

Mass Highway Association 2023 Annual Meeting

*John J. Bechard, P.E.
Deputy Chief Engineer for Project Development*

May 4, 2023

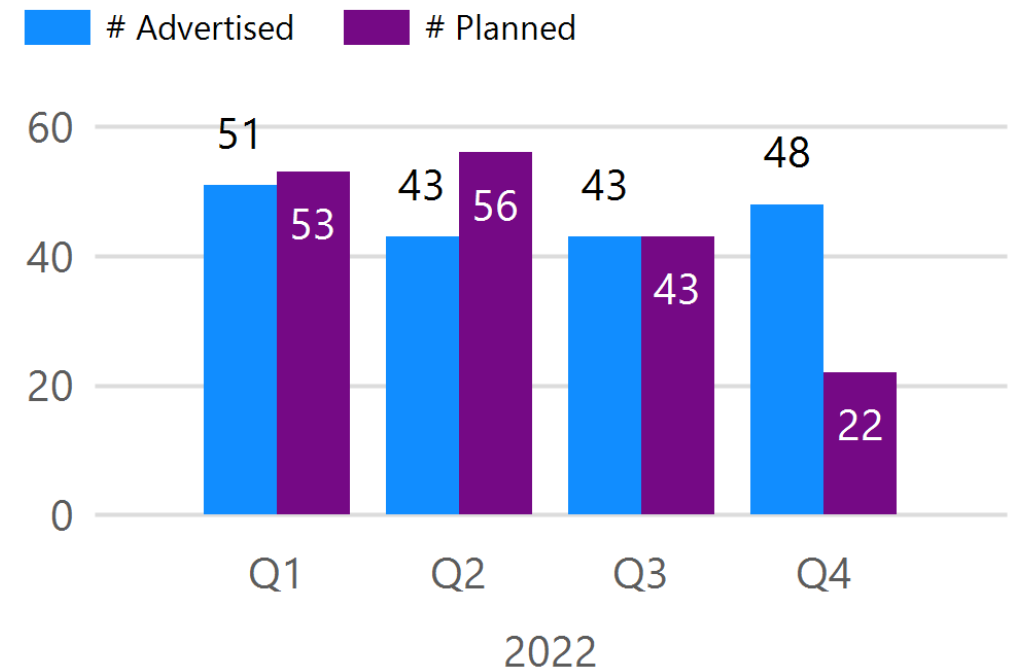


FY 2022 In Review (10/1/21--9/30/22)

- Successful Delivery of FFY 2022 advertisement program with **185 total projects advertised**, continued roll-out of process improvements expediting overall project delivery
- On-time performance by Project Manager was 86.7% within 30 days of locked down AD dates (based on original 168 programmed projects)
- **Total program advertised - \$1,771Bil. (largest ever)**

	Federal Fiscal Year: 2022			
	# Advertised	# Planned	Contract Cost Adv	Contract Cost Planned
STIP	77	64	\$1,108.2M	\$964.3M
Non-STIP	108	104	\$663.5M	\$222.3M
Total	185	168	\$1,771.7M	\$1,186.7M




Advertisements By Quarter (Plan vs. Actual)



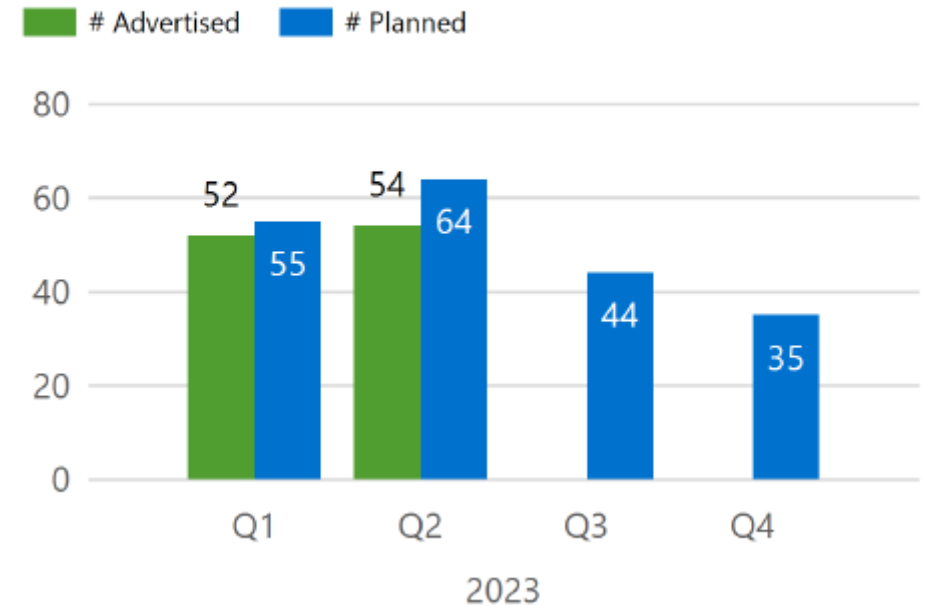
2023 Advertisement Program Update

- 198 Planned Advertisements for FFY22, 87 Fed Aid, 111 NFA

Federal Fiscal Year: 2023

	# ADVERTISED	# PLANNED	CONT COST (ADV)	CONT COST (PLANNED)	% ADVERTISED VS PLAN
STIP	26	87	\$358.7M	\$871.7M	
NON-STIP	80	111	\$281.9M	\$516.4M	
Total	106	198	\$640.6M	\$1,388.1M	

