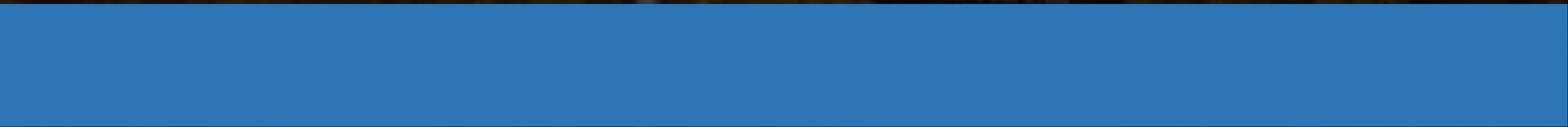


2021 ACEC MassDOT Highway Division



Highway Year in Review

■ Completed Major Projects

- Ashuwillticook Rail Trail (Lanesborough/Cheshire/Adams)
- Kelley Square Reconstruction (Worcester)
- Route 44 bridge slide (Raynham)
- Parcel 12 (under construction)

■ Key Accomplishments

- Delivered 99.7% of the FY 2020 Capital Investment Plan
- Advertised 203 Projects with a total estimated contract value of \$1.1 billion
- Awarded 251 Notice to Proceeds with a total estimated contract value of \$1.2 billion
- Delivered 90% of the original 2020 STIP

■ Response to Covid-19

- Construction Guidance
- Accomplishing aggressive goals....from home

CIP Focus - Planning for Resiliency

Coastal and Inland flooding recognized as a long-term risk to state-owned infrastructure within the 2019 TAMP

- MassDOT Planning leading a study to identify MassDOT transportation assets at risk to inland flooding
- Estimate “do nothing costs” via relationships drawn between flood depths, asset damage, repair costs, loss of service on NHS roads, bridges and large culverts
- Guide Resiliency Investments within Capital Planning



CIP Focus - MHS

- Previous Triennial report, released in 2019 identified a need for a \$1.63 Billion investment over the next ten years (including Allston Viaduct)
- \$816 Million Of MHS Investment was programmed within the SFY2020-2024 CIP
- Next MHS Triennial Report due September 2021
- Inspections expected to begin by calendar year end



CIP Focus - Culverts

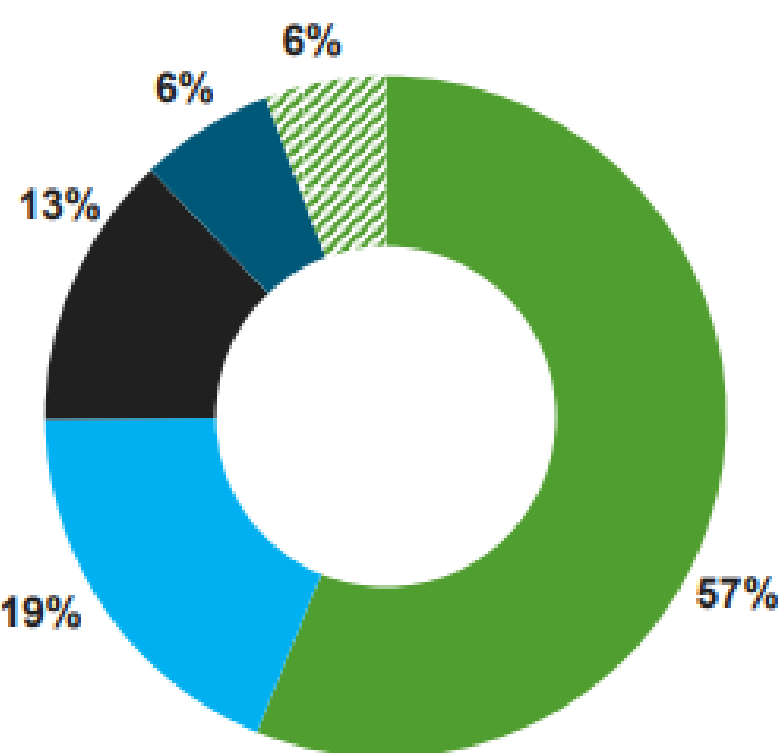
Highway Division has made significant progress on a comprehensive culvert management program

- 5600+ state-owned culverts located geospatially via record construction plans
- Initial Inspections performed along planned pavement resurfacing corridors
- Environmental Section has estimating structure vulnerability for the inventory based on stream flow and existing structure size



Transportation Bond Bill

- Almost \$7 billion in State Bond Cap
 - State match for federal funds (80/20)
 - Fully state funded (NFA)
 - New Grant Programs
- Grant Programs:
 - \$1.25 billion for Next Gen Bridge Program
 - \$70 million for the Municipal Small Bridge Program
 - \$100 million for a *new* Municipal Pavement Partnership Program
 - \$50 million in *new* authorization for the Complete Streets Program
 - \$25 million for a *new* Local Bottleneck Reduction Program
 - \$25 million for a *new* Transit Infrastructure Partnership Program



Overall spending by priority

Spending Priority	% of Total Spending
1 / Reliability	57%
2 / Modernization	19%
3 / Expansion	13%
Planning & Enterprise Services	6%
Chapter 90	6%

Transportation Bond Bill* – new programs

Program	Description	Goals, Size	Implementation / CIP Funding assumptions (TBD)
Next Generation Bridge Program	Focus on bridge preservation/bunding of smaller MassDOT bridges	\$1.25 billion authorized	
Pavement Improvement Program	Additional funding for NHS non-interstate pavement	\$100 million authorized	
Municipal Pavement	Pavement projects on locally owned, but state numbered roads	\$100 million authorized	
Local Bottleneck Reduction	Funds innovative solutions to address local congestion bottlenecks	\$25 million authorized	
Transit Supportive Infrastructure	Program that funds transit-supportive infrastructure, e.g., dedicated bus lanes, signal prioritization, shelters, lighting, signage, repairs and other improvements, etc., preference for those producing TOD housing	\$25 million authorized	Can be structured as a grant program to municipalities
Public Realm Improvements	Grants to municipalities for improvements to sidewalks, curbs, streets, and parking spaces to create additional capacity for pedestrians and cyclists and reimagine and repurpose street space (COVID response)	\$20 million authorized	
Transportation Management Associations	Grants for TMAs for services that reduce vehicle congestion and improve air quality and that enhance transportation demand management activities	\$25 million authorized	

*Assumes programs will remain in the final TBB signed by the Governor and contingent on funding to be identified by ANF.



