
MassDOT/MBTA

Capital Investment Plan (CIP)

Joint MassDOT/FMCB Boards

May 24, 2021



Agenda

- **CIP Process Recap**
 - Status update on CIP development activities
- **Proposed sources and uses for MassDOT and MBTA**
 - Additional adjustments to sources and/or changes
 - Adjustments to proposed uses
- **Appendix**



CIP Process Recap

- **Since last meeting:**

- Finalized programs and funding requests
 - CIP / STIP alignment complete and draft CIP and proposed investments incorporate all federally funded projects
 - CIP programs incorporate funding for several new programs authorized in the final Transportation Bond Bill (TBB)
 - Developed draft list of proposed investments
- Reviewed and refined source assumptions
 - Final bond Cap targets provided by Executive Office for Administration and Finance (ANF)
 - MassDOT pay-go capital projections updated to align with draft FY 22 MassDOT operating budget
- Six virtual CIP public meetings scheduled

- **Today need feedback on:**

- Draft proposed projects and changes
- Final proposed sources and uses
- Draft CIP



Proposed Board Engagement

| | Capital Program Committee | Joint Boards |
|----------|---|---|
| December | CIP discussion postponed until January | |
| January | CIP development approach / strategic framework / timeline / milestones / public engagement | Strategic framework / public engagement |
| February | Status of CIP programs / changes / preliminary sources assumptions | Status of CIP programs / changes / preliminary sources assumptions |
| March | Final discussion on programs, sizes / prior CIP comparisons and initial fiscal constraint analysis | |
| April | Final draft sources and uses; initial list of key initiatives; new programs; public outreach plan | Final draft sources and uses; initial list of key initiatives; new programs; public outreach plan |
| May | Draft CIP including any updates to sources & uses / project changes from 2021 CIP / Joint Boards vote to release for public comment | |
| June | Final CIP / public outreach analysis / equity analysis / Joint Boards vote to approve CIP | |



Adjustments to Revenues/Sources – MassDOT/MBTA

- Bond Cap targets provided by ANF have been finalized
 - 2022 bond cap targets were formally increased by \$24.5 million to fund the new programs authorized in the Transportation Bond Bill (TBB)
 - Municipal Pavement Program - \$15.0 million
 - Local Bottleneck Reduction - \$2.5 million
 - Shared Streets and Spaces - \$4.0 million
 - Cape Cod Bridges – Nearby Roadway design and permitting - \$3.0 million
- \$15 million in new grant anticipation notes (GANs) funding authorized in the TBB included to support the Highway Bridge program
- MassDOT pay-go capital (i.e., Metropolitan Highway System (MHS), Western Turnpike (WT), Tobin Bridge (Tobin)) have been aligned to the proposed FY 22 MassDOT operating budget
- Federal aid sources are final and tied to State Transportation Improvement Program (STIP) projects programmed for 2022-2026



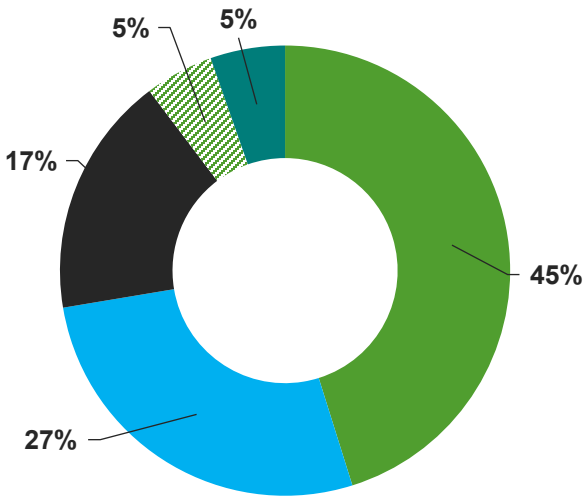
New federal sources to support the CIP

- Disbursement of \$150.8 million in Federal Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) funding is still under consideration and a portion or all may be incorporated in the final CIP
- With the receipt of CRRSAA funds and the pending receipt of ARPA funds, the MBTA restored all FTA preventative maintenance funds (\$460 million) to the MBTA capital program
- American Rescue Plan Act (ARPA) of 2021, was signed into law on March 11, 2021, and includes \$30.5 billion in federal funding to support the national's public transportation systems and additional funding to support state and local investments
 - ARPA allocated \$1.675 billion towards Capital Investment Grants (CIG) which includes \$103.5 million for the Green Line Extension (GLX)
 - MassDOT and the MBTA continue to work closely with ANF and our Federal partners on the programming of the new funds and is awaiting more specific details on the eligible uses
 - MassDOT/MBTA continue to actively prepare to capitalize on the prospect of additional federal investment, and will continue to rely on our annual capital planning process to inform how best to utilize any new capital Federal funding sources
 - The current CIP does not include any assumptions for these new funds

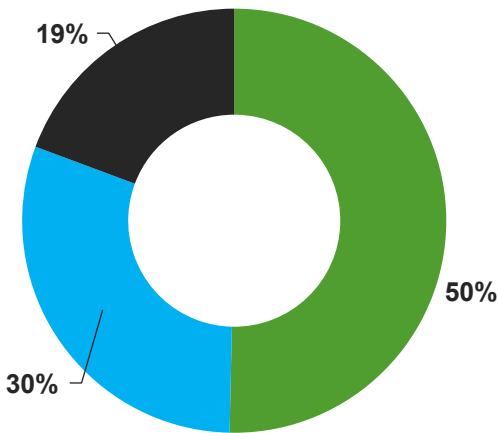


2022 Plan: \$4.0 billion

Overall spending breakdown*



Overall spending by priority



Overall:

- ▶ The draft SFY 2022 CIP maintains the investment strategy of the prior CIPs. The majority of the funds go toward the reliability and modernization of our transportation system, with targeted investments in expansion of the system. The plan is focused on projects and programmed investments that are currently underway with targeted investments in expansion and new transportation modes.
- ▶ A revamped five-year CIP is anticipated to be developed as a clearer understanding of the status of the projected state transportation revenues, federal reauthorization language and federal infrastructure funds becomes available.

Other highlights:

- ▶ MassDOT pay-go capital aligns with FY 22 operating budget; supports the Metropolitan Highway System, Western Turnpike and Tobin Bridge capital needs
- ▶ MBTA FTA preventive maintenance funds restored to support the capital program

| millions | FY 2021 CIP | DRAFT FY 2022 CIP | Difference |
|--|-------------|----------------------|------------|
| Reliability | \$1,751.7 | \$1,829.4 | +\$77.7 |
| Modernization | \$944.4 | \$1,106.8 | +\$162.4 |
| Expansion | \$578.3 | \$702.2 | +\$123.9 |
| Chapter 90 | \$200.0 | \$200.0 | \$ - |
| Planning, Enterprises Services, & Other | \$213.4 | \$217.1 | +\$3.7 |
| one-year total | \$3,687.7 | \$4,055.4 | +367.8 |



Overview 2022 projects and changes

- In general, the 2022 plan looks very similar to last year's CIP
 - While due to lingering effects of COVID, some projects will cost more and/or take longer to complete, the project list remains essentially the same
- For Highway, several new projects have been added to 2022 (more detail in Appendix)
 - Boston I-90 & MBTA Prudential Tunnel lighting rehabilitation - \$41.7 million
 - Somerset/Swansea Pavement preservation work on I-395 - \$25.5 million
 - Boston/Chelsea structural repairs to the Tobin Bridge - \$16.6 million
 - Chelmsford- Bridge betterment at Westford Street over I-495 - \$13.8 million
- For MBTA, several new projects are included for 2022 (more detail in Appendix)
 - Columbus Avenue North Bus Lane - \$3.0 million
 - Bus Lanes and Other Bus Priority - \$2.0 million
 - Short Term Accessibility Improvements (FTA Compliance Action) - \$5.8 million
 - Facility Circulation Safety Improvements – \$3.5 million
 - Quincy Bus Facility Modernization - \$19 million additional funding
 - Lechmere Viaduct Rehabilitation - \$25.8 million additional funding
- New expenditures are focused on:
 - Advancing high-priority safety initiatives and capital maintenance
 - Advancing planning, design, and real estate for bus maintenance facilities
 - Planning and design for longer-term programs to benefit the Red and Orange Line, Commuter Rail, Blue Line, Green Line, and power network





**Massachusetts Bay
Transportation Authority**

Capital Investment Plan (CIP) Update

Joint MassDOT/FMCB Boards

May 24, 2021

Key Milestones for CIP Development

December

- CIP Kicked off, CIP Information Sessions held to detail the process and requirements
- Project proposals due via CIP intake process

January

- Develop initial estimates of capital funding sources
- Begin evaluation and scoring process for new project proposals (scoring using PSAC criteria)

February

- Set initial program sizes based on capital and asset needs
- Prioritization of project proposals, based on scoring and evaluation

March

- Develop initial project list – combine existing and new projects
- Refine sources and sequencing for draft project list

April

- Continue to refine sources and sequencing of draft project list
- Release 5-year TIP to the Boston Metropolitan Planning Organization (MPO)

May

- Finalize draft CIP and present to the FMCB, CPC and Joint Board; Vote to release draft CIP
- Post draft CIP for public comment; engage public through multiple avenues

June

- Public meetings and comment period; incorporate public comment into the CIP
- Joint Board vote to approve final CIP

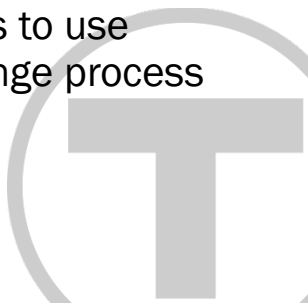
CIP Sources: Updated Assumptions

Federal Programs

- As part of the American Rescue Plan Act of 2021 (“ARPA”), \$1.675B was allocated toward Capital Investment Grants, which includes \$103.5M for the Green Line Extension.
- The Commonwealth is awaiting further guidance regarding the APRA funds and therefore no changes have been made to GLX funding at this time.

