

Final 2023-2027 Capital Investment Plan June 2022

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2023-2027 CAPITAL INVESTMENT PLAN

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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 Tesler



On behalf of the Massachusetts Department of Transportation (*MassDOT*), I am pleased to present this Capital Investment Plan (*CIP* or *Plan*) for Fiscal Years 2023-2027. This Plan for MassDOT reflects a return to a five-year capital plan. We continue to respond to the impacts of the pandemic including the changes

in travel and in the use of shared public space outside. The increase in pedestrian activity and the willingness to share street space to improve business and commerce remains steady along with renewed commitments to green and open spaces in our communities.

Throughout this, MassDOT's priority areas remain the same, focused first on safety, and with an emphasis on larger scale planning to create a transportation system dedicated to improving reliability, accessibility, sustainability and resiliency, and the equity of our network.

This Plan continues the framework laid out with the 2017–2021 CIP, which established a vision and process for the Commonwealth to plan investments in our transportation system. Our prior work included setting priorities for our system, developing programs to implement those priorities, and selecting projects that meet the goals of our programs and those steps continue to lead our organization to meet the challenges in the future.

The CIP is developed in concert with the development of the five-year State Transportation Improvement Program (STIP) for Federal Fiscal Years 2023-2027 (FFY23-27). The STIP will incorporate the new federal funding levels and programs included in the federal surface transportation reauthorization legislation (the Bipartisan Infrastructure Law or BIL) that was signed into law on November 15, 2021. The CIP aligns with the STIP¹ to maximize federal funding available to the Commonwealth, the Metropolitan Planning Organizations (MPOs), and transit operators.

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

BIL provided an additional \$1.8 billion in federal highway formula funding for the Commonwealth of which approximately \$449 million reflects an increase to our core federal highway formula programs and \$1.4 billion is for new formula programs.

In addition, BIL 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 \$14.9 billion in programmed transportation spending for our roads, rails, shared use paths, airports, buses, and bridges over the next five years. Approximately 52% of the investments are focused on improving the reliability and resiliency of the existing core transportation system, with an additional 26%

devoted to modernizing these systems to meet the demands of our citizens across the Commonwealth.

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

I look forward to continuing to work together toward these shared and important goals.

Jamey Tesler
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 02118
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 their 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 02116-3969
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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الفقرة بأخصائي الاتصال يُرجى، أخرى بلغة المعلومات هذه إلى بحاجة كنت إن
الهاتف 857-368-8580 على السادسة

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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, rail improvements. BIL also includes new federal formula programs that address climate change (Carbon Reduction and Electric Vehicle Charging 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 2023 FFY is October 1, 2022 to September 30, 2023. The Massachusetts state fiscal year (SFY) begins on July 1 of the previous calendar year and ends on June 30. The 2023 SFY is July 1, 2022 to June 30, 2023.

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 a newly 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. As the umbrella transportation agency for the Commonwealth, MassDOT also oversees the MBTA. 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 visions 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 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 RTP 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 Regional 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 Regional Transit Authority
CCRTA	Cape Cod Regional Transit Authority
CIP (or Plan)	Capital Investment Plan
CMAQ	Congestion Mitigation Air Quality
CRRSAA	Coronavirus Response and Relief Supplemental Appropriations Act
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-Taunton Regional Transit Authority
GLT	Green Line Transformation
GLX	Green Line Expansion
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	Metro West 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 Regional 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
SPREDD	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 Regional Transit Authority
WRTA	Worcester Regional Transit Authority
WT	Western Turnpike

Document Overview

This document comprises the proposed State Fiscal Year 2023-2027 (FY23-FY27) Capital Investment Plan (CIP) for the Massachusetts Department of Transportation (MassDOT).

It is structured around three major components:

1. Overview of the CIP

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

2. FY23-FY27 Proposed Investments (Appendix A)

- Detailed listing of all capital projects by Division included in the FY23-27 CIP including project ID, project name, description and location, CIP investment program, total project cost, FY23 spending, FY24-27 spending and post FY27 spending (where appropriate)

3. FY23-FY27 CIP Investment Programs (Appendix B)

- One page overview for each CIP program summarizing the program and goals, metrics and planned spending levels for FY23-27.

