

# Highway Division

## Major Projects / Capital Plan Update

February 5, 2020

# Highway Division Capital Plan Update

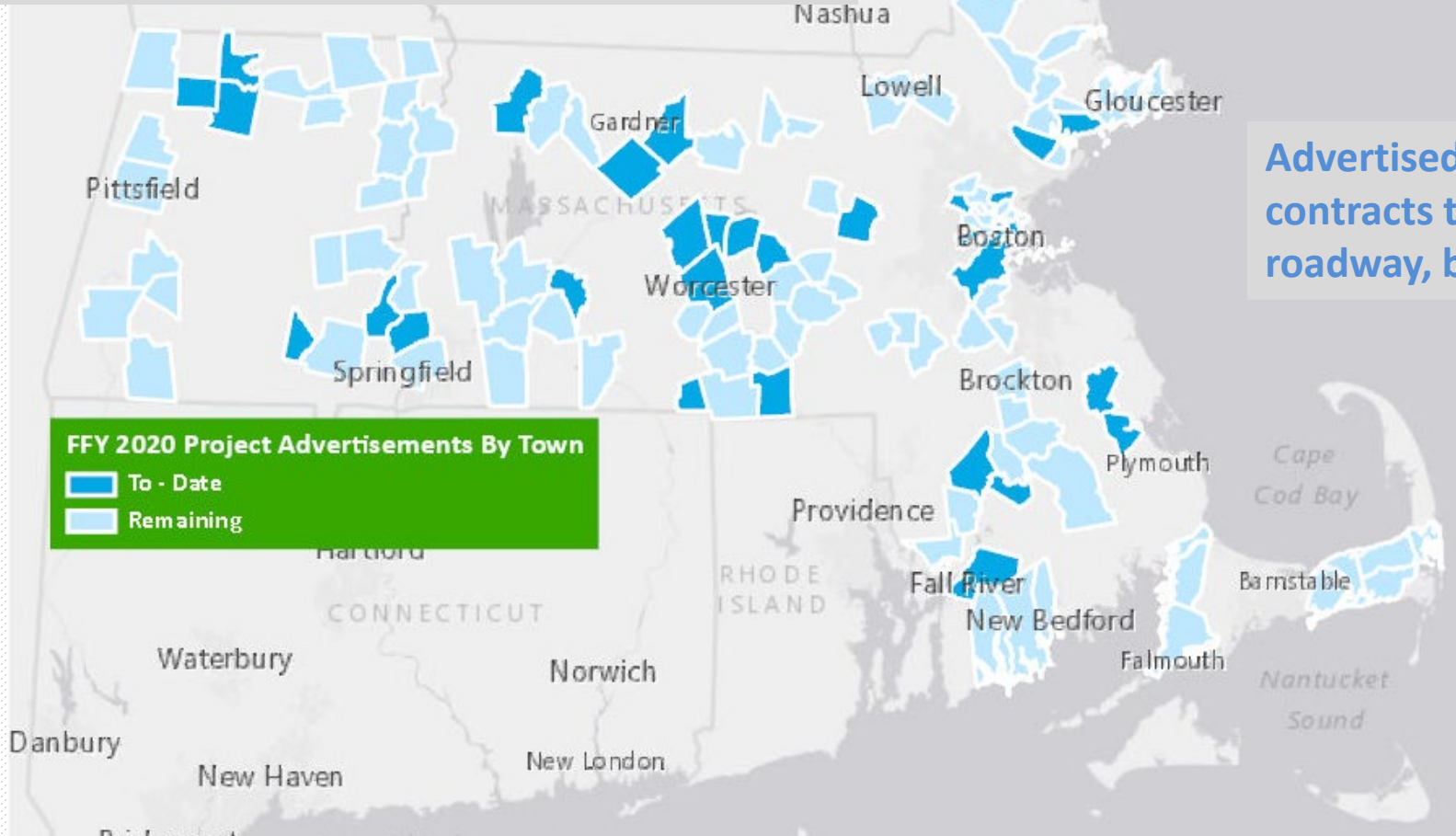
Design

Procurement

Construction

	July	August	September	October	November	December	January	February	March	April	May	June
SFY	Q1			Q2			Q3			Q4		
FFY	Q4			Q1			Q2			Q3		

**Q1 Advertised site specific projects in 27 unique communities, planned advertisements this year for an additional 85 Communities this year**



**Advertised 34 various location maintenance contracts to support day to day repair of roadway, bridge and safety infrastructure**

## Q1 Advertisements By CIP Program

Program	Count of Projects
Bridge	21
Roadway Improvements	20
Non-Interstate Pavement	9
Safety Improvements	8
<b>Bicycle and Pedestrian Modal Implementation</b>	<b>6</b>
Tunnels	3
Intersection Improvements	3
Roadway Reconstruction	3
Facilities	3
ADA Retrofits	2
<b>Grand Total</b>	<b>79</b>

## Notable Projects

PROJECT	LOCATION	DESCRIPTION	ADVERTIZED	CONTRACT VALUE
609122	BOSTON	BOSTON- LIGHTING REPAIRS IN THE I-93 TUNNEL	11/23/2019	\$30,157,721.42
606660	BOSTON	BOSTON- SUMNER & CALLAHAN TUNNEL VENT BUILDING AND CALLAHAN PUMP STATION MECHANICAL AND ELECTRICAL UPGRADES	11/9/2019	\$17,328,796.85
609476	WORCESTER	WORCESTER- CLEANING & PAINTING & VARIOUS REPAIRS OF W-44-082, I-290 (MAINLINE) AND RAMPS OVER THE MBTA/CSX & CITY STREETS	11/2/2019	\$13,725,228.00
609342	DISTRICT6	DISTRICT 6- SCHEDULED & EMERGENCY BRIDGE DECK & JOINT REPAIRS AT VARIOUS LOCATIONS	11/30/2019	\$6,336,267.63
608812	FLORIDA - SAVOY	FLORIDA- SAVOY- RESURFACING AND RELATED WORK ON ROUTE 2	11/30/2019	\$6,111,759.60
609101	PEABODY	PEABODY- PAVEMENT PRESERVATION AND RELATED WORK ON ROUTE 128	12/7/2019	\$5,641,150.03
605347	UXBRIDGE	UXBRIDGE- BRIDGE REPLACEMENT, U-02-041, ST 146 (NB) OVER THE MUMFORD RIVER	11/16/2019	\$4,452,896.50
609376	KINGSTON	KINGSTON- SYSTEMATIC BRIDGE PRESERVATION, K-01-011 (AGD), ROUTE 3 OVER JONES RIVER	11/2/2019	\$4,012,962.50
609375	FALL RIVER	FALL RIVER- SYSTEMATIC BRIDGE PRESERVATION, F-02-056 (3T9), MILLIKEN BOULEVARD OVER I-195	12/7/2019	\$4,012,100.00
602587	WESTMINSTER	WESTMINSTER- BRIDGE REPLACEMENT, W-28-017, ROUTE 12 (ASHBURNHAM ROAD) OVER PHILLIPS BROOK	11/2/2019	\$3,398,449.73
608266	PEMBROKE	PEMBROKE- RESURFACING AND RELATED WORK ON ROUTE 53	11/30/2019	\$2,949,021.35
604636	HUBBARDSTON	HUBBARDSTON- BRIDGE REPLACEMENT, H-24-021 & H-24-027, STATE ROUTE 62 OVER WEST BRANCH OF THE WARE RIVER	10/26/2019	\$2,700,671.80
608633	WEST BROOKFIELD	WEST BROOKFIELD- BRIDGE REPLACEMENT, W-19-009, FOSTER HILL ROAD OVER COYS BROOK	11/30/2019	\$2,120,102.75
608275	MALDEN	MALDEN- EXCHANGE STREET DOWNTOWN IMPROVEMENT PROJECT	10/26/2019	\$1,880,861.90
608804	DISTRICT6	DISTRICT 6- ADA RETROFITS AT VARIOUS LOCATIONS	10/26/2019	\$639,745.74