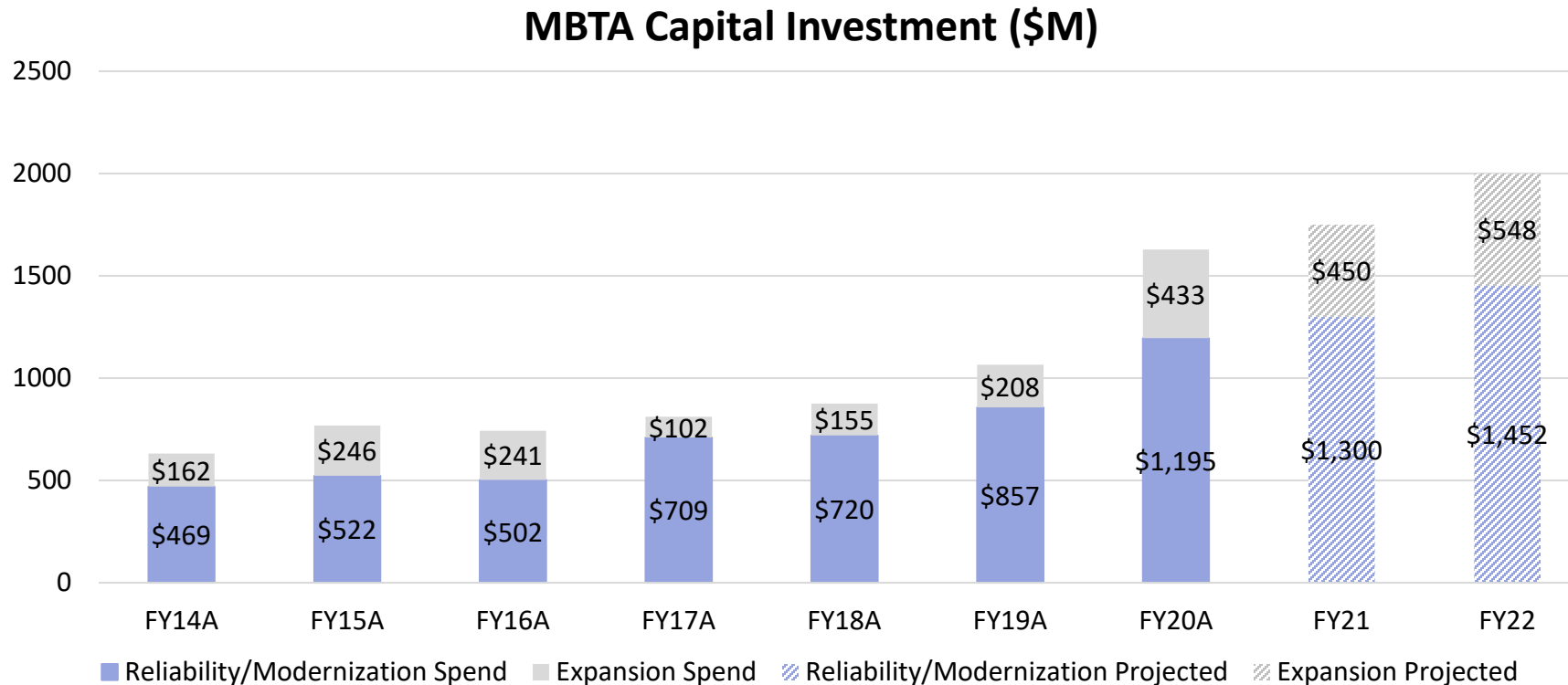
Pay-Go/Lockbox

- Per FMCB direction, the FY22 CIP has been updated to include a new, *Near-Term Transformational Investments fund* to support near-term, capital opportunities that arise during the fiscal year
- This program will be funded through a \$30M transfer of operating funds and is being shown as a Pay-Go/Lockbox source in the FY22 CIP
 - With the receipt of CRRSSA funds and with the pending receipt of ARPA funds, the MBTA is able to support a transfer of operating funds to the capital program
- Consistent with all in-year capital project changes, requests to use these funds will be processed through the MBTA’s CIP Change process



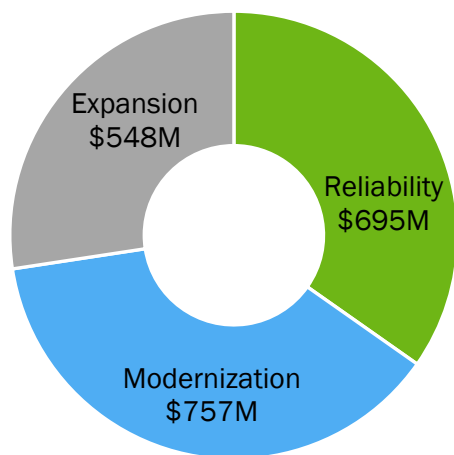
FY 2022 Spending Goal

- The capital program is on track to achieve its FY 2021 goal of \$1.75 billion in total investment, maintaining an unprecedented level of capital spending
 - As of April 30, the T had spent over \$1.45 billion year to date (preliminary)
- The spending goal for FY 2022 is \$2B, with \$1.452B in Reliability/Modernization and \$548M in Expansion



FY 2022 Draft CIP Spending

Draft FY22 CIP Spending by Priority

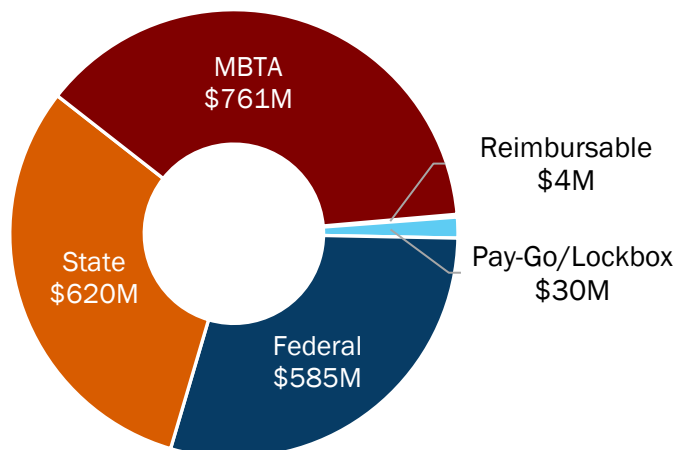


The FY22 CIP reflects significant on-going investment in the Reliability and Modernization priorities, which will continue to deliver improved safety, reliability and quality of service for riders

Spending by Funding Source Highlights:

- **Federal** fund spending is driven by progress on Green Line Extension and the continued drawdown of carry over funds
- **MBTA funds** includes Revenue Bonds to support the 20% match for Federal projects, as well as MBTA-only funded projects. Also includes financing for PTC, ATC and Fiber Burial programs
- **State** funds include Bond Cap and Rail Enhancement Program special obligation bonds for GLX, Red Line/Orange Line improvements, South Coast Rail, and other projects
- **Other** funding sources include municipal contributions, other reimbursements and the new \$30M transfer of operating funds

