects, while investing in strategic safety improvements on all roads of the Commonwealth.	Strategic Highway Safety Plan, life cycle planning of safety systems, FHWA Highway Safety Improvement Program (HSIP)	Projects drawn from District and HQ priorities	Reduction in rate of fatalities or serious injuries	\$157.5 million
Highway	Tunnels Program	The Tunnel program provides investment in the tunnels and ancillary systems within the Metropolitan Highway System (MHS). Massachusetts maintains the third largest tunnel system in America.	Metropolitan Highway System Triennial Report, National Tunnel Inspection Standards, Central Artery Repair and Maintenance Trust Fund	MassDOT Tunnel Project Prioritization Methodology (based on NCHRP best practices)	N/A	\$514.1 million
Information Technology	Cyber/Information Security Program	This program keeps Information Technology (IT) infrastructure and software compliant with best practices and digital security standards to protect both agency and customer data. This program is necessary to maintain customer confidence when making secure transactions.	EOTSS priorities for Cyber/Information Security	Business value, operational impacts, alignment with IT goals and strategies	N/A	\$27.8 million

RELIABILITY

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Information Technology	Digital Infrastructure Program	This program covers a range of digital infrastructure work, including state of good repair hardware upgrades and support of operations. This program is necessary to meet MassDOT's technology goals by sustaining the core computer, storage, telecommunications, and network infrastructure while maintaining best practices and state of good repair.	EOTSS priorities for Digital Infrastructure	Business value, operational impacts, alignment with IT goals and strategies	N/A	\$19.0 million
Rail & Transit Division	Rail Bridges Program	This program repairs or replaces bridges to prevent or address deterioration, keep or restore class of line (federally designated rail track classifications), or maintain the structure's safety and functional utility.	Rail Asset Management Plan (RAMP), 2021 Tracker	Projects prioritized based on the most recent inspection, type of operations (e.g., passenger, hazardous cargo), and contractual or regulatory requirements	Bridge condition index; % in state of good repair; weight capacity; reduced operating restrictions	\$63.5 million
Rail & Transit Division	Rail Facilities Program	This program repairs or replaces rail facilities, specifically rail yards and stations, to prevent or address deterioration or maintain the facility's effectiveness.	Rail Asset Management Plan (RAMP)	Projects prioritized based on condition reports, type of operations and risks, operational impacts, and contractual or regulatory requirements for action	Annual inspection & condition assessment	\$11.5 million
Rail & Transit Division	Rail Grade Crossings Program	This program repairs or replaces grade crossings to address deterioration, keep or restore class of line, or maintain the safety or functional utility of the crossing. Well-maintained grade crossings are critical to public (motorist, bicyclist, and pedestrian) safety, and are a key component of rail service safety and reliability.	State Rail Plan, Rail Asset Management Plan, 2021 Tracker	Projects prioritized based on federal guidelines, most recent inspections, type of operations (e.g., passenger, hazardous cargo), traffic levels, and contractual or regulatory requirements	Grade crossing condition assessment; % in state of good repair; grade crossing incidents	\$57.0 million
Rail & Transit Division	Rail Track and Right of Way Program	This program strives to keep MassDOT owned rail lines in a state of good repair and safe and suitable for the intended traffic. This program repairs or replaces assets within the rail right of way (typically ties, rail, ballast, subsurface roadbed, embankments, drainage, culverts, switches, etc.) to address deterioration, keep or restore class of line, improve resiliency, and maintain the line's safety and operational integrity. These activities are necessary to maintain a safe and reliable rail system. Prioritization will reflect most recent inspections, type of operations (e.g., passenger, hazardous cargo), and contractual or regulatory requirements for action.	State Rail Plan, Rail Asset Management Plan, 2021 Tracker	Projects prioritized based on most recent inspections, type of operations (e.g., passenger, hazardous cargo), and contractual or regulatory requirements	% in state of good repair; weight capacity; reduced operating restrictions	\$180.4 million
Rail & Transit Division	RTA Facility and Vehicle Maintenance Program	This program addresses the maintenance, rehabilitation, and upkeep of existing RTA facilities or vehicles. These investments will help RTAs continue to keep their fleets and facilities in a state of good repair to meet the current and future mobility needs of their region.	Vision for the Future of RTAs report; RTA Transit Asset Management Plans (TAMs)	RTA asset inventory reports and needs	Facility condition and Vehicle ULB (mean miles between failures)	\$23.5 million