Introduction

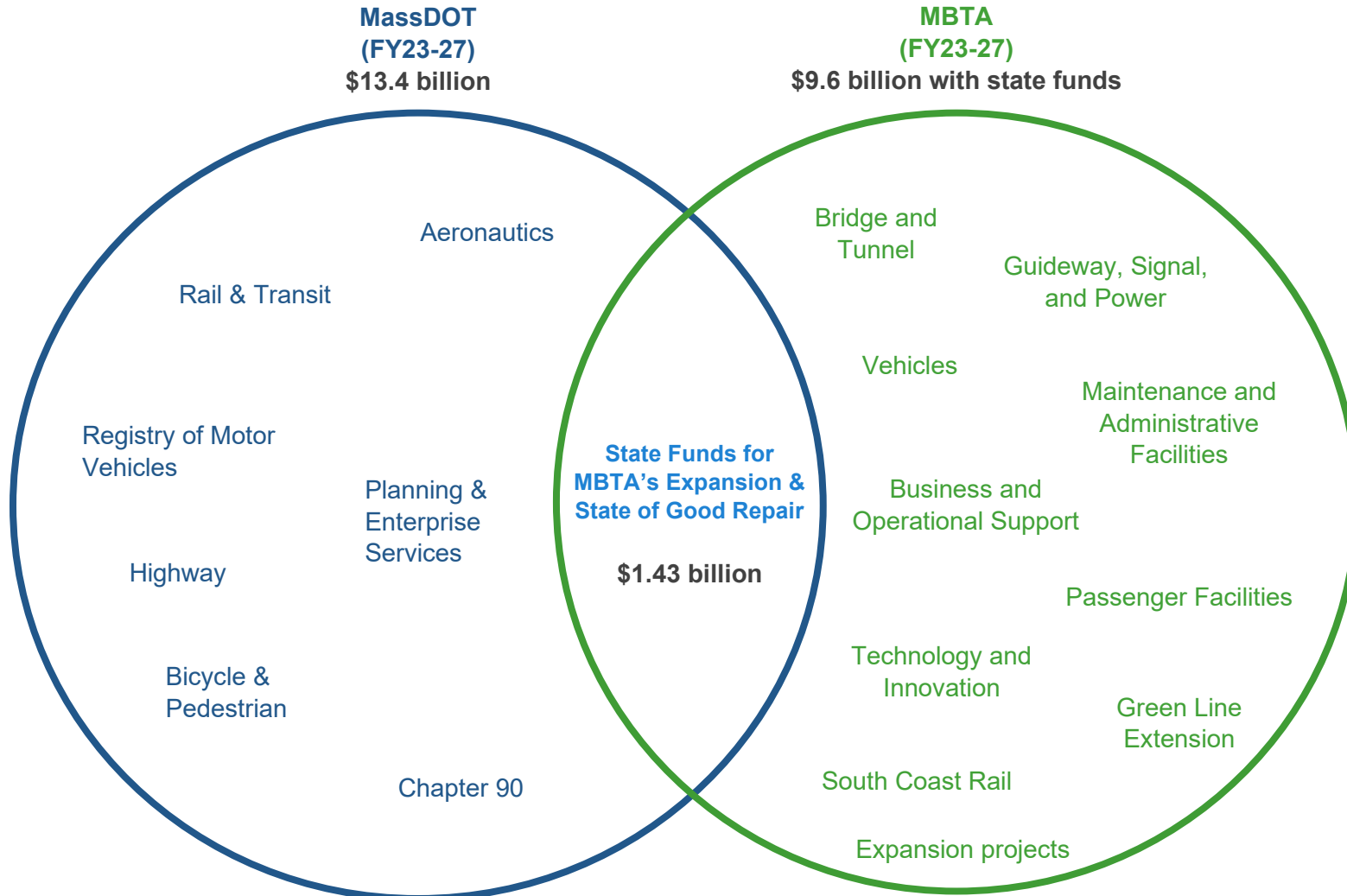
One of MassDOT's key roles is to develop and implement the Commonwealth's transportation investment strategy—the Capital Investment Plan (*CIP*)—in coordination with the federal government, the state legislature, municipalities, regional planning agencies (*RPAs*), regional transit authorities (*RTAs*), other state agencies, and the public. The 2023-2027 capital plan for MassDOT reflects a return to a five-year CIP. It aligns with the 2023–2027 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 2023-2027 CIP

