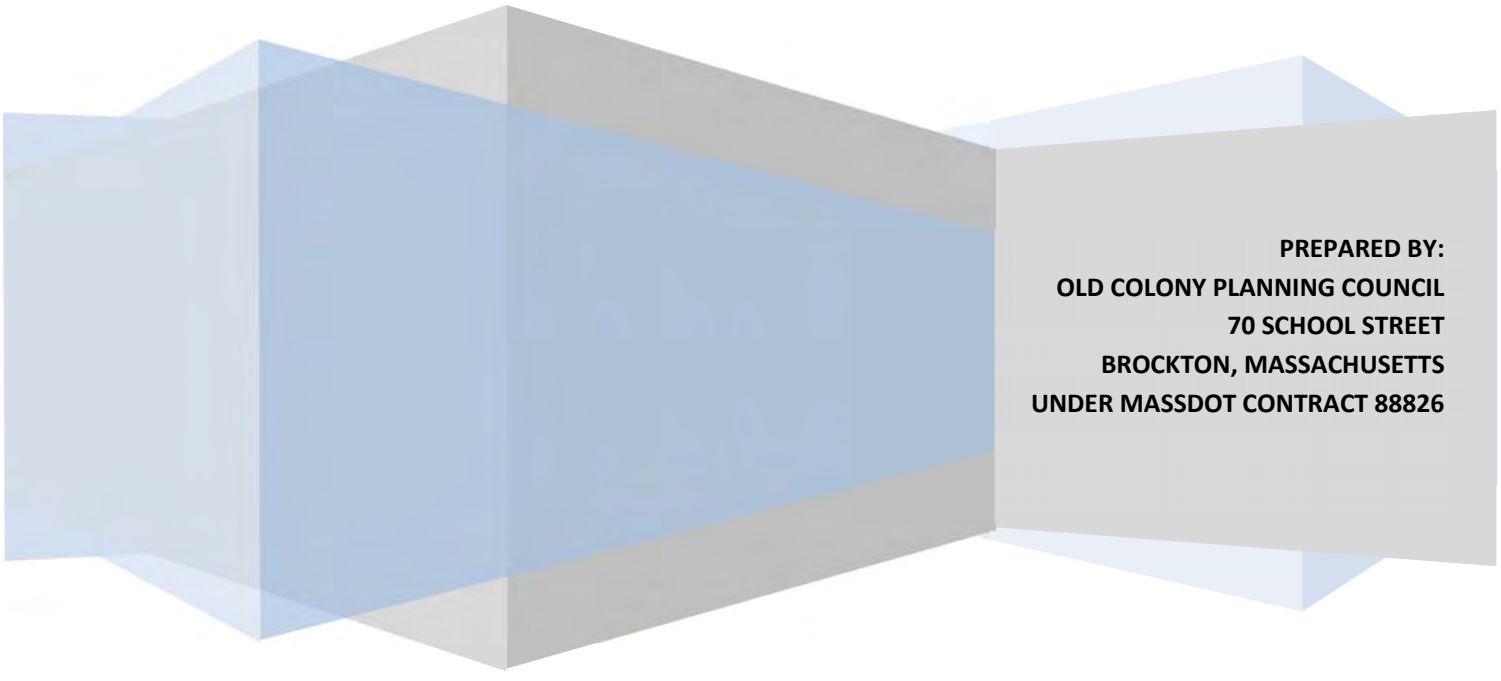
OLD COLONY METROPOLITAN PLANNING ORGANIZATION (MPO)

FFY 2019-2023 OLD COLONY TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENT 2

- **RELEASED BY THE OLD COLONY MPO ON APRIL 16, 2019 TO A 21-DAY PUBLIC REVIEW AND COMMENT PERIOD**

PREPARED IN COOPERATION WITH:

- **BROCKTON AREA TRANSIT AUTHORITY (BAT)**
- **FEDERAL HIGHWAY ADMINISTRATION (FHWA)**
- **FEDERAL TRANSIT ADMINISTRATION (FTA)**
- **MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT)**



PREPARED BY:
OLD COLONY PLANNING COUNCIL
70 SCHOOL STREET
BROCKTON, MASSACHUSETTS
UNDER MASSDOT CONTRACT 88826

OLD COLONY PLANNING COUNCIL

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April 16, 2019

NOTICE OF PUBLIC REVIEW AND COMMENT PERIOD

- **FFY 2019-2023 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENT 2**
- **FFY 2020-2024 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

In accordance with the Public Participation Process developed by the Old Colony Metropolitan Planning Organization (MPO), Old Colony Planning Council (OCPC) is making the FFY 2019-2023 TIP Amendment 2, and the FFY 2020-2024 TIP available for public review and comment. Copies of these documents are available for review at the OCPC Offices (8:30 a.m. to 4:00 p.m.), at http://www.ocpcrpa.org/, and/or upon request. This notice will initiate a 21-Day Public Review and Comment Period. This process will also be used as Brockton Area Transit Authority's (BAT) public participation process. BAT, the Federal Transit Administration (FTA) Section 5307(c) applicant, has consulted with the Old Colony MPO and concurs that the public involvement process adopted by the Old Colony MPO for development of the TIP satisfies the public hearing requirements that pertain to the development of the Program of Projects for the regular Section 5307, Urbanized Area Formula Program, grant applications including the provisions for public notice and the time established for public review and comment. Public notice of public involvement activities and time established for public review and comments on the TIP will satisfy the program of projects (POP) requirements. The public discussion of the TIP at Old Colony JTC, Old Colony MPO, and transportation meetings satisfies the Program of Projects (POP) public hearing requirements of the FTA. A public meeting of the OCPC and Old Colony MPO advisory committee, the Old Colony Joint Transportation Committee (JTC), is scheduled for May 2, 2019 at 12 PM. Furthermore, a public meeting of the Old Colony MPO is scheduled for May 21, 2019 at 10 AM to hear additional public comments and consider endorsement. Please contact Charles Kilmer at 508-583-1833 Extension 206 or for further information.

Please send written comments to:

Charles Kilmer
Old Colony Planning Council (OCPC)
70 School Street
Brockton, MA 02301

The Old Colony MPO fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. The Old Colony MPO operates without regard to race, color, or national origin (including limited English proficiency), age, sex, disability, ancestry, ethnicity, gender, gender identity or expression, sexual orientation, religion, creed, veteran's status, or background. Any person who believes him/herself or any specific class of persons, to be subject to discrimination prohibited by Title VI may by him/herself or by representative file a written complaint with the Old Colony MPO. Complaints are to be filed no later than 180 days from the date of the alleged discrimination. Please contact Pat Ciaramella at 508-583-1833 Extension 202 for more information.

LEGAL ADVERTISEMENTS

Notice of Twenty-One Day Public Review and Comment Period appeared in the following:

- **The Brockton Enterprise**
- **The Ojornal**
- **The Patriot Ledger**

PUBLIC COMMENTS

FFY 2019-2023
OLD COLONY TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
AMENDMENT 2

PART 1

FFY 2019-2023
OLD COLONY TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
AMENDMENT 2

Part 1 - Increases the programmed cost for the following projects:

FFY 2019

1. ABINGTON/ BROCKTON - NORTH QUINCY STREET, CHESTNUT STREET, AND BOUNDARY AVENUE ROUNDABOUT AND GEOMETRIC IMPROVEMENTS (608143)
    - AMENDMENT: INCREASE COST - Increase cost from $1,218,906 to $2,121,017 (increase covered by adding $902,111 in Regional Target CMAQ funding).

2. EAST BRIDGEWATER - RESURFACING AND SIDEWALK CONSTRUCTION ON BEDFORD STREET (ROUTE 18), FROM WHITMAN STREET (ROUTE 106) TO CENTRAL STREET (607941)
    - AMENDMENT: INCREASE COST AND ADD FUNDING PROGRAM - Increase cost from $7,763,091 to $9,023,732 (increase covered by adding $1,260,641 in Regional Target STP funding).

2019 Old Colony Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼
											Present information as follows, if applicable: **a)** Planning / Design / or Construction; **b)** total project cost and funding sources used; **c)** advance construction status; **d)** MPO project score; **e)** name of entity receiving a transfer; **f)** name of entity paying the non-state non-federal match; **g)** earmark details; **h)** TAP project proponent; **i)** other information
►Section 1A / Regionally Prioritized Projects											
►Regionally Prioritized Projects											
AMENDMENT:Increase Cost,AMENDMENT:Change Additional Information	Intersection Improvements	608143	Old Colony	Multiple	ABINGTON/ BROCKTON - NORTH QUINCY STREET, CHESTNUT STREET, AND BOUNDARY AVENUE ROUNDABOUT AND GEOMETRIC IMPROVEMENTS	5	CMAQ	$ 2,041,997	$ 1,633,598	$ 408,399	a) Construction; b) Total Project Cost = $2,121,017 w/ $2,041,997 of CMAQ funding, and $79,020 of HSIP funding; d) MPO score 44.72
AMENDMENT:Change Project Description	Intersection Improvements	608143	Old Colony	Multiple	ABINGTON/ BROCKTON - NORTH QUINCY STREET, CHESTNUT STREET, AND BOUNDARY AVENUE ROUNDABOUT AND GEOMETRIC IMPROVEMENTS	5	HSIP	$ 79,020	$ 71,118	$ 7,902	a) Construction; b) Total Project Cost = $2,121,017 w/ $2,041,997 of CMAQ funding, and $79,020 of HSIP funding; d) MPO score 44.72
AMENDMENT:Increase Cost,AMENDMENT:Change Additional Information	Roadway Reconstruction	607941	Old Colony	East Bridgewater	EAST BRIDGEWATER - RESURFACING AND SIDEWALK CONSTRUCTION ON BEDFORD STREET (ROUTE 18), FROM WHITMAN STREET (ROUTE 106) TO CENTRAL STREET	5	STP	$ 6,023,732	$ 4,818,986	$ 1,204,746	a) Construction; b) Total Project Cost = $9,023,732 w/ $6,023,732 of STP funding, and $3,000,000 of Statewide CMAQ funding; d) MPO score 39.67
			Old Colony					$ -	$ -	$ -	
			Old Colony					$ -	$ -	$ -	
			Old Colony					$ -	$ -	$ -	
							Regionally Prioritized Projects subtotal ►	**$ 8,144,749**	$ 6,523,701	$ 1,621,048	◄ 80% Federal + 20% Non-Federal
►Section 1A / Fiscal Constraint Analysis											
							Total Regional Federal Aid Funds Programmed ►	**$ 8,144,749**	**$ 10,483,760**	**◄Total**	**$ 2,339,011 Target Funds Available**
							STP programmed ►	$ 6,023,732	$ 4,818,986	**◄ STP**	
							HSIP programmed ►	$ 79,020	$ 71,118	**◄ HSIP**	
							CMAQ programmed ►	$ 2,041,997	$ 1,633,598	**◄ CMAQ**	
							TAP programmed ►	$ -	$ -	**◄ TAP**	
►Section 1B / Earmark or Discretionary Grant Funded Projects											
►Other Federal Aid											
			Old Colony		Other Federal Aid		HPP	$ -	$ -	$ -	
			Old Colony		Other Federal Aid		HPP	$ -	$ -	$ -	
							Other Federal Aid subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Section 2A / State Prioritized Reliability Projects											
►Bridge Program / Inspections											
	Bridge Program		Old Colony		Bridge Inspection			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Inspection			$ -	$ -	$ -	
							Bridge Program / Inspections subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Bridge Program / Off-System											
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	