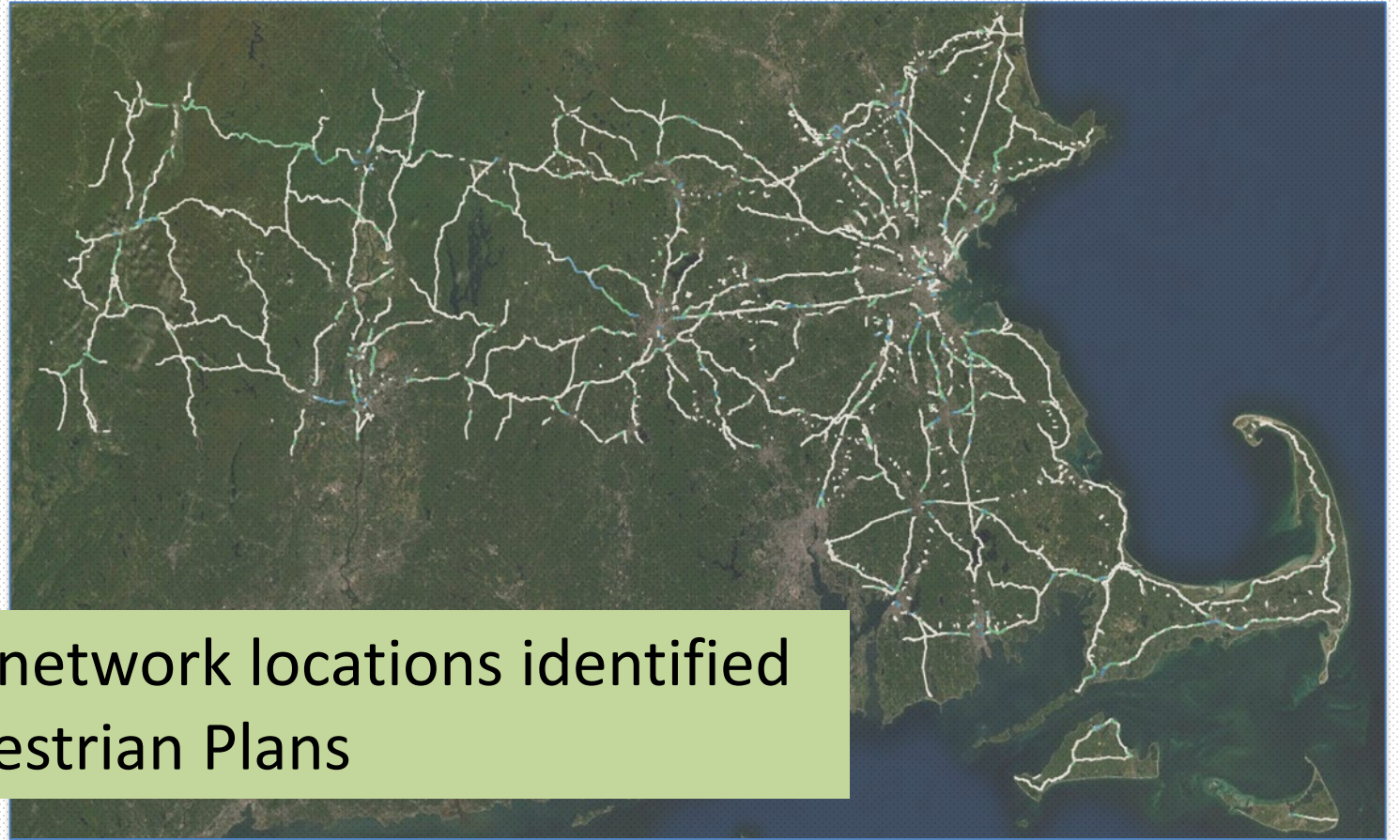


## Project Spotlight

### DISTRICT PEDESTRIAN AND BICYCLE IMPROVEMENTS AT VARIOUS LOCATIONS

Projects will deliver connectivity and safety improvements on state-owned bicycle and pedestrian facilities within each District Boundary

Addressing priority network locations identified by State Bike & Pedestrian Plans



## Performance Measures

% of STIP advertised within the federal fiscal year

**21% of plan, 22% scheduled**

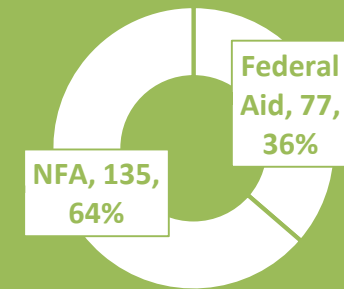
% of STIP projects advertised on time (e.g. within 30 days of plan)

**92% on time, vs 90% last year**

*Performance Measures currently applied to federal program will be extended to state projects for FFY 2021*

## Why is advertisement significant?

*Threshold for procurement and triggers the obligation of federal funds for federal projects*