Transportation Bond Bill* – new programs *continued*

Program	Description	Goals, Size	Implementation / CIP Funding assumptions (TBD)
Bus Transit Access	Grants to municipalities for prioritization and enhancement of access to mass transit by bus	\$25 million	
Transit and Commuter Rail Access	Grants to municipalities to increase access to mass transit and/or commuter rail	\$25 million	
Enhancements for Transit Access	Funding for enhancements to increase access to mass transit (including study and design)	\$25 million	
Electric Vehicle	Grants to municipalities and RTAs for electric vehicles and charging infrastructure	\$25 million	
Water Transportation	Grants to support landside water ferry terminal projects that leverages municipal, nonprofit and private investments to deliver public water transportation services in greater Boston	\$30 million	To be administered by R&T

*Assumes programs will remain in the final TBB signed by the Governor and contingent on funding to be identified by ANF.



NHS Bridge Condition in practical terms

Total Area of NHS Bridges 29,523,128 SF = 512 Football Fields

MA Area in Poor Condition	68 Football Fields
MA 10% Poor Area Federal Threshold	51 Football Fields
Gap	17 Football Fields
Area currently in construction	12 Football Fields
Ave. Annual Growth of Poor Area	5 Football Fields / Year
Average NHS Bridge Size	1/3 Football Field

	Football Fields
Tobin Bridge	4.47
Chelsea Viaduct	2.60
Allston Viaduct	5.1



Draft for Discussion and Policy Purposes Only

Current Bridge Conditions

	Desired Trend	Calendar Year	
		2019	2020
Total Poor Count	Down	461	462
NHS Area Poor	Down	12.58	13 %

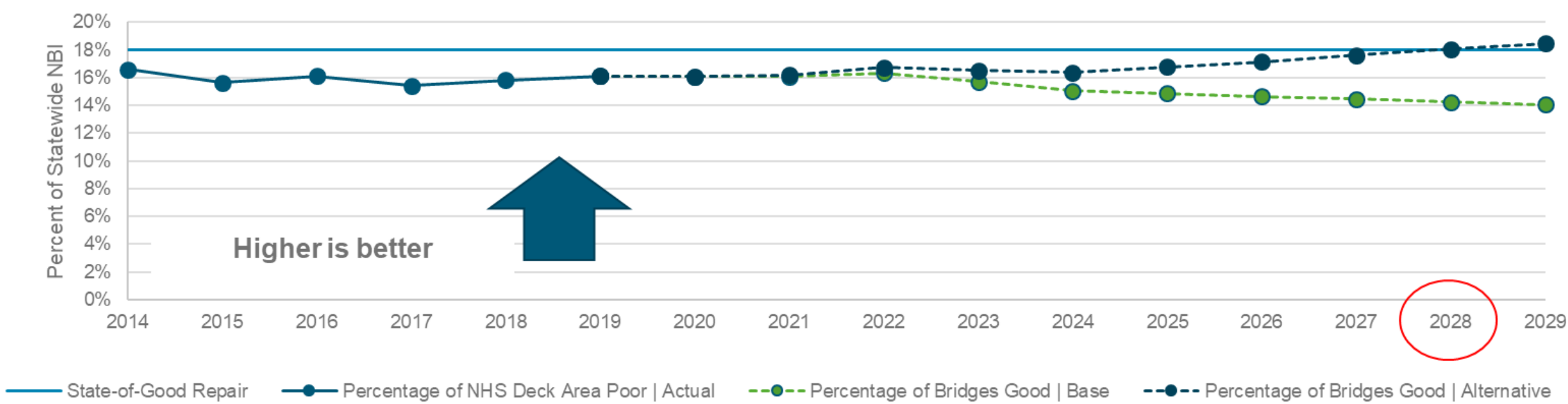
Bridge condition remained roughly the same in SFY 2020 within the key indicators of overall poor count and poor NHS Area

- 2019 TAMP forecasts a decline in both measures at current investment levels
- Massachusetts is 16th in the nation for highest % poor count, and 4th in the nation for highest poor area
- States in excess of 10% NHS poor area are required to commit a set portion of federal funds to NHS bridges, thus limiting flexibility
- Authorization of additional Grant Anticipation Notes (GANS) in the transportation bond bill (currently in conference committee) would support increased bridge investments