Section 1A instructions: **MPO Template Name)** Choose Regional Name from dropdown list to populate header and MPO column; **Column C)** Enter ID from ProjectInfo; **Column E)** Choose Municipality Name from dropdown list; **Column H)** Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; **Column I)** Enter the total amount of funds being programmed in this fiscal year and for each funding source; **Column J)** Federal funds autocalculates. Please verify the amount and only change if needed for flex. **Column K) N**on-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; **Column L)** Enter Additional Information as described - please do not use any other format.

2019 Old Colony Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ ***Present information as follows, if applicable:* a)** Planning / Design / or Construction; **b)** total project cost and funding sources used; **c)** advance construction status; **d)** MPO project score; **e)** name of entity receiving a transfer; **f)** name of entity paying the non-state non-federal match; **g)** earmark details; **h)** TAP project proponent; **i)** other information
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Off-System			$ -	$ -	$ -	
					Bridge Program / Off-System subtotal ►			**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
►Bridge Program / On-System (NHS)											
	Bridge Program		Old Colony		Bridge Program / On-System (NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (NHS)			$ -	$ -	$ -	
					Bridge Program / On-System (NHS) subtotal ►			**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Bridge Program / On-System (Non-NHS)											
	Bridge Program		Old Colony		Bridge Program / On-System (Non-NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (Non-NHS)			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / On-System (Non-NHS)			$ -	$ -	$ -	
					Bridge Program / On-System (Non-NHS) subtotal ►			**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
►Bridge Program / Systematic Maintenance											
	Bridge Program		Old Colony		Bridge Program / Systematic Maintenance			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Systematic Maintenance			$ -	$ -	$ -	
	Bridge Program		Old Colony		Bridge Program / Systematic Maintenance			$ -	$ -	$ -	
					Bridge Program / Systematic Maintenance subtotal ►			**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Interstate Pavement											
	Interstate Pavement		Old Colony		Interstate Pavement			$ -	$ -	$ -	
	Interstate Pavement		Old Colony		Interstate Pavement			$ -	$ -	$ -	
	Interstate Pavement		Old Colony		Interstate Pavement			$ -	$ -	$ -	
	Interstate Pavement		Old Colony		Interstate Pavement			$ -	$ -	$ -	
	Interstate Pavement		Old Colony		Interstate Pavement			$ -	$ -	$ -	
					Insterstate Pavement subtotal ►			**$ -**	$ -	$ -	◄ 90% Federal + 10% Non-Federal
►Non-Interstate Pavement											
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
	Non-Interstate Pavement		Old Colony		Non-Interstate Pavement			$ -	$ -	$ -	
					Non-Interstate Pavement subtotal ►			**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
► Roadway Improvements											

2019 Old Colony Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ *Present information as follows, if applicable:* **a)** Planning / Design / or Construction; **b)** total project cost and funding sources used; **c)** advance construction status; **d)** MPO project score; **e)** name of entity receiving a transfer; **f)** name of entity paying the non-state non-federal match; **g)** earmark details; **h)** TAP project proponent; **i)** other information
	Roadway Improvements		Old Colony		Roadway Improvements			$ -	$ -	$ -	
	Roadway Improvements		Old Colony		Roadway Improvements			$ -	$ -	$ -	
	Roadway Improvements		Old Colony		Roadway Improvements			$ -	$ -	$ -	
							Roadway Improvements subtotal ►	**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
► Safety Improvements											
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
	Safety Improvements		Old Colony		Safety Improvements			$ -	$ -	$ -	
							Safety Improvements subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Section 2B / State Prioritized Modernization Projects											
► ADA Retrofits											
	ADA Retrofits		Old Colony		ADA Retrofits			$ -	$ -	$ -	
	ADA Retrofits		Old Colony		ADA Retrofits			$ -	$ -	$ -	
							ADA Retrofits subtotal ►	**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
►Intersection Improvements											
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
	Intersection Improvements		Old Colony		Intersection Improvements			$ -	$ -	$ -	
							Intersection Improvements subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Intelligent Transportation Systems											
	Intelligent Transportation Systems		Old Colony		Intelligent Transportation Systems			$ -	$ -	$ -	
	Intelligent Transportation Systems		Old Colony		Intelligent Transportation Systems			$ -	$ -	$ -	
	Intelligent Transportation Systems		Old Colony		Intelligent Transportation Systems			$ -	$ -	$ -	
							Intelligent Transportation System subtotal ►	**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
►Roadway Reconstruction											

2019 Old Colony Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ *Present information as follows, if applicable:* **a)** Planning / Design / or Construction; **b)** total project cost and funding sources used; **c)** advance construction status; **d)** MPO project score; **e)** name of entity receiving a transfer; **f)** name of entity paying the non-state non-federal match; **g)** earmark details; **h)** TAP project proponent; **i)** other information
AMENDMENT:Change Additional Information	Roadway Reconstruction	607941	Old Colony	East Bridgewater	EAST BRIDGEWATER- RESURFACING AND SIDEWALK CONSTRUCTION ON BEDFORD STREET (ROUTE 18), FROM WHITMAN STREET (ROUTE 106) TO CENTRAL STREET	5	CMAQ	$ 3,000,000	$ 2,400,000	$ 600,000	a) Construction; b) Total Project Cost = $9,023,732 w/ $6,023,732 of STP funding, and $3,000,000 of Statewide CMAQ funding; d) MPO score 39.67
	Roadway Reconstruction		Old Colony		Roadway Reconstruction			$ -	$ -	$ -	
	Roadway Reconstruction		Old Colony		Roadway Reconstruction			$ -	$ -	$ -	
	Roadway Reconstruction		Old Colony		Roadway Reconstruction			$ -	$ -	$ -	
							Roadway Reconstruction subtotal ►	**$ 3,000,000**	$ 2,400,000	$ 600,000	◄ Funding Split Varies by Funding Source
►Section 2C / State Prioritized Expansion Projects											
►Bicycles and Pedestrians											
	Bicycles and Pedestrians		Old Colony		Bicycles and Pedestrians			$ -	$ -	$ -	
	Bicycles and Pedestrians		Old Colony		Bicycles and Pedestrians			$ -	$ -	$ -	
	Bicycles and Pedestrians		Old Colony		Bicycles and Pedestrians			$ -	$ -	$ -	
							Bicycles and Pedestrians subtotal ►	**$ -**	$ -	$ -	◄ 80% Federal + 20% Non-Federal
►Capacity											
	Capacity		Old Colony		Capacity			$ -	$ -	$ -	
	Capacity		Old Colony		Capacity			$ -	$ -	$ -	
							Capacity subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Section 3 / Planning / Adjustments / Pass-throughs											
►Planning / Adjustments / Pass-throughs											
			Old Colony		ABP GANS Repayment	Multiple		$ -	$ -	$ -	
			Old Colony		ABP GANS Repayment	Multiple		$ -	$ -	$ -	
			Old Colony		Award adjustments, change orders, etc.	Multiple		$ -	$ -	$ -	
			Old Colony		Award adjustments, change orders, etc.	Multiple		$ -	$ -	$ -	
			Old Colony		Award adjustments, change orders, etc.	Multiple		$ -	$ -	$ -	
			Old Colony		Award adjustments, change orders, etc.	Multiple		$ -	$ -	$ -	
			Old Colony		Metropolitan Planning	Multiple		$ -	$ -	$ -	
			Old Colony		Metropolitan Planning	Multiple		$ -	$ -	$ -	
			Old Colony		State Planning and Research Work Program I, (SPR I), Planning	Multiple		$ -	$ -	$ -	
			Old Colony		State Planning and Research Work Program II, (SPR II), Research	Multiple		$ -	$ -	$ -	
			Old Colony		Railroad Crossings	Multiple		$ -	$ -	$ -	
			Old Colony		Railroad Crossings	Multiple		$ -	$ -	$ -	
			Old Colony		Recreational Trails	Multiple		$ -	$ -	$ -	
							Other Statewide Items subtotal ►	**$ -**	$ -	$ -	◄ Funding Split Varies by Funding Source
►Section 4 / Non-Federally Aided Projects											
►Non-Federally Aided Projects											
	Non Federal Aid		Old Colony		Non-Federal Aid			$ -		$ -	
	Non-Federally Aided Projects		Old Colony		Non-Federal Aid			$ -		$ -	
							Non-Federal Aid subtotal►	**$ -**		$ -	◄100% Non-Federal