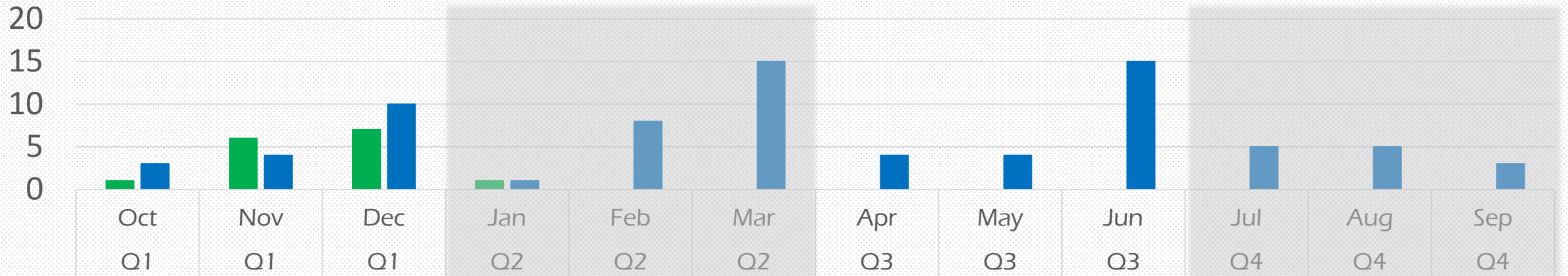


DESIGN

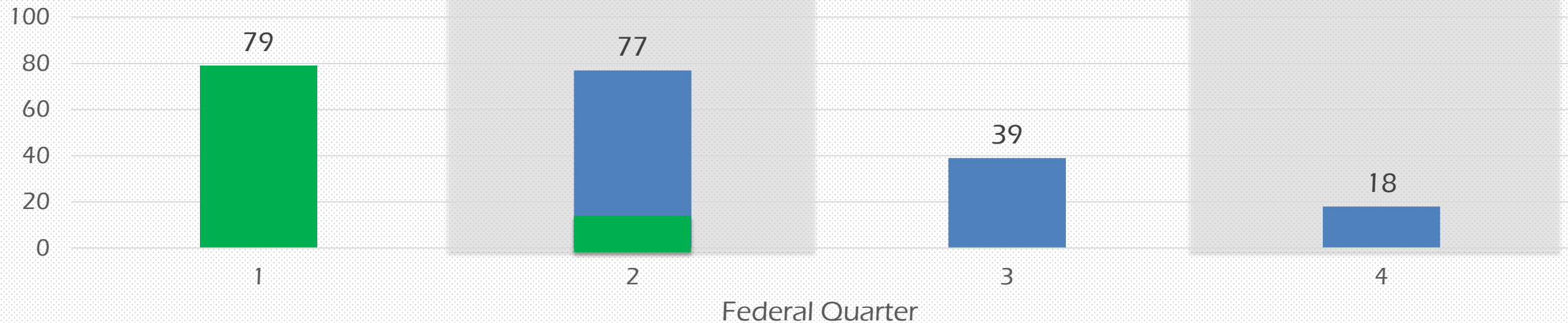
PROCUREMENT

CONSTRUCTION

### FFY 2020 Federal-Aid Advertisements



### FFY 2020 Advertisements – All Funding Sources



DESIGN

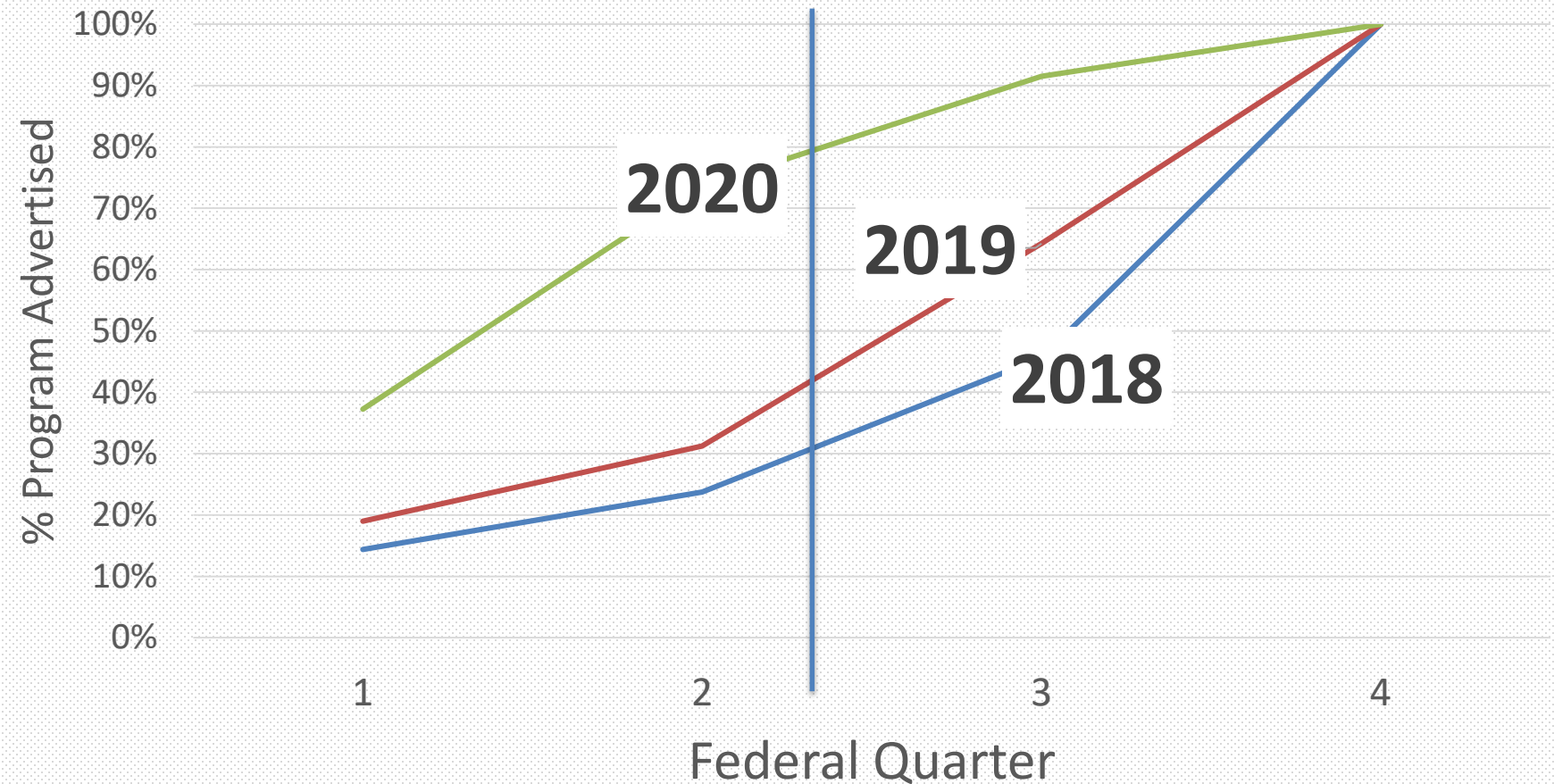
PROCUREMENT

CONSTRUCTION

## Refining Project Delivery

Multi-year effort has focused on modulating project advertisements in the 4<sup>th</sup> quarter, resulting in a 2020 profile more projects advertised in the beginning of the Fiscal Year