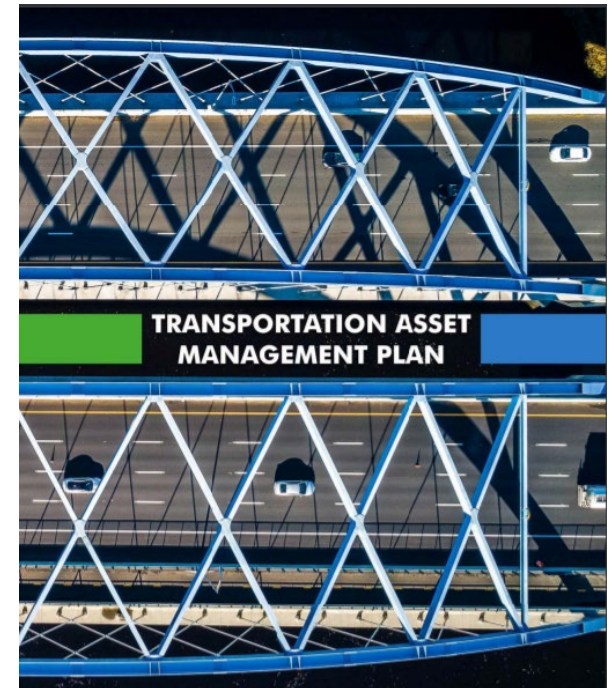
Ads By Quarter thru 3/31/2023



Looking Forward to 2023 and Beyond



- Increasing federal funding through the **Infrastructure Investment and Jobs Act (IIJA)** also known as the **Bipartisan Infrastructure Law (BIL)**
- **Future of work becoming our way of doing business**
 - Implemented hybrid and flexible schedules and significant progress in modernization of Boston Transportation Building and District Offices
- **Submitting first update to Federal Transportation Asset Management Plan (TAMP) since its initial report in 2019**



Expanded Bridge Program

- **Massachusetts received sixth largest state allocation of bridge formula funds through BIL**
- NextGen provided MassDOT a head start for BIL
- On-going scoping of new bridge projects
- Significant increase in maintenance & preservation projects



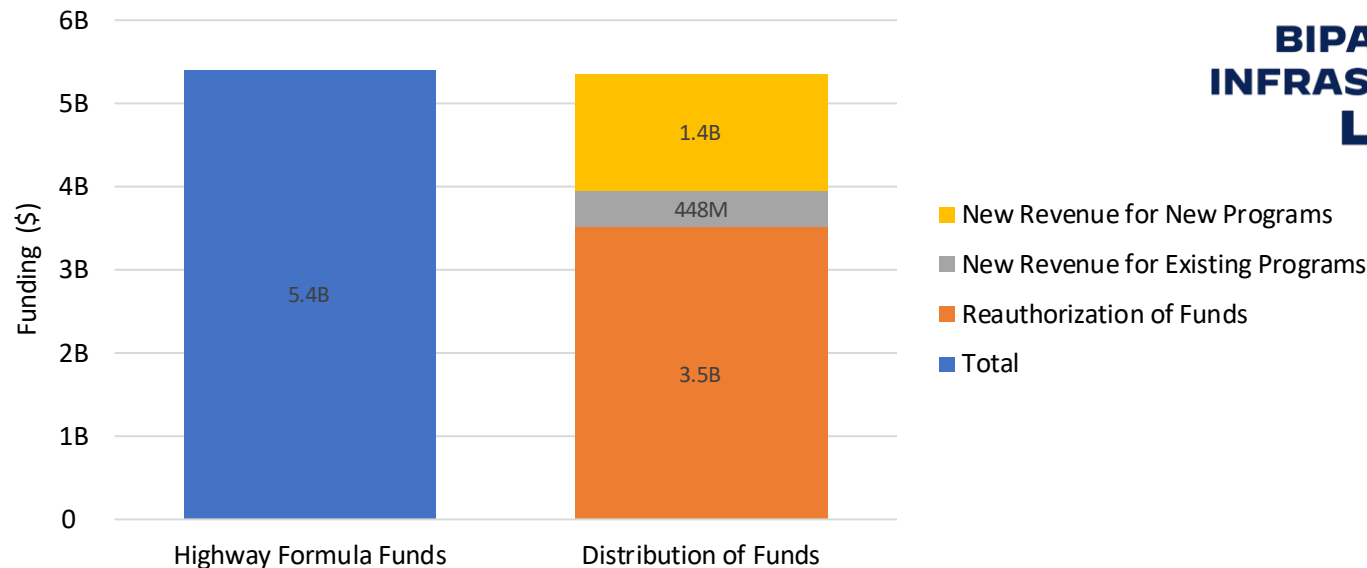
Image source: [MassDOT](#)

Bipartisan Infrastructure Law (BIL)

A total of \$5.4B in highway formula funds and over \$110B in possible discretionary grants

- The Bipartisan Infrastructure Law primarily provides for the **five-year reauthorization** of the surface transportation federal funding programs for highway and transit
- BIL also includes over **\$110B in discretionary grant programs** that MassDOT will aggressively pursue based on grant criteria, project eligibility and formal guidance from our federal partners (FHWA and FTA)