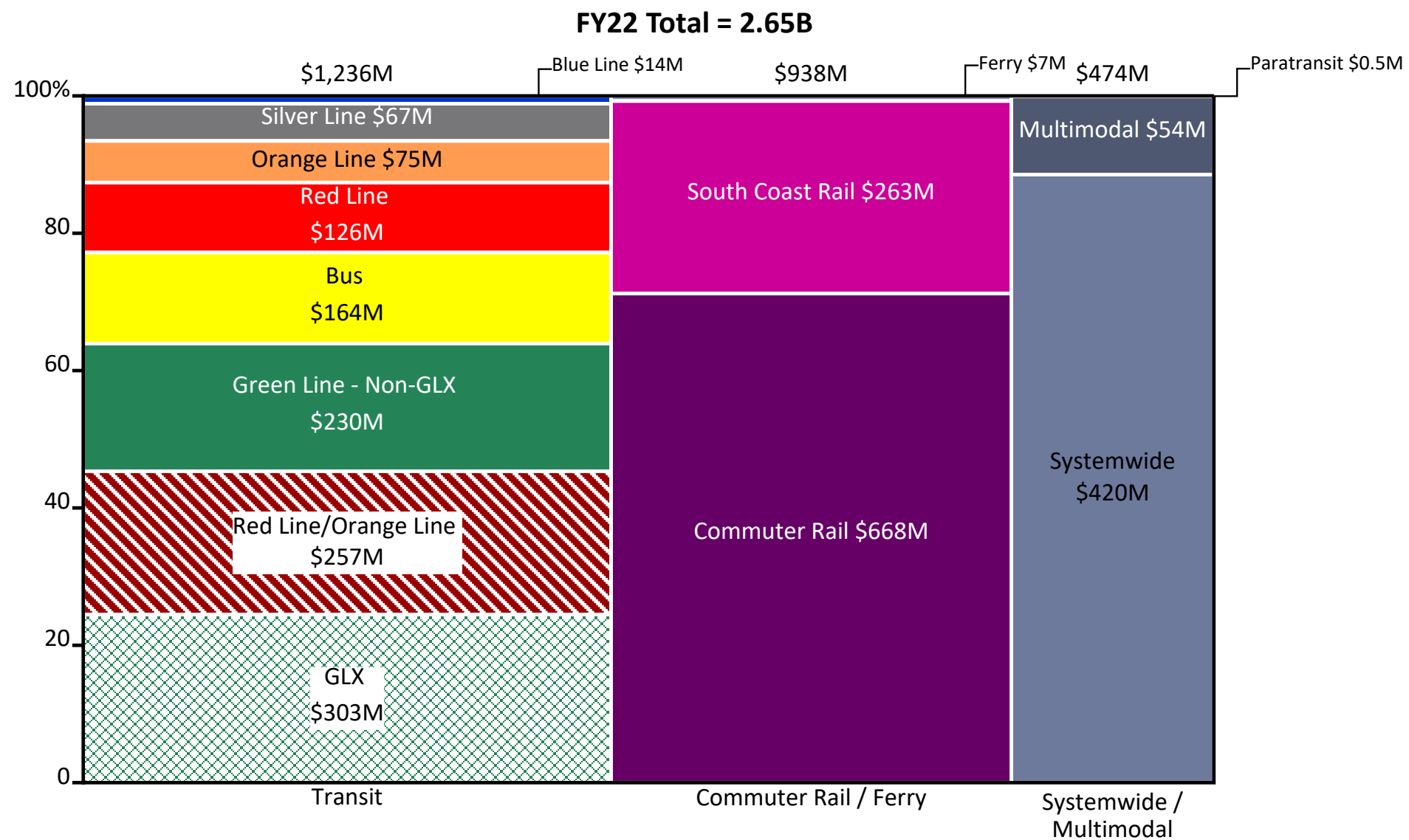
Draft FY22 CIP Spending by Funding Source



FY22 CIP programs reflect \$2.6 billion organized by Priority and Program



FY22 CIP Programmed Funds by Mode/Line



Investment Principles

With a “maintenance of effort” CIP, the MBTA will focus on continuing projects already underway, with targeted investments for the future

Continue to prioritize and invest in steady-state asset replacement and modernization

- Upgrades to our revenue vehicle fleet, including procurement of new **Electric Hybrid (EEH) buses** for the Silver Line, overhauls of **Commuter Rail Locomotives**, and funding for an ongoing program to **replace vans and sedans** used by The RIDE.
- \$170M programmed for bridge and tunnel upgrades, including continued funding for the replacement of the **Gloucester Drawbridge**
- Installation of **Automatic Train Control** on the North Side of the Commuter Rail System
- Completion of **Braintree and Quincy Adams Garage Rehabilitation**

Continue to invest in and support through completion, a number of in-flight capital programs

- Continued execution of the **Green Line Extension**, working towards commencing revenue service by the end of CY21.
- Continued construction of **South Coast Rail Phase 1**, as well as procurement of additional Commuter Rail coaches to support service
- Investments in vehicles, yards, maintenance facilities, and signals to support the **Red Line/Orange Line Transformation**
- Continued implementation of **Fare Transformation**

Make targeted investments in the next round of transformation programs and establish a strong foundation for future funding opportunities

- Final design and construction of the **Quincy Bus Facility**, which will support future Battery Electric Buses (BEB) fleets
- Additional investments in **bus priority infrastructure** and passenger amenities
- Continued investments in planning to support **Rail Transformation**
- Improvements to Green Line track, signals, and stations as part of **Green Line Transformation**

FY22 Programmed Funds – Top 10 Projects

- The top 10 projects account for \$1.18B in programmed FY22 funds, the remaining 471 projects total \$1.47B in programmed FY22 funds

| | | Project Name | Mode | Investment Details | FY22 Funding | Total Auth. Budget |
|---|--|---|-------|---|--------------|--------------------|
| FY22 Top 10 Projects by Amount Programmed | | Green Line Extension (P0095) | GL | Extension of the Green Line to Union Square in Somerville and College Avenue in Medford. | \$284.4M | \$2,118.6M |
| | | South Coast Rail Expansion (P0160) | CR | Expansion of the Commuter Rail system to southeastern Massachusetts, including Taunton, Fall River ,and New Bedford. | \$263.4M | \$918.2M |
| | | ATC Implementation on the MBTA North Side Commuter Rail Lines (P0606) | CR | Funds the implementation of federally mandated Automatic Train Control. Currently in Construction. | \$154.0M | \$368.8M |
| | | Signal Program - Red/Orange Line (P0285) | RL OL | Replaces aging analog signal systems on the Red and Orange Line with new, digital infrastructure. Currently in construction, with completion expected in 2022. | \$88.5M | \$267.6M |
| | | Procure 64 Bi-Level CR Coaches (P0893) | CR | Procurement of commuter rail coaches to replace existing cars that have exceeded their service life. | \$75.5M | \$276.1M |
| | | Red/ Orange Line Vehicles (P0362) | RL OL | Fund the procurement of the new fleet of Red and Orange Line Vehicles. Full acceptance of 152 new OL vehicles is expected by August 2023 and acceptance of 252 new RL vehicles is expected by January 2025. | \$75.5M | \$1,073.5M |
| | | Red Line / Orange Line Infrastructure Improvements (P0157) | RL OL | Improvements and expansion of maintenance facilities, carhouses, and supporting infrastructure needed for the acceptance of new vehicles. | \$74.1M | \$475.4M |
| | | Fare Transformation (P0265) | SW | Upcoming project initiatives include expansion of CharlieCard access, implementation of contactless payment, and rear-door boarding capabilities. | \$68.7M | \$783.4M |
| | | Cabot Yard Complete Upgrade (P0512) | RL | Replaces the storage and maintenance facility for Red Line vehicles, including track replacement to service red line vehicles. Currently in Construction. | \$48.3M | \$174.0M |
| | | DMA Replacement (P0619) | SL | Procurement of hybrid electric fleet for the Silver Line. DMA replacement design in process with pilot bus beginning in August 2021. Delivery anticipated between March and August 2022. | \$44.0M | \$89.4M |
| Total | | | | | \$1,176.4M | \$6,545.0M |

FY 2022 Draft CIP – Improvements for Accessibility

Heavy/Light Rail



- New funding awarded to address ADA compliance at 14 street level stations on the **Green Line B and C branches**
- Work is underway to improve paths of travel and replace elevators at **Oak Grove**
- Construction of new raised platforms and redundant elevators at **Symphony Station** will begin in summer 2021
- Design is currently underway for the replacement of elevators at **Central Square** through the Elevator Program

Bus



- Ongoing **reconstruction of over 300 bus stops** identified by the MBTA as high priority, with multiple barriers to access. Improvements include sidewalk widening and leveling and the replacement of unusable curb ramps.

Commuter Rail



- Construction of new platforms, elevators, and ramps is underway at **Natick Center** station, with completion expected in 2022.
- A relocated, fully accessible **Chelsea Station** will improve connections to the Silver Line and will open in late 2022.
- Design is underway for elevators and high level platforms at **Worcester Union Station**

Systemwide

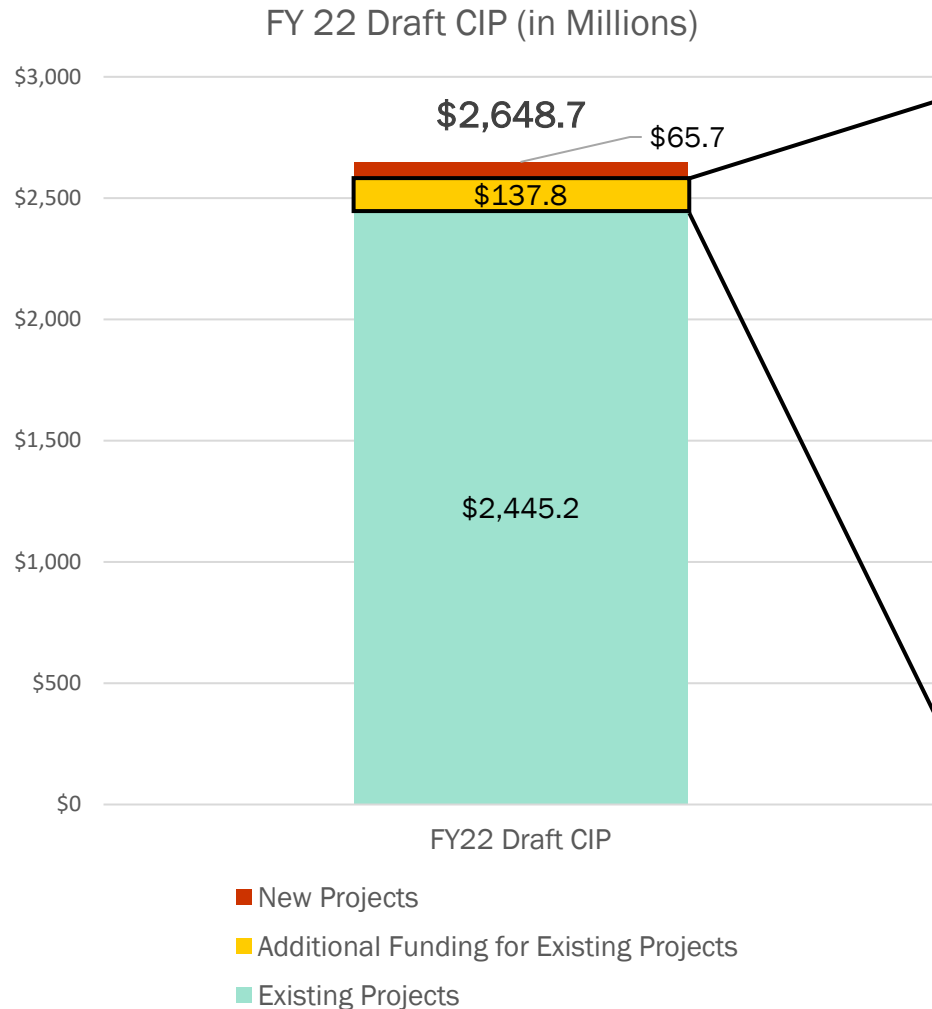


- New funding awarded for procurement and installation of **automated fare gate openers**
- Ongoing replacement of **RIDE vans and sedans** and in-vehicle technology upgrades to improve reliability and customer experience
- Continued investment in **station wayfinding and brightening** to comply with ADA/MAAB regulations and LEP standards