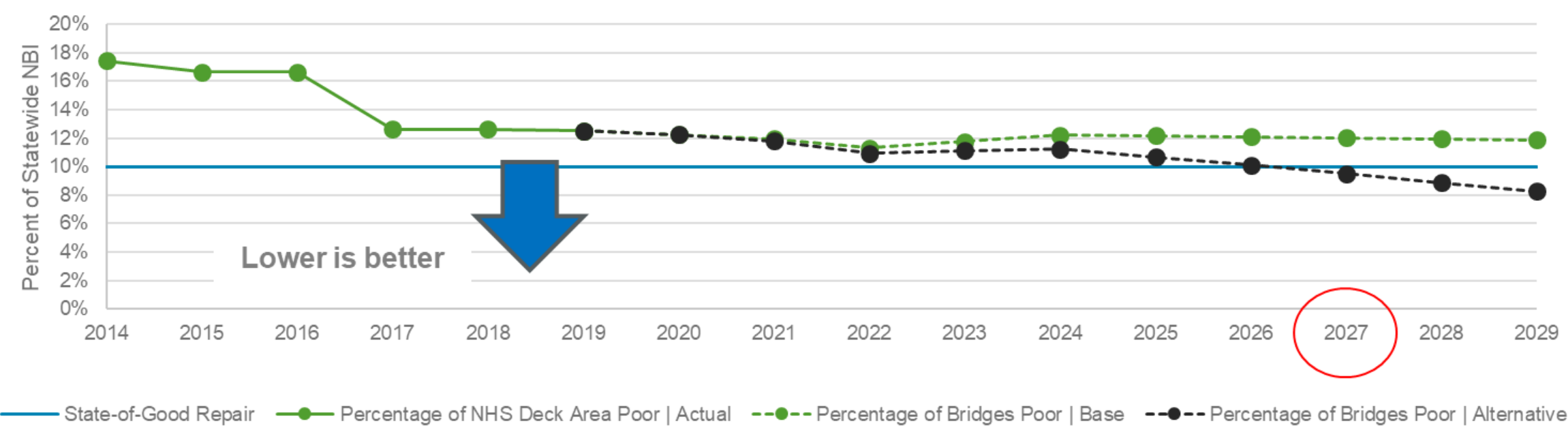


Improving Bridge Condition

NHS Bridge Deck Area in Good Condition



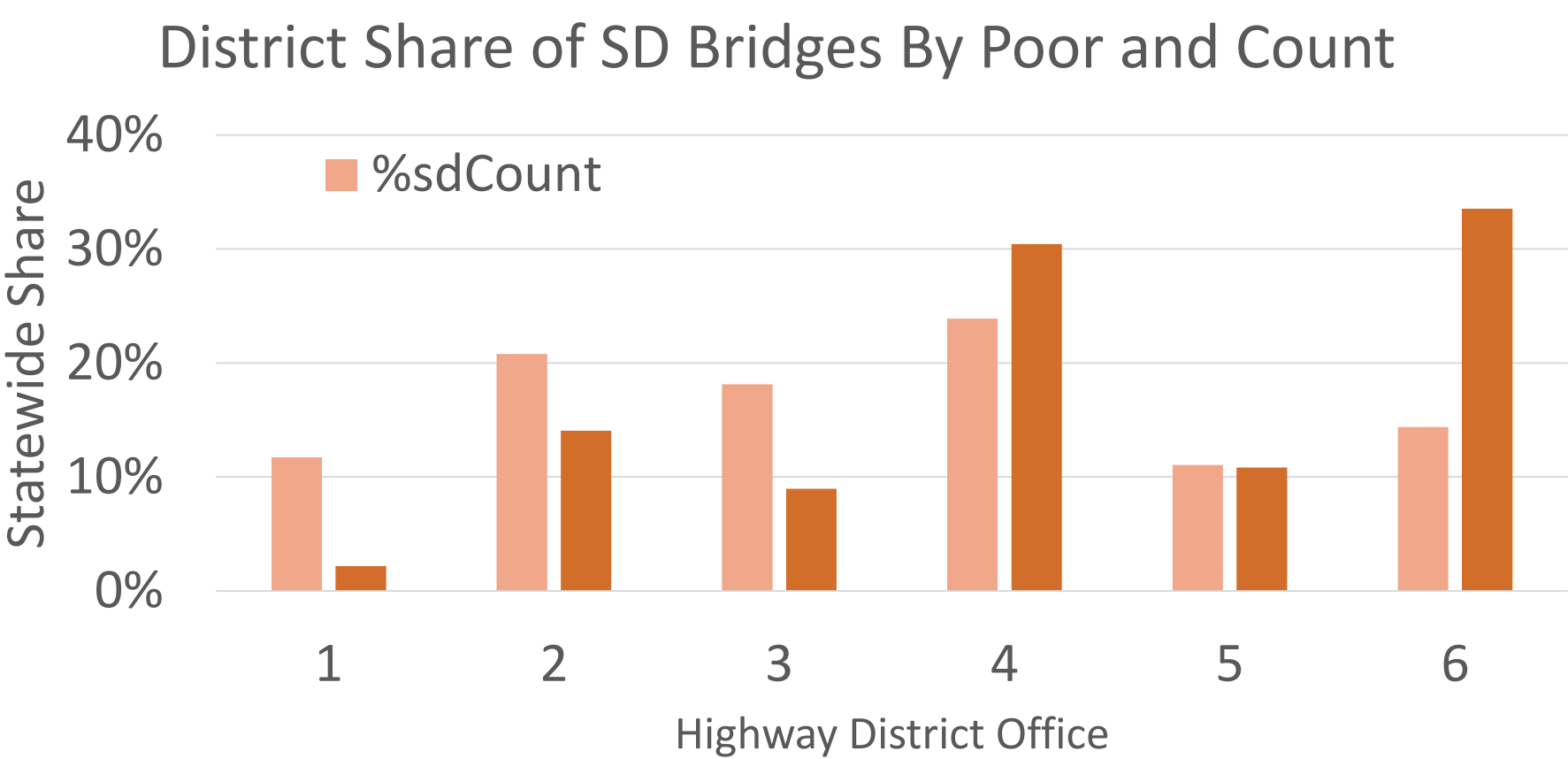
NHS Bridge Deck Area in Poor Condition



○ = target achieved

Next Gen Bridge Program

Increased Bridge Spending to continue progress toward bridge state of good repair



- Goals
- Make significant progress towards NHS SD Area minimum condition threshold (threshold= 10%, current 12.6%)
 - Maintain and reduce current SD count % (current 8.8%)
- Approach
- Leverage design-build procurement
 - Pursue corridor/multi structure bundle projects
 - Increase annual bridge maintenance program with emphasis on site specific task orders
 - Strive for regional equity with program investments

- Near Term Plan (through June)
- Complete design and advertise existing bridge contingency projects for early program release
 - Initiate new projects based on bridge prioritization
 - Add next gen bridges to 2022-2026 CIP
 - Begin design assignments

Current Pavement Conditions

	Desired Trend	Calendar Year	
		2018	2019
Interstate % Good	Up	83	88.3
Non-Interstate % Good	Up	61.5	67.2