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MODERNIZATION

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Aeronautics Division	Airport Administration Buildings Program	This program builds or renovates airport administration buildings as recommended by the 2010 Statewide Airport System Plan.	2010 Massachusetts Statewide Airport System Plan	2010 Massachusetts Statewide Airport System Plan	N/A	\$10.1 million
Highway Division	ADA Retrofits Program	This program improves the condition and accessibility of state-owned sidewalks and is necessary to meet obligations identified under the MassDOT ADA Transition Plan.	MassDOT ADA Transition Plan	Ramp replacement follows multi-factor prioritization (i.e., proximity to public buildings, schools, and population factors)	Number of failed or missing curb ramps on state-wide inventory	\$49.3 million
Highway Division	Complete Streets Program	The program provides technical assistance and construction funding to eligible municipalities for the construction of facilities that enhance pedestrian, bicycle, and transit travel for roadway users of all ages and abilities. Currently, 80% of communities are involved with the program at some level: Registered Communities: 283; Complete Streets Policies Passed: 257; Prioritization Plans Adopted: 228; Construction Projects Built: 230	Chapter 220 legislation and Program Guidance Document/Website	All communities may receive one Tier 2 grant. For Tier 3 grants, municipalities propose projects and MassDOT awards grants via a competitive selection process.	N/A	\$75.0 million
Highway Division	Intelligent Transportation Systems Program	The Highway Intelligent Transportation Systems (ITS) program supports the design and implementation of innovative and new communication equipment and information technology systems designed to provide real traffic information to MassDOT projects, residents, and visitors throughout the Commonwealth.	N/A	MassDOT ITS Strategic Plan & stakeholder input from MassDOT HQ, Districts, MPO's, and State Police	N/A	\$60.0 million
Highway Division	Intersection Improvements Program	This program supports safety at roadway intersections for all user locations through operational and geometric improvement projects.	FHWA Highway Safety Improvement Program, statewide crash analysis, road safety audits	Projects drawn from HQ priorities	Mitigation of top 200 crash locations; reduction in rate of fatalities or serious injuries	\$282.7 million
Highway Division	Local Bottleneck Reduction Program	This grant program provides funding for municipalities to address congestion bottlenecks at local signalized intersections to improve traffic flow while addressing safety, bicycle, transit, and pedestrian needs with preference to projects near transit-oriented development and multifamily housing.	Congestion in the Commonwealth 2019 Report to the Governor; Program Guidance/Website	Municipalities propose projects; MassDOT confirms eligibility and awards grants via a competitive selection process based on delay and congestion metrics using RITIS data	N/A	\$25.0 million
Highway Division	National Electric Vehicle Charging Infrastructure Program	This program funds deployment of electric vehicle (EV) charging infrastructure and establishment of an interconnected network to facilitate data collection, access, and reliability. Eligible uses include acquisition and installation of EV charging infrastructure, operations and maintenance costs related to EV infrastructure, and data sharing about the EV infrastructure.	EV Infrastructure Charging Plan for use of funds developed by MassDOT and approved by USDOT in September 2022	TBD	N/A	\$79.4 million

MODERNIZATION

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Highway Division	Roadway Reconstruction Program	This program adapts existing roadway designs to contemporary needs. Nearly all of the projects in this program include improvements to bicycle and pedestrian user spaces.	State Transportation Improvement Program, Long Range Transportation Plans	Projects scored by RPAs/MPOs & MassDOT (using Project Selection Advisory Council recommended scoring elements)	N/A	\$2,124.4 million
Highway Division	Safe Routes to School Program	This program works to increase safe biking and walking among elementary, middle, and high school students by using a collaborative, community-focused approach that bridges the gap between health and transportation. SRTS utilizes the six E's to implement its program: Education, Encouragement, Engagement, Evaluation, Engineering, and Equity.	Program guidance/website	For both the SRTS Signs and Lines and Infrastructure Grant Programs, MassDOT convenes a Project Selection Committee comprised of stakeholders from MassDOT's Office of Transportation Planning and Highway Division (including the Project Management, Highway Design, Right-of-Way, Municipal Grants and Traffic Sections, among others) to evaluate and select projects that align with SRTS priorities and ensure equitable distribution of investments.	N/A	\$36.6 million
Rail & Transit Division	Rail Facility Modernization Program	This program repairs or replaces rail facilities, specifically rail yards and stations, to upgrade them to current industry standards or otherwise maintain or improve the facility's utility. Facility modernization investments enhance the rail system's capacity and reliability and improve the state's economic competitiveness.	State Rail and Freight Plans	Prioritization of projects in this program will reflect transportation or other public benefits (including economic development) associated with the improvement and related operational outcomes, facility condition reports, type of operations and risks/ opportunities, contractual or regulatory requirements, and consistency with the State Rail Plan.	Improvement to facility capacity and/or rail services and operations	\$12.6 million