FY 2022 Draft CIP – Targeted Investments

The draft FY22 CIP focuses on continuing projects already underway, with targeted investments for the future

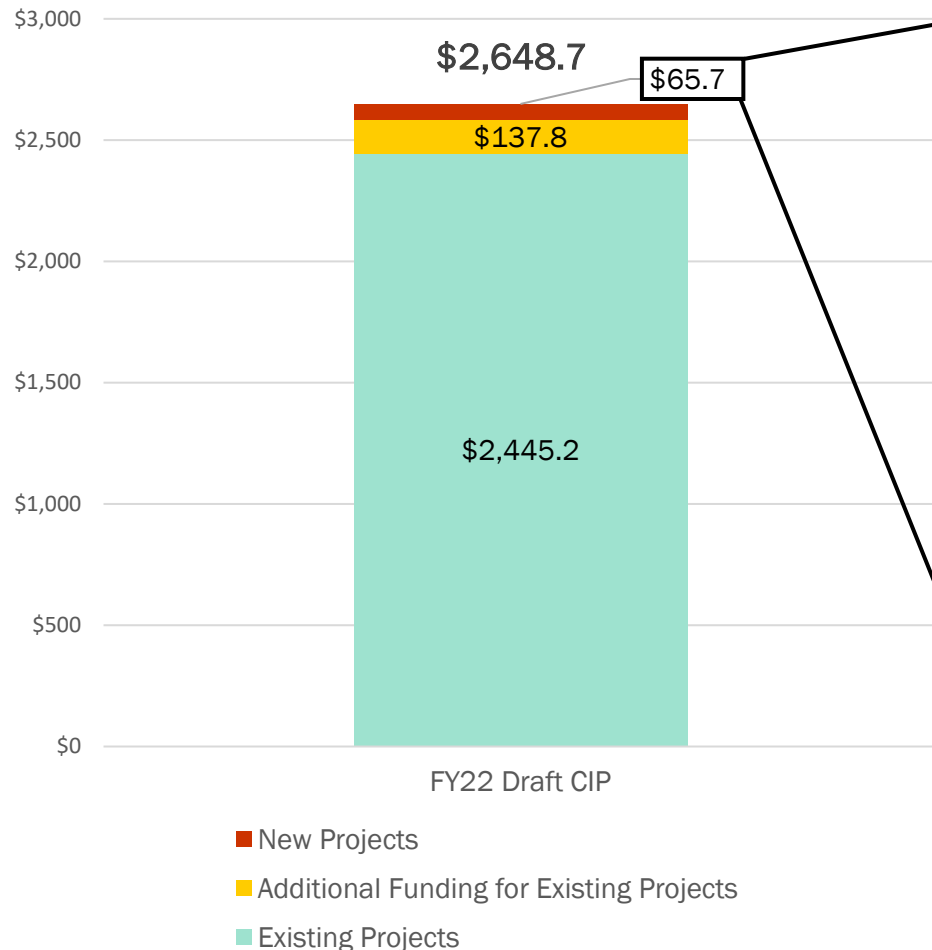


| Existing Projects with Additional Funding | CIP Program | FY 2022 (M) |
|--|--------------------------------|----------------|
| Reliability | | |
| Structural Repairs Systemwide | Bridge and Tunnel | \$2.0 |
| Future Regional Rail Layover Planning | Facilities | \$30.0 |
| BAE A123 Energy Storage System Replacement Program | Revenue Vehicles | \$2.3 |
| Locomotive Overhaul | Revenue Vehicles | \$0.5 |
| Capital Program Support | System Upgrades/Other | \$8.6 |
| Keolis Capitalization Initiatives and Extra Work | Track, Signal, and Power | \$17.0 |
| Modernization | | |
| Bus Facility Modernization - Quincy Bus Facility | Bus Transformation | \$19.0 |
| Lechmere Viaduct Rehabilitation Project | Green Line Transformation | \$25.8 |
| Symphony Station Improvements | Green Line Transformation | \$5.0 |
| Green Line Transformation | Green Line Transformation | \$4.9 |
| Green Line Central Tunnel Signal - 25 Cycle | Green Line Transformation | \$2.0 |
| Wellington Yard Complete Upgrade | Red/Orange Line Transformation | \$10.6 |
| Red Line / Orange Line Infrastructure Improvements | Red/Orange Line Transformation | \$3.4 |
| Workforce Modernization Program - HASTUS | Technology and Innovation | \$6.7 |
| Total | | \$137.8 |

FY 2022 Draft CIP – Targeted New Investments

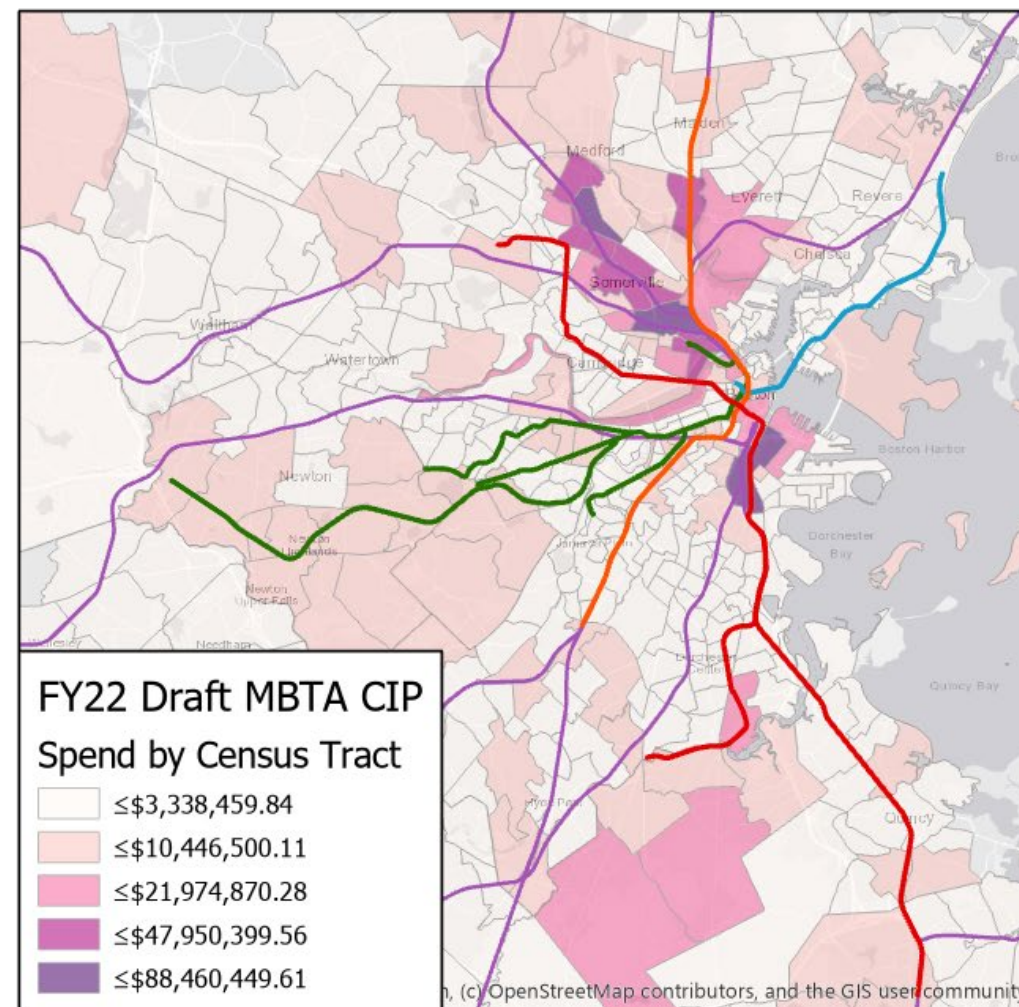
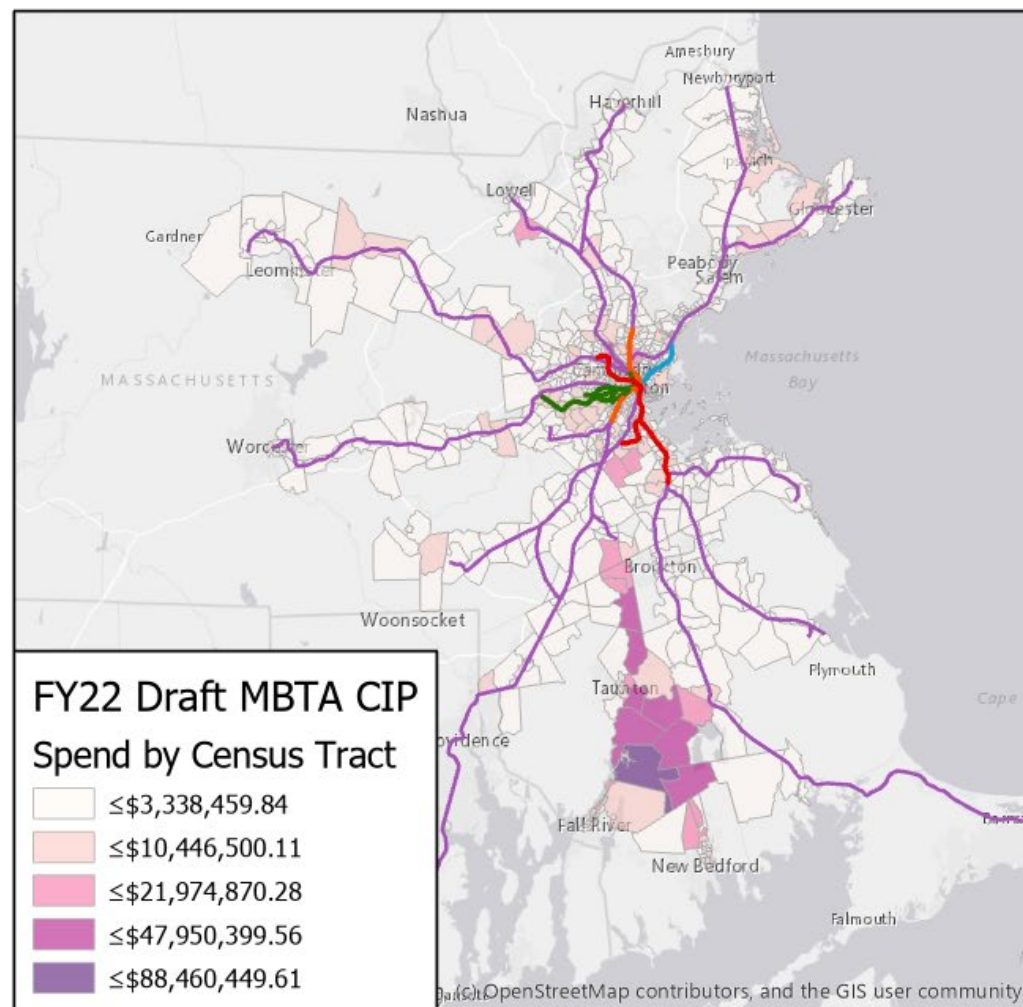
The draft FY22 CIP focuses on continuing projects already underway, with targeted investments for the future