2019 Old Colony Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼
											Present information as follows, if applicable: **a)** Planning / Design / or Construction; **b)** total project cost and funding sources used; **c)** advance construction status; **d)** MPO project score; **e)** name of entity receiving a transfer; **f)** name of entity paying the non-state non-federal match; **g)** earmark details; **h)** TAP project proponent; **i)** other information

2019 Summary

	TIP Section 1 - 3: ▼	TIP Section 4: ▼	Total of All Projects ▼	
Total ►	$ 11,144,749	$ -	$ 11,144,749	◄ Total Spending in Region
Federal Funds ►	$ 8,923,701		$ 8,923,701	◄ Total Federal Spending in Region
Non-Federal Funds ►	$ 2,221,048	$ -	$ 2,221,048	◄ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: http://www.massdot.state.ma.us/Highway/flaggers/main.aspx

FFY 2019-2023
OLD COLONY TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
AMENDMENT 2

PART 2

FFY 2019-2023
OLD COLONY TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
AMENDMENT 2

Part 2 - Replaces the existing Section 2. FAST Act, National Planning Factors, and Performance Based Planning with an updated Section 2. FAST Act, National Planning Factors, and Performance Based Planning reflective of Performance Based Planning Narrative, Performance Measures and Targets (PM1, PM2, PM3, and TAM), and adoption of said Performance Measures and Targets (PM1, PM2, PM3, and TAM)

EXISTING: Section 2. FAST Act, National Planning Factors, and Performance Based Planning

2. FAST Act, National Planning Factors, and Performance Based Planning

The Fixing America's Surface Transportation (FAST) Act legislation requires all MPOs to carry out a continuing, cooperative, and comprehensive performance-based multimodal transportation planning process. To meet this requirement, the Old Colony MPO develops the Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) that facilitate the safe and efficient movement of safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight (including accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities that support intercity transportation, including intercity bus facilities and commuter van pool providers) and that fosters economic growth and development within and between States and urbanized areas, and take into consideration resiliency needs while minimizing transportation-related fuel consumption and air pollution in all areas of the region.

The FAST Act continues to emphasize performance-based planning as an integral part of the metropolitan planning process: states are to develop performance goals, guided by the national goals, and then MPOs will work with state departments of transportation (DOTs) to develop MPO performance targets. The TIP will integrate the MPOs' performance measures and link transportation-investment decisions to progress toward achieving performance goals. The Old Colony MPO, MassDOT, and BAT jointly agree and will develop specific written provisions for cooperatively developing and sharing information related to transportation performance data, the selection of performance targets, the reporting of performance targets, the reporting of performance to be used in tracking progress towards attainment of critical outcomes for the Old Colony Region and the collection of data for the MassDOT Asset Management Plan. The Old Colony MPO sought to develop the TIP with due consideration of other related planning activities within the metropolitan area, and utilize a process that provides for the design and delivery of transportation services within the metropolitan planning area. The following is an overview of how the Long Range Transportation Plan (LRTP) and the Transportation Improvement Program reflect the national planning factors and performance-based planning:

- **Safety -** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Increase the safety of the transportation system for motorized and non-motorized users. To ensure that the transportation system and its users are safe and secure. Review safety data, goals, objectives, and strategies to promote safety.

In addition, the Strategic Highway Safety Plan should be incorporated into the long range transportation plan. The Old Colony MPO shall apply specific criteria in the review of transportation strategies. These criteria are applied to estimated changes in safety. The primary goal of the LRTP is focused on safety and security: "Enhance Safety and Security." Safety is of such importance that it is recognized in its own chapter of the LRTP. Also included in the LRTP are the following goals: Increase the security of the transportation system for motorized and non-motorized users; Examine both transit and highways networks and develop appropriate goals and strategies; Review current plans for emergency planning and security elements; Identify critical facilities and transportation systems; and Define the roles of the various players in promoting security. One area of additional security planning that applies is that of traffic impacts due to extreme weather events such as impending hurricanes, and climate changes.

Objectives:

- Reduce the number and rates of fatalities and serious injuries.
  - **Target and Performance Measure**: Reduce motor vehicle, pedestrian, and bicyclist fatalities, hospitalizations, and crashes by 10 percent in 10 years.
  - **Target and Performance Measure**: Conduct Road Safety Audits for a minimum of 3 high crash locations (MassDOT Top 5% Crash Clusters) per year, including minimum of 1 pedestrian/ walkability audit and one bicycle audit per year.
  - **Target and Performance Measure:** Fully program minimum HSIP targets each TIP year and seek to program Statewide HSIP funds when available/ feasible for priority safety related projects.
- Provide and maintain safe fixed route service (e.g. Preventable Accidents per 100K miles).
  - **Target and Performance Measure**: Maintain fixed route service preventable accidents/ 100k miles below 2 (FY 2014 actual is 1.02) (from BAT Performance Dashboard).
- Provide and maintain safe demand response service (Preventable accidents/ 100k miles).
  - **Target and Performance Measure**: Maintain demand response service preventable accidents/ 100k miles below 2 (FY 2014 actual is 1.20) (from BAT Performance Dashboard).
- Protect the viability of transportation infrastructure to accommodate emergency response and evacuations.
- Protect transportation system users from safety and security threats.
- Increase number of Safe Routes to School Partner Schools.
  - **Target and Performance Measure**: Increase percentage of SRTS Partner Schools to 85% in 10 years. Currently, 70% of eligible partner schools are partner schools.

- **Infrastructure Condition (Pavement, Bridge, and Transit) -** To maintain a highway infrastructure asset system in a state of good repair. Emphasize the preservation of the existing transportation system. The LRTP supports this planning factor through this goal: Enhance and Protect Regional Mobility. The LRTP also supports this performance measure: Maintaining and preserving transit, highway, and bridge infrastructure. As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network.

MassDOT is developing the Transportation Asset Management Plan (TAMP) to address pavement and bridge conditions on the National Highway System (NHS). The TAMP will include information on the NHS Inventory and Performance, Life Cycle Planning and Investment Strategy, Risk Management, and a Financial Plan.

Recipients of public transit funds, which can include states, local authorities, and public transportation operators, are required to establish performance targets for safety and state of good repair; to develop transit asset management and transit safety plans; and to report on their progress toward achieving targets. Public transportation operators are directed to share information with MPOs and states so that all plans and performance reports are coordinated. The identified state of good repair performance measures for transit asset management with regard to BAT include the following areas: equipment (Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)), rolling stock (Percentage of revenue vehicles within a particular asset class that have met or exceeded their ULB), and facilities (Percentage of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model scale).

Objectives:

- Provide and maintain fixed route and demand response state of good repair.
  - **Target and Performance Measure**: Increase miles between breakdowns with passenger interruption on fixed route to 20,000 (standard) within 10 years (currently 18,020) (from BAT Performance Dashboard).
  - **Target and Performance Measure:** Increase miles between breakdowns with passenger interruption on demand response to 10,000 (standard) within 10 years (currently 6,452) (from BAT Performance Dashboard).
- Improve bridge conditions.
  - **Target and Performance Measure:** Maintain percentage of bridges categorized "structurally deficient" below 5% and increase overall average AASHTO rating (current 79) by 10 percent by 2040.
- Improve pavement conditions and state of good repair.
  - **Target and Performance Measure:** Achieve 50% of federal-aid eligible roadways in the region with a PCI-based pavement ranking of "Good" or "Excellent" within 10 years.

- **Congestion Reduction -** To achieve a significant reduction in congestion on the NHS. Enhance the integration and mobility of the transportation system, across and between modes, for people and freight. The MPO shall apply specific criteria in the review of transportation strategies. These criteria are applied to improvements in multimodal accessibility. The LRTP supports these efforts through its goal: "Enhance and Protect Regional Mobility, and Foster Sustainable, Healthy, and Livable Communities."

  Objectives

  - Promote Mode Shift by increasing use of transit, carpool/ vanpool, and non-motorized transportation modes such as bicycling and walking.
    - **Target and Performance Measure:** Achieve 15% of commuters in the Old Colony region using healthy transportation modes (transit, walking, bicycling, etc.) within 10 years (10.5% of surveyed commuters in Old Colony Region were using transit, walking, or bicycling in the 2011 Massachusetts Travel Survey).

- Reduce traffic congestion, and improve level of service and access management.
  - **Target and Performance Measure:** Monitor congestion levels on federal-aid eligible highway network annually, and highlight corridors with volume to capacity (v/c) ratios of 0.8 or greater for targeted study and/ or improvements.
- Maintain and improve transit system efficiency and capacity.
  - **Target and Performance Measure:** Achieve average on-time ranking on fixed-route system of 98% by 2040 (from BAT Performance Dashboard).
- Increase automobile and bicycle parking capacity and usage at transit stations and commuter lots.
  - **Target and Performance Measure**: 100% of intermodal facilities with adequate bicycle parking by 2040.
- Eliminate bottlenecks on limited access highways and on the freight network.
- Improve and expand human service coordination, mobility, and accessibility for all modes.
- Reduce number and size of gaps in the ADA accessible sidewalk network.
- Increase use of traffic signal priority (hold current green light) for transit vehicles and traffic signal pre-emption for emergency vehicles (override programmed phasing to provide approaching emergency vehicles a green light).
- Monitor utilization and congestion levels at commuter rail and Park & Ride parking facilities.
  - **Target and Performance Measure:** Record utilization data twice annually and report data to MassDOT.
- Improve accessibility for all modes to all users.
  - **Target and Performance Measure:** 50% of communities with Complete Streets policies within 10 years.
  - **Target and Performance Measure:** 50% of available Transportation Improvement Program (TIP) funding allocated to projects that significantly improve bicycle and pedestrian mobility.

System Reliability - To improve the efficiency of the surface transportation system. Promote efficient system operation and management. The Old Colony MPO supports Operation and Management Strategies (O and M) for both the transit and highway networks. The LRTP supports this planning factor through this performance measure: "Maintaining and preserving transit, highway, and bridge infrastructure." As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network. The Old Colony MPO and BAT are coordinating to implement a performance based planning process. The MPO will integrate BAT's Transit Asset Management (TAM) Plan into its planning process that prioritizes investments that meet regional performance targets for State of Good Repair. The identified state of good repair performance measures for transit asset management with regard to BAT include the following areas: equipment (Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)), rolling stock (Percentage of revenue vehicles within a particular asset class that have met or exceeded their ULB), and facilities (Percentage of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model scale). Additionally, the Old Colony TIP contains operation and maintenance costs for the federal aid network and BAT.