BIL Funding Distribution



**BIPARTISAN
INFRASTRUCTURE
LAW**



Preparing for the Bipartisan Infrastructure Law - Process

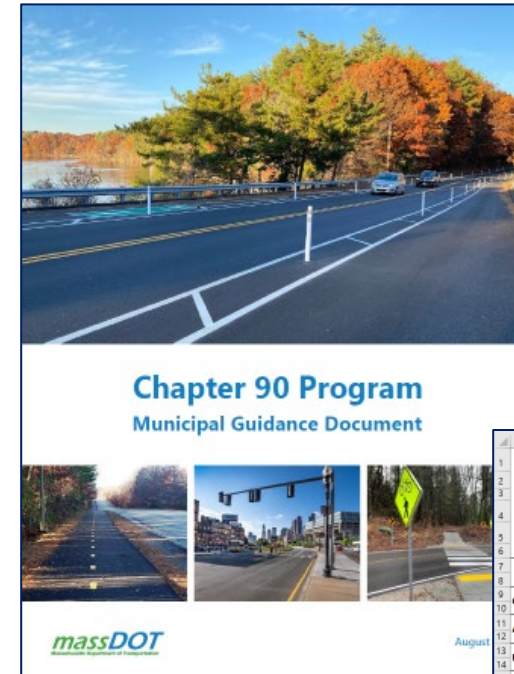
Workstream	Goal
Traffic Control	Reduce reliance on MSP for construction details by relying on alternatives to details and/or other interventions.
Risk Based Design & Review	Evaluate and streamline (identify, analyze and prioritize) risk with design process and review and establish processes /tools to decrease the overall design duration.
Environmental	Streamline the ENV review process to help reduce duration of environmental permitting to ensure on time project Advertisement. Development of a performance management dashboard.
Right of Way	Top to bottom review of ROW process with identification of bottlenecks and solutions to help reduce ROW duration to ensure on time project Advertisement. Development of a performance management dashboard.
District Bridge Maintenance Contracting	Improve the Consistency of District Bridge Maintenance Contracting to support funding increase and streamline and improve contract execution
Alternative Project Delivery	Top to bottom review of the program processes to identify bottlenecks and improvements needed to improve velocity of projects which may include program enhancements and policy changes.

Municipal Funding Programs

- **Overview of MassDOT Highway Division funding programs:**
 - Chapter 90 Program
 - Complete Streets Funding Program
 - Local Bottleneck Reduction Program
 - Municipal Pavement Program
 - Municipal Small Bridge Program
 - Shared Streets and Spaces Program
 - Winter Recovery Assistance Program (WRAP)

Chapter 90 Program

- Chapter 90 entitles cities and towns to reimbursements on transportation projects
 - Formula-based apportionments determined by lane miles, population, and employment
- New Guidance Document released in 2021
 - New and clarified information all in one place
 - Supports local decision-making and investment planning with new tools:
 - Quick-Start Guide
 - Planning Toolkit



	A	B	C	D	E	F	G	H	I	J
1	Chapter 90 Planning Toolkit									
2	Instructions for Use									
3	The Chapter 90 Planning Toolkit is an Excel spreadsheet that includes a collection of tabs that can be used to help plan projects funded through the Chapter 90 Program. More detailed guidance and information can be found on the Chapter 90 webpage: www.mass.gov/chapter-90-program .									
4										
5										
6										
7	Document Contents & Description									
8										
9	Chapter 90 Planning Checklist	A basic list of steps that can be taken on an annual basis to prepare for Chapter 90 funding decisions.								
10	Asset Condition List	A template that can be used to list all assets that may require maintenance as well as track year installed/built, most recent inspection date, and conditions.								
11	Bridge Inventory List	A template that can be used to list all bridges and summarize key data from inspection Reports to identify urgent needs.								
12	Infrastructure Budget	A basic budget template to compile anticipated revenue from various funding sources, as well as anticipated uses of funds, for a given fiscal year.								
13	Project Planning	A long-term planning tool that lists all potential projects and forecasts their costs into the future, projecting Chapter 90 allocations/carry-overs.								
14	Unweighted Prioritization Matrix	A tool to prioritize or rank potential projects using criteria set by the user, where projects are scored evenly based on all the criteria.								
15	Weighted Prioritization Matrix	A tool to prioritize or rank potential projects, allowing the user to input percent-weights to each category and rank accordingly.								
16										
17	How to Use this Document									
18										
19	The intent of the Chapter 90 Planning Toolkit is to provide municipalities with a basic resource for planning. The Planning Toolkit may be used as a guide for planning as deemed appropriate by the municipality. It should be noted that altering the format Excel document from its template form may undermine any preset formulas and conditions of the cells, thereby potentially resulting in mathematical errors. Municipalities should verify that all work is accurate. The Planning Toolkit does not replace any required local, state, or federal planning methods or approvals. This tool requires a fundamental									
20										
21										
22										
23										
24										
25										

Complete Streets Funding Program

- Encourages communities to incorporate Complete Streets principles into regular local planning and design practices
 - Safe and accessible travel for all roadway users regardless of age or ability
 - Projects include sidewalks, bike lanes, paths, curb extensions, and more!
- Provides technical assistance and project funds to incentivize ongoing change
 - Tier 2 Technical Assistance grants: up to \$38K
 - Tier 3 Project grants: up to \$500K (competitive application process)
 - Design funded separately by municipality