FY 22 Draft CIP (in Millions)



| New Projects | CIP Program | FY 2022 (M) |
|--|--------------------------------|---------------|
| Reliability | | |
| Urgent Structural Design Support | Bridge and Tunnel | \$0.5 |
| Facility Circulation Safety Improvements | Facilities | \$3.5 |
| Emergency Egress Ventilation and Lighting | Facilities | \$0.4 |
| Keolis General & Administrative Contract | Track, Signal, and Power | \$6.0 |
| Systemwide Bike Racks | Stations | \$0.1 |
| Near-Term Transformational Investment Fund | System Upgrades/Other | \$30.0 |
| Modernization | | |
| Columbus Ave Bus Lane Phase 2 | Bus Transformation | \$3.0 |
| Bus Lanes and Other Bus Priority | Bus Transformation | \$2.0 |
| Malden/Everett Main Street Transit Signal Priority | Bus Transformation | \$0.1 |
| Accessible Fare Gate Opener | Fare Transformation | \$3.6 |
| Short Term Accessibility Improvements - FTA Compliance Actions | Green Line Transformation | \$5.8 |
| GLX Vehicle Maintenance Facility Modifications & Upgrades | Green Line Transformation | \$0.7 |
| Red Line Orange Line PM/CM Professional Services | Red/Orange Line Transformation | \$6.8 |
| Bus Video Security System Mandatory Platform Upgrade | Risk Management and Mitigation | \$3.3 |
| Total | | \$65.7 |

Draft FY 2022 CIP by Census Tract



2022 CIP Public Engagement

- The CIP is published both as a PDF and as a virtual “story map,” providing users the opportunity to interact with the CIP content and comment on specific projects
- In lieu of in-person public meetings, MassDOT/MBTA has organized six virtual regional public meetings to be held with participation of the Metropolitan Planning Organizations (MPOs)/Transportation Planning Organizations (TPOs)
- Each meeting will provide a brief overview of the CIP and focus on 2022 investments
 - Public comment will be accepted as part of the virtual public meeting and is also encouraged via the online public comment tool
 - While each meeting will focus on a specific region, comments will be accepted on any aspect of the CIP
 - Two ways to advance projects in the CIP:
 - MassDOT/MBTA local planning & prioritization processes
 - MPO/TPO planning & prioritization processes



CIP Public Engagement

Virtual Public Meeting Schedule

MassDOT will host 6 public meetings across the Commonwealth with participation from the Metropolitan Planning Organizations. Zoom details for public meetings are available at mass.gov/cip.

May 25th at 6pm – Western Mass/Berkshires

Berkshire Regional Planning Commission / Pioneer Valley Metropolitan Planning Organization / Franklin Regional Council of Governments

May 26th at 6pm – Northern Middlesex/Merrimack Valley*

Northern Middlesex Planning Commission / Merrimack Valley Planning Commission

May 27th at 6pm – Central Mass*

Central Massachusetts Regional Planning Commission / Montachusett Regional Planning Commission

June 1st at 6pm – Boston*

Boston MPO / Central Transportation Planning

June 2nd at 6pm – Southeastern Mass*

Old Colony Planning Council / Southeastern Regional Planning & Economic Development District

June 3rd at 6pm – Cape and the Islands

Cape Cod Commission / Nantucket Planning and Economic Development Commission / Martha's Vineyard Commission

* Region includes the MBTA service area

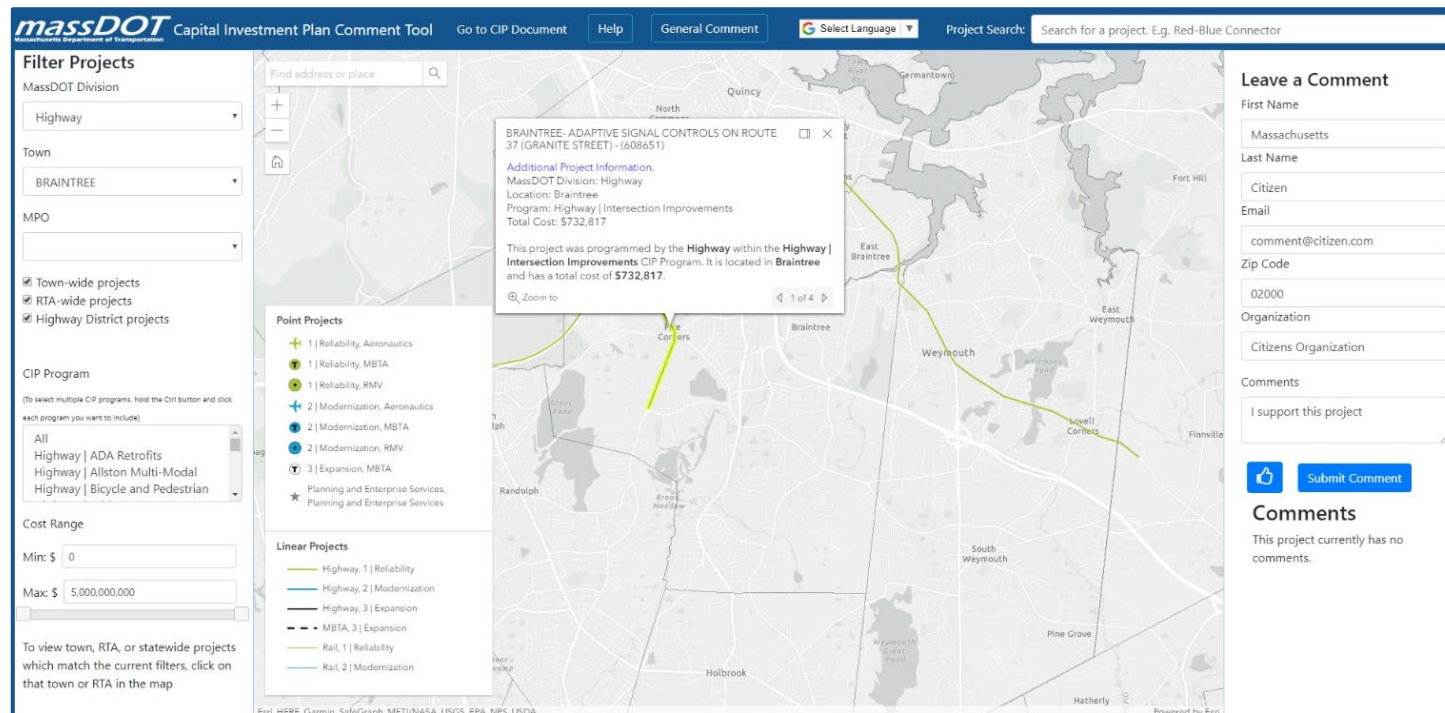
Other Opportunities for Public Participation

- **CIP Comment Tool:** Comments will be accepted directly through the [CIP Online Comment Tool](#). Members of the public can add general comments or project-specific comments.
- **Email:** Comments can be emailed to massCIP@state.ma.us
- **Letters:** Physical letters will be accepted from stakeholders and members of the public wishing to use non-virtual means to participate.
- MassDOT also encourages the public to engage with your municipal leaders about your priorities for transportation projects.