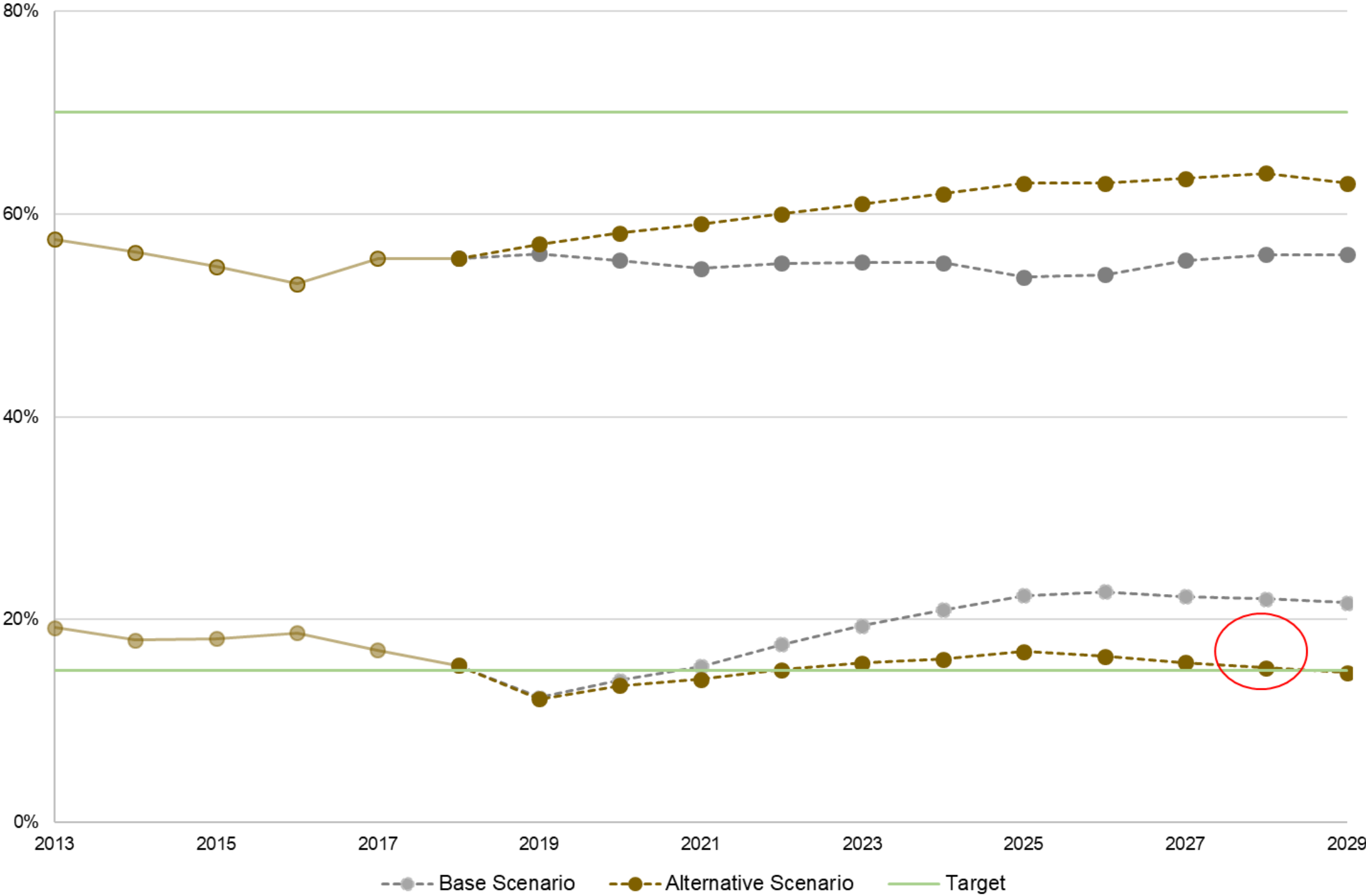
Pavement Conditions on both interstate and non-interstate systems showed solid improvement in calendar year 2019

- Increased investment is beginning to manifest itself though improved non-interstate pavement condition, even while interstate condition continue to improve
- In SFY 2020, through increased funding within the CIP, Highway was able to preserve or rehabilitate state-owned non-interstate pavement on roadways in over 25 communities



Improving Pavement Condition

NHS Non Interstate Pavement Condition



% Good Pavement
Higher is better



% Poor Pavement
Lower is better



 = target achieved

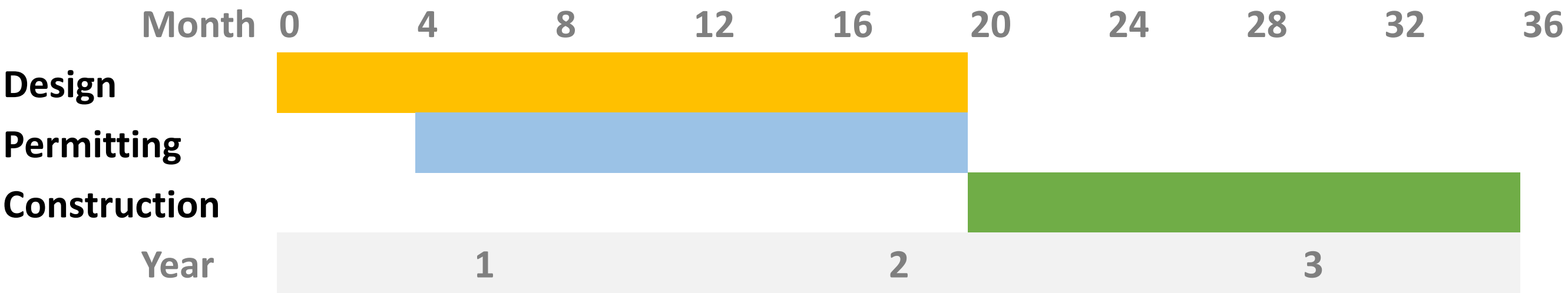
Municipal Small Bridge Program

- Since most bridge projects take three years to complete, completion of most projects will take place in 2021 and 2022
- Reauthorization is included in Transportation Bond Bill to continue program

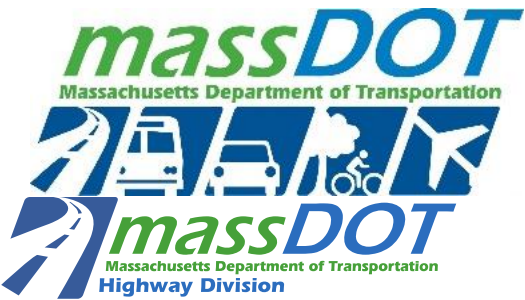
Current Project Status

Total Funded Projects	Contracting	Design/Permit	Construction	Completed
117	9	42	39	27
% of Total	8%	36%	33%	23%

