

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

massDOT
Massachusetts Department of Transportation



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This format of the Capital Investment Plan provides a text-only alternative to the Story Map presentation available through <https://www.mass.gov/cip>. For the full version, please see the linked website.

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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

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

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

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Non-Discrimination Protections

Federal Title VI Rights & Protections

The Massachusetts Department of Transportation (*MassDOT*) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (*Title VI*), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, the Federal Transit Administration, or both prohibit discrimination on the basis of age, sex, and disability. These protected categories are contemplated within MassDOT's Title VI Programs consistent with federal interpretation and administration. Additionally, MassDOT provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with US Department of Transportation policy and guidance on federal Executive Order 13166.

State Nondiscrimination Protections

MassDOT complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 §§ 92a, 98, 98a, prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, MassDOT complies with the Governor's Executive Order 526, section 4 requiring all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual origination, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

Complaint Filing

To file a complaint alleging a violation of Title VI or related federal nondiscrimination law, contact the Title VI Specialist within 180 days of the alleged discriminatory conduct at:

MassDOT, Title VI Specialist
Office of Diversity and Civil Rights
10 Park Plaza
Boston, MA 02116
Phone: 857-368-8580 / TTY: 857-368-0603
Email: MASSDOT.CivilRights@state.ma.us

To file a complaint alleging a violation of the state's Public Accommodation Law, contact the Massachusetts Commission Against Discrimination within 300 days of the alleged discriminatory conduct at:

Massachusetts Commission Against Discrimination
(MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02109
Phone: 617-994-6000 / TTY: 617-994-6196

ADA/504 Notice of Nondiscrimination

MassDOT does not discriminate on the basis of disability in admission to its programs, services, or activities; in access to them; in treatment of individuals with disabilities; or in any aspect of its operations. MassDOT also does not discriminate on the basis of disability in its hiring or employment practices.

This notice is provided as required by Title II of the Americans with Disabilities Act of 1990 (*ADA*) and Section 504 of the Rehabilitation Act of 1973. Questions, complaints, or requests for additional information regarding ADA and Section 504 may be forwarded to:

Office of Diversity and Civil Rights
Massachusetts Department of Transportation
10 Park Plaza, 3rd Floor
Boston, MA 02116
Phone: 857-368-8580 / TTY: 857-368-0603 / Fax:
857-368-0602
Email: MASSDOT.CivilRights@state.ma.us
Office hours: 9:00 am to 5:00 pm

This notice is available from the Office of Diversity and Civil Rights in large print, on audio tape, and in Braille upon request.

Translation Availability

If this information is needed in another language, please contact the MassDOT Title VI Specialist at 857-368-8580.

Caso esta informação seja necessária em outro idioma, favor contar o Especialista em Título VI do MassDOT pelo telefone 857-368-8580.

Si necesita esta información en otro idioma, por favor contacte al especialista de MassDOT del Título VI al 857-368-8580.

如果需要使用其它语言了解信息，请联系马萨诸塞州交通部（MassDOT）《民权法案》第六章专员，电话 857-368-8580。

如果需要使用其它语言了解信息，請聯繫馬薩諸塞州交通部（MassDOT）《民權法案》第六章專員，電話 857-368-8580。

Если Вам необходима данная информация на любом другом языке, пожалуйста, свяжитесь со специалистом по Титулу VI Департамента Транспорта штата Массачусетс (MassDOT) по тел: 857-368-8580.

Si yon moun vle genyen enfòmasyon sa yo nan yon lòt lang, tanpri kontakte Espesyalis MassDOT Title VI la nan nimewo 857-368-8580.

Nếu quý vị cần thông tin này bằng tiếng khác, vui lòng liên hệ Chuyên viên Luật VI của MassDOT theo số điện thoại 857-368-8580.

Si vous avez besoin d'obtenir une copie de la présente dans une autre langue, veuillez contacter le spécialiste du Titre VI de MassDOT en composant le 857-368-8580.

Se ha bisogno di ricevere queste informazioni in un'altra lingua si prega di contattare lo Specialista MassDOT del Titolo VI al numero 857-368-8580.

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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.

Table of Acronyms

Acronym	Defined Term
AAA	American Automobile Association
ABP	Accelerated Bridge Program
ADA	American with Disabilities Act of 1990
ALARS	Automatic License and Renewal System
ANF	Executive Office for Administration and Finance
APMS	Airport Pavement Management System
ATC	Automatic Train Control
BAT	Brockton Area Transit Authority
BIL	Bipartisan Infrastructure Law
BRTA	Berkshire Regional Transit Authority
BUILD grant	Better Utilizing Investment to Leverage Development grant
CARM	Central Artery Project Repair and Maintenance Trust Fund
CATA	Cape Ann Transportation Authority
CCRTA	Cape Cod Regional Transit Authority
CIP (or Plan)	Capital Investment Plan
CMAQ	Congestion Mitigation Air Quality
EJ	Environmental Justice
EOEEA	Executive Office of Energy and Environmental Affairs
EOTSS	Executive Office of Technology Services and Security
e-STIP	electronic STIP
FAA	Federal Aviation Administration

FAST Act	Fixing America's Surface Transportation Act
FFGA	Full Funding Grant Agreement
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FRA	Federal Rail Administration
FRTA	Franklin Regional Transit Authority
FTA	Federal Transit Administration
FY	Fiscal Year
GANs	Grant Anticipation Notes
GATRA	Greater Attleboro and Taunton Regional Transit Authority
GLT	Green Line Transformation
GLX	Green Line Extension
GO	General Obligation
IJA	Infrastructure Investment and Jobs Act
IRAP	Industrial Rail Access Program
LEP	Limited English Proficiency
LOS	Level of Service
LRTA	Lowell Regional Transit Authority
MAP	Mobility Assistance Program
MAP-21	Moving Ahead for Progress in the 21 st Century
MaPIT	Massachusetts Project Intake Tool
MART	Montachusett Regional Transit Authority
MassDOT	Massachusetts Department of Transportation