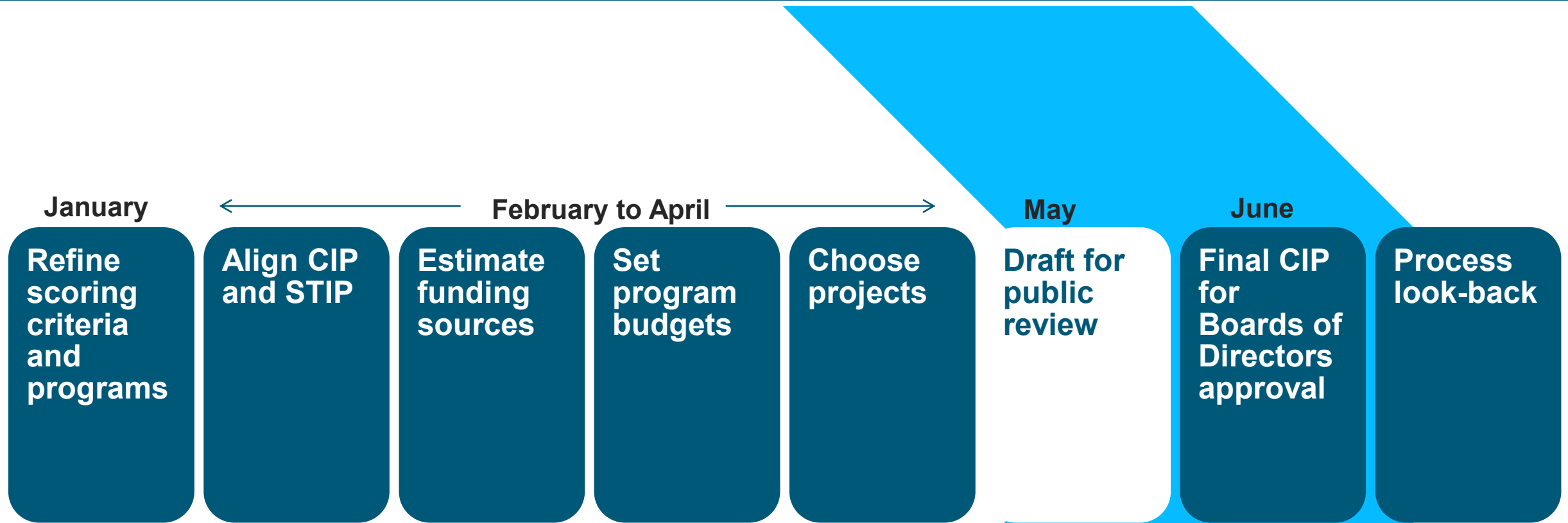


CIP Comment Tool

- The CIP online comment tool and interactive map allows users to view and comment on CIP projects.
- Users can filter projects by MassDOT Division, municipality, MPO region, CIP program, and cost. Users can also search for projects by name and enter their address to view nearby projects.
- General, non-project specific comments may also be submitted using the tool.
- The SFY 2022 comment tool will go live on May 25th at: <https://gis.massdot.state.ma.us/cipcommenttool/>



2022 Capital Investment Plan process



Where we are:

- Finalize draft 2022 Capital Investment Plan
- Present to CPC May 19, Joint Boards May 24
- Post draft CIP for comment; engage public through multiple avenues (virtual)



2022 Plan: additional iterations

- **Changes expected before update is released for comment**
 - MPOs/TPOs have released all of their TIPs for public comment; those project lists have been incorporated into the draft CIP update project lists; changes not expected until CIP released for public comment
 - Changes requested from today's Joint Board meeting
- **Changes expected after update is released for comment**
 - MPOs/TPOs have endorsed all of their TIPs; project lists will be incorporated into the final draft CIP update
 - Changes due to any responses to public comments
- **Changes expected after June Board meetings**
 - Changes that may be requested from CPC and at the Board meeting before publishing the final plan



Next steps and discussion

- Finalize content in on-line format for review during public comment period
- Continue with an equity analysis before the Joint Board votes to approve the final CIP
- **Today:**
 - Need feedback on proposed draft 2022 CIP and changes to highlighted projects in 2022
 - Seeking Joint MassDOT/FMCB Boards approval to release draft 2022 for public comment



Proposed Board Action

VOTED:

That the Secretary/CEO, or his designee, is hereby authorized and directed to take any steps deemed necessary and appropriate to request public comment for the MassDOT/MBTA Draft FY22 Capital Investment Plan



2022 CIP: Appendix

TBB Programs and New Funding
Project changes by Division/Program
Sources and spending
Program spending adjustments



Transportation Bond Bill – new funding and/or programs

| Program | Description | TBB Authorization | CIP Funding assumptions |
|--|---|---------------------------|--|
| Municipal Pavement* | Program would provide funds through partnerships and/or grants to cities and towns to assist them in repairing and replacing municipal-owned pavement | \$100 million authorized | \$15 million in FY22 proposed spending; Approved |
| Transit Infrastructure Improvements* | Program will provide funds through partnerships and/or grants to municipalities to implement transit-supportive infrastructure to improve and facilitate more efficient delivery of transit operations, improve the passenger experience, and enhance transit rider and pedestrian service and safety for both the MBTA and RTA networks | \$25 million authorized | Program funding for FY 22 TBD |
| Local Bottleneck Reduction* | The program would provide new funding for cities and towns to address localized, operationally influenced bottlenecks that negatively impact traffic flow. The program would fund for moderate, cost effective congestion relief such as redesign, re-striping, lane and shoulder width adjustments, signal improvements, signage and other infrastructure improvements . | \$25 million authorized | \$2.5 million in FY22 proposed spending; Approved |
| Public Realm Improvements (aka Shared Streets and Spaces) | Program will continue a successful initiative launched in FY 21 and to provide in grants for cities and towns to launch or expand improvements to sidewalks, curbs, streets, on-street and off-street parking in support of public health, safe mobility, and commerce in their communities | \$20 million authorized | \$4 million in FY22 proposed spending; Approved |
| New Funding/Program | Description | Authorization | CIP Funding assumptions |
| Next Generation Bridge Program | Focus on bridge preservation/bundling of smaller MassDOT bridges | \$1.25 billion authorized | \$50 million to be obligated in FY22 in the STIP*; Approved \$15 million in estimated spending for FY22 |

*TBB stipulates that for communities with ready access to public transit or commuter rail that any grants provided shall be given to those communities that encourage Transit-Oriented Development (TOD), including multifamily housing near transit; MassDOT and the MBTA will work with the Executive office of Housing and Economic Development to define these parameters as part of the establishing the programs.

Review of 2022 projects and changes

- The following tables highlight significant changes primarily for projects worth \$15 million or greater in total cost:
 - New projects added in this CIP
 - Deleted or unfunded projects as compared to 2020-2024
 - Changes in cost (>10%) to total costs as compared to 2020-2024 (see Appendix)
- Cost drivers include:
 - Additional inflation costs incurred when scheduled start of project shifts out
 - Highway project costs include escalation by 4% to mid-point of construction (per guidance from FHWA)
 - Conversely, if project construction is initiated sooner, inflation adjustment could reduce total project cost
 - Scope changes to MassDOT or MBTA projects
 - Scope changes to MPO projects or regional target projects not under MassDOT or MBTA control
 - Cost changes for materials, e.g., changes to cost of steel, liquid asphalt



Plan update: project status – MassDOT projects

Project status – Existing Projects with additional funding

| Existing Projects – additional funding | Division / CIP Program | Cost Increase (millions) | Status |
|--|-----------------------------------|--------------------------|--------------|
| Reliability | | | |
| 606522 - ANDOVER- BRIDGE REHABILITATION, A-09-036, I-495 OVER ST 28 (SB), A-09-037, I-495 OVER B&M AND MBTA, A-09-041, I-495 OVER ST 28 (NB) | Highway/Bridge | \$52.3 | Design |
| 606226 - BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE | Highway / Roadway Reconstruction | \$38.5 | Design |
| 609409 - SPRINGFIELD- BRIDGE REPLACEMENT, S-24-016, ARMORY STREET OVER CSX MAINLINE & S-24-026, ARMORY STREET OVER ABANDONED CSX | Highway/Bridge | \$32.9 | Design |
| 605287 - CHELSEA- ROUTE 1 VIADUCT REHABILITATION (SB/NB) ON C-09-007 & C-09-011 | Highway/Bridge | \$26.9 | Construction |
| 605857 - NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET | Highway/Intersection Improvements | \$15.5 | Design |
| 602202 - SALISBURY- RECONSTRUCTION OF ROUTE 1 (LAFAYETTE ROAD) | Highway/Roadway Reconstruction | \$10.4 | Design |
| Total | | \$176.5 | |