The Massachusetts Bay Transportation Authority (MBTA) has developed a separate, standalone Capital Investment Plan for 2023-2027 that was reviewed and approved by the new MBTA Board of Directors. The MBTA CIP is available at <https://cdn.mbtta.com/sites/default/files/2022-05/2022-05-26-fy23-27-mbta-final-cip-public-document-accessible.pdf>.

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. MassDOT's CIP details the Commonwealth's capital funding that is provided to the MBTA to support those investments. Those funds equal \$1,426 million for 2023-2027. The following diagram illustrates the overlap between the MBTA CIP and the MassDOT CIP. A total of \$14.9 billion is programmed for spending over the next five years (2023-2027).

**MassDOT
2023-2027 Spending
\$14.9 billion**



Both the CIP and the STIP incorporate the new 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). Massachusetts will receive an increase of approximately \$1.8 billion over the next five years to support highway roadway and bridge projects and an additional \$570 million to support transit investments for the fifteen Regional Transit Authorities and the MBTA. New highway formula funds include:

- \$1.125 billion in new 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 Charging Infrastructure) and resiliency (PROTECT)

BIL includes 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.

Transportation and Infrastructure Bond Bills

In January 2021, Governor Baker signed a \$16 billion transportation bond bill (TBB) into law - An Act Authorizing and Accelerating Transportation Investment. The TBB continues to accelerate investments in modernizing our transportation system and authorized several new programs to address asset conditions and congestion at the local level, improve transit access, and provide new funding for the Commonwealth's extensive National Highway System bridges (NHS bridges). New 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 new federal Bipartisan Infrastructure Law (BIL) additional bond authorization is needed to fully utilize the new funding provided to the Commonwealth. Governor Baker has filed a new \$9.707 billion transportation bond bill, "An Act Relative to Massachusetts's Transportation Resources and Climate" (MassTRAC,) The bill is currently under review and consideration by the Legislature and will provide this necessary authority.

The 2023-2027 CIP includes a number of new bridge projects programmed with the Next Generation Bridge GANs authorized in 2021 TBB along with the additional bridge funding (\$1.125 billion) provided under BIL. The combination of both GANs and new 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 state and federal long-term condition targets for our bridges.

In addition, the 2023-2027 CIP includes two new CIP programs - one program authorized in the 2021 TBB not included in the 2022 CIP as well as a program authorized and funded under BIL:

- Municipal Electric Vehicle Charging Infrastructure (2021 TBB)
- National Electric Vehicle Formula Program (BIL)

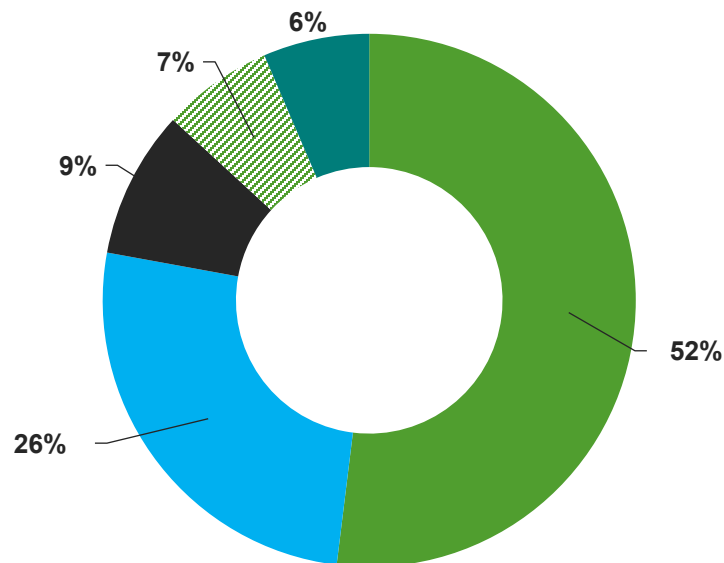
New Program / Funding	Description	Authorization / 2023-2027 Capital Funding / Programmed Spending
Municipal Electric Vehicle Charging Infrastructure program	Provides grant funding to municipalities and regional transit authorities (RTAs) for the integration of electric vehicles (EV) and EV equipment in communities. 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	\$25 million authorized / \$25 million
National Electric Vehicle Formula 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.	\$63.5 million authorized / \$47.0 million (including state match)