MBTA	Massachusetts Bay Transportation Authority
MEPA	Massachusetts Environmental Policy Act
MHS	Metropolitan Highway System
MPO	Metropolitan Planning Organization
MVRTA	Merrimack Valley Regional Transit Authority
MWRTA	MetroWest Regional Transit Authority
NHS	National Highway System
NMCOG	Northern Middlesex Council of Governments
NRTA	Nantucket Regional Transit Authority
NTP	Notice to Proceed
ODCR	Office of Diversity and Civil Rights
OTP	Office of Transportation Planning
PATI	Plan for Accessible Transit Infrastructure
PCI	Pavement Condition Index
PROTECT	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation
PSAC	Project Selection Advisory Council
PTC	Positive Train Control
PVTA	Pioneer Valley Transit Authority
REP	Rail Enhancement Program
RIDOT	Rhode Island Department of Transportation
RL/OL	Red Line/Orange Line
RMAT	Resilient MA Action Team
ROW	Right of Way
RPA	Regional Planning Agency

RRIF	Railroad Rehabilitation and Improvement Financing
RTA	Regional Transit Authority
RTP	Regional Transportation Plan
RTTM	Real Time Traffic Management
SCR	South Coast Rail
SFY	State Fiscal Year
SGR	State of Good Repair
SRPEDD	Southeastern Regional Planning & Economic Development District
SRTA	Southeastern Regional Transit Authority
STIP	State Transportation Improvement Program
TAM	Transit Asset Management Plan
TAMP	Transportation Asset Management Plan (Highway)
TBB	Transportation Bond Bill
TERM	Transit Economic Requirements Model
TIFIA	Transportation Infrastructure Financing and Innovation Act
TIP	Transportation Improvement Program
Tobin	Tobin Bridge
ULB	Useful Life Benchmark
VMT	Vehicle Miles Travelled
VTA	Martha's Vineyard Transit Authority
WRTA	Worcester Regional Transit Authority
WT	Western Turnpike

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?

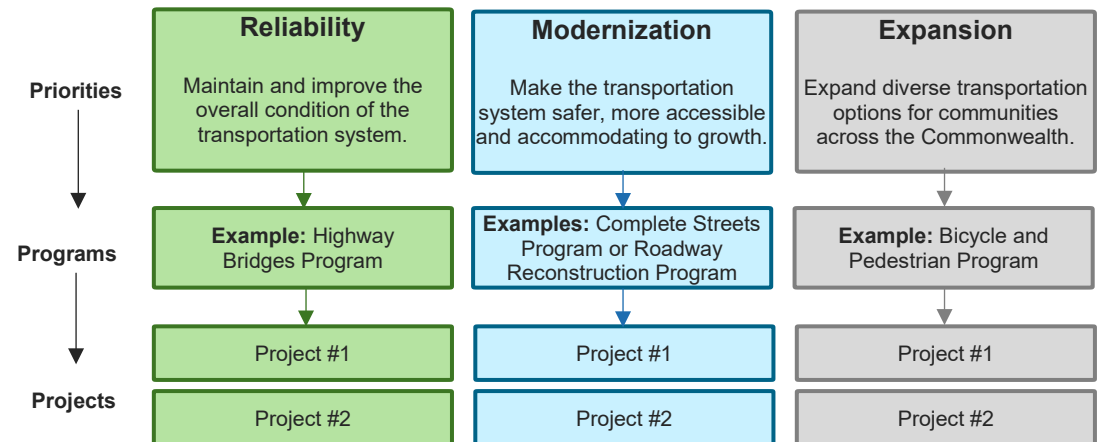
The proposed 2024–2028 Capital Investment Plan (CIP) for MassDOT is a budget and policy document. It is a financially constrained investment plan that programs state and federal funds to pay for all of our capital expenditures.

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

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.

Document Overview

This document comprises the proposed State Fiscal Year 2024-2028 (FY24-FY28) Capital Investment Plan (CIP) for the Massachusetts Department of Transportation (MassDOT).

It is structured around three major components:



Overview of the CIP

- Introduction and Key Changes
- Development Process
- CIP Approach and Structure
- Programmed Spending
- Funding Sources
- Municipal Programs
- Selected Major Investments
- Equity Analysis
- Public Engagement



Appendix A: FY24-FY28 Proposed Investments

- Detailed listing of all capital projects by Division included in the FY24-28 CIP, which includes project ID, project name, description and location, CIP investment program, total project cost, FY24 spending, FY25-28 spending, and post FY28 spending (where appropriate)



Appendix B: FY24-FY28 CIP Investment Programs

- One page overview for each CIP investment program by Priority and Division summarizing the program goals, metrics, and programmed spending levels for FY24-28