Objectives

- Provide and maintain fixed route reliability: Miles between breakdowns w/ passenger interruption.
  - **Target and Performance Measure:** Achieve average of 20K miles between breakdowns with passenger interruptions by 2025, and 25K miles by 2040 (from BAT Performance Dashboard).
- Provide and maintain demand response reliability: Miles between breakdowns w/ passenger interruption.
  - **Target and Performance Measure:** Achieve average of 10K miles between breakdowns with passenger interruptions by 2025, and 15K miles by 2040 (from BAT Performance Dashboard).
- Provide and maintain highway network travel time reliability.
- Protect and strengthen transportation systems vulnerable to climate change through identification of at-risk transportation assets and development of protection measures for each category of asset.

- **Freight Movement and Economic Vitality -** To improve the nation freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency. The MPO shall apply specific criteria in the review of transportation strategies. These criteria are applied to changes of delay and emissions. Reduction in traffic delay has a direct consequence on economic vitality both through the timely arrival of commuters and goods and reduction in fuel expenses and losses due to air pollution. The LRTP directly supports these efforts through the goal: "Promote Policies that Ensure Economic Vitality and Sustainability." The MPO directly supports regional productivity through its economic development mission manifested in the Regional Policy Plan, including support of the federally approved Old Colony Comprehensive Economic Development Strategy priority projects.

  Objectives

  - Reduce delay along identified freight routes.
    - **Target and Performance Measure:** Address minimum of (2) freight corridors through UPWP every four years.
  - Improve safety along freight routes.
  - Mitigate and improve key arterial (such as Route 106) and freeway (Routes 3 and 24) bottlenecks that inhibit efficient freight movement by truck.
  - Identify opportunities for promoting intermodal freight movement and uses for the Brockton CSX site.
  - Increase access to major employment centers.
    - **Target and Performance Measure:** Minimum of 2 planning studies in UPWP every 4 years that address access to employment centers.
  - Increase viaduct clearance to improve freight movement, emergency response, and reduce delay.
    - **Target and Performance Measure:** 100% of underpasses on freight corridors have highway standard vertical clearance by 2040.
  - Plan and prioritize transportation investments that serve targeted development areas.

- **Environmental Sustainability -** To enhance the performance of the transportation system while protecting and enhancing the natural environment. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns. The LRTP supports this planning factor through three goals: "Promote Environmental Protection and Climate Change Adaptation, and Pursue the GreenDOT Vision and achieve the three GreenDOT goals." The LRTP and therefore the TIP includes a focus on addressing Climate Change. Where appropriate, TIP projects will include assessments of vulnerabilities and negative risks that climate change effects or extreme weather events pose, to the region's transportation infrastructure. These vulnerabilities and risks will be seriously considered when planning future improvements. Where appropriate, TIP projects should include adaptation strategies that will enable the region to implement improvements appropriately. The reduction of greenhouse gas emissions (GHG) remains an important goal in addressing climate change.

  Objectives
  - Minimize negative environmental impacts of the transportation system.
    - **Target and Performance Measure:** Program a minimum of 100% of Congestion Mitigation and Air Quality (CMAQ) Program funding targets.
  - Reduce greenhouse gas emissions and ground level ozone (NOx and VOCs) by all transportation modes.
    - **Target and Performance Measure:** 50% of TIP projects reduce GHGs while also reducing negative impacts on the natural environment (such as improved storm water management or the addition of green space).
  - Increase the usage of clean alternative fuels and recyclable material for new transportation infrastructure.
  - Increase coordination of transportation and housing programs to promote affordable housing near transit.
  - Develop and support transportation policies that support healthy lifestyles.
  - Support investments that clean up brownfields and avoid investments that increase pressure to develop greenfields.
  - Support livable communities and smart growth development patterns through the creation of a balanced multi-modal transportation system.

- **Reduced Project Delivery Delays -** To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

  Objectives
  - Continue to utilize transportation evaluation criteria in screening potential TIP projects.
    - **Target and Performance Measure**: 100% of all potential projects undergo initial evaluation to determine if project is realistic, viable, and implementable.
  - Enhanced careening and evaluation of projects to determining Year 1 readiness for TIP.
    - **Target and Performance Measure**: 100% of potential Year 1 TIP projects are screened for implementation readiness.

- **Target and Performance Measure:** At least 80% of Year 1 TIP Projects are advertised.
- Continue to maintain annual participation at TIP Day with MassDOT.
  - **Target and Performance Measure**: 100% attendance and participation at TIP Day.
  - **Target and Performance Measure**: At 25% design stage, work with stakeholders on 100% of potential projects to determine Right-of-Way (ROW), environmental permitting, and other potential challenges to project development and implementation.
- Reduce time of transit contracting.

- **Resiliency and Reliability of the Transportation System** - improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation. Promote efficient system operation and management.

  Objectives
  - Provide and maintain fixed route reliability: Miles between breakdowns w/ passenger interruption.
    - **Target and Performance Measure:** Achieve average of 20K miles between breakdowns with passenger interruptions by 2025, and 25K miles by 2040 (from BAT Performance Dashboard).
  - Provide and maintain demand response reliability: Miles between breakdowns w/ passenger interruption.
    - **Target and Performance Measure:** Achieve average of 10K miles between breakdowns with passenger interruptions by 2025, and 15K miles by 2040 (from BAT Performance Dashboard).
  - Provide and maintain highway network travel time reliability.
  - Protect and strengthen transportation systems vulnerable to climate change through identification of at-risk transportation assets and development of protection measures for each category of asset.

  The Old Colony MPO supports Operation and Management Strategies (O and M) for both the transit and highway networks. The LRTP supports this planning factor through this performance measure: "Maintaining and preserving transit, highway, and bridge infrastructure." As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network. Additionally, the Old Colony TIP contains operation and maintenance costs for the federal aid network and BAT.

- **Travel and Tourism - Enhance Travel and Tourism.** The Old Colony MPO is working on efforts to enhance travel and tourism through the LRTP and TIP. Opportunities to monitor, analyze, and development recommendations will be undertaken.

The TIP is designed such that once implemented, it makes progress toward achieving the performance targets. Performance-based planning attempts to make the transportation investment decision-making

process both informed and accountable. Several questions need to be considered when implementing this method. They are as follows:

- What are the areas of opportunity and concern we as a community, region, state and nation are trying to address?
- How do those areas perform both now and historically? Can we measure them?
- What are our improvement goals for those areas?
- Given competing areas and limited resources, what can we achieve that addresses our concerns?
- How do we prioritize our investments in such a way that we can best achieve our goals?
- When projects are built, or services are added or enhanced, did they achieve what they were intended to do?

One desired outcome of performance-based planning is constant quality improvement in project selection and delivery with respect to meeting national goals. If a particular project did not help the plan meet its stated goals, or was more effective than originally thought, that information can inform future decision-making. Done properly, performance-based planning not only improves project selection and prioritization, it also can make a compelling case for the Old Colony MPO's LRTP and why the community is invested in its outcome.

The Old Colony MPO has chosen to adopt the statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2018. In setting these targets, MassDOT has followed FHWA guidelines by using statewide crash data and Highway Performance Monitoring System (HPMS) data for vehicle miles traveled (VMT) in order to calculate 5 year, rolling average trendlines for all FHWA defined safety measures. CY 2018 targets for four of the five safety measures—total number of fatalities, rate of fatalities per 100 million vehicle miles traveled, total number of serious injuries, and rate of serious injuries per 100 million VMT—were established by extending their respective trendlines into the 2014-2018 period. All four of these measures reflect a decrease in statewide trends. The fifth safety measure, total number of combined serious injuries and fatalities for non-motorized modes, is the only safety measure for which the statewide trendline depicts an increase. MassDOT's effort to increase the non-motorized mode share throughout the Commonwealth has posed a challenge to simultaneously reducing non-motorized injuries and fatalities. Rather than adopt a target that depicts an increase in the trendline, MassDOT has elected to establish a target of non-motorized fatalities and injuries in CY 2018 to remain constant from the rolling average for 2011-2015. In recent years, MassDOT and the Old Colony MPO have invested in "complete streets," bicycle and pedestrian, intersection and safety improvements in both the Capital Investment Plan (CIP) and Statewide Transportation Improvement Program (STIP) that address increasing mode share and incorporate safety mitigation elements into projects. Moving forward, the Old Colony MPO, alongside MassDOT, is actively seeking to improve data collection and methodology for bicycle and pedestrian VMT counts, and to continue analyzing crash clusters and crash counts that include both motorized and non-motorized modes in order to address safety issues at these locations.

In all safety categories, MassDOT has established a long-term target of "Toward Zero Deaths" through MassDOT's Performance Measures Tracker and will be establishing safety targets for the MPO to consider for adoption each calendar year. While the MPO is not required by FHWA to report on annual safety performance targets, FHWA guidelines require MPOs to adopt MassDOT's annual targets or perennially establish their own.

The safety measures MassDOT has established for CY 2018, and that the Old Colony MPO has adopted, are as follows:

1) **Fatalities**: The target number of fatalities for CY 2018 is 352.3, down from an average of 361 fatalities for the years 2011-2015. [Please see Figure 1 for Old Colony MPO for comparison of the trend for this performance measure].
2) **Rate of Fatalities per 100 million VMT**: The target fatality rate for CY 2018 is 0.611, down from a 0.641 average for 2011-2015.
3) **Serious Injuries**: The target number of serious injuries for CY2018 is 2895.9, down from the average of 3251.8 for 2011-2015. [Please see Figure 2 for Old Colony MPO for comparison of the trend for this performance measure].
4) **Rate of Serious Injuries per 100 million VMT**: The target serious injury rate for CY2018 is 5.01 per year, down from the 5.78 average rate for 2011-2015.
5) **Total Number of Combined Serious Injuries and Fatalities for Non-Motorized Modes**: The CY2018 target number of fatalities and serious injuries for non-motorists is 540.8 per year, the same as the average for 2011-2015.