The following table details the funding programmed in the 2023-2027 CIP.

Program Investments by Division

	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 23-27 Total
Reliability	\$323.3 (millions)	\$6,694.4	\$45.8	\$169.5	\$341.1	\$1.1	\$149.4	\$ -	\$7,724.5
	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 23-27 Total
Modernization	\$10.3 (millions)	\$2,917.7	\$74.3	\$673.7	\$50.6	\$13.3	\$88.9	\$25.0	\$3,853.8
	Aeronautics	Highway	IT	MBTA	Rail	RMV	Transit	OTP	SFY 23-27 Total
Expansion	\$ - (millions)	\$699.5	\$ -	\$582.7	\$17.0	\$ -	\$ -	\$33.6	\$1,332.7
Division/Total	\$333.6	\$10,311.5	\$120.1	\$1,425.9	\$408.7	\$14.4	\$238.3	\$58.6	\$12,911.0

Overall Program Spending Breakdown

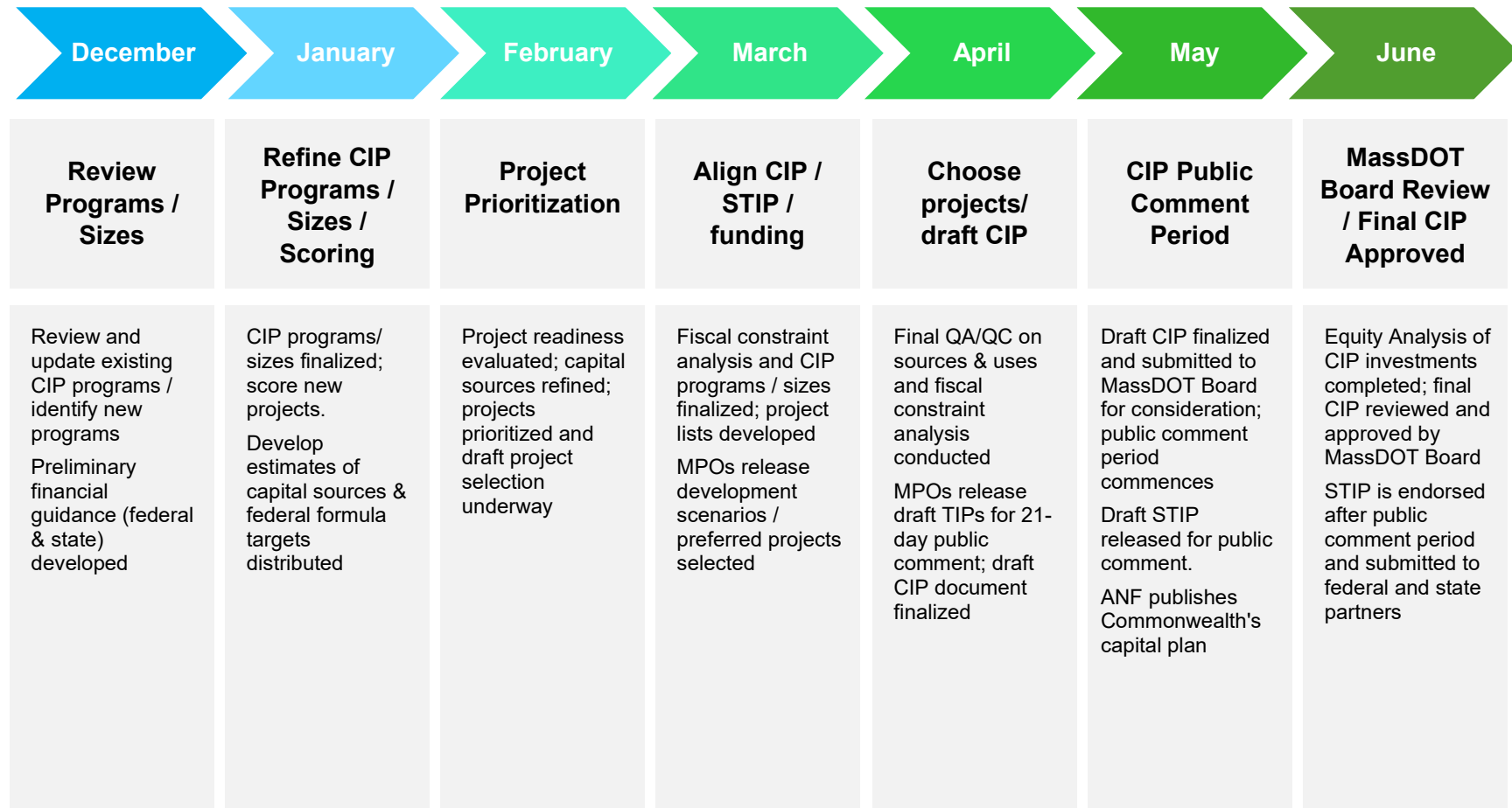


(millions)	SFY 2022	SFY 2023	SFY 2023-27
Reliability	\$1,211.7	\$1,248.0	\$7,724.5
Modernization	\$501.8	\$665.1	\$3,853.8
Expansion	\$502.7	\$490.4	\$1,332.7
Chapter 90	\$200.0	\$200.0	\$1,000.0
Planning & Enterprise Services	\$201.8	\$149.4	\$957.3
Total	\$2,624.0	\$2,754.3	\$14,868.4

Totals may not add due to rounding.

CIP Development Cycle

Each year the CIP development process starts with each division revisiting CIP programs - purpose, needs, 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 continues to be 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, and reliability of the transportation system (approximately 52% 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 26% 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 9% 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 Plans (*TAMs*) 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 2023-2027 CIP. MassDOT is currently updating its 2019 TAMP which will be submitted to FHWA for approval this summer.

Along with our asset management goals and performance targets established in the 2021 Tracker, Divisions utilize existing condition reports and surveys to identify and prioritize investments over the short term and long term. Tracker is MassDOT's annual report that reviews progress to achieving our goals. It is a key 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 provides new federal formula funds (Carbon Reduction, PROTECT and Electric Vehicle Charging Infrastructure) to fund new investments that can mitigate the

impacts of climate 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 for 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.

Funding Sources

The CIP is funded from a mix of federal, state, and local 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 2023-2027 CIP reflects federal and state funding that was made available to Massachusetts and included 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
- 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 the 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 project design, management, operations, and other construction support provided to the Aeronautics, Highway, Registry, and Rail and Transit Divisions, MassDOT Planning and Enterprise Services and the MBTA South Coast Rail program.

Accelerated Bridge bonds

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

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.

Rail Enhancement bonds

This is the Commonwealth Rail Enhancement Program (*REP*): a dedicated \$2.1 billion program 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 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 FY23-FY27, the pay-go capital funds reflect an increase (over previous estimates in the 2022 CIP) as traffic and revenues have begun to rebound along the toll facilities.

Metropolitan Highway System (MHS) pay-go

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

Other Sources

Central Artery Tunnel Project Repair and Maintenance Trust Fund (CARM)

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

Municipal and local funds

Funds provided by municipalities to match federal-aid sources 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), surplus Commonwealth operating funds provided to pay additional BIL-related program/project development costs 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 funds include the new federal formula funds authorized under BIL and Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) funds.