Project Completion Timeline



Project Time to Completion dependent on project type and permitting requirements



Complete Streets Funding Program

250

Municipalities Registered

226

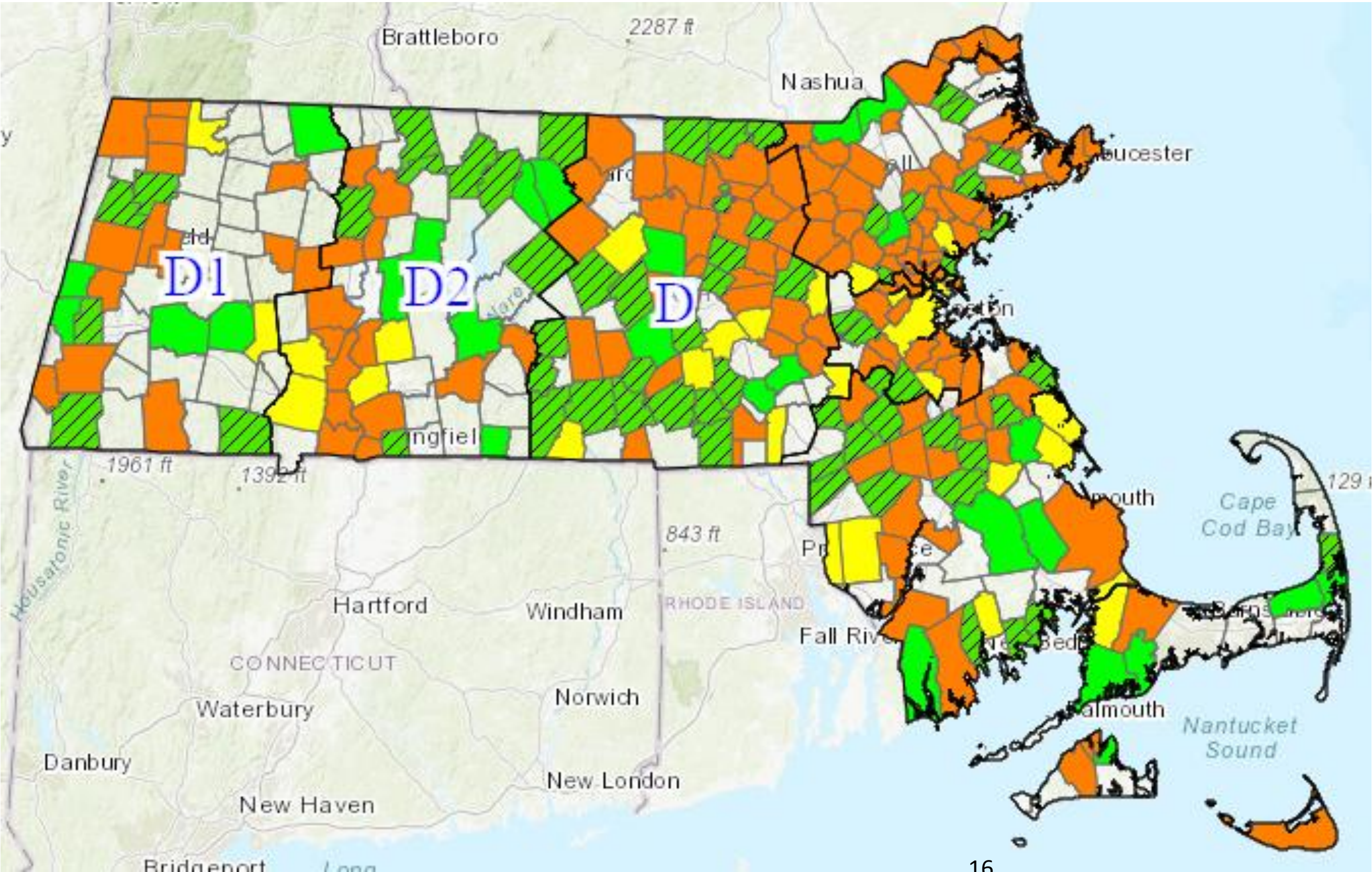
Municipal Policies

198

Project Prioritization Plans

160

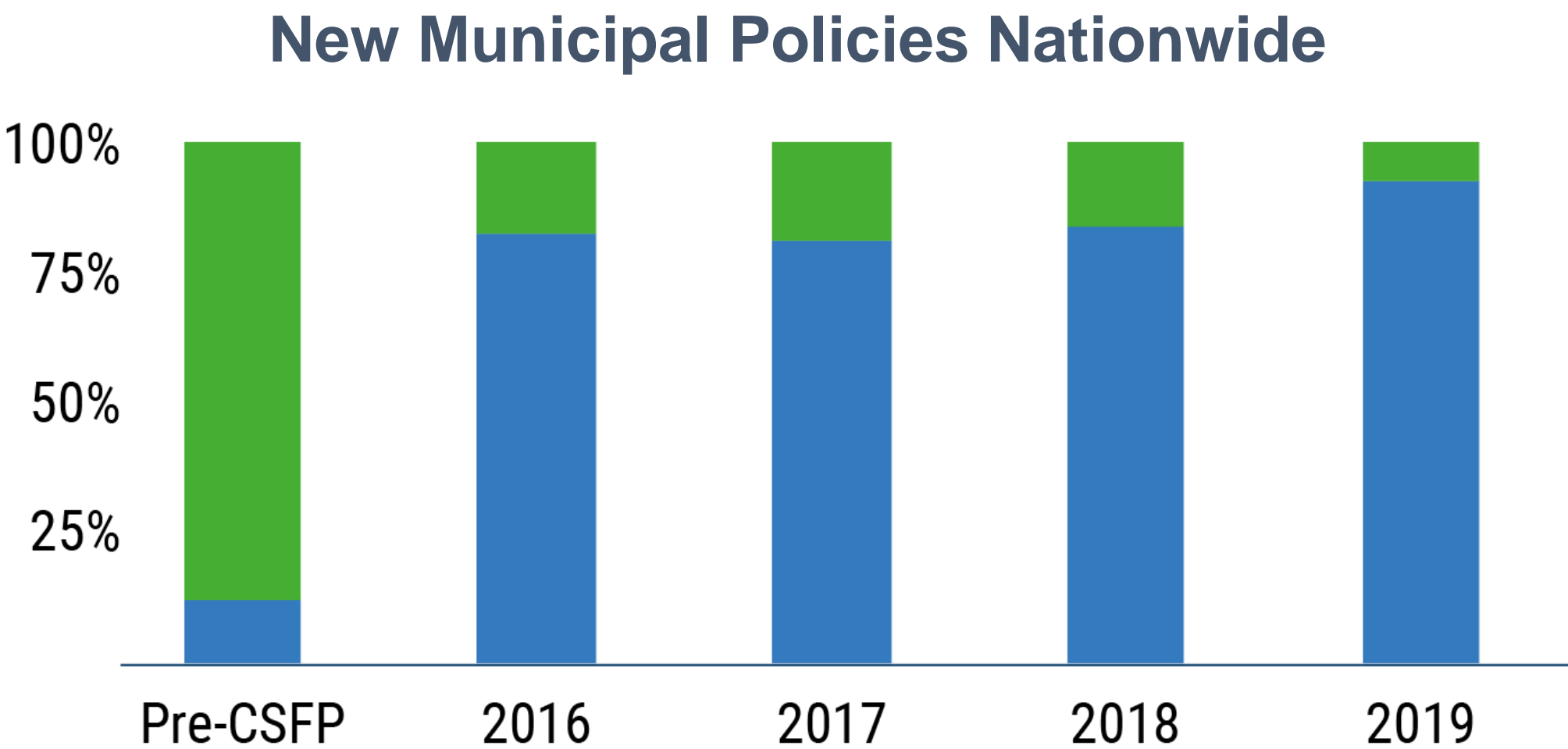
Municipalities received
Construction Funding



National Leadership



The efforts of Massachusetts cities and towns have been recognized by Smart Growth America on the annual “Best Complete Street Policies” list every year since 2013.