Tier 1

Attend Training & Pass Complete Streets Policy or Letter of Intent to Pass a Policy within one year

Tier 2

Develop a 5-year Complete Streets Prioritization Plan

Tier 3

Apply for Construction Funding

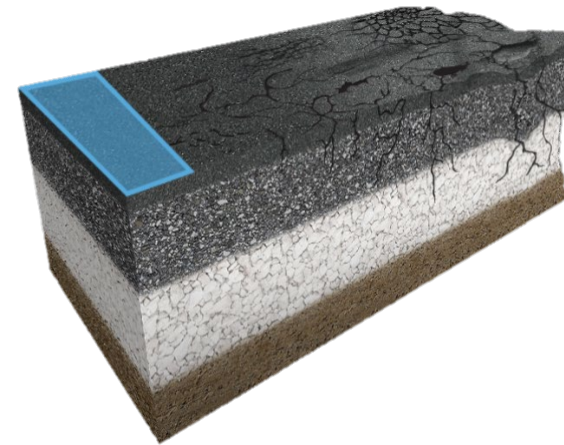
Local Bottleneck Reduction Program

- Funds solutions to address local congestion bottlenecks to improve traffic flow and safety
- Competitive application program provides up to \$500,000 in construction funding
 - Project design is completed at no cost by a MassDOT-led consultant
- Eligible project types include:
 - Addition of turn/through/auxiliary lanes
 - Geometric changes to the roadway
 - Improved pavement markings or signage
 - New signal equipment or improvements such as coordination



Municipal Pavement Program

- Seeks to improve the condition of municipally-owned state numbered routes
 - Projects include resurfacing, mill and overlay, and similar
- **Not** a competitive application program
- MassDOT selects roadway segments based on:
 - Pavement condition data
 - Locally owned state route mileage in a municipality
 - Geographic equity
- Funds as many segments as possible in a given year
 - Project value depends on necessary roadway treatments
- Design and construction managed by MassDOT and its contractor in coordination with community



Municipal Small Bridge Program

- Provides cities and towns with financial support for small bridge replacement, preservation, and rehabilitation projects
 - Bridges must be municipally owned on public ways with spans between 10' and 20'
- FY23: program utilizes competitive phased grants:
 - Phase 1: design conducted by MassDOT led consultant at no cost, or a grant up to \$100k
 - Phase 2: construction up to \$500K



Shared Streets and Spaces Program

- Quick-build projects that support public health, safe mobility, and renewed commerce
- First launched as a response to COVID-19 then continued due to local success
- Competitive application program
- Eligible projects include permanent or pilot:
 - Sidewalks, paths, bicycle facilities, outdoor dining/programming equipment, traffic calming, and bus lane or bus stop improvements
 - Grant limits vary between \$200K and \$500K
- Seeks to encourage communities to get creative
- Progress of FY23 awards (184 grants!) will inform next round's timing



WRAP Funding

- In April 2022, Governor Baker approved \$100M in funding for the Winter Recovery Assistance Program (WRAP)
- Funding is distributed to every community via a formula based on a municipality's share of locally owned roadway mileage
- Funds must be spent by June 30, 2023
- Eligible project types:
 - Rehabilitation, reconstruction, resurfacing or preservation of roadways and appurtenances
 - Including sidewalks and bike lanes/paths
 - Repair or replacement of traffic control devices, signage, guardrails, and storm grates
 - Road striping or painting



Municipal Funding Program Updates

- Chapter 90 Program
 - Apportionment letters for FY24 mailed out in February, also listed on Chapter 90 website.
- Complete Streets Funding Program
 - FY24 grant round #1 applications due May 1. Expect to hear around June.
- Local Bottleneck Reduction Program
 - FY24 grant round application deadline was March 31, Expect to hear around July.
- Municipal Pavement Program
 - Hope to talk w/municipalities selected for FY24 program year this Spring.
 - Currently working through implementation of FY23 projects.
- Municipal Small Bridge Program
 - New grant round opening May 1, closing June 30. No program changes.
- Shared Streets and Spaces Program
 - Planning another grant round in FY24, but no date available at this time.
- Winter Recovery Assistance Program (WRAP)
 - 98% of communities under contract with MassDOT for these funds – keep spending!
 - Funds no longer available after June 30 this year.

Municipal Program Web-sites

- Do you have questions?
- Each program presented today has a website and program guidance:
 - Chapter 90 Program - www.mass.gov/chapter-90-program
 - Complete Streets Funding Program - gis.massdot.state.ma.us/completestreets/
 - Local Bottleneck Reduction Program - www.mass.gov/local-bottleneck-reduction-program
 - Municipal Pavement Program - www.mass.gov/municipal-pavement-program
 - Municipal Small Bridge Program - www.mass.gov/municipal-small-bridge-program
 - Shared Streets & Spaces - www.mass.gov/shared-streets-and-spaces-grant-program
 - WRAP - www.mass.gov/winter-recovery-assistance-program-wrap

Department Updates

- Ancillary structures (traffic signs/signals, lighting, closed circuit cameras & changeable message signs):
 - Initial Inventory/condition over 29,000
 - State Owned 25,300
 - Municipally owned 4,000 (est) (primarily lighting/traffic signals)
 - A&E Approved Procurement - Inspection RFQ Summer '23'
- Guide to Estimating Highway Projects and Appendix
 - On Project Development Tools webpage