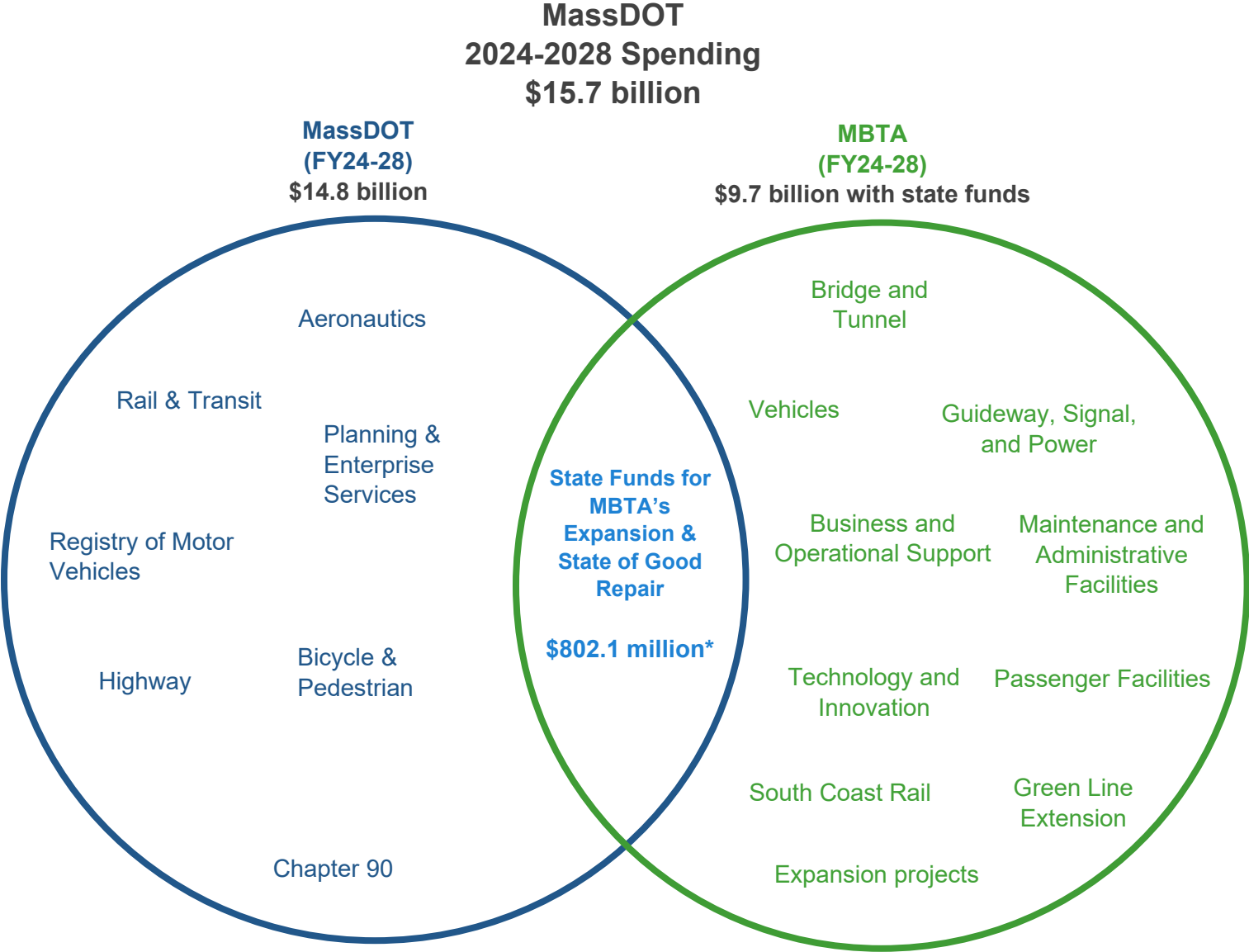
Introduction

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.mbtta.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).



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

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.

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.



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

Highway Safe Routes to School (SRTS)

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

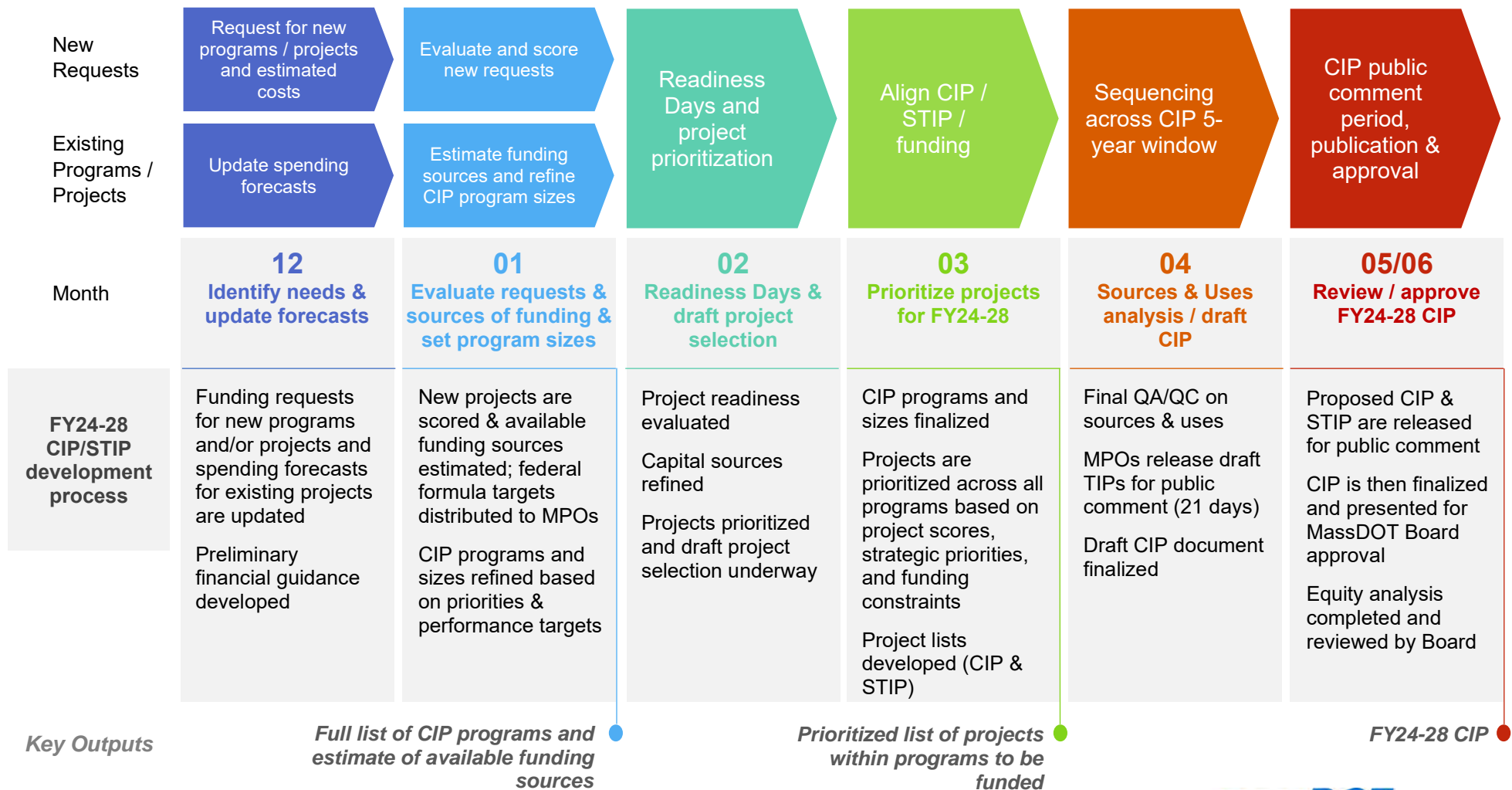
Description: This program works to increase safe biking and walking among elementary, middle, and high school students by using a collaborative, community-focused approach that bridges the gap between health and transportation. SRTS utilizes the six E's to implement its program—Education, Encouragement,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



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 impacts 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 funds (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.