Advertising Program Profile - Cumulative by Quarter



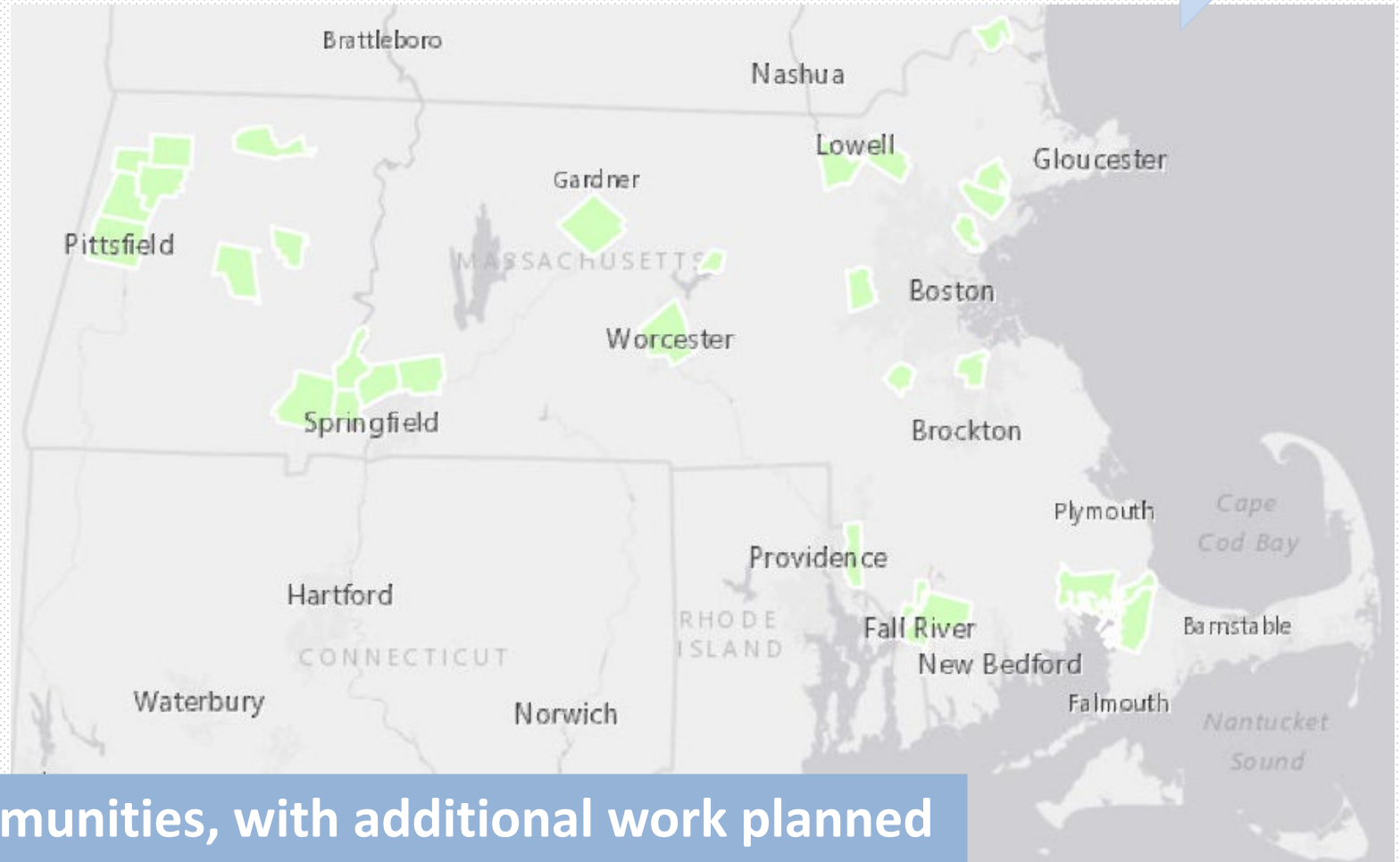


## Procurement

Process includes preparation of bid package, release of bid package, response to bidder questions, opening and evaluation of bids, award, and issuance of contract with Notice To Proceed

49 Projects issued contract Notice to proceed (NTP) in Q1

Contract starts in 30 communities, with additional work planned in other cities/towns through maintenance projects



## Notable Project Starts

Project	Contract	Project Description	NTP
607848	108251	Hubbardston- Resurfacing And Related Work On Route 68, From Williamsville Road To The Gardner C.L.	10/9/2019
604961	108083	Clinton- Resurfacing & Related Work On Route 110 (High Street)	10/11/2019
609203	108004	Chicopee- Ludlow- West Springfield- Westfield- Cleaning & Painting Structural Steel On Various Bridges On I-90	10/22/2019
603783	108254	Westfield- Columbia Greenway Rail Trail Construction (Center Downtown Section)	10/23/2019
607954	107617	Danvers- Bridge Replacement, D-03-018, St 128 Over Waters River	10/30/2019
608344	108244	Chelmsford- Intersection Improvements At Route 129 And Riverneck Road	10/31/2019
607392	107786	Seekonk- Intersection Improvements & Related Work At Fall River Avenue (Route 114A) And County Street	11/6/2019
608251	107669	Holyoke- Systematic Bridge Maintenance On H-21-047 And H-21-049	11/8/2019
608351	108457	Adams- Cheshire- Lanesborough- Resurfacing On The Ashuwillticook Rail Trail, From The Pittsfield T.L. To The Adams Visitor Center	11/12/2019
608523	108248	Pittsfield- Bridge Replacement, P-10-042, New Road Over West Branch Of The Housatonic River	11/12/2019
609406	108467	Goshen- Resurfacing And Related Work On Route 112	11/20/2019
608608	108586	Braintree- Highway Lighting Improvements At I-93/Route 3 Interchange	11/20/2019
608602	108463	Fall River- Somerset- Stormwater Improvements Along I-195 And Route 79	11/22/2019
609403	108590	New Ashford- Resurfacing And Related Work On Route 7	11/27/2019
608223	108466	Fall River- Resurfacing And Related Work On Route 24	12/4/2019
608222	108459	Bourne- Wareham- Resurfacing And Related Work On Route 25	12/4/2019
608781	109102	Saugus- Culvert Replacement & Environmental Remediation, Wheelabrator Access Drive Over Crescent Marsh/Bear Creek (MassDOT Owned)	12/5/2019
2/5/2020 602418	108808	Amesbury- Reconstruction Of Elm Street	Draft for Discussion and Policy Purposes Only 12/13/2019