Figure 1

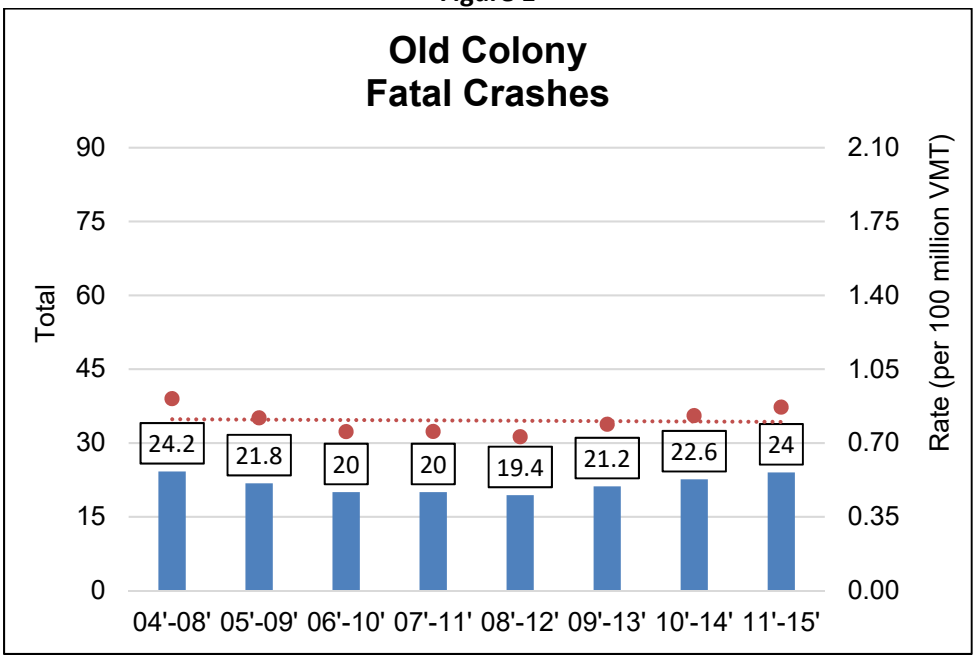


Figure 2

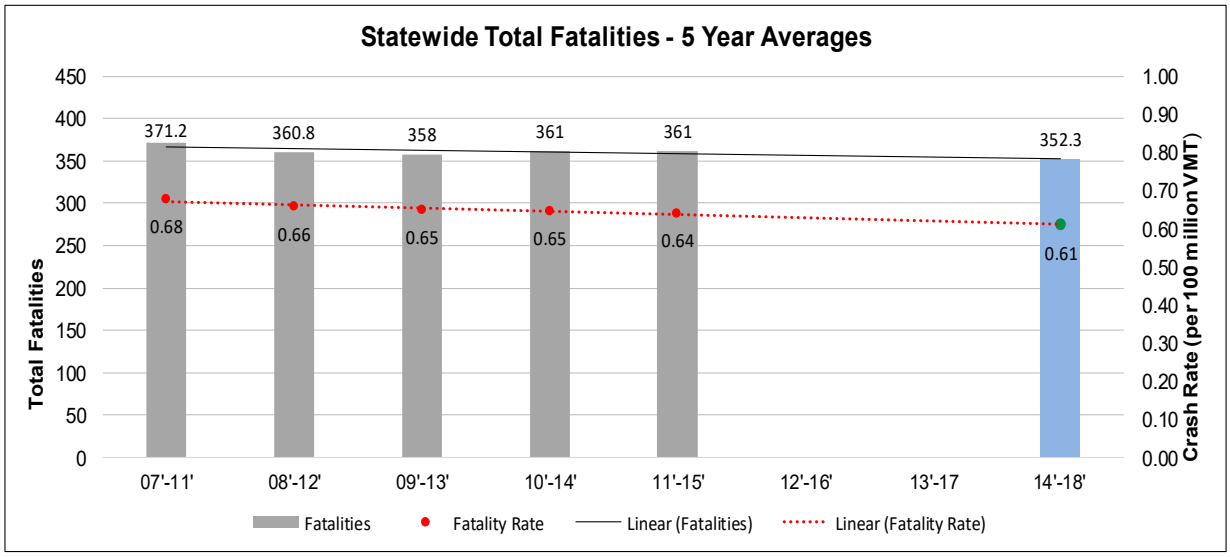


Figure 3

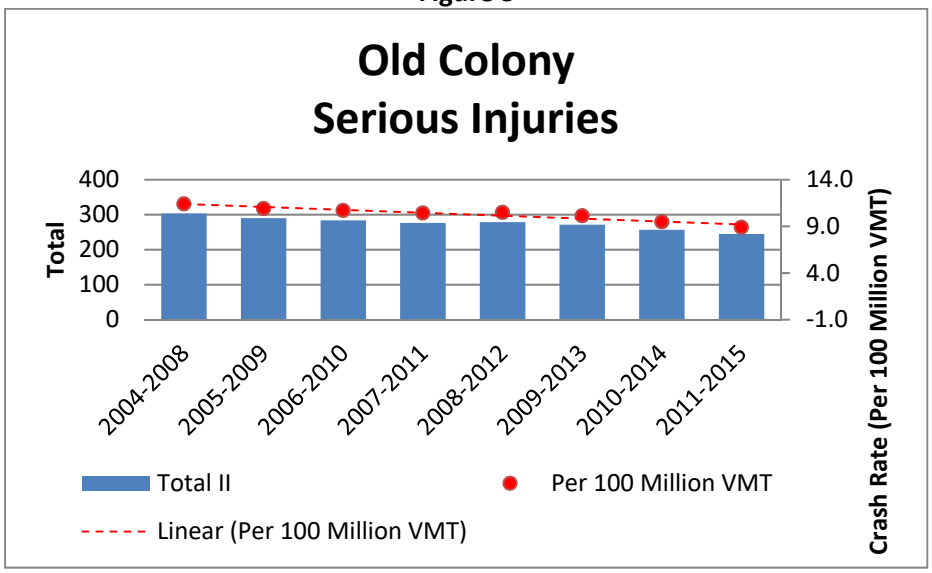
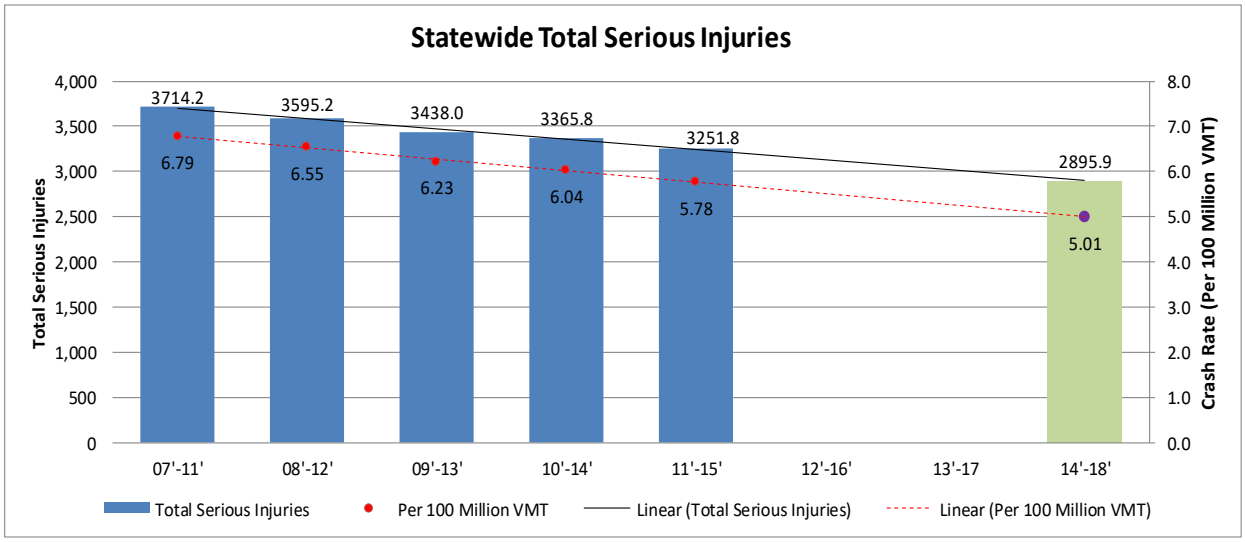


Figure 4


Statewide Total Serious Injuries
Total Serious Injuries
Crash Rate (Per 100 Million VMT)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
3714.2
3595.2
3438.0
3365.8
3251.8
2895.9
6.79
6.55
6.23
6.04
5.78
5.01
07'-11'
08'-12'
09'-13'
10'-14'
11'-15'
12'-16'
13'-17
14'-18'
Total Serious Injuries
Per 100 Million VMT
Linear (Total Serious Injuries)
Linear (Per 100 Million VMT)

PROPOSED: Replace previous Section 2. with the following updated Section 2.

2. FAST Act, National Planning Factors, and Performance Based Planning

The Fixing America's Surface Transportation (FAST) Act legislation requires MPOs to implement a continuing, cooperative, and comprehensive performance-based multimodal transportation planning process. To meet this requirement, the Old Colony MPO develops the Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) that facilitate the safe and efficient movement of safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight (including accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities that support intercity transportation, including intercity bus facilities and commuter van pool providers) and that fosters economic growth and development within and between States and urbanized areas, and take into consideration resiliency needs while minimizing transportation-related fuel consumption and air pollution in all areas of the region.