Project Selection

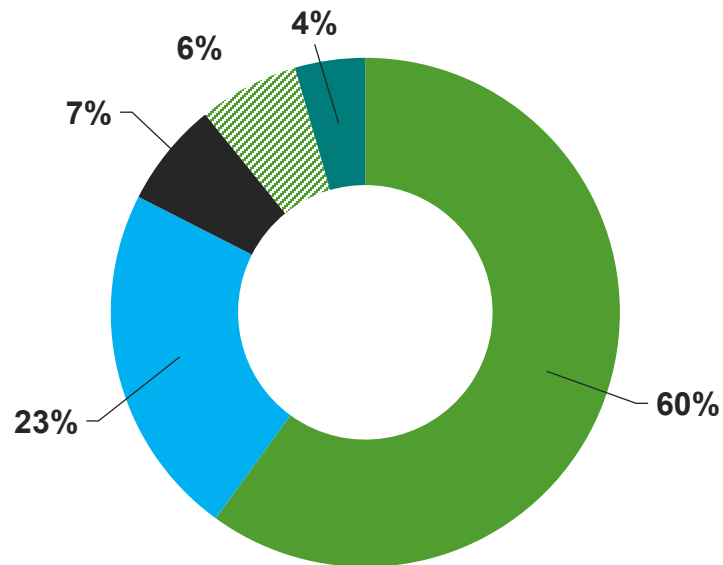
Individual investments are selected into each program by using MassDOT's set of scoring criteria established by each Division to whom the project applies. As previously mentioned, reliability investments are not scored using these criteria, but instead are prioritized using performance targets and asset 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
	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 24-28 Total
Modernization	\$10.1 (millions)	\$2,866.6	\$64.3	\$440.1	\$38.1	\$15.8	\$96.3	\$ -	\$3,531.1
	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 24-28 Total
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.

Funding 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.

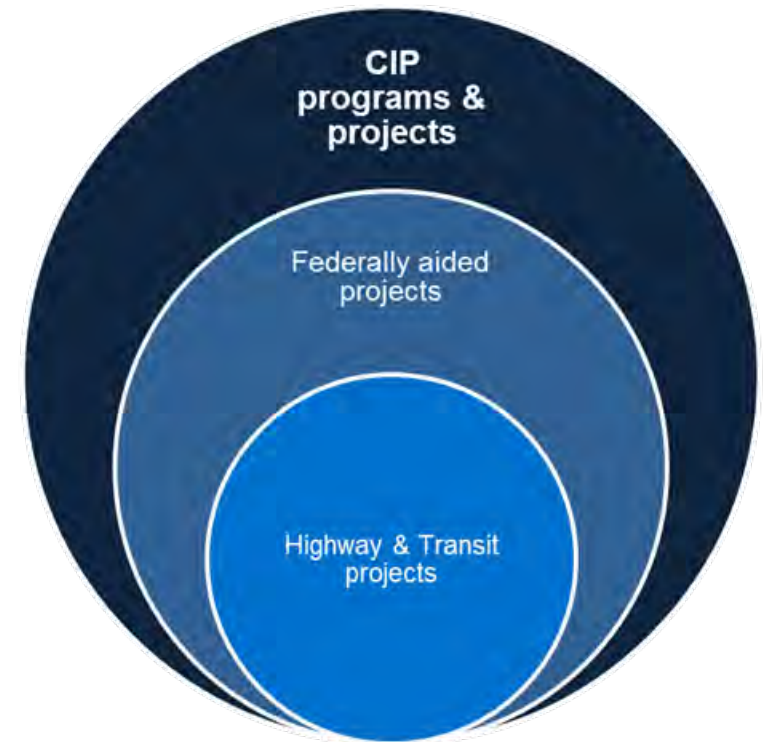
Federal Railroad (*FRA*) funds

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 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 (<i>FHWA</i>) reimbursements	\$5,528.9	\$6,137.1
Federal Transit (<i>FTA</i>) reimbursements	\$33.7	\$63.7
Federal Aviation (<i>FAA</i>) reimbursements and grant draws	\$251.7	\$364.8
Federal Rail (<i>FRA</i>) 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 (<i>GANs</i>)	\$595.0	\$827.9
Accelerated Bridge bonds	\$8.7	\$4.5
Rail enhancement bonds	\$1,280.2	\$811.3
Metropolitan Highway system (<i>MHS</i>) pay-go	\$792.8	\$818.9
Tobin Bridge (<i>Tobin</i>) pay-go	\$139.0	\$183.9
Western Turnpike (<i>WT</i>) pay-go	\$505.4	\$511.1
Central Artery Tunnel Project Repair and Maintenance Trust Funds (<i>CARM</i>)	\$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.

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 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
- 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.

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 Investments

About 7% of the \$15.7billion 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.

Expansion Spending by Division for 2024-2028 (millions)

Highway	\$742.1
MBTA	\$292.3
Rail	\$14.3
Total:	\$1,048.7

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.