## Performance Measures

Bid opening performance

***Ratio of office estimate to winning bid***

Duration

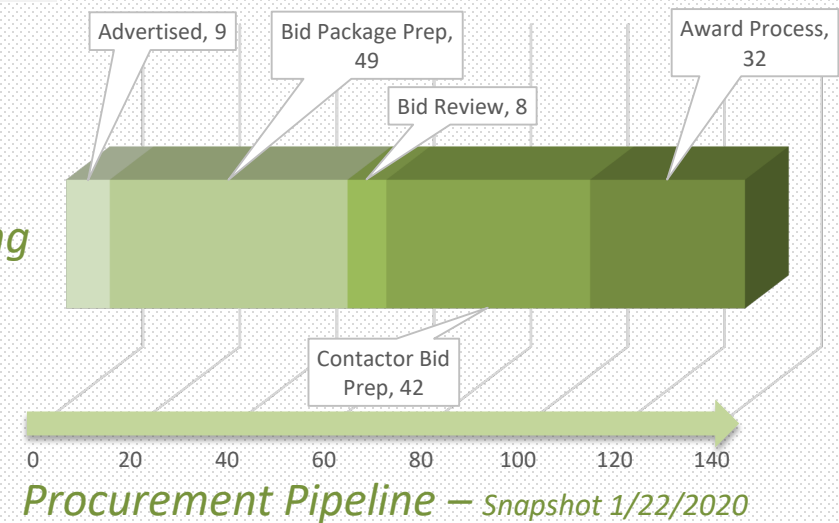
***Duration of advertisement to notice-to-proceed***