MODERNIZATION

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Rail & Transit Division	Rail Track and ROW Modernization Program	This program repairs or replaces assets within the rail right-of-way (typically ties, rail, ballast, subgrade, culverts, switches, etc.) to an increased standard to improve track class or capacity (i.e., increasing weight capacity to 286,000 lbs. ("286K"); double-stack clearance; installation of continuous welded rail; etc.) to meet current industry standards or otherwise achieve an improved condition with associated operational results.	State Rail Plan	Prioritization of projects in this program will reflect operational and economic opportunities, most recent inspections, type of operation (e.g., passenger, hazardous cargo, heavier / standard car weights), contractual or regulatory requirements, and consistency with the State Rail Plan or other emergency policy goals.	Age and facility condition	\$10.5 million
Rail & Transit Division	RTA Facility and System Modernization Program	This program improves or modernizes or technologically upgrades existing RTA facilities, systems, or equipment, including automated fare collection and electrification of the bus fleet.	Comprehensive Regional Transit Plan (CRTP) and RTA-conducted facility-specific studies	Project evaluation and prioritization is based on the RTA individual asset management plans and replacement schedules	Age and facility condition	\$43.4 million

EXPANSION

DIVISION	PROJECT	DESCRIPTION	PROGRAM PLAN & GUIDANCE	PROJECT SELECTION	PERFORMANCE MEASURE	SFY '24-'28 PROJECTED SPEND
Highway Division	Bicycle and Pedestrian Modal Implementation Program	This program is focused on expanding walking and biking on roadways by filling sidewalk and bicycle facility network gaps, constructing new or enhanced crossings, improving sidewalk conditions and accessibility, slowing vehicular speeds, improving access to transit, and making complete streets enhancements.	Massachusetts Statewide Bicycle and Pedestrian Plans	Projects that fill in gaps in infrastructure or increase access to transit/walking/biking	Outputs: Walking and biking infrastructure network and access to that network Outcomes: Increase in percentage of short trips made by walking and biking; decrease in serious injuries and fatalities	\$61.6 million
Highway Division	Capacity Program	This program adds new connections or expands the existing transportation network. Examples include the provision of additional lanes, new highway connections, or new roadways.	State Transportation Improvement Program, Long Range Transportation Plans	Projects scored by RPAs/MPOs & MassDOT (Using Project Selection Advisory Council recommended scoring elements)	N/A	\$305.2 million
Highway Division	Shared Streets and Spaces Program	This program provides grants to municipalities and regional transit authorities to expand or repurpose sidewalks, curbs, streets, and on-street and off-street parking in support of public health, safe mobility, and renewed commerce. Projects may focus on pedestrian and bicyclist improvements, outdoor dining or programming, and transit-related improvements.	Program Guidance/Website	Municipalities propose projects; MassDOT confirms eligibility and awards grants via a competitive selection process	N/A	\$34.5 million
Highway Division	Shared Use Paths / Bicycle and Pedestrian Program	This program utilizes federal funds for the construction of new shared use paths (also known as multi-use trails) to expand and connect the Commonwealth's network of paths and support active transportation, recreation, and reduce dependency on driving. State funds have been recently introduced to the program to fund bicycle and pedestrian improvements on state owned roads.	Massachusetts Statewide Bicycle and Pedestrian Plans; MassTrails—Inter-Agency Trails Team	Projects scored by MassDOT (Project Selection Advisory Council-recommended scoring elements)	N/A	\$321.3 million
MBTA	Green Line Extension Program	The Green Line Extension (GLX) program includes the vehicles, stations, and infrastructure to extend the Green Line from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford. The project's six new stations will put 80 percent of all Somerville residents within walking distance of rapid transit. GLX opened for service in two phases.	Focus40	N/A	GLX Project Milestones	\$6.0 million (state-funded portion only)
MBTA	South Coast Rail Program	The South Coast Rail (SCR) program will restore commuter rail service between Boston and southeastern Massachusetts.	Focus40	N/A	SCR Project Milestones	\$286.3 million