Before

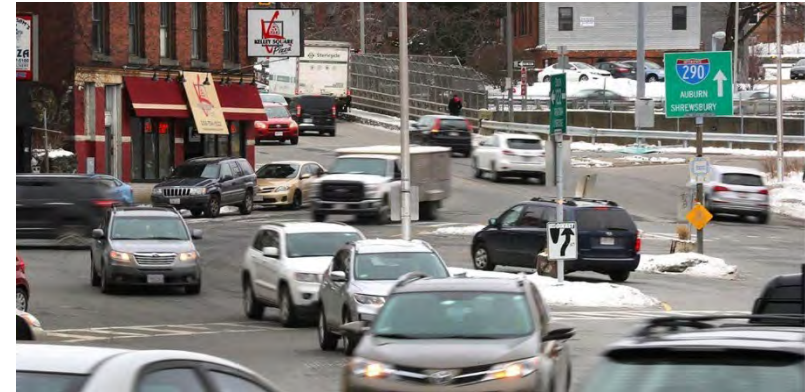


After



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 daylight 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.



Andover-Lawrence – Bridge Rehabilitation - I-495 over Route 28 (Northbound and Southbound) and I-495 Over B&M Railroad and the MBTA

The project includes replacement of six structurally deficient bridges with new bridges that will meet current design loading requirements. The proposed replacements will be designed to meet current seismic requirements and approach roadways will comply with the latest AASHTO standards for acceleration and deceleration lanes and shoulder width. New bike lanes and sidewalks will be constructed on Route 28 Northbound and Southbound.



Hopkinton-Westborough – I-495 / I-90 Interchange Improvements

The purpose of the I-495 / I-90 Interchange Improvements project is to improve safety and operational efficiency at the interchange of these two regionally significant interstate highways.

This project will increase safety for all movements within the project area and address chronically deficient traffic conditions for the movement of people and goods. Additionally, this project will support planned growth in the region and accommodate future traffic demand at acceptable levels of service (LOS) and travel time through the interchange.



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.



Newton & Weston – I-90 / I-95 Interchange

A series of eight bridges at the I-90/I-95 (Route 128) interchange on the Newton/Weston border are in need of replacement and rehabilitation. Included in these bridges is I-90 crossing over the Charles River. Of the eight bridges, five will be replaced, one will be rehabilitated, and two will have their superstructures replaced.

The I-90/I-95 interchange provides access between Boston, MetroWest, and points north and south around the Boston region. I-90 over the Charles moves passengers and freight to downtown Boston, Logan Airport, and Boston's Seaport.



Boston – Sumner Tunnel Centennial Project

Construction of the Sumner Tunnel was completed in 1934. The tunnel is now in need of significant work. The tunnel arch and deck will be rehabilitated. The ceiling, wall panels, lighting, fire standpipe, and communications systems will be replaced. The work will be done in several phases: an initial series of weekend closures, followed by an approximately two-month closure in Summer 2023, another series of weekend closures, an approximately two-month closure in Summer 2024, and a final series of weekend closures. During closures work is expected to occur twenty-four hours per day. More details are available at <https://www.mass.gov/info-details/sumner-tunnel-restoration-project-details-and-closure-schedule>.



Charlton & Oxford – Route 20 Reconstruction

This is a significant project to reconstruct and improve the safety of Route 20 from Charlton to Oxford. The project begins on Route 20 at Richardson's Corner in Charlton and continues easterly 3.2 miles to the Route 12 intersection in Oxford at the Auburn Line. The project includes highway reconstruction, widening, traffic signals and installation of median barrier. The bridges carrying US 20 over the Little River in Charlton and US 20 over the French River in Oxford will also be rehabilitated.



Fall River – Route 79 / Davol Street

Davol Street and Route 79 run along the Taunton Riverfront in Fall River. Currently, access between the neighborhoods and the waterfront is limited and the corridor lacks bicycle accommodations. The City of Fall River is partnering with MassDOT to redesign the mile long corridor to improve mobility, connectivity, and safety along and across Route 79 and Davol Street.

The preferred alternative will replace Route 79 and Davol Street with an urban boulevard; create 19 acres of new developable parcels and 9 acres of open space; reduce the number of travel lanes from four to two lanes in each direction; establish four cross street connections between neighborhoods and the waterfront; provide two miles of sidewalks and over two miles of shared use paths; add coordinated traffic signals along Route 79; introduce landscaping elements throughout the corridor; replace the bridge carrying northbound Route 79 at the southern project end; and improve stormwater and sewage systems.



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.



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.



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.

Equity Analysis

Overview

This section discusses the results of the equity analysis conducted on the draft FY2024-2028 CIP, which indicates an equitable plan. The narrative herein describes the results and methodology used along with illustrative maps.

This equity analysis is a component of the Healey-Driscoll Administration's commitment to equity. Because transportation enables people to access destinations and opportunities, MassDOT centers the quality of travel that everyone experiences in its work, and recognizes that certain communities, including low-income, non-white, foreign-born, and others, have historically been overburdened and underserved by transportation networks. In response to this, MassDOT works to make equity a key consideration in planning, designing, constructing, and implementing all elements of the transportation network.

The investments included in the CIP are determined through a collaborative process among many stakeholders (cities and towns, private and public agencies, advocates, etc.), representing diverse constituencies with an array of perspectives and goals for the future of public transportation. As part of our commitment to civil rights and nondiscrimination, during each CIP development cycle, MassDOT evaluates proposed investments and projects to assure that they are equitable with respect to both geography and to the population groups that they benefit.

MassDOT and the MBTA strive to achieve an equitable balance in developing and prioritizing transportation investments to meet the needs of the residents throughout the Commonwealth.

The analysis evaluated investments per capita at the municipality and census tract levels using all the investments prioritized for FY2024–2028 by MassDOT and the MBTA. MassDOT investments include those in the Highway, Rail and Transit, and Aeronautics Divisions. MassDOT created spatial buffers for CIP investments using Geographic Information Systems (GIS) to reflect areas of impact. These buffers varied by mode or project type for RTA/MBTA, Rail, and Aeronautics projects and by location (rural, suburban, and urban) for Highway Division projects. Investments were measured per capita to account for population density.