The FAST Act continues to emphasize performance-based planning as an integral part of the metropolitan planning process: states are to develop performance goals, guided by the national goals, and then MPOs will work with state departments of transportation (DOTs) to develop MPO performance measures and targets, or adopt the statewide performance measures and targets. The TIP integrates MassDOT's and the MPOs' performance measures and link transportation-investment decisions to progress toward achieving performance targets. The MPOs, MassDOT, and providers of public transportation jointly agree and have developed specific written provisions for cooperatively developing and sharing information related to transportation performance data, the selection of performance targets, the reporting of performance targets, the reporting of performance to be used in tracking progress towards attainment of critical outcomes for the MPO regions and the collection of data for the MassDOT Asset Management Plan. The Old Colony MPO sought to develop the TIP with due consideration of additional planning activities within the metropolitan area, and utilize a process that provides for the design and delivery of transportation services within the metropolitan planning area. The following is an overview of how the Long Range Transportation Plan and the Transportation Improvement Program reflect the national planning factors and performance-based planning:

- **Safety -** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Increase the safety of the transportation system for motorized and non-motorized users. To ensure that the transportation system and its users are safe and secure. Review safety data, goals, objectives, and strategies to promote safety.

In addition, the Strategic Highway Safety Plan is incorporated into the Long Range Transportation Plan. The Old Colony MPO applies specific criteria in the review of transportation strategies. These criteria are applied to estimated changes in safety. The primary goal of the LRTP is focused on safety and security: "Enhance Safety and Security." Safety is of such importance that it is recognized in its own chapter of the LRTP. Also included in the LRTP are the following goals: Increase the security of the transportation system for motorized and non-motorized users; Examine both transit and highways networks and develop appropriate goals and strategies; Review current plans for emergency planning and security elements; Identify critical facilities and transportation systems; and Define the roles of the various players in promoting security. One area of additional security planning that applies is that of traffic impacts due to extreme weather events such as impending hurricanes, and climate changes.

Objectives:

- Reduce the number and rates of fatalities and serious injuries.
  - **Target and Performance Measure**: Reduce motor vehicle, pedestrian, and bicyclist fatalities, hospitalizations, and crashes by 10 percent in 10 years.
  - **Target and Performance Measure**: Conduct Road Safety Audits for a minimum of 3 high crash locations (MassDOT Top 5% Crash Clusters) per year, including minimum of 1 pedestrian/ walkability audit and one bicycle audit per year.
  - **Target and Performance Measure:** Fully program minimum HSIP targets each TIP year and seek to program Statewide HSIP funds when available/ feasible for priority safety related projects.
- Provide and maintain safe fixed route service (e.g. Preventable Accidents per 100K miles).
  - **Target and Performance Measure**: Maintain fixed route service preventable accidents/ 100k miles below 2 (FY 2018 is 1.26 (from BAT Performance Dashboard).
- Provide and maintain safe demand response service (Preventable accidents/ 100k miles).
  - **Target and Performance Measure**: Maintain demand response service preventable accidents/ 100k miles below 2 (FY 2018 is 0.39) (from BAT Performance Dashboard).
- Protect the viability of transportation infrastructure to accommodate emergency response and evacuations.
- Protect transportation system users from safety and security threats.
- Increase number of Safe Routes to School Partner Schools.
  - **Target and Performance Measure**: Increase percentage of SRTS Partner Schools to 85% in 10 years. Currently, 70% of eligible partner schools are partner schools.

- **Infrastructure Condition (Pavement, Bridge, and Transit) -** To maintain a highway infrastructure asset system in a state of good repair. Emphasize the preservation of the existing transportation system. The LRTP supports this planning factor through this goal: Enhance and Protect Regional Mobility. The LRTP also supports this performance measure: Maintaining and preserving transit, highway, and bridge infrastructure. As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network.

  MassDOT develops the Transportation Asset Management Plan (TAMP) to address pavement and bridge conditions on the National Highway System (NHS). The TAMP will include information on the NHS Inventory and Performance, Life Cycle Planning and Investment Strategy, Risk Management, and a Financial Plan.

  Recipients of public transit funds, which can include states, local authorities, and public transportation operators, are required to establish performance targets for safety and state of good repair; to develop transit asset management and transit safety plans; and to report on their progress toward achieving targets. Public transportation operators are directed to share

information with MPOs and states so that all plans and performance reports are coordinated. The identified state of good repair performance measures for transit asset management with regard to BAT include the following areas: equipment (Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)), rolling stock (Percentage of revenue vehicles within a particular asset class that have met or exceeded their ULB), and facilities (Percentage of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model scale).

Objectives:

- Provide and maintain fixed route and demand response state of good repair.
  - **Target and Performance Measure**: Increase miles between breakdowns with passenger interruption on fixed route to 25,000 (goal) within 10 years (currently 27,761) (from BAT Performance Dashboard).
  - **Target and Performance Measure:** Increase miles between breakdowns with passenger interruption on demand response to 30,000 (goal) within 10 years (currently 33,325) (from BAT Performance Dashboard).
- Improve bridge conditions.
  - **Target and Performance Measure:** Maintain percentage of bridges categorized "structurally deficient" below 5% and increase overall average AASHTO rating (current 79) by 10 percent by 2040.
- Improve pavement conditions and state of good repair.
  - **Target and Performance Measure:** Achieve 50% of federal-aid eligible roadways in the region with a PCI-based pavement ranking of "Good" or "Excellent" within 10 years.

- **Congestion Reduction -** To achieve a significant reduction in congestion on the NHS. Enhance the integration and mobility of the transportation system, across and between modes, for people and freight. The MPO applies specific criteria in the review of transportation strategies. These criteria are applied to improvements in multimodal accessibility. The LRTP supports these efforts through its goal: "Enhance and Protect Regional Mobility, and Foster Sustainable, Healthy, and Livable Communities."

  Objectives

  - Promote Mode Shift by increasing use of transit, carpool/ vanpool, and non-motorized transportation modes such as bicycling and walking.
    - **Target and Performance Measure:** Achieve 15% of commuters in the Old Colony region using healthy transportation modes (transit, walking, bicycling, etc.) within 10 years (10.5% of surveyed commuters in Old Colony Region were using transit, walking, or bicycling in the 2011 Massachusetts Travel Survey).
  - Reduce traffic congestion, and improve level of service and access management.
    - **Target and Performance Measure:** Monitor congestion levels on federal-aid eligible highway network annually, and highlight corridors with volume to capacity (v/c) ratios of 0.8 or greater for targeted study and/ or improvements.
  - Maintain and improve transit system efficiency and capacity.
    - **Target and Performance Measure:** Achieve average on-time ranking on fixed-route system of 98% by 2040 (from BAT Performance Dashboard).
  - Increase automobile and bicycle parking capacity and usage at transit stations and commuter lots.

- **Target and Performance Measure**: 100% of intermodal facilities with adequate bicycle parking by 2040.
- Eliminate bottlenecks on limited access highways and on the freight network.
- Improve and expand human service coordination, mobility, and accessibility for all modes.
- Reduce number and size of gaps in the ADA accessible sidewalk network.
- Increase use of traffic signal priority (hold current green light) for transit vehicles and traffic signal pre-emption for emergency vehicles (override programmed phasing to provide approaching emergency vehicles a green light).
- Monitor utilization and congestion levels at commuter rail and park & ride parking facilities.
  - **Target and Performance Measure:** Record utilization data twice annually and report data to MassDOT.
- Improve accessibility for all modes to all users.
  - **Target and Performance Measure:** 50% of communities with Complete Streets policies within 10 years.
  - **Target and Performance Measure:** 50% of available Transportation Improvement Program (TIP) funding allocated to projects that significantly improve bicycle and pedestrian mobility.

System Reliability - To improve the efficiency of the surface transportation system. Promote efficient system operation and management. The Old Colony MPO supports Operation and Management Strategies (O and M) for both the transit and highway networks. The LRTP supports this planning factor through this performance measure: "Maintaining and preserving transit, highway, and bridge infrastructure." As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network. The Old Colony MPO and BAT are coordinating to implement a performance based planning process. The MPO integrate BAT's Transit Asset Management (TAM) Plan into its planning process that prioritizes investments that meet regional performance targets for State of Good Repair. The identified state of good repair performance measures for transit asset management with regard to BAT include the following areas: equipment (Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)), rolling stock (Percentage of revenue vehicles within a particular asset class that have met or exceeded their ULB), and facilities (Percentage of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirements Model scale). Additionally, the Old Colony TIP contains operation and maintenance costs for the federal aid network and BAT.

Objectives

- Provide and maintain fixed route reliability: Miles between breakdowns w/ passenger interruption.
  - **Target and Performance Measure:** Achieve average of 25,000 miles between breakdowns with passenger interruptions by 2040 (from BAT Performance Dashboard).
- Provide and maintain demand response reliability: Miles between breakdowns w/ passenger interruption.

- **Target and Performance Measure:** Achieve average of 30,000 miles between breakdowns with passenger interruptions by 2040 (from BAT Performance Dashboard).
- Provide and maintain highway network travel time reliability.
- Protect and strengthen transportation systems vulnerable to climate change through identification of at-risk transportation assets and development of protection measures for each category of asset.

- **Freight Movement and Economic Vitality -** To improve the nation freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency. The MPO applies specific criteria in the review of transportation strategies. These criteria are applied to changes of delay and emissions. Reduction in traffic delay has a direct consequence on economic vitality both through the timely arrival of commuters and goods and reduction in fuel expenses and losses due to air pollution. The LRTP directly supports these efforts through the goal: "Promote Policies that Ensure Economic Vitality and Sustainability." The MPO directly supports regional productivity through its economic development mission manifested in the Regional Policy Plan, including support of the federally approved Old Colony Comprehensive Economic Development Strategy priority projects.

  Objectives
  - Reduce delay along identified freight routes.
    - **Target and Performance Measure:** Address minimum of (2) freight corridors through UPWP every four years.
  - Improve safety along freight routes.
  - Mitigate and improve key arterial (such as Route 106) and limited access highways (Routes 3 and 24) bottlenecks that inhibit efficient freight movement by truck.
  - Identify opportunities for promoting intermodal freight movement and uses for the Brockton CSX site.
  - Increase access to major employment centers.
    - **Target and Performance Measure:** Minimum of 2 planning studies in UPWP every 4 years that address access to employment centers.
  - Increase viaduct clearance to improve freight movement, emergency response, and reduce delay.
    - **Target and Performance Measure:** 100% of underpasses on freight corridors have highway standard vertical clearance by 2040.
  - Plan and prioritize transportation investments that serve targeted development areas.