<https://www.mass.gov/lists/massdot-highway-project-development-tools>

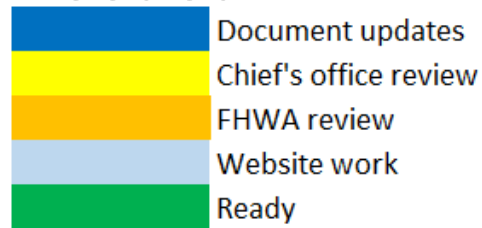
- Project Development and Design Guide (PDDG) Updates

PDDG Schedule

- 11 existing chapter PDFs (2006 content) to be posted on chapter landing pages by June 30.
- 7 revised chapters to be posted online by June 30 (pending schedule agreement)
 - Ch. 1 - Introduction
 - Ch. 4 – Horizontal & Vertical Alignment
 - Ch. 9 – Pavement
 - Ch. 10 – Bridges
 - Ch. 12 – Intermodal Facilities
 - Ch. 13 – Landscape
 - Ch. 15 – Access Management

Target Schedule – Pending Coordination with Chapter Teams and Reviewers

- Updated based on FHWA’s 3/29 feedback on review timeline; requires further coordination with Chief’s office and chapter teams to reach agreement
- Note: Two-week review assumed for FHWA’s 2nd review, when needed.



Chapter		Apr '23				May '23				Jun '23				
1	Introduction	Blue	Blue	Blue	Blue	Yellow	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Green
2	Project Development	Blue	Blue	Blue	Blue	Yellow	Yellow	Blue	Blue	Yellow	Yellow	Orange	Orange	Orange
3	Basic Design Controls													
4	Horizontal and Vertical Alignment					Orange	Blue	Blue	Yellow	Orange	Orange	Light Blue	Light Blue	Light Blue
5	Cross-Section and Roadside Elements													
6	Intersection Design													
7	Interchanges	Blue	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Yellow	Yellow	Orange	Orange	Orange
8	Drainage and Erosion Control													
9	Pavement Design					Yellow	Yellow	Orange	Orange	Orange	Orange	Light Blue	Light Blue	Light Blue
10	Bridges	Blue	Blue	Yellow	Yellow	Yellow	Orange	Orange	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Green
11	Shared Use Paths and Greenways	Blue	Blue	Yellow	Yellow	Blue	Blue	Orange	Orange	Orange	Orange	Orange	Light Blue	Light Blue
12	Intermodal Facilities and Rest Areas													
13	Landscape and Aesthetics					Orange	Orange	Orange	Orange	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
14	Wildlife Accommodation													
15	Access Management	Blue	Blue	Yellow	Yellow	Yellow	Orange	Orange	Orange	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
16	Traffic Calming and Traffic Management													
17	Work Zone Management													
18	1A - Base, ROW, Layout Plans, Specs, Estimates													
18	1B - Final Construction Plans													
19	Glossary	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue

Financial District	2018	2019	2020	2021	2022
PROJECT MANAGEMENT - DESIGN	\$70,651,479	\$73,815,923	\$77,493,020	\$88,039,138	\$99,252,099
BRIDGES AND STRUCTURES	\$36,722,912	\$37,749,707	\$39,454,666	\$44,120,882	\$35,465,025
CONSTRUCTION	\$16,180,646	\$13,560,929	\$13,659,050	\$12,285,382	\$7,015,063
ENVIRONMENTAL SERVICES	\$5,579,022	\$5,230,432	\$6,062,391	\$6,721,156	\$8,080,222
HIGHWAY SAFETY	\$4,193,218	\$4,072,373	\$4,594,951	\$4,585,710	\$6,466,562
ASSET MANAGEMENT	\$2,853,541	\$2,473,224	\$2,982,168	\$3,910,690	\$4,033,422
STATEWIDE OPERATIONS & MAINTENANCE	\$3,911,444	\$3,522,283	\$3,299,613	\$3,156,374	\$2,047,950
	\$140,092,262	\$140,424,871	\$147,545,859	\$162,819,332	\$162,360,343

Consultant/Contract Investment

Breakdown of assignments as follows:	# of Firms
• 25 or more assignments	7
• Between 15 \geq 25 assignments	6
• Between 10 \geq 15 assignments	11
• Between 5 \geq 10 assignments	10
• Between 1 \geq 5 assignments	20
• <u>In process/negotiating new assignments</u>	6
• Total firms with MSA Assignments	60
• 630 assignments totaling over \$300M	

Consultant Assignment/ Opportunities

- January Assignment Meeting: Assigned 12 new bridge projects
- March Assignment Meeting: Assigned 21 new bridge projects
- May 24 Project Review Committee (PRC) Meeting for approval:
 - 18 Off-System SD Bridge Projects
 - 27 Bridge Preservation Projects
 - 7 Environmental/Resiliency Projects
 - 12 other project types (Maint., Pav't, etc.) that may need design/consultant support
 - Approx. 50+ projects in need of design support (remainder anticipated to be In-house/District Design)