Overall, this analysis shows that the CIP equitably distributes investments among minority, low-income, and Limited English Proficient (LEP) populations. With respect to geographic equity, it did not show any concerning trends in the distribution of investments throughout the Commonwealth.

MassDOT and the MBTA continue to develop and refine the analysis used to determine equity of capital investments. While geographic funding distribution and allocation of funding across diverse communities remains a core component of this analysis, MassDOT and the MBTA continue to work to innovate finer-grain analysis

methodologies that would allow us to identify and quantify the equity of the impacts of projects both at the community level and statewide.

For additional information about MassDOT's Civil Rights work, web links are available in the Glossary of Terms.

More information about the current state of this practice and future goals is available by contacting the MassDOT Civil Rights team at MassDOT.civilrights@state.ma.us.

Geographic Analysis

As a state agency, MassDOT seeks to fund transportation infrastructure equitably across Massachusetts. To assess the geographic equity of the distribution of FY 2024-2028 CIP investments, MassDOT compared the share of CIP spending (reflecting both MassDOT and MBTA projects) in a municipality to the share of statewide Chapter 90 funding that municipality receives.

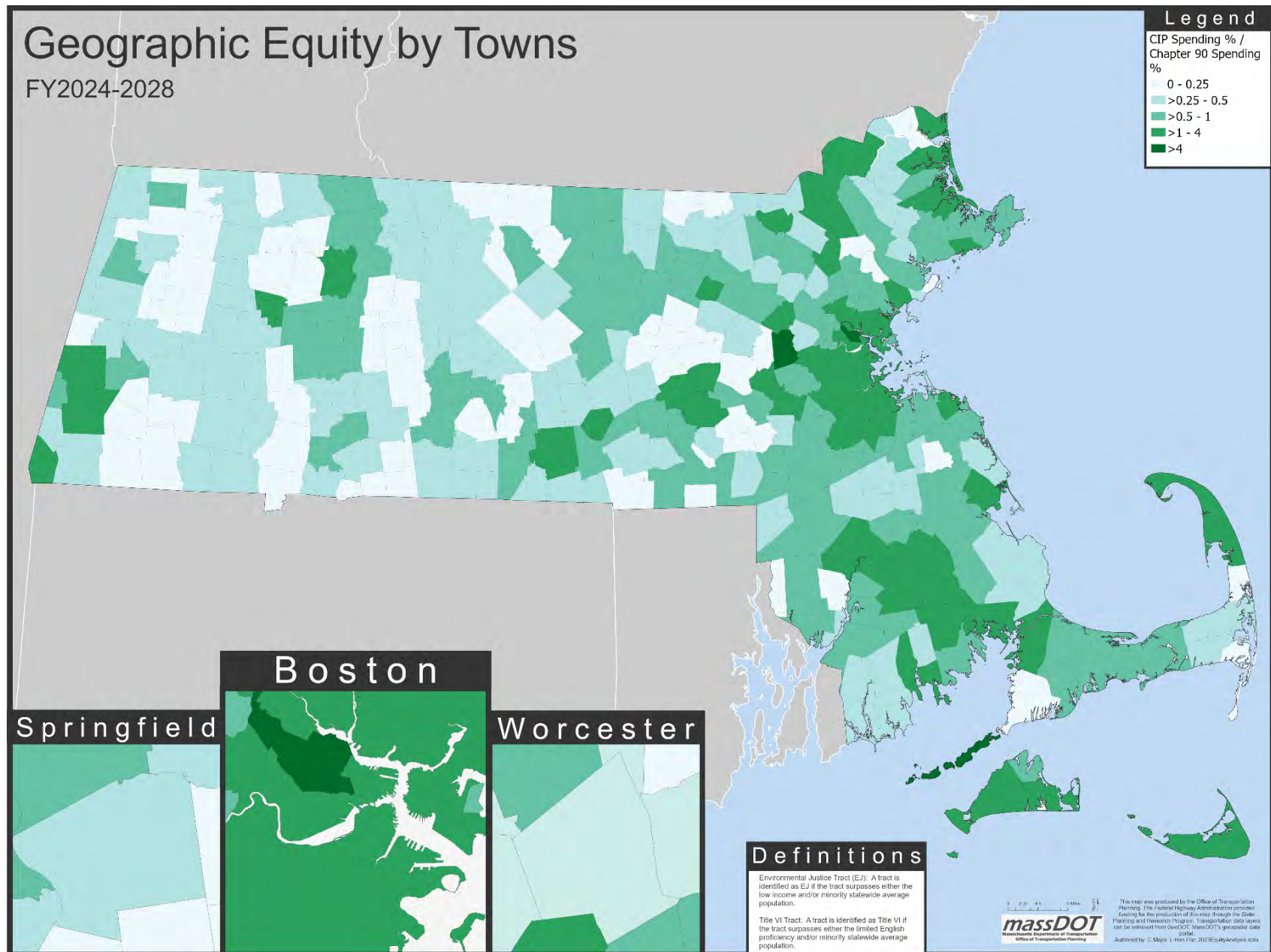
The Chapter 90 Program is a formula program distributed to municipalities for roadway improvements. The formula used to distribute Chapter 90 funding for roadway improvements to the Commonwealth's 351 cities and towns is based on population (20.83%), employment (20.83%), and lane miles (58.33%). Population and employment are considered to evaluate investment per capita and lane miles is considered as a proxy for the extent of the local transportation network. This formula has been in use for distribution of transportation funds to municipalities since 1972.

As the formula has a history of use as a proxy for equitable geographic distribution of transportation investment throughout the Commonwealth, MassDOT opted to use the given percentages as a reference point to determine if CIP funding allocation decisions track with or deviate from the Chapter 90 program. If the share of statewide CIP funds invested in a municipality is the same as the share of Chapter 90 funding it receives—meaning a ratio of one—this would indicate that the CIP distribution is equitable. A value of greater than one would indicate that more CIP investment is planned for a municipality than would be expected if funding were distributed according to the Chapter 90 formula. Meanwhile, a value of less than one would mean that the share of planned CIP investments in that municipality is less than what it would be if the Chapter 90 formula were in use for allocating the spending. Significant deviations can be analyzed more closely as a potential indicator of disparities.