***Predictable procurement durations ensure that spending forecasts within the CIP are achievable***

***Process improvements underway to speed the procurement of construction contracts***

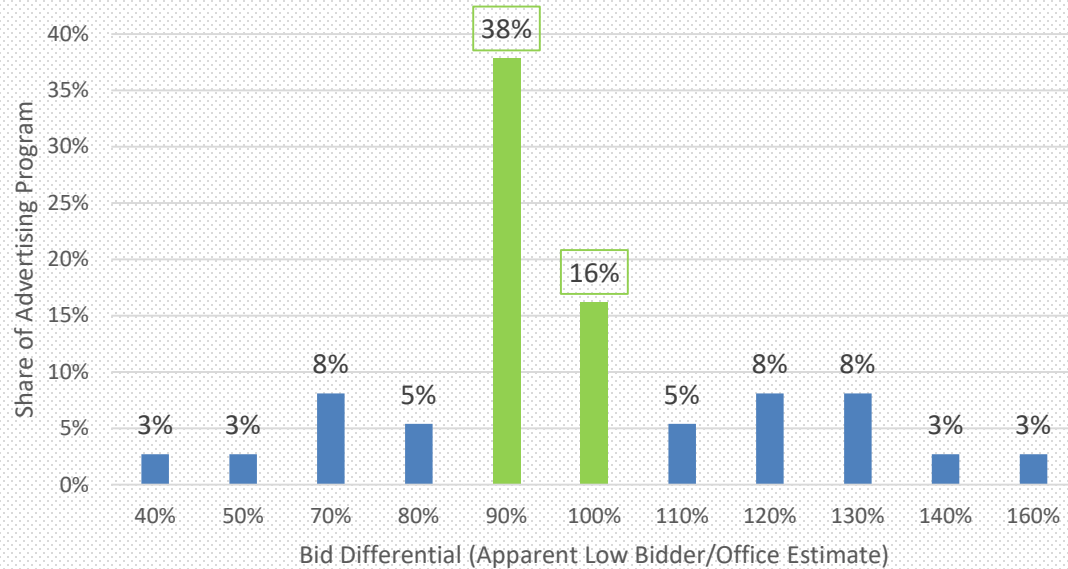
Advertising

NTP

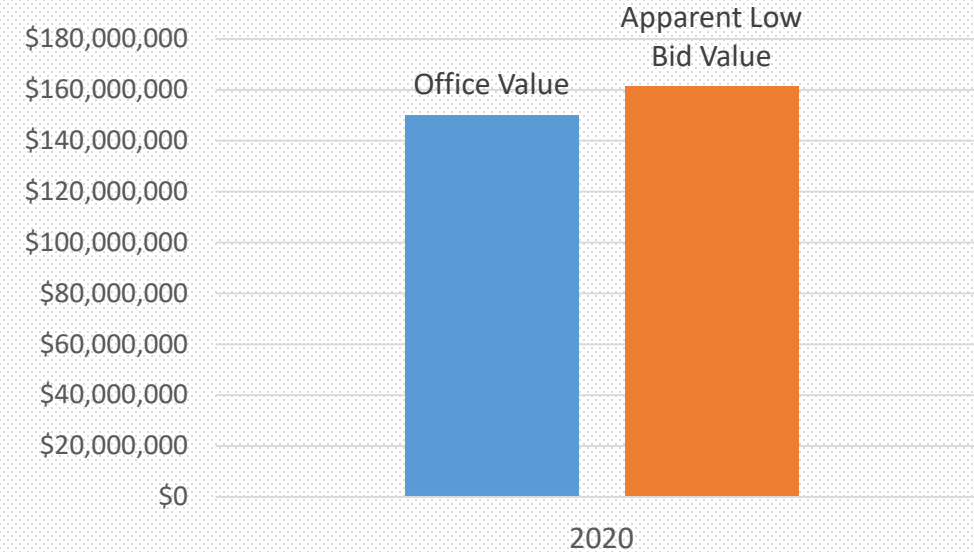


## Bid Opening Performance

Distribution of Bids - FFY 2020 to-date



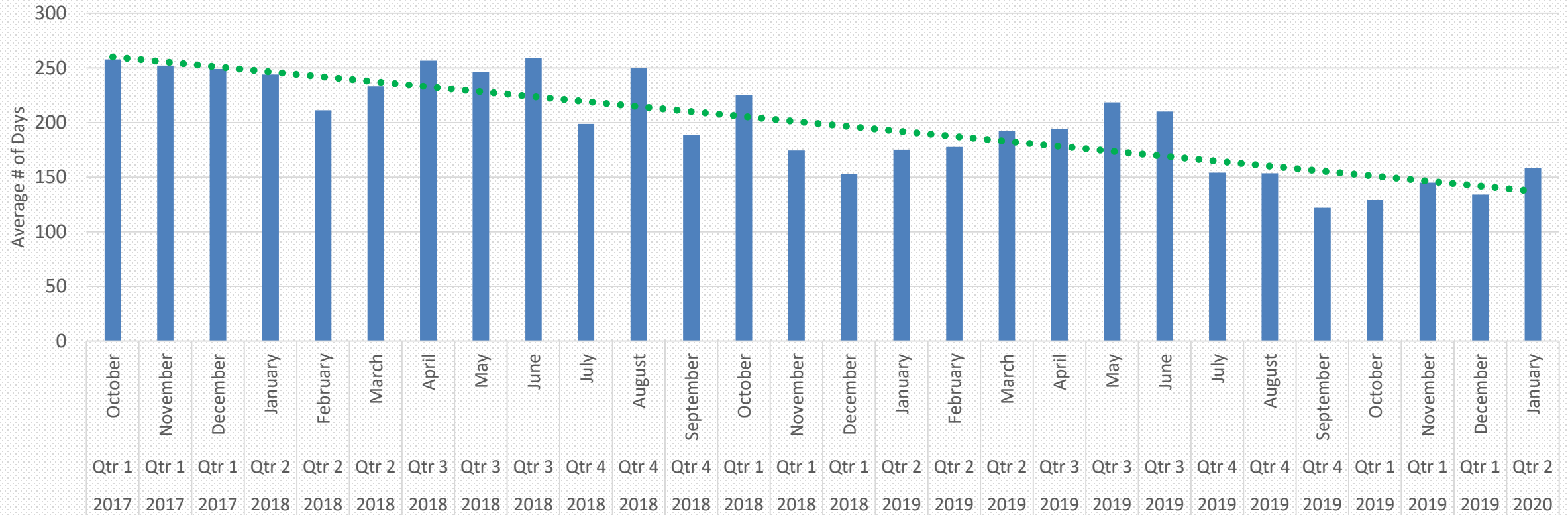
Bid to Office Value - FFY 2020 To-Date



*28 bid openings to-date FFY 2020*

## Procurement Duration

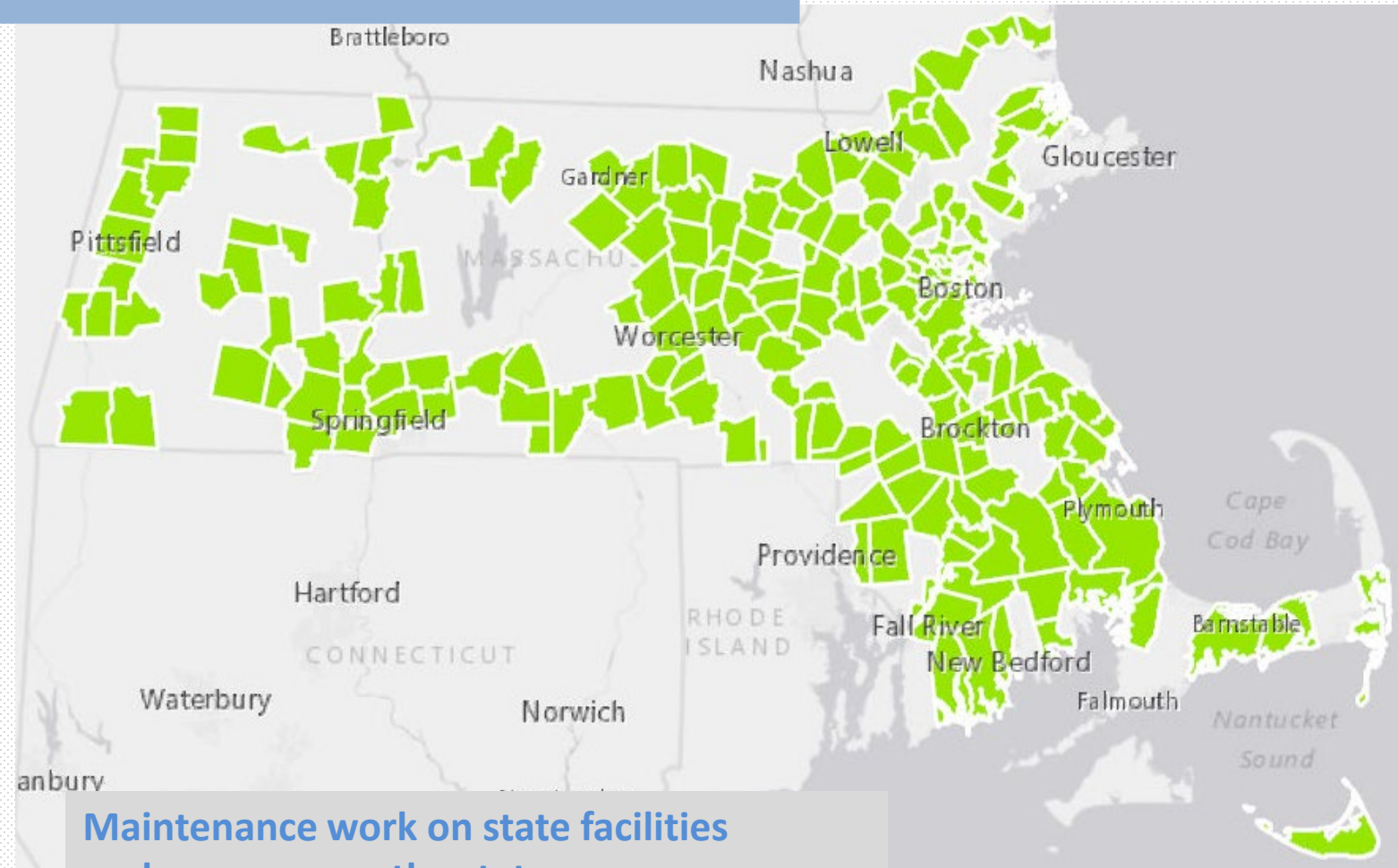
Procurement Duration - By Month





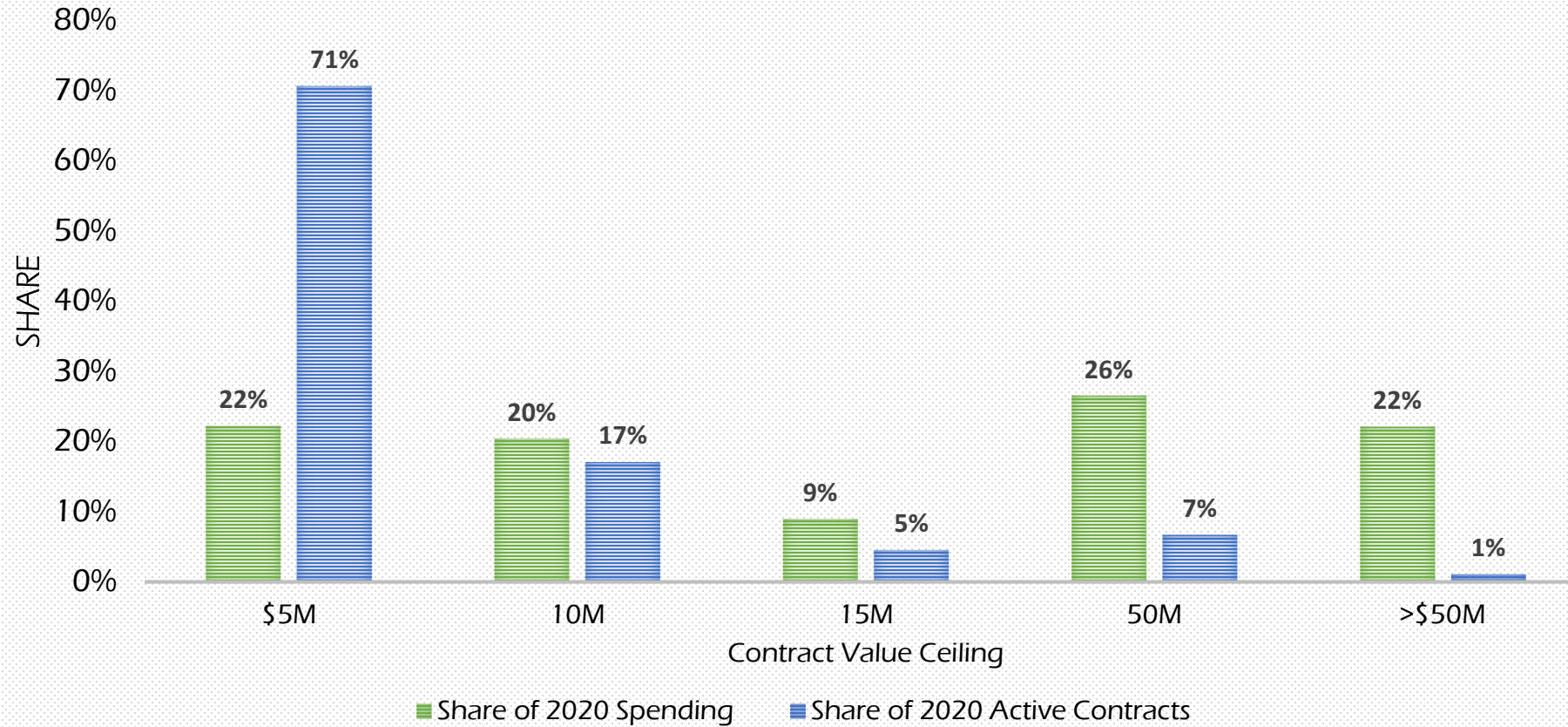
## Active Construction Projects in 189 Communities across the state