Interpreting Your Machine Oil Sample Results



JARED UTZ

Product Support Manager
Milton CAT

Implementing a scheduled oil sampling or S•O•S program can be a valuable tool for guiding your machine maintenance & repair decisions. The sample results can help you identify problems before they become a much bigger, costlier problem by providing insights into the health of your machine. These indicators can be a sign of contamination in your components such as water, antifreeze, fuel, or even dirt ingestion. Other indicators in components like bearings or gear wear, can also be detected through sampling to help prevent a catastrophic failure. Although there are numerous benefits of oil sampling, to maximize your investment made into oil sampling you should be committed to the practice of regularly sampling and acting on the results.

Consistency is key when it comes to oil sampling since abnormal patterns can be warning signs of major component issues. Regularly testing your machine's oil establishes a basis for normal test results. Sample results that deviate from the established trend may indicate a problem. Three to five oil samples are needed to establish a trend.

Since S•O•S consists of multiple different tests, interpreting the results can be overwhelming. Using a S•O•S program provider that knows about your equipment, not just the oil, can make interpreting the results easier as you will receive a summary interpreting the results and a recommended course of action. However, you should still review the results for yourself so you can get a better understanding of how your machine is functioning.

Familiarizing yourself with the layout of the S•O•S report can make interpreting the results less daunting. There are six main sections of an S•O•S report including:

- 1. Label Information:** Includes the data supplied by you including company name, machine serial number, machine model, hours, and job site. Label information is used to register your sample into a database and allows the S•O•S sample history to be displayed on the report.
- 2. Lab Control Number:** A unique number the lab assigns to your sample to help the lab track the sample through all the analyses.
- 3. Overall Evaluation:** A color coded report indicating the urgency of any needed actions. Review the red reports first since these are the most urgent. Then the yellow reports and finally the green reports.
- 4. S•O•S Results:** This section indicates the test name and its results. Elemental analysis will list each element individually and display the result.
- 5. Interpretation:** Summarizes the findings of the S•O•S results and provides recommendations. Suggested actions may be to resample to verify findings or to monitor wear more closely.
- 6. Explanation of Abbreviations:** An explanation of the abbreviations used throughout the report.

Test Name	Result	Unit	Limit	Color
Water	0.05	%	0.10	Green
Fuel	13.5	%	10.0	Red
Viscosity	150	cSt @ 100°C	150	Green
Sulfur	0.5	%	0.5	Green
Silicon	0.2	ppm	0.2	Green

As you review your oil sample report, here are some warning signs to look out for.

Coolant: Coolant in the oil may indicate a plugged water pump weep hole which could lead to major engine failure.

Fuel: Your machine's injector may be bad if fuel is detected in the oil. If not remedied, the fuel quickly breaks down the viscosity of the oil which in turn can lead to component breakdown.

Viscosity: Reported in centistokes (cSt @ 100°C). Measures a lubricant's resistance to flow. Viscosity changes indicated improper servicing, dilution, contamination, or lubrication breakdown.

Silicon: If silicon is found in your oil, it is a good indication that there may be a pin hole in a filter or a loose or broken filter housing clamp.

Sulfur: Reported in terms of percent allowed. During combustion, fuel sulfur oxidizes and combines with water to form sulfuric acid. Acid corrodes engine parts, but is most dangerous to valves and valve guides, piston rings, and liners.



Oil sample report indicating required action. The sample tested for more than 13% fuel dilution possibly indicating excessive idling, leaking injectors, failed fuel transfer pump, or engine over fueling.



Once the oil sample is collected, it is sent to a lab for analysis. The lab looks for indicators of wear, contamination, and other issues that may be affecting the performance of the machine.



CHRISTOPHER W. MOROG



ROBERT T. FERGUSON, JR.

Impossibility of Performance, Frustration of Purpose, and Force Majeure: What Happened to These COVID Catchphrases?