- **Environmental Sustainability -** To enhance the performance of the transportation system while protecting and enhancing the natural environment. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns. The LRTP supports this planning factor through three goals: "Promote Environmental Protection and Climate Change Adaptation, and Pursue the GreenDOT Vision and achieve the three GreenDOT goals." The LRTP and therefore the TIP includes a focus on addressing Climate Change. Where appropriate, TIP projects will include assessments of vulnerabilities and negative risks that climate change effects or

extreme weather events pose, to the region's transportation infrastructure. These vulnerabilities and risks will be seriously considered when planning future improvements. Where appropriate, TIP projects should include adaptation strategies that will enable the region to implement improvements appropriately. The reduction of greenhouse gas emissions (GHG) remains an important goal in addressing climate change.

Objectives

- Minimize negative environmental impacts of the transportation system.
  - **Target and Performance Measure:** Program a minimum of 100% of Congestion Mitigation and Air Quality (CMAQ) Program funding targets.
- Reduce greenhouse gas emissions and ground level ozone (NOx and VOCs) by all transportation modes.
  - **Target and Performance Measure:** 50% of TIP projects reduce GHGs while also reducing negative impacts on the natural environment (such as improved storm water management or the addition of green space).
- Increase the usage of clean alternative fuels and recyclable material for new transportation infrastructure.
- Increase coordination of transportation and housing programs to promote affordable housing near transit.
- Develop and support transportation policies that support healthy lifestyles.
- Support investments that clean up brownfields and avoid investments that increase pressure to develop greenfields.
- Support livable communities and smart growth development patterns through the creation of a balanced multi-modal transportation system.

- **Reduced Project Delivery Delays -** To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Objectives

- Continue to utilize transportation evaluation criteria in screening potential TIP projects.
  - **Target and Performance Measure**: 100% of all potential projects undergo initial evaluation to determine if project is realistic, viable, and implementable.
- Enhanced careening and evaluation of projects to determining Year 1 readiness for TIP.
  - **Target and Performance Measure**: 100% of potential Year 1 TIP projects are screened for implementation readiness.
  - **Target and Performance Measure:** At least 80% of Year 1 TIP Projects are advertised.
- Continue to maintain annual participation at TIP Day with MassDOT.
  - **Target and Performance Measure**: 100% attendance and participation at TIP Day.
  - **Target and Performance Measure**: At 25% design stage, work with stakeholders on 100% of potential projects to determine Right-of-Way (ROW), environmental

permitting, and other potential challenges to project development and implementation.
    - Reduce time of transit contracting.

- **Resiliency and Reliability of the Transportation System** - improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation. Promote efficient system operation and management.

  Objectives
    - Provide and maintain fixed route reliability: Miles between breakdowns w/ passenger interruption.
        - **Target and Performance Measure:** Achieve average of 25,000 miles between breakdowns with passenger interruptions by 2040 (from BAT Performance Dashboard).
    - Provide and maintain demand response reliability: Miles between breakdowns w/ passenger interruption.
        - **Target and Performance Measure:** Achieve average of 30,000 miles between breakdowns with passenger interruptions by 2040 (from BAT Performance Dashboard).
    - Provide and maintain highway network travel time reliability.
    - Protect and strengthen transportation systems vulnerable to climate change through identification of at-risk transportation assets and development of protection measures for each category of asset.

  The Old Colony MPO supports Operation and Management Strategies (O and M) for both the transit and highway networks. The LRTP supports this planning factor through this performance measure: "Maintaining and preserving transit, highway, and bridge infrastructure." As part of the LRTP development, the MPO utilities a pavement management system to develop costs and recommended repair for operation, preservation, and maintenance of the federal aid network. Additionally, the Old Colony TIP contains operation and maintenance costs for the federal aid network and BAT.

- **Travel and Tourism - Enhance Travel and Tourism.** The Old Colony MPO is working on efforts to enhance travel and tourism through the LRTP and TIP. Opportunities to monitor, analyze, and development recommendations will be undertaken.

One desired outcome of performance-based planning is constant quality improvement in project selection and delivery with respect to meeting national goals. If a particular project did not help the plan meet its stated goals, or was more effective than originally thought, that information can inform future decision-making. Done properly, performance-based planning not only improves project selection and prioritization, it also can make a compelling case for the Old Colony MPO's LRTP and why the community is invested in its outcome.

The TIP is designed such that once implemented, it makes progress toward achieving the performance targets. Performance-based planning attempts to make the transportation investment decision-making process both informed and accountable. Projects and services implemented through the TIP will help to

achieve the performance targets for Safety (PM1), Bridge and Pavement Condition (PM2), System Performance Measures (PM3), and Transit Asset Management (TAM) State of Good Repair (SGR).

Safety (PM1)

The Old Colony MPO has chosen to adopt the statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2019. In setting these targets, MassDOT has followed FHWA guidelines by using statewide crash data and Highway Performance Monitoring System (HPMS) data for vehicle miles traveled (VMT) in order to calculate 5 year, rolling average trend lines for all FHWA-defined safety measures. For CY 2019 targets, four of the five safety measures—total number of fatalities, rate of fatalities per 100 million vehicle miles traveled, total number of incapacitating injuries, and rate of incapacitating injuries per 100 million VMT—were established by extending their trend lines into the 2015-2019 period. All four of these measures reflect a modest decrease in statewide trends. The fifth safety measure, the total number of combined incapacitating injuries and fatalities for non-motorized modes, is the only safety measure for which the statewide trend line depicts an increase. MassDOT's effort to increase non-motorized mode share throughout the Commonwealth has posed a challenge to simultaneously reducing non-motorized injuries and fatalities. Rather than adopt a target that depicts an increase in the trend line, MassDOT has elected to establish a target of non-motorized fatalities and injuries and for CY 2019 that remains constant from the rolling average for 2012–2016. In recent years, MassDOT and the Old Colony MPO have invested in "complete streets," bicycle and pedestrian infrastructure, intersection and safety improvements in both the Capital Investment Plan (CIP) and Statewide Transportation Improvement Program (STIP) to address increasing mode share and to incorporate safety mitigation elements into projects. Moving forward, the Old Colony MPO, alongside MassDOT, is actively seeking to improve data collection and methodology for bicycle and pedestrian VMT counts and to continue analyzing crash clusters and crash counts that include both motorized and non-motorized modes in order to address safety issues at these locations.

In all safety categories, MassDOT has established a long-term target of "Toward Zero Deaths" through MassDOT's Performance Measures Tracker[1] and will be establishing safety targets for the MPO to consider for adoption each calendar year. While the MPO is not required by FHWA to report on annual safety performance targets, FHWA guidelines require MPOs to adopt MassDOT's annual targets or to establish their own each year.

The safety measures MassDOT has established for CY 2019, and that the Old Colony MPO has adopted, are as follows:

1. Fatalities: The target number of fatalities for years CY 2019 is 353, down from an average of 364 fatalities for the years 2012–2016. [See Figure 1 for Our MPO vs. statewide comparison of the trend for this performance measure]
2. Rate of Fatalities per 100 million VMT: The target fatality rate for years CY 2019 is 0.58, down from a 0.61 average for years 2012–2016. [See Figure 1 for Our MPO vs. statewide comparison of the trend for this performance measure]
3. Serious Injuries: The target number of incapacitating injuries for CY2019 is 2801, down from the average of 3146 for years 2012–2016. [See Figure 2 for Our MPO vs. statewide comparison of the trend for this performance measure]

[1] https://www.mass.gov/lists/tracker-annual-performance-management-reports

4. Rate of Incapacitating Injuries per 100 million VMT: The incapacitating injury rate target for CY2019 is 4.37 per year, down from the 5.24 average rate for years 2012–2016. [See Figure 2 for Our MPO vs. statewide comparison of the trend for this performance measure]
5. Total Number of Combined Incapacitating Injuries and Fatalities for Non-Motorized Modes: The CY2019 target number of fatalities and incapacitating injuries for non-motorists is 541 per year, the same as the average for years 2012–2016. [See Figure 3 for Our MPO vs. statewide comparison of the trend for this performance measure]

Figure 1
Total Fatalities and Fatality Rate
with Old Colony (OC) Data for Comparison

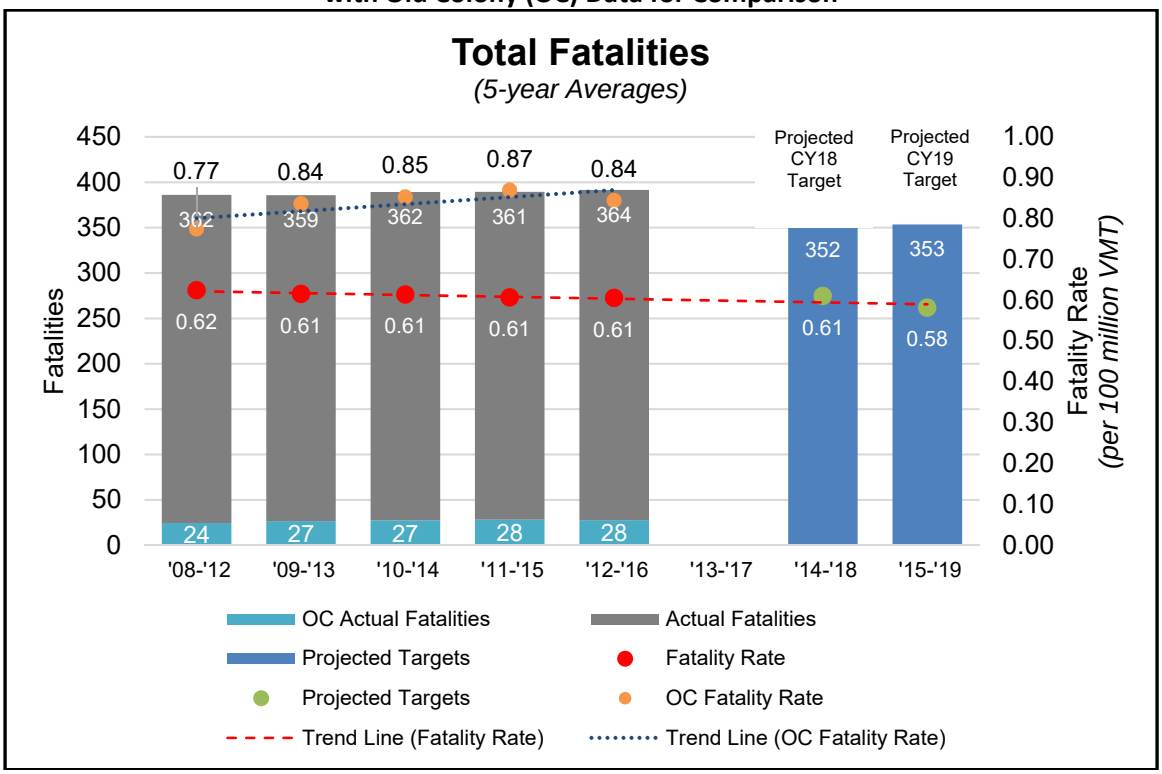


Figure 2
Total Incapacitating Injuries and Incapacitating Injuries Rate with Old Colony (OC) Data for Comparison