Plan update: project status – MassDOT projects

Project status – Existing Projects with additional funding

| Existing Projects – additional funding | Division / CIP Program | Cost Increase (millions) | Status / Comment |
|---|------------------------------------|--------------------------|--|
| Modernization | | | |
| 605857 - NORWOOD- INTERSECTION IMPROVEMENTS @ ROUTE 1 & UNIVERSITY AVENUE/EVERETT STREET | Highway/Intersection Improvements | \$15.5 | Design |
| 606226 - BOSTON- RECONSTRUCTION OF RUTHERFORD AVENUE, FROM CITY SQUARE TO SULLIVAN SQUARE | Highway/Roadway Reconstruction | \$38.5 | Design |
| 602202 - SALISBURY- RECONSTRUCTION OF ROUTE 1 (LAFAYETTE ROAD) | Highway/Roadway Reconstruction | \$11.4 | Design |
| ATLAS | RMV/ATLAS | \$7.0 | Funds enhancements to the new platform |
| Rail Line capacity project for New England Central Railroad | Rail / Track and ROW Modernization | \$8.0 | Project delayed due initiation of FRA grant delay and contract award |
| Total | | \$80.4 | |



Plan update: project status – MassDOT projects

Project status – Existing Projects with decreased funding

| Existing Projects – additional funding | Division / CIP Program | Cost Increase (millions) | Status/ Comment |
|---|-----------------------------------|--------------------------|-----------------|
| Reliability | | | |
| 606552 - NORTHAMPTON– BRIDGE REPLACEMENT, N-19-059, I-91 OVER US ROUTE 5 AND B&MRR, BRIDGE REPLACEMENT, N-19-060, I-91 OVER HOCKANUM ROAD AND IMPROVEMENTS TO I-91/INTERCHANGE 18 | Highway / Bridge | (\$15.5) | Construction |
| 608895 -BOSTON- MISCELLANEOUS RAMPS MICROSILICA OVERLAY REPLACEMENT ON I-90 & I-93 (CRC 28) CONTRACT 2 | Highway / Tunnels | (\$10.9) | Construction |
| 609346 - BOSTON- TUNNEL LIGHTING REPLACEMENT FOR I-93 (NB/SB) RAMPS (CRC 17G) | Highway / Tunnels | (\$10.8) | Design |
| 609452 - LYNN- SAUGUS- BRIDGE REPLACEMENT, L-18-016=S-05-008, ROUTE 107 OVER THE SAUGUS RIVER (AKA - BELDEN G. BLY BRIDGE) | Highway / Bridge | (\$10.1) | Construction |
| 608335 - SOUTHBOROUGH- WESTBOROUGH BRIDGE REHABILITATION OF S-20-022, S-20-024 & W-24-032 & REPLACEMENT OF S-20-023 | Highway / Bridge | (\$9.6) | Construction |
| 609402 - FRAMINGHAM- NATICK- RESURFACING AND RELATED WORK ON ROUTE 9 | Highway / Non-Interstate Pavement | (\$8.1) | Design |
| Modernization | | | |
| 607977 - HOPKINTON- WESTBOROUGH- RECONSTRUCTION OF I-90/I-495 INTERCHANGE | Highway / Roadway Reconstruction | (\$19.3) | Design |
| 607319 - MASHPEE- CORRIDOR IMPROVEMENTS & RELATED WORK ON ROUTE 151, FROM OLD BARNSTABLE ROAD TO THE MASHPEE ROTARY (PHASE 1) | Highway / Roadway Reconstruction | (\$14.3) | Design |
| 605034 - NATICK- RECONSTRUCTION OF ROUTE 27 (NORTH MAIN STREET), FROM NORTH AVENUE TO THE WAYLAND T.L. | Highway / Roadway Reconstruction | (\$13.4) | Construction |
| Total | | (\$112.0) | |

Plan update: project status – MassDOT projects

Project status – Existing Projects with decreased funding

| Existing Projects – additional funding | Division / CIP Program | Cost Increase (millions) | Status / Comment |
|---|------------------------|--------------------------|------------------|
| Expansion | | | |
| 605888 -TAUNTON- INTERCHANGE IMPROVEMENTS AT ROUTES 24 & 140, INCLUDING REPLACING T-01-045 AND T-01-046 | Highway / Capacity | (\$34.0) | Construction |
| Total | | (\$34.0) | |



Plan update: project status – MassDOT projects

Project status – New projects

| New Projects | Division / CIP Program | Cost (millions) | Status / Comment |
|---|-----------------------------------|-----------------|------------------|
| Reliability | | | |
| NANTUCKET MEMORIAL AIRPORT / REHABILITATE TAXIWAY ECHO | Aeronautics / Airport Pavement | \$14.0 | Construction |
| 610894 - BOSTON- I-90 & MBTA PRUDENTIAL TUNNEL LIGHTING REHABILITATION | Highway / Tunnels | \$41.7 | Design |
| 611990 - SOMERSET- SWANSEA- PAVEMENT PRESERVATION & RELATED WORK ON I-195 | Highway / Interstate Pavement | \$25.5 | Design |
| 610918 - BOSTON- CHELSEA- STRUCTURAL REPAIRS TO THE TOBIN BRIDGE, B-16-017=C-09-006 | Highway / Bridge | \$16.6 | Design |
| 612032 - PROVINCETOWN- TRURO- RESURFACING AND RELATED WORK ON ROUTE 6 | Highway / Non-Interstate Pavement | \$15.6 | Design |
| 605645 - CHELMSFORD- BRIDGE BETTERMENT, C-08-036, WESTFORD STREET OVER I-495 | Highway / Bridge | \$13.8 | Design |
| Total | | \$127.2 | |



Plan update: project status (MBTA Projects, \$ millions)

Project status – Existing Projects with additional funding

*New or additional funding in FY22

| Existing Projects – additional funding | CIP Program | Total Budget | 2022* | Status |
|--|--------------------------------|--------------|----------------|------------------|
| Reliability | | | | |
| Structural Repairs Systemwide | Bridge and Tunnel | \$25.1 | \$2.0 | Construction |
| Future Regional Rail Layover Planning | Facilities | \$30.0 | \$30.3 | Planning |
| BAE A123 Energy Storage System Replacement | Revenue Vehicles | \$13.5 | \$2.3 | Design |
| Locomotive Overhaul | Revenue Vehicles | \$111.5 | \$0.5 | Construction |
| Keolis Capitalization Initiatives and Extra Work | Track, Signal, and Power | \$85.0 | \$17.0 | Construction |
| Capital Program Support | System Upgrades/Other | \$8.6 | \$8.6 | Design |
| Modernization | | | | |
| Bus Facility Modernization - Quincy Bus Facility | Bus Transformation | \$371.9 | \$19.0 | Pre-Design |
| Lechmere Viaduct Rehabilitation Project | Green Line Transformation | \$99.6 | \$25.8 | Construction |
| Symphony Station Improvements | Green Line Transformation | \$46.8 | \$5.0 | Design |
| Green Line Transformation | Green Line Transformation | \$48.3 | \$4.9 | Planning |
| Green Line Central Tunnel Signal - 25 Cycle | Green Line Transformation | \$17.0 | \$2.0 | Construction |
| Wellington Yard Complete Upgrade | Red/Orange Line Transformation | \$85.1 | \$10.6 | Construction |
| Red Line / Orange Line Infrastructure Improvements | Red/Orange Line Transformation | \$475.4 | \$3.4 | Construction |
| Workforce Modernization Program - HASTUS | Technology and Innovation | \$40.5 | \$6.7 | Non Construction |
| Total | | | \$137.3 | |



Plan update: project status (MBTA Projects, \$ millions)

Project status – New projects

*New or additional funding in FY22

| New Projects | CIP Program | Total Budget | 2022* | Status |
|--|--------------------------------|--------------|---------------|---------------------------------|
| Reliability | | | | |
| Urgent Structural Design Support | Bridge and Tunnel | \$3.8 | \$0.5 | Design |
| Facility Circulation Safety Improvements | Facilities | \$15.5 | \$3.5 | Design |
| Emergency Egress Ventilation and Lighting | Facilities | \$1.0 | \$0.4 | Design |
| Keolis General & Administrative Contract | Track, Signal, and Power | \$30.0 | \$6.0 | Non Construction |
| Systemwide Bike Racks | Stations | \$0.1 | \$0.1 | Non Construction |
| Modernization | | | | |
| Columbus Ave North Bus Lane | Bus Transformation | \$3.0 | \$3.0 | Design |
| Bus Lanes and Other Bus Priority | Bus Transformation | \$22.0 | \$2.0 | Planning & Design |
| Malden/Everett Main Street Transit Signal Priority | Bus Transformation | \$0.1 | \$0.1 | Planning & Design |
| Accessible Fare Gate Opener | Fare Transformation | \$9.0 | \$3.6 | Design & Implementation |
| Short Term Accessibility Improvements - FTA Compliance Actions | Green Line Transformation | \$57.5 | \$5.8 | Design & Construction |
| GLX Vehicle Maintenance Facility Modifications & Upgrades | Green Line Transformation | \$12.4 | \$0.7 | Design & Installation |
| Red Line Orange Line PM/CM Professional Services | Red/Orange Line Transformation | \$50.2 | \$6.8 | Design & Construction Support |
| Bus Video Security System Mandatory Platform Upgrade | Risk Management and Mitigation | \$3.3 | \$3.3 | Non Construction & Installation |
| Total | | | \$35.7 | |