The shading on the map titled “FY2024–2028 CIP: Geographic Equity Results by Municipality” is based on the ratio calculated for each municipality. Darker green shading indicates municipalities that have a share of statewide 2024-28 investments that is greater than its share of statewide Chapter 90 funding. Generally, urban areas receive a disproportionately high share of investment based on lane miles, while rural areas receive a disproportionately high share on a per capita basis. Using the Chapter 90 formula as a benchmark for equity, which includes both lane miles and population, results in less stark contrasts, though urban areas still have higher ratios of the share of CIP spending compared to Chapter 90 spending. Because more roads are eligible for state and federal funding and projects are

generally more expensive in urban areas, this finding does not mean there is clear bias.

Overall, there are no major geographic equity concerns within the SFY 2024-2028 CIP. MassDOT and the MBTA will continue to analyze the CIP year over year to assure that inequitable patterns do not emerge.



Social Equity Analysis

The social equity analysis was conducted to establish compliance with federal and state non-discrimination laws and regulations, including Title VI of the Civil Rights Act of 1964 (*Title VI*), the Civil Rights Restoration Act of 1987, and the 1994 Presidential Executive Order 12898 on Environmental Justice.

Title VI and Environmental Justice (EJ)

Title VI of the Civil Rights Act of 1964 prohibits discrimination by recipients of Federal financial assistance on the basis of race, color, and national origin, including matters related to language access for Limited English Proficient (LEP) persons.

On February 11, 1994, Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations- and Low-Income Populations, was established. Environmental Justice (EJ) refers to the fair treatment and meaningful involvement of all people regardless of minority or low-income status. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.

Per the Order, EJ as it relates to transportation includes:

- Avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental

effects, including social and economic effects, on minority and low-income communities

- Ensuring the full and fair participation by all potentially affected communities in the transportation decision-making process
- Preventing the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Justice40 Initiative

In January 2021, the federal Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, created the [Justice40 Initiative](#). This initiative identifies five indicators for communities that experience transportation disadvantage:

- **Transportation Insecurity** occurs when people are unable to get to where they need to go to meet the needs of their daily life regularly, reliably, and safely.
- **Health Vulnerability** assesses the increased frequency of health conditions that may result from exposure to air, noise, and water pollution, as well as lifestyle factors such as poor walkability, care dependency, and long commute times.
- **Environmental Burden** measures factors such as pollution, hazardous facility exposure, water pollution and the built environment. These environmental burdens can have far-reaching consequences such as health disparities, negative educational outcomes,

and economic hardship.

- **Social Vulnerability** measures socioeconomic indicators that have a direct impact on quality of life including lack of employment, educational attainment, poverty, housing tenure, access to broadband, and housing cost burden as well as identifying household characteristics such as age, disability status, and English proficiency.
- **Climate and Disaster Risk Burden** reflects sea level rise, changes in precipitation, extreme weather, and heat which pose risks to the transportation systems, possibly affecting system performance, safety, and reliability.

Federal guidance and additional information on how this initiative will be implemented is still evolving, and MassDOT and the MBTA continue to monitor this ongoing discussion.

While MassDOT has not adopted Justice40 in our CIP equity analysis process, these Justice40 indicators of disadvantage are being considered in the development of the Commonwealth's next State-wide Long-Range Transportation Plan (SLRTP), [Beyond Mobility](#). This means that future versions of the CIP will include individual capital projects in areas that were identified and analyzed under the latest LRTP and are therefore reflective of meeting the needs of transportation disadvantaged populations. MassDOT will continue monitoring for updates related to the Justice40 initiative and incorporate any relevant guidance into future CIP equity analyses.

Analysis Results

The social equity analysis considered the distribution of investments across all census tracts, and across different demographic indicators, such as minority¹, low-income, Limited English Proficiency (LEP).

Minority census tracts are defined as those with populations that are at least 23.87 percent minority, as defined by the US Census, which is the statewide minority population percentage (based on the 2010 Census, Table P2). Consistent with state policy, low-income census tracts are defined as those with a median household income at or below 65 percent of the statewide median household income. Based on 2010-14 ACS data, the statewide median household income is \$67,846. Therefore, low-income census tracts are defined as those with median household incomes of \$44,100 or less, regardless of household size. Census tracts with at least 5.0 percent of their population considered LEP (individuals above the age of five who do not speak English as their primary language and who have a limited ability to read, write, speak, or understanding English) were also considered for social equity implications.

Equity analyses in this context seek to identify discrepancies in the allocation of funding across the identified demographic groups. While there is no single threshold that serves as a definitive indication of funding allocation differences that suggest clear equity concerns, the state of the practice² indicates that differences on the order of 20% can be observed without impacting equity. Furthermore, in instances where differences exceed 20%, there may be legitimate,

nondiscriminatory justifications that, again, do not indicate equity concerns.

Based on an aggregate assessment of MassDOT and MBTA investments for 2024-28, planned spending per capita in tracts defined as Title VI and/or EJ tracts³ is 3.4 percent greater than in non-Title VI and/or EJ tracts. This result falls within the 20 percent disparity threshold and suggests equitable spending.

- Planned spending per capita in minority Census tracts is 27.0 percent greater than in non-minority Census tracts. These results go beyond the 20 percent disparity threshold in a desirable way.
- Planned spending per capita in LEP census tracts is 2.6 percent greater than in non-LEP census tracts. This result falls within the 20 percent disparity threshold.
- Planned spending per capita in low-income communities is 18.0 percent less than in non-low-income communities. This result falls within the 20 percent disparity threshold.