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 do not include FTA funds available to 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 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 2023-2027 CIP. Further, all projects programmed in the STIP are incorporated into the CIP.

MassDOT Spending by Source

Projected Spending by Source*	SFY 2023	5-year Total
Federal Sources of Funds		
Federal Highway (<i>FHWA</i>) reimbursements	\$829.9	\$5,528.9
Federal Transit (<i>FTA</i>) reimbursements	\$6.5	\$33.7
Federal Aviation (<i>FAA</i>) reimbursements and grant draws	\$18.1	\$251.7
Federal Rail (<i>FRA</i>) reimbursements and grant draws	\$6.5	\$10.6
Subtotal of federal spending	\$861.0	\$5,824.8
Bond cap	\$1,107.7	\$5,344.5
Grant Anticipation Notes (<i>GANs</i>)	\$14.3	\$595.0
Accelerated Bridge bonds	\$5.9	\$8.7
Rail enhancement bonds	\$446.2	\$1,280.2
Central Artery Tunnel Project Repair and Maintenance Trust Funds (<i>CARM</i>)	\$26.7	\$133.0
Metropolitan Highway system (<i>MHS</i>) pay-go	\$127.0	\$792.8
Tobin Bridge (<i>Tobin</i>) pay-go	\$15.6	\$139.0
Western Turnpike (<i>WT</i>) pay-go	\$100.3	\$505.4
Municipal, reimbursable and local funds	\$1.7	\$19.5
Other State Funds	\$47.9	\$225.4
Subtotal of non-federal spending	\$1,893.3	\$9,043.6
Total Spending	\$2,754.3	\$14,868.4

*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 2023-2027 CIP, descriptions of each program, and descriptions of any asset- and performance management-based data used for setting program sizes. See Appendix B.

Reliability Investments

About 52% of the \$14.9 billion in proposed capital spending for 2023-2027 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, repaving/resurfacing projects on I-95 or Route 3, track and right of way replacement for the Berkshire Line, 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 2023-2027 (millions)

Aeronautics	\$323.3
Highway	\$6,694.4
IT	\$45.8
MBTA	\$169.5
Rail	\$341.1
RMV	\$1.1
Transit	\$149.4
Total	\$7,724.5

Modernization Investments

About 26% of the \$14.9 billion in proposed capital spending for 2023-2027 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 airport capital improvements for the public use airports throughout the Commonwealth.

Modernization Spending by Division for 2023-2027 (millions)

Aeronautics	\$10.3
Highway	\$2,917.7
IT	\$74.3
MBTA	\$673.7
Rail	\$50.6
RMV	\$13.3
Transit	\$88.9
OTP	\$25.0
Total	\$3,853.8

Expansion Investments

About 9% of the \$14.9 billion in proposed capital spending for 2023-2027 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 2023-2027 *(millions)*

Highway	\$699.5
MBTA	\$582.7
Rail	\$17.0
Highway/OTP	\$33.6
Total:	\$1,332.7

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 - 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 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 nationally and 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.

The Design-Build contract was awarded and construction is anticipated to commence in the middle of calendar year 2022.

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 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 temporary bridge (ca. 1983) will be removed as part of the project work. This structure is a nine-span structure consisting of eight spans of galvanized steel Acrow Panelized Modular trusses and one reinforced concrete slab approach span. The signals at the intersection with Pawtucket Blvd and Old Ferry Rd 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's crossing over the Charles River. Of the eight bridges, five will be replaced, one will be rehabilitated, and two will have their superstructure 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 rehabilitation. 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 three phases including a series of weekend closures will then be followed

by a 16-week closure followed by a final series of weekend closures. The 16-week closure will occur in Summer 2023. During closures work is expected to occur twenty-four hours per day.

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. 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.

Construction of this project is expected to commence in 2023.



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. MassDOT is redesigning 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.

Construction on the project is expected to commence in 2023.



Boston - I-90 Allston Multi-Modal 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 drivers behind the I-90 Allston Intermodal 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 the BPY as well as the ongoing development just to the north of Cambridge Street.