82%
of the new city-level Complete Streets policies adopted in the United States since 2016 were for municipalities in Massachusetts

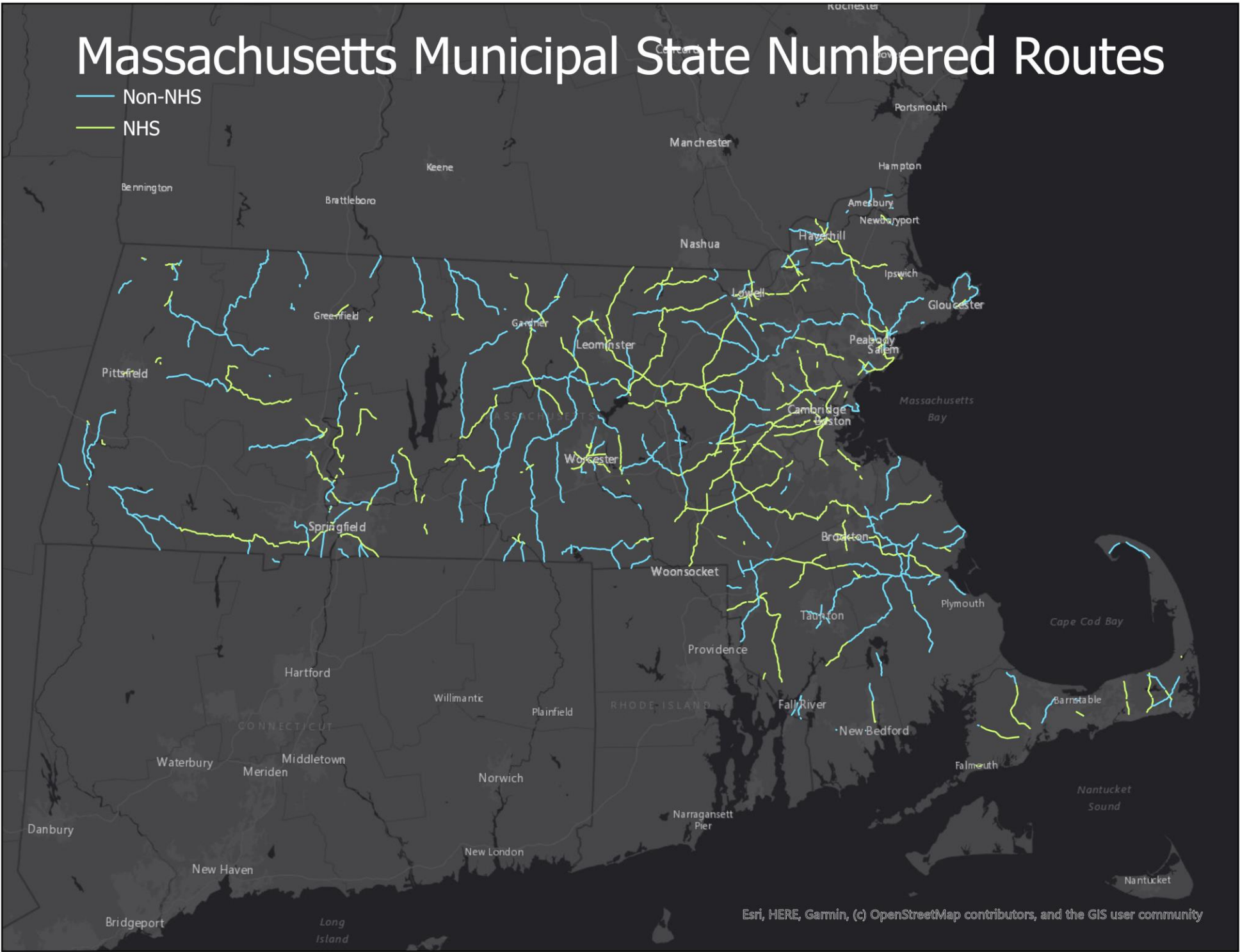
Complete Streets Funding Program

- Current program authorization covers next \$50M of grant awards for FY 21 - 25
 - Authorization comes from Environmental Bill
 - Transportation Bond Bill contains additional program authorization
- Important program updates are underway, including updated program guidance and changes to grant application scoring



Municipal Pavement

Improved Pavement Condition on the Municipal State Numbered Route Network



Regional Share

District	Non-NHS		Total (MI)	% of State
	NHS (MI)	(MI)		
1	44	136	180	11%
2	105	147	252	15%
3	274	254	528	31%
4	135	146	282	17%
5	146	205	351	21%
6	87	14	101	6%
			1,694	

- MassDOT collects pavement condition for all state numbered routes.
- Network assessment underway to determine state wide five-year priority list
- Potential segments will be screened for mobility opportunities and design effort and scheduled/assigned accordingly
- Community outreach/coordination major component

MassDOT Contract Opportunities

- Design Services to support CIP
- Specialty Services to support Highway Division activities
 - Environmental, Right of Way, Complete Streets, etc.
- Master Service Agreements (MSA)
- Right-of-Way
 - ROW Activities
 - ROW Plan Preparation and Review