Design-Build Projects Update

Project Number	Description	Project Type	Project Status	Ad Date/RFP Issued	District	Location	Design Builder Contractor/Designer	Contract Bid Price or Project Estimate
608009	BOXBOROUGH-ROUTE 111 OVER I-495	Bridge Replacement	Preliminary Design	Sep-23	District 3	BOXBOROUGH		\$ 25,000,000.00
605311	MARION & WAREHAM - WAREHAM STREET (US 6) OVER WEWEANTIC RIVER	Bridge Replacement	Preliminary Design	Dec-23	District 5	MARION & WAREHAAM		\$ 35,000,000.00
612631	CHELMSFORD-BRIDGE BUNDLE- GORHAM STREET OVER I-495 & WESTFORD STREET OVER I-495	Bridge Reconstruction/Rehab	Preliminary Design	Feb-24	District 4	CHELMSFORD		\$ 42,000,000.00
606527	NEW BEDFORD - I-195 EB/WB RAMP C&F OVER SR18/LOCAL STREETS/RR	Bridge Replacement	Preliminary Design	Mar-24	District 5	NEW BEDFORD		\$ 170,000,000.00
605313	NATICK- BRIDGE REPLACEMENT, N-03-020, ROUTE 27 (NORTH MAIN STREET) OVER ROUTE 9 (WORCESTER STREET) AND INTERCHANGE	Bridge Replacement	Preliminary Design	Mar-24	District 3	NATICK		\$ 38,000,000.00
609466	HAVERHILL & METHUEN - BRIDGE REPLACEMENT, H-12-040, I-495 (NB & SB) OVER MERRIMACK RIVER (SOUTHERN BRIDGES)	Bridge Replacement	Preliminary Design	Apr-24	District 4	HAVERHILL & METHUEN		\$ 225,000,000.00
607887	LOWELL- ROURKE BRIDGE REPLACEMENT, L-15-088, WOOD STREET EXTENSION OVER BOSTON AND MAINE RAILROAD AND MERRIMAC RIVER	Bridge Replacement	Preliminary Design	Jul-24	District 4	LOWELL		\$ 180,000,000.00
605304	HAVERHILL- BRIDGE REPLACEMENT, H-12-007 & H-12-025, BRIDGE STREET (SR 125) OVER THE MERRIMACK RIVER AND THE ABANDONED B&M RR (PROPOSED BIKEWAY)	Bridge Replacement	Preliminary Design	Sep-24	District 4	HAVERHILL		\$ 150,000,000.00
606475 ¹	BOSTON- REPLACEMENT OF ALLSTON I-90 ELEVATED VIADUCT, B-16-359, INCLUDING INTERCHANGE RECONSTRUCTION BEACON PARK YARD LAYOVER & WEST STATION	Bridge & Hwy Reconstruct- Restr and Rehab	Preliminary Design	Sep-25	District 6	BOSTON		\$ 1,900,000,000.00
608020 ¹	CAPE COD CANAL BRIDGES AND AREA ROADWAY IMPROVEMENTS	Bridge Rehab	Preliminary Design	Sep-25	District 5	CAPE COD		\$ 3,900,000,000.00
1 Subject to Funding								

Questions

Thank you

Contact information

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(c) 508-751-1755

What is SARPET?

- The **State Aid Reimbursable Programs Estimating Tool (SARPET)** is an excel document that provides municipal staff with a reliable and easy method to develop cost estimates

State Aid Reimbursable Programs Estimating Tool (SARPET)	
A tool for estimating project costs for Chapter 90, Complete Streets, Safe Routes to School, Shared Streets and Spaces, Local Bottleneck Reduction, Municipal Pavement, and other local projects.	
SARPET INSTRUCTIONS	
The tool makes calculations based on MassDOT weighted bid prices and data entered on the following tabs:	
BasicProjectData Roadway Multimodal Pavement TrafficControl MiscItems	
The tool results are shown in two forms on the following tabs:	
ProjectSummary ProjectEstimate	
The tool's background calculations can be seen on the following tabs:	
AREA PAVEMENTS DESIGN CIVIL EDGING DRAINAGE LIGHTING TRAFFIC SIGNAL AMENITIES	
Please follow the steps below to best utilize this cost estimating tool for your project:	
Step #1:	Ensure that you have downloaded the latest version of the tool from this website. This tool was last updated MARCH 2022.
Step #2:	Input your project scope information into the Basic Project Data tab. This tab will identify which of the other input tabs need to be filled in based on your project scope.
Step #3:	Fill in Roadway, Multimodal, Traffic Control and Pavement tabs as directed by the Basic Project Data tab.
Step #4:	Review which items are included in the construction cost estimate by navigating to the ProjectEstimate tab. If any items appear to be missing, enter them in the MiscItems tab.
Step #5 (Optional):	Double check the calculations and assumptions in the grey tabs and make edits as appropriate. Unit prices can be overridden in the highlighted cells to the right of the calculations. To prevent accidental errors, certain cells have been locked. Use password "MODIFY" if you wish to unlock these cells for any reason.
Step #6:	Review the cost estimate in the ProjectSummary and ProjectEstimate tabs. The ProjectSummary tab provides the overall project cost broken down by category and includes costs beyond construction items, such as contingencies. The ProjectEstimate tab shows construction costs using MassDOT Standard Items, user-inputted items, and pavement items. This sheet can be used to fill the MassDOT Preliminary Estimate Form.