Changes in 2022 spending since April and comparison to 2021

- MassDOT - \$115 million in increased spending over 2021 CIP
- Pay-go capital (annual revenue) - MassDOT slight change compared to amounts estimated in April
 - Tied to final draft FY 22 operating budget
 - Overall spending compared to 2021 CIP is \$54.2 higher; tied to programmed projects and toll revenues increasing with traffic volumes
- FHWA reimbursements \$30.6 million higher than 2021 CIP programmed reimbursements
 - Tied to projects programmed in the FFY 2022-2026 STIP and incorporated into 2022 CIP
- New GANs funding (\$15 million) and anticipated spending for 2022
- Additional bond cap (\$24.5 million) for new TBB programs; pending/no confirmed in April



Bond Cap Target Comparison for MassDOT and MBTA

| (\$ millions) | 2021 ¹ | April 2022 ¹ | May 2022 ¹ |
|---|-------------------|-------------------------|-----------------------|
| MassDOT | \$592.7 | \$612.2 | \$612.2 |
| Chapter 90, Complete Streets, Muni Bridge | 220.0 | 220.0 | 220.0 |
| MBTA ² | 60.0 | 60.0 | 60.0 |
| SCR | 134.1 | 73.9 | 73.9 |
| Atlas/IRP ³ | 4.9 | 7.0 | 7.0 |
| Port Projects | 35.0 | 37.5 | 37.5 |
| Subtotal | \$1,046.7 | \$1,010.6 | \$1,010.6 |
| Municipal Pavement | 10.0 | 10.0 | 15.0 |
| Local Bottleneck Reduction ⁴ | 2.5 | 0.0 | 2.5 |
| Transit Infrastructure Partnership ⁵ | 1.0 | 5.0 | 0.0 |
| Shared Streets/Spaces ⁶ | 0.0 | 4.0 | 4.0 |
| Cape Cod Bridges – Approaches | 2.0 | 3.0 | 3.0 |
| Subtotal Proposed New Bond Cap⁷ | \$15.5 | \$22.0 | \$24.5 |
| Total MassDOT | \$1,062.2 | \$1,032.6 | \$1,035.1 |

¹Totals may not add due to rounding.

²An additional \$140 million was allotted to the MBTA during FY 2021 that was not in the original bond cap target.

³International Registration Program (under RMV); program funding complete.

⁴Program will be launched in 2022.

⁵Funding for this program if launched in 2022 TBD; previous proposed bond cap funding shifted to Municipal Pavement for 2022

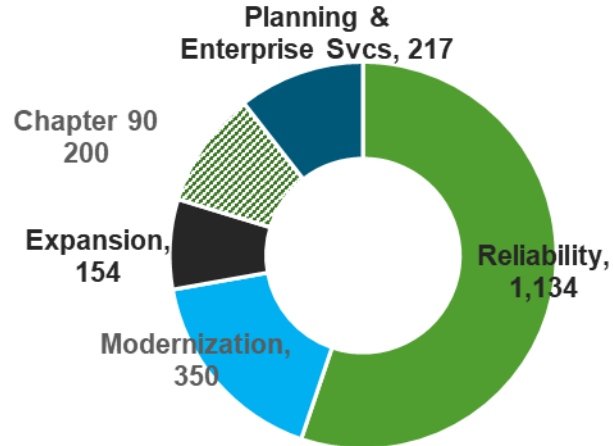
⁶Program was launched in 2021 after CIP approved; approximately \$30 million in bond cap funds and CARES funds allotted during 2021 to support program; not included in original cap.

⁷Approved by ANF and included in Commonwealth's capital plan.

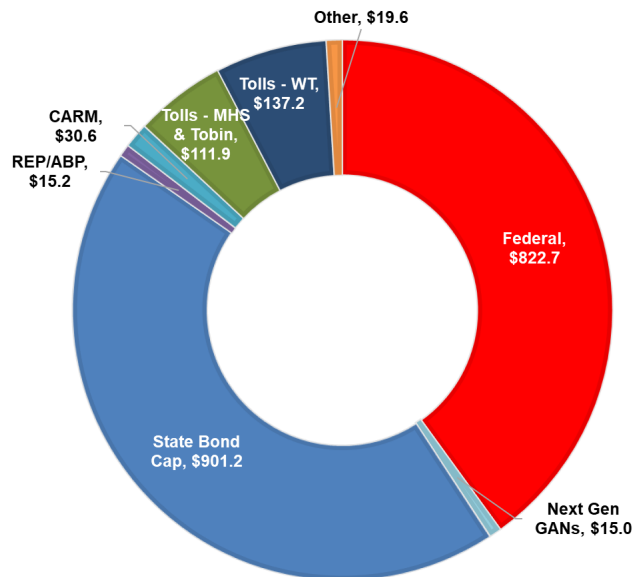


MassDOT 2022 Spending by Source (\$ millions)

Draft 2022 Spending by Priority



Draft 2022 Spending by Funding Sources



Key Highlights

2022 CIP reflects significant ongoing investment for our reliability and modernization priorities (72%) that address the existing condition of our assets, improve safety and reliability with a continued focus on resiliency and mitigation of climate change impacts

- **Bond Cap: \$901.2 M** which includes \$24.5 M for new TBB programs
- **Federal:**
 - \$773.9 M in anticipated FHWA reimbursements (Highway)
 - \$37.70 M in FAA grants
 - \$6.0 M in FTA grants to support Mobility Assistance Program
 - FRA BUILD grant: \$5.0 M in FY 22 (10.8 M total)
- **GANs: \$15 M** (*to be spent; including state match*)
- **Operating: \$249.1 M** in tolls pay-go capital
- **CARM: \$30.6 M** for eligible projects
- **Other:**
 - Local Funds, Reimbursements, Other State **\$11.9 M** for FY22



MassDOT spending by sources (a/o 5/12/21)

| Projected sources (in millions) | 2022 |
|---|------------------|
| Federal sources of funds | |
| Federal Highway (FHWA) reimbursements | 773.9 |
| Federal Transit (FTA) reimbursements** | 6.0 |
| Federal Aviation (FAA) reimbursements and grant draws | 37.7 |
| Federal Rail (FRA) reimbursements and grant draws | 5.0 |
| Subtotal federal sources* | \$822.7 |
| Bond cap | 901.2 |
| Next Generation Bridges - GANs | 15.0 |
| Accelerated Bridge bonds | 10.0 |
| Rail enhancement bonds | 5.2 |
| CARM | 30.6 |
| Metropolitan Highway system (MHS) pay-go | 83.6 |
| Tobin Bridge (Tobin) pay-go | 28.3 |
| Western Turnpike (WT) pay-go | 137.2 |
| Municipal, reimbursable and local funds | 2.9 |
| Other State Funds*** | 16.6 |
| Subtotal of non-federal sources* | \$1,230.7 |
| Total sources* | \$2,053.4 |

* Totals may not add due to rounding

** FTA reimbursements for MassDOT projects only; RTA federal funds are not included

***Reflects additional state funds for electric bus procurements, if available HED funds for Seaport District Roadway Improvements.

MassDOT sources comparison (changes highlighted in red)

| | April CPC | May CPC |
|---|------------------|------------------|
| Projected sources (in millions) | 2022 | 2022 |
| Federal Highway (FHWA) reimbursements | 774.8 | 773.9 |
| Federal Transit (FTA) reimbursements** | 6.0 | 6.0 |
| Federal Aviation (FAA) reimbursements and grant draws | 30.0 | 30.0 |
| Federal Rail (FRA) reimbursements and grant draws | 5.0 | 5.0 |
| Subtotal federal sources* | \$815.9 | \$815. |
| Bond cap | 876.7 | 901.2 |
| FHWA Next Generation Bridges - GANs | 15.0 | 15.0 |
| Accelerated Bridge bonds | 11.1 | 10.0 |
| Rail enhancement bonds | 3.4 | 5.2 |
| CARM*** | 294.1 | 294.1 |
| Metropolitan Highway system (MHS) pay-go | 114.5 | 116.9 |
| Tobin Bridge (Tobin) pay-go | 95.5 | 94.2 |
| Western Turnpike (WT) pay-go | 206.5 | 206.9 |
| Municipal, reimbursable and local funds | 2.7 | 2.9 |
| Other State Funds**** (TBD) | 17.1 | 16.6 |
| Subtotal of non-federal sources* | \$1,636.7 | \$1,646.5 |
| Total sources* | \$2,452.6 | \$2,461.5 |

* Totals may not add due to rounding

** FTA reimbursements for MassDOT projects only; RTA federal funds are not included

*** Available balance as of 11/30/2019.

**** Reflects additional state funds for electric bus procurements, if available. Funds received by DEP from VW settlement of emissions lawsuit.

2022 Plan: program adjustments

Program adjustments

Highway / Municipal pavement program:

Program spending for 2022 increased to \$15 million to address the identified pavement conditions of municipal-owned roads.

Secretary/OTP / Transit Infrastructure Partnership:

Program and proposed spending for 2022 to be determined pending further discussions with the MBTA, the RTAs and the Secretary's Office on program structure and management; the \$5 million originally proposed as bond cap funding shifted to the Municipal Pavement program for 2022.