Design Build – Upcoming Projects

Charlton – Oxford - Route 20
~\$60 million

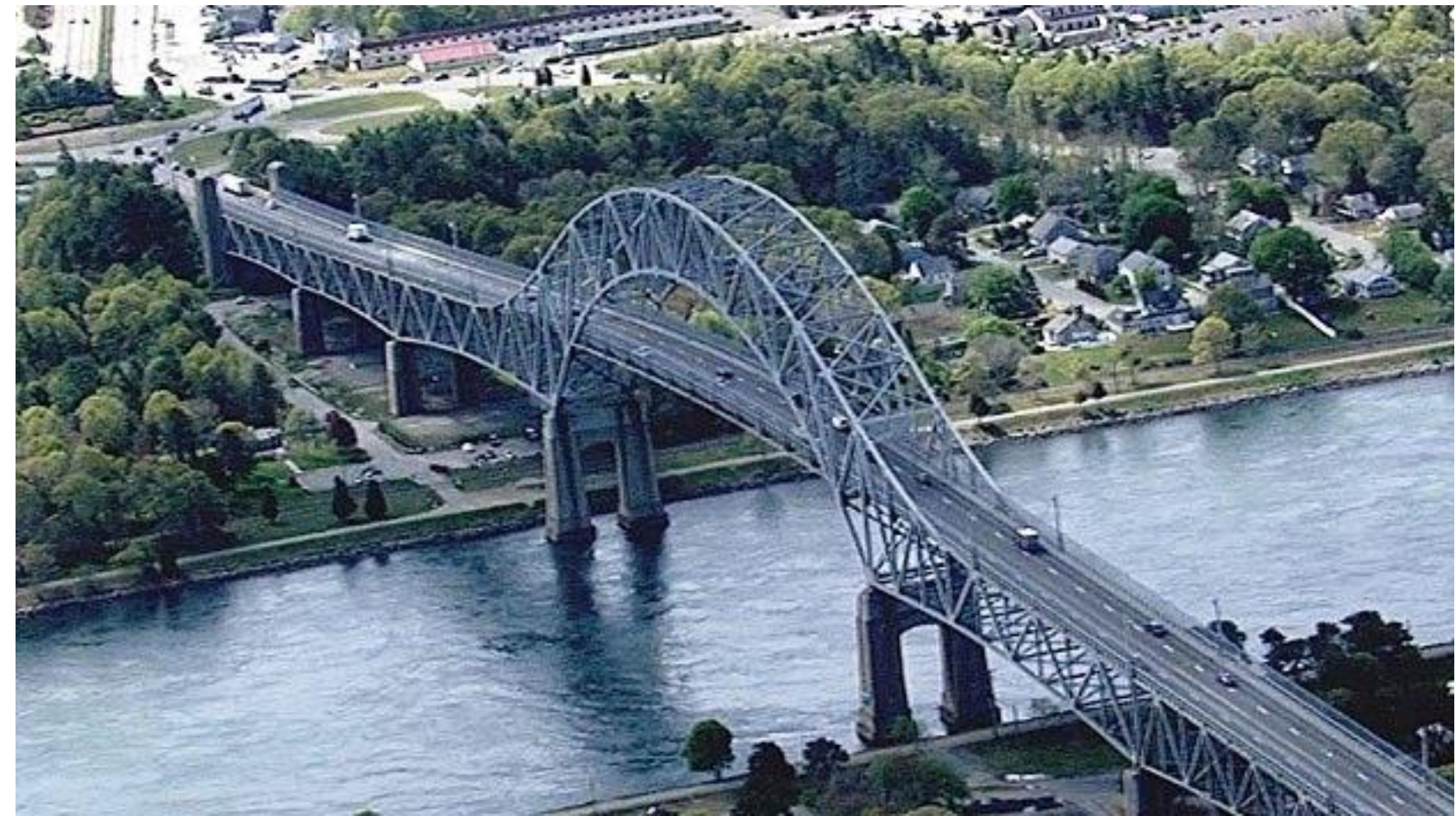
Sumner Tunnel
~\$100 million

Cape Cod Bridges and Approach
~ \$1 billion

Hopkinton - 495/90 Interchange
~\$270 million

Boston – Allston Intermodal
~ \$1 billion

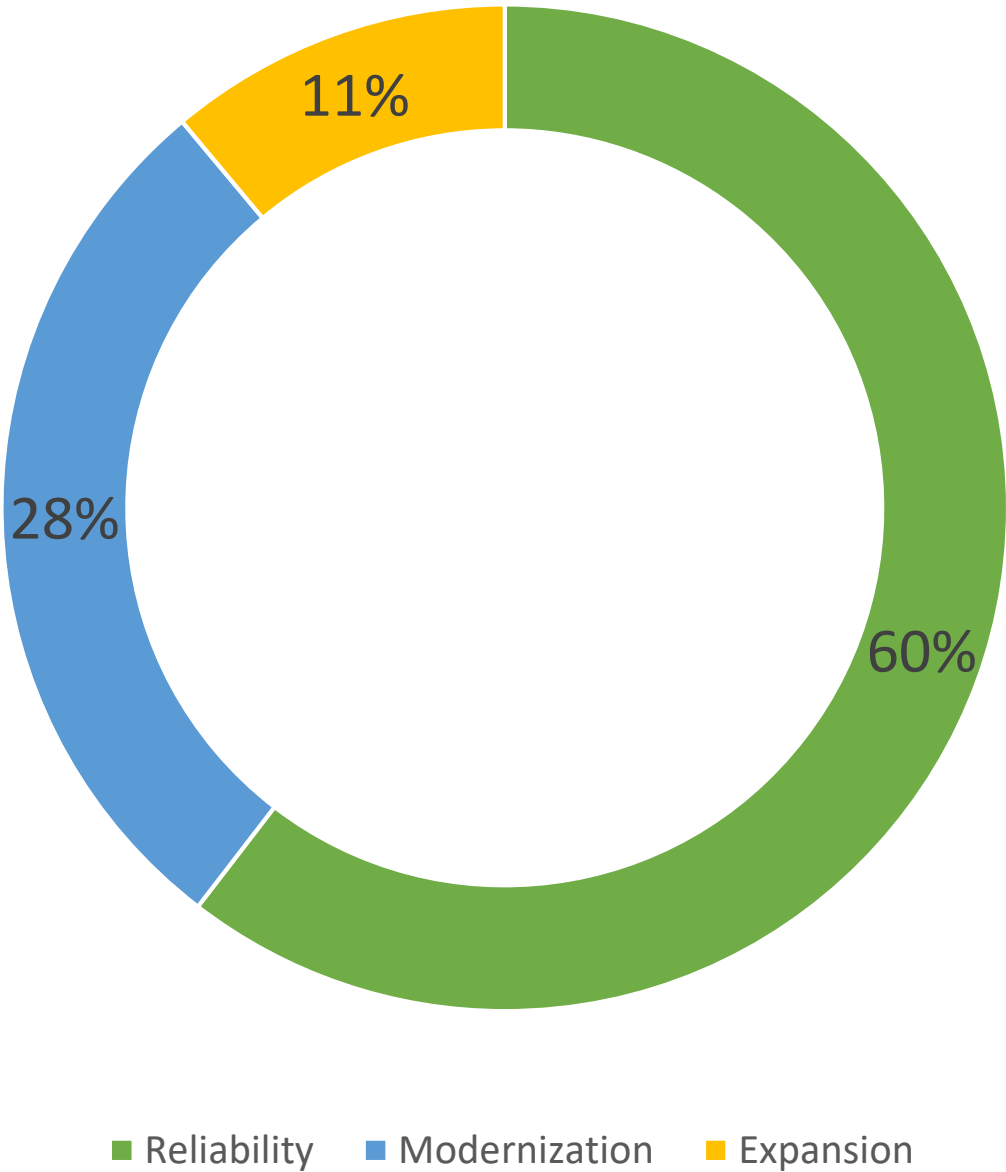
Newton-Weston – Interchange Bridges
~\$180 million