The 2023-2027 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 2023-2027 CIP includes funding for design and permitting as well as the interim repair/replacement project.

Bourne & Sagamore - The Cape Cod Bridges

MassDOT Highway Division has started on one the most important transportation programs in the region: addressing the aging Sagamore and Bourne bridges and making improvements to the surrounding roadway network.

When the Sagamore and Bourne bridges were built in 1933, they changed the relationship between the Cape and the rest of Massachusetts. They 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 respond to today's needs and expectations, which includes being brought up to modern standards, helping to improve travel operations, and being more flexible for alternate modes of travel, like 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.

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.



East-West Rail

MassDOT completed a feasibility study looking at alternatives to provide passenger rail service between Pittsfield, Springfield, Worcester, and Boston.

Federal and Massachusetts officials recently reached agreement on a plan to extend existing rail service west from Worcester to Springfield and Pittsfield.

A new rail authority must be created by the Legislature that will capitalize on the federal funding provided for rail service that was included in BIL enacted in November 2021. A budget and timeline for the project will be developed and finalized. No funding for the project has been programmed

in the 2023-2027 CIP. It is anticipated that future CIPs will incorporate funding for the project as the design and schedule of the project progresses.



Equity Analysis

Overview

This section discusses the results of the equity analysis conducted on the draft FY2023-2027 CIP, which indicates an equitable plan. The narrative herein describes the results and methodology used along with illustrative maps.

The investments included in the CIP update 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, 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 FY23-27 by MassDOT and the MBTA. Equitable investment was evaluated using a number of different variables and indicators such as transportation mode (Highway, MBTA, Rail & Transit, and Aeronautics) and on several levels:

- In the aggregate and by investment categories to understand the total impact of the CIP;
- Individually for each mode and investment category to identify particular areas of concern that the aggregate level would not have identified separately; and
- Variable buffering to analyze impacts of the proposed CIP investments in two ways: by mode (RTA/MBTA, Rail, and Aeronautics) and for the Highway Division by location (rural, suburban, urban).

Investments were measured per capita to account for population density. 2014 ACS (American Community Survey) data was used in the analysis.

Overall, this analysis determined that the CIP equitably distributes investments among minority, low-income, and Limited English Proficient (LEP) populations. It also shows an equitable distribution of investments geographically across 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 to identify and quantify the equity of the impacts of projects 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 the state. However, because of the data that is available and the nature of transportation infrastructure, there is no clear consensus on what exactly is an equitable distribution of resources, given the variation between needs, demand, and contributed tax dollars. As a result, MassDOT assessed the data in a variety of ways for this equity analysis. The maps included in this section illustrate a few different ways that MassDOT assessed the data. While no single method is perfect, these approaches taken together provide useful information to better understand the regional distribution of resources. Only projects programmed within SFY 2023-2027 in the CIP are considered.

Variables considered in analyzing the geographic equity of the plan are population, employment, and lane miles, captured by the Chapter 90 formula. 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.

The Chapter 90 Program is a formula program distributed to municipalities for roadway improvements based on population (20.83%), employment (20.83%), and lane miles (58.33%). 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 geographic distribution of transportation investment throughout the Commonwealth, MassDOT opted to use the given percentages as a measure for an equitable distribution of investments.

If the ratio of CIP funding allocated to a municipality is the same as the ratio of Chapter 90 funding it receives—meaning a ratio of one—this would indicate that the CIP distribution is equitable. Greater than one would indicate more CIP funding than would be expected if funding were distributed according to the Chapter 90 formula, less than one would mean that the CIP distribution provides less than would have been received if the Chapter 90 formula were in use.

The shading on the map indicates the variations in the percentage of CIP investments from the percentage of 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 perform better. 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 2023-2027 CIP. MassDOT and MBTA will

continue to analyze the Capital Investment Plan 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 nondiscrimination 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, Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, created the [Justice40 Initiative](#). This initiative identifies six indicators for communities that experience transportation disadvantage:

- **Transportation access disadvantage** identifies communities and places that spend more, and take longer, to get where they need to go
- **Health disadvantage** identifies communities based on variables associated with adverse health outcomes, disability, as well as environmental exposures.
- **Environmental Disadvantage** identifies communities with disproportionately high levels of certain air pollutants and high potential presence of lead-based paint in housing units.