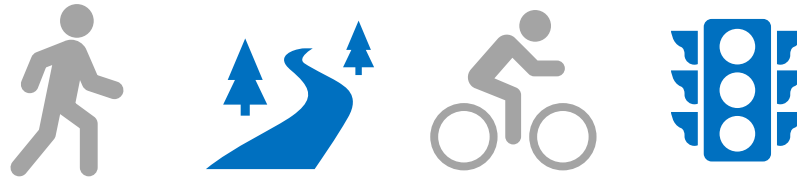
massDOT Massachusetts Department of Transportation Highway Division		State Aid Reimbursable Programs Preliminary Estimate Form			
Municipality:	_____	Contract #:	_____		
Project Name:	_____	Program:	_____		
Project Location:	_____				
_____	_____				
Item #	Description of Item	Unit	Quantity	Unit Price	Total Cost
					\$ -
					\$ -
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Why SARPET?

- Before SARPET, no state-wide cost estimation tool existed for local transportation projects
- Project cost development can be difficult, time consuming, and sometimes expensive
- Cost estimates are generally required for project funding applications for MassDOT programs
- Inaccurate cost estimates lead to budget and implementation issues down the road

SARPET Overview

- SARPET can calculate project costs for projects that include various components:
 - Roadway
 - Multimodal
 - Traffic control
 - Pavement
- Includes a broad range of project elements from pavement resurfacing to bicycle racks to lighting
 - Miscellaneous items can also be added



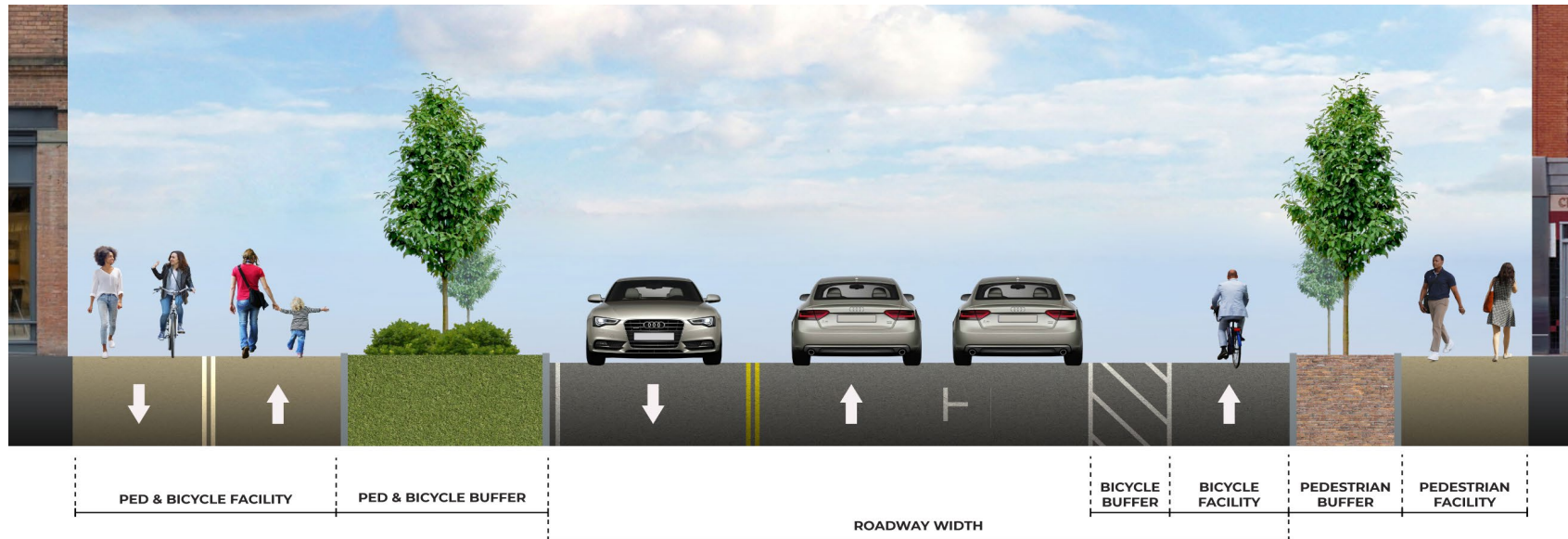
SARPET Overview: Uses

- Supports project applications submitted through MassDOT's funding programs, such as:
 - Chapter 90
 - Complete Streets
 - Safe Routes to School
 - Shared Streets & Spaces
- Can also be used for projects funded through other sources



SARPET Overview: User Inputs

- Users input data based on project scope
 - General project components, materials, measurements
- Based on inputs, tool uses predetermined background calculations to develop a cost estimate for each item
 - Savvy users can edit background assumptions if desired



SARPET Overview: Cost Calculations

- The tool's background calculations utilize MassDOT's weighted bid prices to develop estimations
 - Uses the Mean Unit Price of an item for the appropriate District
 - If the Statewide Mean Unit Price is higher, the tool uses it to ensure a more conservative estimate (can be overridden)
- SARPET is updated every 3 -4 months to refresh data to reflect the latest bid prices
 - Always visit the SARPET website to download the latest version!
- Unit prices can be overridden by a user when more accurate costs are available locally

Municipal Programs: SARPET – New Municipal Tool

- Provides a project summary and cost estimate
 - Includes standard item numbers when available
 - Aligns with MassDOT Preliminary Estimate Form
- Uses MassDOT Weighted Bid Prices
 - Uses District level data, statewide if none exists
 - Allows for manual override of costs by user if desired
 - Tool is updated with new bid prices twice annually
- First-in-the-nation tool of its kind!
 - Learn more on the [SARPET website](#)