Capital Investment Program (CIP)	# Projects
Bridge	113
Roadway Improvements	85
Roadway Reconstruction	59
Safety Improvements	56
Non-Interstate Pavement	37
Facilities	24
Intersection Improvements	24
Interstate Pavement	24
Intelligent Transportation Systems	12
Shared Use Paths	11
Tunnels	9
ADA Retrofits	6
Capacity	4
South Coast Rail	1
<b>Total</b>	<b>465</b>



**Maintenance work on state facilities  
underway across the state**

## Distribution of Construction Contract Value – by spending and # contracts



# Construction

## Active contracts > \$15 M with % budget expended vs. % schedule elapsed

Project	Contract	Project Description	Contract Value	NTP Date	Completion Date	% Budget	% Schedule	On Time	On Budget
605964	86774	MILLBURY- BRIDGE REPLACEMENT, M-22-020, ROUTE 146 (NB & SB) OVER WEST MAIN STREET & IMPROVEMENTS ON ROUTE 146 @ ELM STREET, ELMWOOD STREET & WEST MAIN STREET (ROUNDAABOUT)	\$23,403,991.27	9/3/2015	6/19/2020	94	91.5	On Time	On Budget
602932	90724	LOWELL- BRIDGE REPLACEMENT, L-15-058, VFW HIGHWAY OVER BEAVER BROOK	\$16,910,712.53	6/13/2016	9/10/2021	33	68.9	Over Time	On Budget
606284	90723	BOSTON- BROOKLINE- IMPROVEMENTS TO COMMONWEALTH AVENUE, FROM ARMORY STREET TO ALCORN STREET	\$20,439,329.69	8/16/2016	1/25/2020	73	99.8	Over Time	On Budget
606146	90726	CANTON- NORWOOD- WESTWOOD- DEDHAM STREET/I-95 INTERCHANGE RECONSTRUCTION INCLUDING REHABILITATION/REPLACEMENT OF 5 BRIDGES	\$51,528,337.27	12/22/2016	5/5/2022	27	57.5	On Time	On Budget
606553	97935	HANOVER- NORWELL- BRIDGE REPLACEMENT, H-06-010, ST 3 OVER ST 123 (WEBSTER STREET) & N-24-003, ST 3 OVER HIGH STREET	\$34,387,802.98	4/28/2017	10/1/2020	93	79.9	On Time	On Budget
606308	99594	WORCESTER- CONSTRUCTION AND RELOCATION OF DISTRICT 3 ADMINISTRATION BUILDING ON PLANTATION PARKWAY	\$41,033,068.10	8/1/2017	2/29/2020	65	96.1	Over Time	On Budget
29492	97932	BEDFORD- BILLERICA- MIDDLESEX TURNPIKE IMPROVEMENTS, FROM CROSBY DRIVE NORTH TO MANNING ROAD, INCLUDES RECONSTRUCTION OF B-04-006 (PHASE III)	\$38,385,997.36	8/31/2017	6/6/2023	37	41.6	On Time	On Budget
601630	97936	WEYMOUTH- ABINGTON- RECONSTRUCTION & WIDENING ON ROUTE 18 (MAIN STREET) FROM HIGHLAND PLACE TO ROUTE 139 (4.0 MILES) INCLUDES REPLACING W-32-013, ROUTE 18 OVER THE OLD COLONY RAILROAD (MBTA)	\$68,424,209.80	9/11/2017	5/27/2022	34	50.3	On Time	On Budget
605957	98626	BOSTON- CHELSEA- DECK REHABILITATION ON TOBIN BRIDGE, B-16-017, FROM C4 TO C30 (PHASE VII) INCLUDING STRUCTURAL STEEL REPAIRS TO CHELSEA CROSS-GIRDERS & RELATED WORK TO EVERETT STREET ON-RAMP, CLEANING AND PAINTING, DRY STANDPIPE INSTALLATION	\$49,382,678.80	10/19/2017	7/15/2020	56	82.6	On Time	On Budget
608763	100297	BOSTON- SOMERVILLE- MEDFORD- STONEHAM- WOBURN- READING- HIGHWAY LIGHTING REHABILITATION ON I-93 (PHASE II)	\$17,248,642.35	5/3/2018	4/22/2021	58	58.1	On Time	On Budget
605384	102272	AGAWAM- WEST SPRINGFIELD- BRIDGE REPLACEMENT, A-05-002=W-21-014, ROUTE 147 OVER THE WESTFIELD RIVER & INTERSECTION & SIGNAL IMPROVEMENTS @ 3 LOCATIONS	\$24,248,707.77	8/1/2018	7/5/2022	39	37.7	On Time	On Budget
604173	102269	BOSTON- BRIDGE REPLACEMENT, B-16-016, NORTH WASHINGTON STREET OVER THE BOSTON INNER HARBOR	\$182,288,118.75	8/8/2018	11/7/2023	14	27.8	On Time	On Budget
605287	104677	CHELSEA- ROUTE 1 VIADUCT REHABILITATION (SB/NB) ON C-09-007 & C-09-011	\$195,888,623.00	12/3/2018	7/27/2021	35	43	On Time	On Budget
606380	104297	SHREWSBURY- BRIDGE REHABILITATION, S-14-018, BOYLSTON STREET (ROUTE 140) OVER I-290	\$15,532,912.65	1/22/2019	6/5/2021	39	42.3	On Time	On Budget
607137	106084	BOSTON- LEAK SEALING, FIREPROOFING & MISCELLANEOUS REPAIRS IN MASSDOT TUNNELS	\$16,578,731.25	4/10/2019	4/9/2021	8	39.5	On Time	On Budget
117106	105995	WAREHAM- RECONSTRUCTION OF ROUTE 6 & 28, FROM 500 FT. EAST OF TYLER AVENUE TO RED BROOK ROAD (1.65 MILES)	\$18,496,801.40	4/10/2019	5/19/2023	5	19.2	On Time	On Budget
609200	106704	BERKLEY- FREETOWN- LAKEVILLE- SOUTH COAST RAIL EARLY ACTION BRIDGE REPLACEMENTS	\$26,147,487.60	5/8/2019	11/23/2020	39	46	Over Time	On Budget
606381	105765	CAMBRIDGE- ARLINGTON- BELMONT- LEXINGTON- HIGHWAY LIGHTING REPAIR & MAINTENANCE ON ROUTE 2	\$16,283,942.14	6/5/2019	5/21/2024	1	12.8	On Time	On Budget
609121	107208	BOSTON- LIGHTING REPAIRS IN THE TED WILLIAMS TUNNEL (CRC 17C & 17E)	\$37,299,297.10	9/18/2019	3/16/2022	1	14	On Time	On Budget
609226	108887	WORCESTER- KELLEY SQUARE SAFETY IMPROVEMENTS ON MADISON STREET AND VERNON STREET	\$18,038,294.17	9/27/2019	3/26/2021	12	21.6	On Time	On Budget
607954	107617	DANVERS- BRIDGE REPLACEMENT, D-03-018, ST 128 OVER WATERS RIVER	\$24,723,828.33	10/30/2019	9/22/2024	1	4.8	On Time	On Budget