Believe it or not, it has been more than 3 years since the Commonwealth of Massachusetts declared a state of emergency in light of the onset and rise of the COVID-19 Coronavirus pandemic. As we were all grappling with the day-to-day impacts of the pandemic, many questions arose as to what impacts the pandemic might have on business relationships and legal duties and obligations. At that time, the pandemic shed new light on old legal theories, such as impossibility and impracticability of performance, frustration of purpose, and force majeure. Many wanted to know whether the pandemic and its impacts might excuse existing legal responsibilities under one or more of these types of theories.

Of course, the answer to this question is deeply rooted in the facts and circumstances of a given case. That said, earlier this year, the Massachusetts Supreme Judicial Court issued a decision applying these legal concepts to a situation that arose during the pandemic. A review of the court's decision leads to two initial takeaways: (1) prevailing on theories of impossibility or impracticability

of performance and frustration of purpose can be very difficult; and (2) it is imperative for contracting parties to properly allocate risk in their contracts.

The case arose out of a 2015 asset purchase agreement in which the defendants purchased a cleaning service franchise. The purchase price was payable in three installments over a multi-year period. Other than a specific adjustment clause tied to sales performance numbers in the six month period after closing, there was no financial contingency. The agreement did not contain a force majeure clause.

The defendant-purchaser made the first two payments. However, in 2018, the parties agreed to modify the payment terms and extend the final payment period by an additional four years, up to May of 2022. Two co-owners of the defendant-purchaser agreed to be jointly and severally liable under the amended promissory note. Again, there was no financial contingency and no force majeure clause.

Ultimately, the defendants failed to make payment and defaulted on their payment obligations. The record indicated that the Governor's Executive Orders had effectively shut down the cleaning service franchise. Even after the Executive Orders were lifted, the cleaning service struggled, as customers were reluctant to allow cleaning crews into their homes. In addition, if a cleaning crew member tested positive, the other crew-mates had to quarantine, creating further adverse impacts.

In these circumstances, the defendants raised the doctrines of impossibility and impracticability of performance as well as frustration of purpose to excuse their nonpayment. The Supreme Judicial Court rejected these arguments and upheld the lower court's finding that the defendants had materially breached the contract by failing to pay the agreed amounts.

Emphasizing that "[w]e cannot rewrite the contract to cure an oversight or relieve a party from the consequences of the failure to adhere to its plain terms," the Court surveyed the history of the defendants' legal theories. Because theories "excusing contractual performance are exceptions" to the general rule enforcing contracts in accordance with their terms, the Court noted that they are "not lightly applied." The party invoking these doctrines bears a high burden of demonstrating certain specific elements, which the Court concluded were not present in the case.

The record did not include evidence demonstrating that payment was impossible. And the fact that performance of the contract might have become inconvenient or more expensive was not enough. In addition, the cleaning service's financial performance was not a basic assumption upon which the agreement was made. Absent a financial contingency or force majeure provision, the defendant-purchaser bore the risk that its financial conditions may worsen over time. The Court also did not find sufficient evidence to support a claim

that the purpose of the agreement was frustrated so as to excuse the non-payment. In short, although the Court recognized the clear adverse impacts of the pandemic, the Court concluded that the defendants had not met their burden to succeed on any of their legal theories.

The Court specifically did "not foreclose parties from raising the impracticability or frustration of purpose defenses to breach of contract claims arising from the COVID-19 pandemic." However, contracting parties should not assume that they could easily invoke the legal doctrines discussed in this case.

More recently, at the end of June, 2023, the Massachusetts Appeals Court rejected a tenant's attempt to invoke frustration of purpose to excuse its non-performance of lease obligations in light of Governor's pandemic shutdown orders. The Appeals Court stated that "[i]n the context of the COVID-19 pandemic, the vast majority of courts to have considered frustration of purpose have declined to apply the doctrine to temporary business closures caused by government shutdown orders."

The Supreme Judicial Court case illustrates the power of contracting: had the parties planned for risk contingencies at the contracting stage – such as by negotiating a force majeure provision governing the occurrence of unexpected circumstances – they might have avoided this situation altogether. The importance of thoughtful contract drafting and negotiation cannot be understated. Even for risks that no person could have contemplated at the time of contracting, there are various ways to set the parties' expectations and attempt to control potential risk at the contract formation stage. Given the uncertainties in construction, contractors should consider contract provisions that not only address ongoing issues relating to the pandemic, but also material escalation and supply chain issues, and risk of loss clauses, among others.