The map titled “Planned FY 2024-28 CIP Spending Per Capita for EJ and/or Title VI Tracts” shows EJ and/or Title VI tracts within Massachusetts. Darker shading indicates higher levels of CIP spending per capita.

Overall, the equity analysis of the FY2024-2028 CIP does not seem to indicate social equity concerns. MassDOT and MBTA will continue to analyze the Capital Investment Plan

year over year to assure that inequitable patterns do not emerge. For any analysis, MassDOT would not expect perfect equity for a five-year plan, as variations are bound to happen given that one-time large projects can skew outcomes.

¹ Federal agency compliance requirements rely on particular terminology to distinguish between demographic groups. This terminology may not be consistent with today's standards. For example, FTA relies on the terms "minority" and "non-minority" to distinguish between demographic groups on the basis of race and ethnicity. This analysis utilizes this terminology when necessary to reflect compliance with federal laws and regulations. However, MassDOT recognizes there are other contexts where more updated and inclusive terminology should be used to discuss underlying concepts of equity and nondiscrimination. MassDOT is committed to the concepts of equity, diversity, inclusivity, and accessibility and strives to communicate in a way that considers the diverse perspectives of the populations it serves.

² Disparate impact analyses were first used to identify employment discrimination where the courts established a 20% threshold as a reasonable indicator of possible disparities. For CIP equity analyses, MassDOT has relied on this industry standard. The 20% threshold is consistent with how the MBTA identifies potential disparities in major services changes and monitors service and amenities.

³ A Census tract is defined as an Environmental Justice (EJ) tract if it surpasses the statewide average for minority population or if has an average median income that meets or falls below 65 percent of the statewide median income. A Census tract is defined as a Title VI tract if it surpasses the statewide average for minority population or has 5 percent or more people that meet Limited English Proficiency criteria.



Public Comment and Engagement

Public feedback is important to the development and support of the Capital Investment Planning process. MassDOT has created [an interactive comment tool](#) to provide an opportunity for members of the public to directly comment on individual investments in the CIP. The comment tool was active throughout the public comment period which ended June 9, 2023.

Written comments were also be accepted via more traditional methods: via email at massCIP@state.ma.us or by letter sent to:

MassDOT
Office of Transportation Planning
Attn: Manager of Capital Planning
10 Park Plaza Rm. 4150
Boston, MA 02116

The Capital Planning team at MassDOT reviews all comments and will provide a response in the form of a single document that addresses all comment topics. It will be posted to the mass.gov/dot/cip website upon conclusion of the CIP process.

Public Engagement for the 2024-2028 CIP

MassDOT hosted a series of public meetings across the Commonwealth in collaboration with our regional partners,

the Metropolitan Planning Organizations. Below is a list of all the virtual public meetings that were held for the 2024-2028 CIP. Public comment was accepted as part of the virtual public meetings. While each meeting focused on a specific region, comments were welcome on any aspect of the CIP.

Zoom details for public meetings, including registration links were available at <http://www.mass.gov/cip>. All meetings began at 6:00 pm, EST, and accommodation and language translation services were provided upon request.

Virtual Public Meetings

Region	Meeting Host	Date	Time	Platform
Western Massachusetts / Berkshires	Berkshire Regional Planning Commission / Franklin Regional Council of Governments Pioneer Valley Planning Organization /	May 23 rd	6:00 pm	Zoom: https://us02web.zoom.us/meeting/register/tZYvfuGhqzluEta1NSHlITHy7c7hxvCI-4Xo
Northern Middlesex / Merrimack Valley	Northern Middlesex Council of Governments/ Merrimack Valley Planning Commission	May 24 th	6:00 pm	Zoom: https://us02web.zoom.us/meeting/register/tZUucOitrDljGtQX7JyBFPkG20LM2RNuyBmc
Boston	Boston Region MPO (Central Transportation Planning Staff)	May 30 th	6:00 pm	Zoom: https://us02web.zoom.us/meeting/register/tZYpdOuvpz4jH9HBfZ4cVU5Uwbmi39gTeWf1
Southeastern Massachusetts	Old Colony Planning Council / Southeastern Massachusetts Regional Planning and Economic Development District	May 31 st	6:00 pm	Zoom: https://us02web.zoom.us/meeting/register/tZMpfuiogTMuHNRAEJQqK5MoCxTW0oHjQr9

Cape Cod and Islands	Cape Cod Commission / Martha's Vineyard's Commission / Nantucket Planning and Economic Development Commission	June 1 st	6:00 pm	Zoom: https://us06web.zoom.us/join/9tZAgf-2qrT8oEtN6fBLIpbPx3ETVKN_XjL1P#/registration
Central Massachusetts	Central Mass Regional Planning Commission / Montachusett Regional Planning Commission	June 5 th	6:00 pm	Zoom: https://us02web.zoom.us/join/9tZcvfuqqz4vH92WInj9C3jv7YoUrDjnmjNZ#/registration

The above table lists the virtual public meetings that were held for the CIP, along with the meeting hosts and platforms. All meetings were hosted in partnership with MassDOT's regional planning partners. Recordings of meetings will be made available online at www.mass.gov/CIP.

Appendix A: Investment Details

This section provides the lists of investments contained within this CIP. The information within each column is described below:

- Location – where the investment is located
- Project ID – the Division specific ID that uniquely identifies each investment
- Project name – the name of the investment and a brief description
- Priority – the capital priority that the investment addresses
- Program – the program from which the investment is made
- Total cost – the total cost of the investment*
- Prior years – the spending on the investment that pre-dates the plan update*
- FY 2024 – the spending estimated to occur in fiscal year 2024*
- FY 2025-2028 – the spending estimated to occur in fiscal years 2025-2028*
- Post FY 2028 – the estimated spending to occur post fiscal year 2028 for the project, if applicable*

* Note: Cost and spending values are shown in millions and rounded to two decimal places (the nearest ten thousand).

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Appendix B: Investment Programs

This section provides a list of all investment programs contained within this CIP. Each investment program includes a description, details about any relevant performance tracking that informs program size and need, and proposed program spending.

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