# 195 Dedham St (606146/90726)

## Budget Performance

- Projections currently within original Budget (\$51,528,337.27)

## Schedule Performance

- Current Completion Date 5/5/2022 Forecasted Finish: 3/26/2024
- Initial Recovery Schedule rejected by District office; investigation of alternatives to accelerate the remaining work underway

### Current Activities

Phase 2 work underway on River and Railroad bridges.  
Utility duct banks, utility relocations and drainage work are ongoing.

### Project Risks

Current contractor schedule forecasts a completion date 691 beyond contractual completion

Additional Delay attributed to unanticipated removal of Eversource's existing cable and asbestos conduit, enabling work was to be completed prior to bid by Eversource.

Further delays attributed to anticipated utility relocations continue to be a concern.



Designer	Stantec Inc.
Contractor	SPS NEW ENGLAND INC
Owners Rep.	Richard Littlefield (Chappell Engineering)
NTP	12/22/2016



# Weymouth Route 18 (601630/97936)

## Budget Performance

- Projections currently within original Budget (\$68,712,094.80)

## Schedule Performance

- Contractor schedule forecasts achievement of interim and completion milestones
- Current Completion Date 5/27/2022

### Current Activities

Utility pole installation is complete and overhead wire transfer is ongoing

The temporary girder has been installed allowing for partial demolition of the existing bridge deck, wingwalls and abutment to facilitate foundation work for the new bridge

Drainage and Roadway work in Abington and Weymouth is ongoing

### Project Risks

Utility relocation and coordination



Designer	Tetra Tech, Inc.
Contractor	GIOIOSO-D&R JV
Owners Rep.	Paul Tyrell (STV, Inc.)
NTP	9/11/2017



# North Washington Bridge Project (604173/102269)

## Budget Performance

- Projections currently within original Budget (\$204,385,944.75)

## Schedule Performance

- Current Completion Date 11/7/2023
- Notice to Proceed Date 8/8/2018

### Current Activities

The Contractor is scheduled to continue work on the temporary vehicular and pedestrian bridges. Once opened to traffic, anticipated late March 2020, demolition of the existing bridge will commence. The contractor has all permits approved to start construction of the temporary vehicular bridge.

Eversource has completed relocation/cut over of utilities from the existing bridge to the temporary utility bridge. National Grid Gas has completed relocation/cut over of the gas pipe onto the temporary utility bridge spans. All utilities are active.

### Project Risks

Approval of environmental submittals by DEP to allow demolition of the existing bridge.

Approval and installation of fendering system for temporary bridge pier supports.



Designer	Benesch
Contractor	J F WHITE CONTRACTING CO
Owners Rep.	Jeffrey Paul (JRP Consulting Services LLC)
NTP	8/8/2018

# Chelsea Viaduct Rehabilitation (605287/104677)

## Budget Performance

- Projections currently within original Budget (\$195,888,623)

## Schedule Performance

- Contractor schedule forecasts achievement of interim and completion milestones
- Current Completion Date 07/27/2021

### Current Activities

Contractor completed Stage 2, Sections 2 and 3 in December 2019 and is currently performing Stage 3 superstructure work including deck removal, stringer removal, blasting and painting top of cap beams, installation of diaphragms, and placement of barrier. Stage 3 is anticipated to be in place throughout the 2019/2020 winter.

Below structure work includes replacing and painting steel, continuing installation of dust containment system, power washing and painting columns and support beams, excavating around support column footings, and placing new concrete columns.

### Project Risks

Contaminated Soils Management, aggressive PBU and Structural Steel Fabrication Schedule.



Designer	HNTB CORPORATION
Contractor	Skanska Mccourt III Jv
Owners Rep.	Jeffrey Paul (JRP Consulting Services LLC)
NTP	12/3/2018

# Haverhill I-495 Bridge Replacement (605306/103045)

## Budget Performance

- Projections currently within original Budget (\$102,628,272.74)

## Schedule Performance

- The Contractor's schedule was impacted due to a project wide shutdown in the aftermath of a worker fatality that occurred on November 27, 2019.
- Prior to resuming work, MassDOT required the General Contractor to identify enhanced safety protocols including provision of an additional full time Site Safety Officer, re-training of all project staff on the use of aerial lifts, revisions to work plans to enable use of smaller-reach aerial lifts. Work was resumed on December 30, 2019
- The Contractor is working 24-hour shifts, 7 days a week to recover the lost time. MassDOT is working with the Contractor to determine the need for any additional schedule recovery efforts.
- Current Completion Date 6/23/2022

## Current Activities

Demolition of existing northbound superstructure / substructure

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Installation of the new northbound phase 2 substructure

## Project Risks

Based on the in-water permit work restrictions, the existing northbound bridge must be demolished and the drilled shafts for Phase 2 of the northbound bridge must be installed by February 29, 2020.



Designer	AECOM Technical Services, Inc.
Contractor	SPS NEW ENGLAND INC (D/B)
Owners Rep.	Eric Botterman (Millennium Engineering, Inc.)
NTP	8/1/2018