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Do You Have to be on FIRE to Retire?

For many, the month of July conjures up visions of family and friends get together, celebrating independence, mom’s apple pie and fireworks.

Of course, do not get us wrong, we enjoy family and friends and mom’s apple pie, but what comes to mind for the financial professionals at Broadstone Advisors, LLC, is independence and FIRE.

If you are not familiar with the acronym FIRE, it stands for: Financial Independence, Retire Early (FIRE). It is a lifestyle centered around extreme savings and investment with the goal of gaining the ability to stop working long before the traditional retirement age.

The FIRE movement has several variations based on how aggressively one saves and how frugally one lives, including:

- **Lean FIRE:** Followers aim to retire as early as possible and live very frugally both before and after retirement.
- **Fat FIRE:** Followers also aim to retire early, but they want a more traditional, even luxurious lifestyle in retirement. This requires a larger nest egg than Lean FIRE.
- **Barista FIRE:** This variation includes people who have retired from their careers but still work part-time or engage in lower-paying work that they enjoy allowing them to cover some expenses and keep active.

The FIRE strategy indeed requires an elevated level of discipline and frugality that might not be suitable for everyone. You may not be comfortable with the significant lifestyle changes and sacrifice required to save and invest as much as 50-75% of your income, which is common among FIRE followers.

While the principle of saving and investing a sizable portion of your income is sound, it is essential to find a balance that lets you enjoy your life today while also preparing for the future. Financial planning should not be about depriving yourself to the point of misery, but about making informed decisions that secure your future while still allowing you to live a fulfilling life.

Here are a few alternative strategies you could consider:

- **Traditional Retirement Planning:** This involves working until the traditional retirement age (typically around 65) and saving a portion of your income in retirement accounts like a 401(k) and/or an IRA during your working years. This strategy might involve saving 10-20% of your income, which is less extreme than FIRE but still a significant amount.
- **Semi-Retirement:** This strategy involves reducing your work hours or taking a less demanding job as you get older, rather than completely stopping work at a certain age. This might enable you to save less while you are young, as you will still

have some income in your later years.

- **Real Estate Investing:** Some people aim to achieve financial independence by investing in real estate. This could involve buying properties to rent out for income or flipping houses for a profit. This strategy requires some expertise in real estate but can be a viable way to build wealth.
- **Start a Business or Side Hustle:** If you have a business idea or a skill you can monetize, this can be another way to increase your income and save more for retirement. This strategy carries more risk than traditional retirement saving but can also potentially provide higher returns.
- **Flexible Retirement:** This strategy involves having multiple stages of retirement, including

periods of work. For instance, you might retire early from your primary career, start a business, or work part-time for a few years, and then retire completely.

No matter which strategy you choose, and there are others, it is important to start saving and investing as early as possible, diversify your investments, and regularly review and adjust your plan, as necessary.

We also recommend that you consult with a financial advisor or retirement planning specialist to help guide your retirement plans. The financial professionals at Broadstone Advisor, LLC are prepared to help you develop a strategy that fits your lifestyle and goals.



**24 Century Hill Drive, Suite 102
Latham, NY 12110
518-220-3061**

Broadstone Advisors, LLC is a group of dedicated financial professionals committed to providing effective financial solutions for our clients diverse and complex financial challenges. Our goal is to guide our clients to accumulate assets while staying informed and having access to diverse education and premier service.

Todd McDonald, AIF® (Wealth Management Advisor) tmcDonald@broadstoneadvisors.com

Kyle Sumple, AIF® (Wealth Management Advisor) ksumple@broadstoneadvisors.com

Christopher Derham (Wealth Management Advisor) cderham@broadstoneadvisors.com

Alana Jennings (Retirement Plan Coordinator) ajennings@broadstoneadvisors.com

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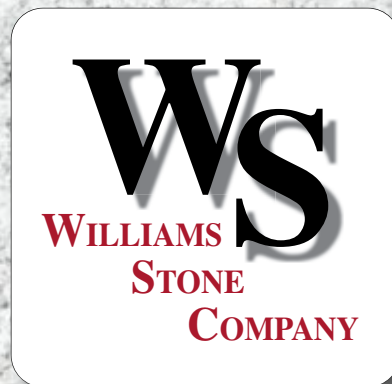
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