State Aid Reimbursable Programs Estimating Tool (SARPET)						
Item #	Description	Units	Quantity	Unit Price (Max or Override)	Total Cost	Comment
Items Calculated by this Cost Estimating Tool in the "Grey" tabs						
120.1*	UNCLASSIFIED EXCAVATION	CY	0	\$44.94	\$0.00	
142	CLASS B TRENCH EXCAVATION	CY	0	\$35.48	\$0.00	
151	GRAVEL BORROW	CY	0	\$46.27	\$0.00	
151.2	GRAVEL BORROW FOR BACKFILLING STRUCTURES AND	CY	0	\$56.31	\$0.00	
156	#67 CRUSHED STONE FILTER BASE COURSE	CY	0	\$50.00	\$0.00	
156	#67 CRUSHED STONE FILTER BASE COURSE	CY	0	\$55.00	\$0.00	
170	FINE GRADING AND COMPACTING - SUBGRADE AREA	SY	0	\$6.87	\$0.00	
201	CATCH BASIN	EA	0	\$4,302.22	\$0.00	
202	MANHOLE	EA	0	\$4,785.08	\$0.00	
220	DRAINAGE STRUCTURE ADJUSTED	EA	0	\$425.13	\$0.00	
220.3	DRAINAGE STRUCTURE CHANGE IN TYPE	EA	0	\$102.08	\$0.00	
220.7	SANITARY STRUCTURE ADJUSTED	EA	0	\$441.51	\$0.00	
222.3	FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD	EA	0	\$941.14	\$0.00	
222.4	LARGE HOOK LOCK BAR GRATE - FURNISHED AND	EA	0	\$2,008.17	\$0.00	
223.2	FRAME AND GRATE (OR COVER) REMOVED AND	EA	0	\$90.40	\$0.00	
227.3	REMOVAL OF DRAINAGE STRUCTURE SEDIMENT	CY	0	\$253.74	\$0.00	
227.31	REMOVAL OF DRAINAGE PIPE SEDIMENT	FT	0	\$336.82	\$0.00	
241.12	12 INCH REINFORCED CONCRETE PIPE	FT	0	\$96.72	\$0.00	
241.18	18 INCH REINFORCED CONCRETE PIPE	FT	0	\$110.64	\$0.00	
241.36	36 INCH REINFORCED CONCRETE PIPE	FT	0	\$254.51	\$0.00	
241.72	72 INCH REINFORCED CONCRETE PIPE	FT	0	\$350.00	\$0.00	
242.36	36 INCH REINFORCED CONCRETE PIPE FLARED END	EA	0	\$3,250.00	\$0.00	
402	DENSE GRADED CRUSHED STONE FOR SUB-BASE	CY	0	\$74.91	\$0.00	
431	HIGH EARLY STRENGTH CEMENT CONCRETE BASE	SY	0	\$60.73	\$0.00	
440	CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL	LB	0	\$0.43	\$0.00	
450.14	WMA POROUS PAVEMENT SURFACE COURSE	TON	0	\$170.00	\$0.00	
450.16	WMA POROUS PAVEMENT BASE COURSE	TON	0	\$170.00	\$0.00	
450.23*	SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5)	TON	0	\$131.85	\$0.00	
450.32*	SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)	TON	0	\$120.73	\$0.00	
450.42*	SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5)	TON	0	\$120.91	\$0.00	
451*	HMA FOR PATCHING	TON	0	\$229.01	\$0.00	
452*	ASPHALT EMULSION FOR TACK COAT	GAL	0	\$7.29	\$0.00	
453*	HMA JOINT SEALANT	FT	0	\$0.86	\$0.00	
470	HOT MIX ASPHALT BERM	TON	0	\$235.71	\$0.00	
472	TEMPORARY ASPHALT PATCHING	TON	0	\$215.46	\$0.00	
476.11	CEMENT CONCRETE PAVEMENT - STAMPED & COLORED	SY	0	\$75.00	\$0.00	
506	GRANITE CURB TYPE VB - STRAIGHT	FT	0	\$48.23	\$0.00	
506.1	GRANITE CURB TYPE VB - CURVED	FT	0	\$56.85	\$0.00	
509	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - STRAIGHT	FT	0	\$58.05	\$0.00	
509.1	GRANITE TRANSITION CURB FOR PEDESTRIAN CURB RAMPS - CURVED	FT	0	\$63.27	\$0.00	
510	GRANITE EDGING TYPE SA	FT	0	\$51.60	\$0.00	
514	GRANITE CURB INLET - STRAIGHT	EA	0	\$486.80	\$0.00	
520	CONCRETE CURB TYPE VA	FT	0	\$46.31	\$0.00	
570	HOT MIX ASPHALT CURB - OPTION	FT	0	\$18.66	\$0.00	
580	CURB REMOVED AND RESET	FT	0	\$31.42	\$0.00	
590	CURB REMOVED AND STACKED	FT	0	\$5.64	\$0.00	
620.12	GUARDRAIL, TL-2 (SINGLE FACED)	FT	0	\$33.18	\$0.00	
620.32	GUARDRAIL - CURVED, TL-2 (SINGLE FACED)	FT	0	\$36.49	\$0.00	



Draft for Discussion Only