2021 Advertisements By CIP Program

PRIORITY	PROGRAM	# Proj	EST CONTRACT VALUE
Reliability	Bridge	47	\$135,264,754
Reliability	Facilities	9	\$6,301,300
Reliability	Interstate Pavement	5	\$54,085,498
Reliability	Non-Interstate Pavement	18	\$92,659,904
Reliability	Roadway Improvements	34	\$26,564,040
Reliability	Safety Improvements	13	\$11,957,703
Reliability	Tunnels	1	\$131,355,674
Modernization	ADA Retrofits	5	\$4,725,972
Modernization	Intelligent Transportation Systems	4	\$8,504,998
Modernization	Intersection Improvements	9	\$32,983,247
Modernization	Roadway Reconstruction	25	\$169,721,779
Expansion	Bicycle and Pedestrian	6	\$37,995,465
Expansion	Capacity	2	\$45,991,712

Planned FFY 2021 Advertisements By CIP Priority



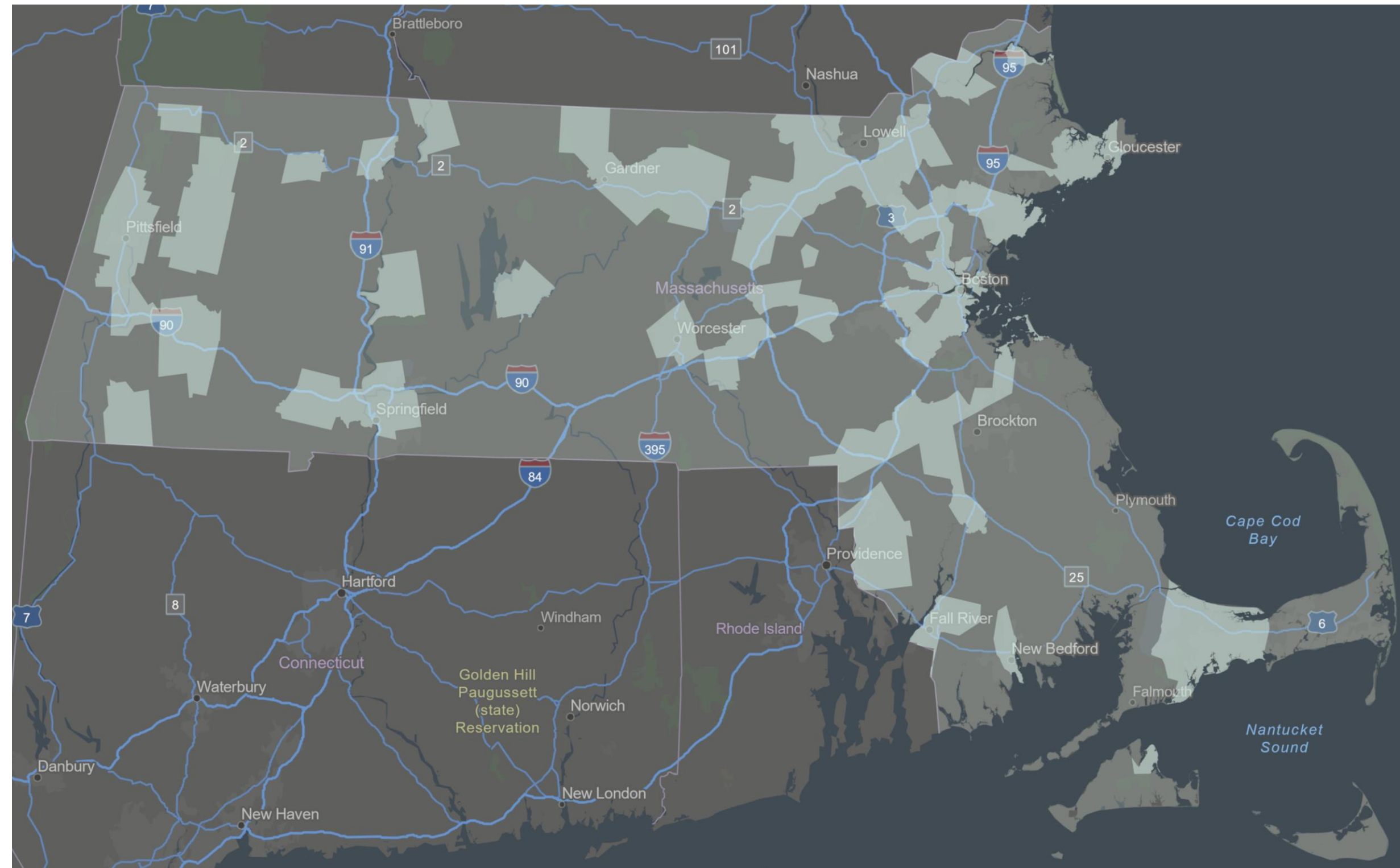
FFY 2021 Advertisement Plan

178 Projects planned for advertisement through September 2021

80 Federal-Aid (STIP) Projects

Site specific projects planned for **93 Cities/Towns**

24 Projects advertised to-date



Advertisement Plan Performance Measures

Building on the successes of 2020, the Highway Division has expanded measures and controls for the 2021 Adv. Plan to maintain focus on reliability

Focus	Measure	FFY 2020	Target
Completeness	% of Original STIP advertised	90%	90% (2022)
	% of Overall Plan advertised	New for 2021	
Timeliness	% of Projects advertised within 30 days of plan	67%	TBD
Distribution	% Quarterly Distribution (STIP)	39%	No quarter > 35%
	% Quarterly Distribution (Full Plan)	New for 2021	