- **Economic disadvantage** identifies areas and populations with high poverty, low wealth, lack of local jobs, low homeownership, low educational attainment, and high inequality.
- **Resilience disadvantage** identifies communities vulnerable to hazards caused by climate change.

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.

The social equity analysis considered the distribution of investments across all census tracts, and across different demographic indicators, such as minority, 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 average. 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. The statewide median household income is currently \$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 6.25% 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 dispositive indication of funding allocation differences that suggest clear equity concerns, the state of the practice* 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.

Analyzing the entire CIP, investments in 2023-2027 are approximately 47.2% more per capita in minority than non-minority communities.

Considering all modes, LEP census tracts receive 26.4% more funding per capita than non-LEP census tracts.

For the proposed SFY 2023-2027 investments, low-income communities receive approximately 98.2% per capita investments as compared to non-low-income communities (less than 1.8%).

Overall, the equity analysis of the SFY 2023-2027 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.

*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 evaluates major services changes and monitors service and amenities.

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 8, 2022.

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

MassDOT
Office of Transportation Planning
Attn: Director 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, and it will be posted to the mass.gov/dot/cip website.

Public Engagement for the 2023-2027 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 being held for the 2023-2027 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 24 th	6:00 pm	Zoom: https://us02web.zoom.us/j/82037272448?pwd=aXo3Sy9GTmdiVGRXU2VHcXFRK01pdz09 Meeting ID: 820 3727 2448 Passcode: 090975 Dial-In: 1-646-876-9923
Northern Middlesex / Merrimack Valley	Northern Middlesex Planning Commission / Merrimack Valley Planning Commission	May 25 th	6:00 pm	Zoom: https://us02web.zoom.us/j/81042377110?pwd=K3loZyt6UERETzlCb2RIYzhtNG5kQT09 Meeting ID: 810 4237 7110 Passcode: 725620 Dial-In: 1-646-876-9923
Central Massachusetts	Central Mass Regional Planning Commission / Montachusett Regional Planning Commission	May 26 th	6:00 pm	Zoom https://us02web.zoom.us/j/81042377110?pwd=K3loZyt6UERETzlCb2RIYzhtNG5kQT09 Meeting ID: 857 9613 5985 Passcode: 730172 Dial-In: 1-646-876-9923
Boston	Boston MPO / Central Transportation Planning	May 31 st	6:00 pm	Zoom https://us02web.zoom.us/j/81042377110?pwd=K3loZyt6UERETzlCb2RIYzhtNG5kQT09 Meeting ID: 892 4730 4438 Passcode: 605065 Dial-In: 1-646-876-9923

Southeastern Massachusetts	Old Colony Planning Council / Southeastern Massachusetts Regional Planning and Economic Development District	June 1 st	6:00 pm	Zoom https://us02web.zoom.us/j/81042377110?pwd=K3loZyt6UERETzlCb2RIYzhtNG5kQT09 Meeting ID: 826 0250 2217 Passcode: 624318 Dial-In: 1-646-876-9923
Cape Cod and Islands	Cape Cod Commission / Martha's Vineyard's Commission / Nantucket Planning and Economic Development Commission	June 2 nd	6:00 pm	Zoom https://us02web.zoom.us/j/81042377110?pwd=K3loZyt6UERETzlCb2RIYzhtNG5kQT09 Meeting ID: 826 0250 2217 Passcode: 987991 Dial-In: 1-646-876-9923

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 with participation from MassDOT's regional planning partners and the relevant Highway District offices. Recordings of meetings are 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 2023 – the spending estimated to occur in fiscal year 2023
- FY 2024-2027 – the spending estimated to occur in fiscal years 2024-2027
- Post FY 2027 – the estimated spending to occur post fiscal year 2027 for the project, if applicable

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.