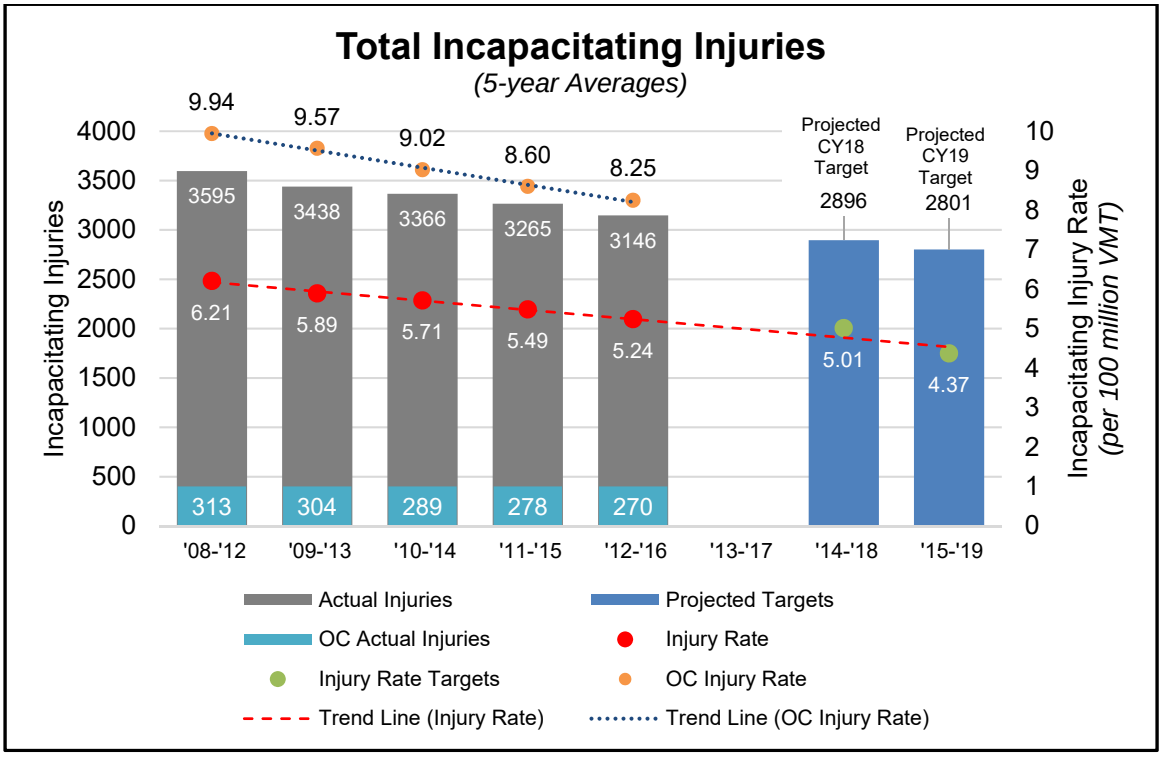
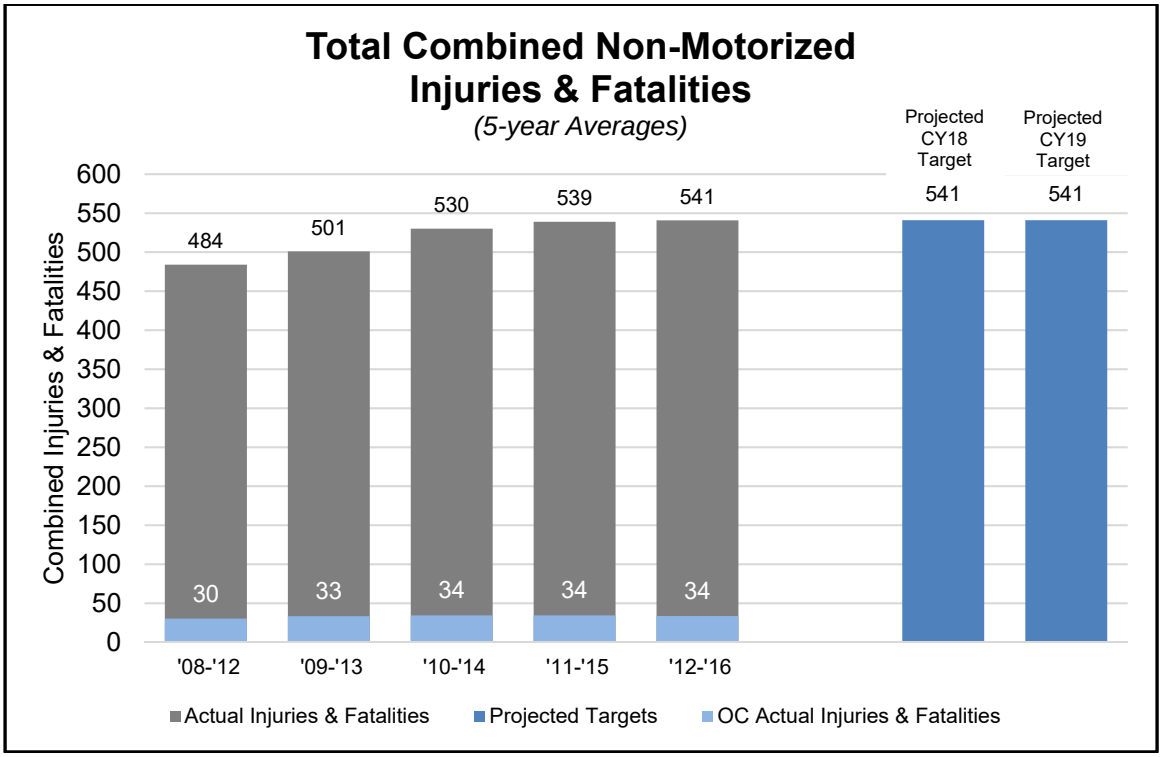


Figure 3
Total Number of Non-Motorized Fatalities and Incapacitating Injuries with Old Colony (OC) Data for Comparison



System Preservation Performance (PM2)

System preservation continues to be a priority for the Old Colony Region MPO because the region's transportation infrastructure is aging. It is also important to improve the resiliency of the region's transportation system to prepare for existing or future extreme conditions, such as sea level rise and flooding.

The Old Colony MPO has chosen to adopt the 2-year (2020) and 4-year (2022) statewide bridge and pavement performance measure targets set by MassDOT. MassDOT was required to adopt a statewide target by May 20, 2018, with MPOs either adopting the statewide target or establishing their own by November 2018. In setting these targets, MassDOT has followed FHWA guidelines by measuring bridges and pavement condition using the 9-point National Bridge Inventory Standards (NBIS); the International Roughness Index (IRI); the presence of pavement rutting; and the presence of pavement cracking. 2-year and 4-year targets were set for six individual performance measures: percent of bridges in good condition; percent of bridges in poor condition; percent of Interstate pavement in good condition; percent of Interstate pavement in poor condition; percent of non-Interstate pavement in good condition; and percent of non-Interstate pavement in poor condition. All of the above performance measures are tracked in greater detail in MassDOT's Transportation Asset Management Plan (TAMP), which is due to be finalized in July 2019.

Targets for bridge-related performance measures were determined by identifying which bridge projects are programmed and projecting at what rate bridge conditions deteriorate. The bridge-related performance measures measure the percentage of deck area, rather than the total number of bridges.

Performance targets for pavement-related performance measures were based on a single year of data collection, and thus were set to remain steady under the guidance of FHWA. These measures are to be revisited at the 2-year mark (2020), once three years of data are available, for more informed target setting.

MassDOT continues to measure pavement quality and to set statewide short-term and long-term targets in the MassDOT Performance Management Tracker using the Pavement Serviceability Index (PSI), which differs from IRI. These measures and targets are used in conjunction with federal measures to inform program sizing and project selection. Table 1 provides the MassDOT Performance Measures and Targets for NHS Pavements, while Table 2 provides the MassDOT Performance Measures and Targets for NHS Bridges.

Table 1
MassDOT Performance Measures and Targets for NHS Pavements

Interstate Pavement (FHWA Full Distress)			
Performance Measure	**Current Condition (2017)**	**2-Year Target (2020)**	**4-Year Target (2022)**
% Interstate Pavement in Good Condition	74.2%	70%	70%
% Interstate Pavement in Poor Condition	0.1%	4%	4%
Non-Interstate Pavement (FHWA IRI only)			
Performance Measure	**Current Condition (2017)**	**2-Year Target (2020)**	**4-Year Target (2022)**
% Non-Interstate Pavement in Good Condition	32.9%	30%	30%
% Non-Interstate Pavement in Poor Condition	31.4%	30%	30%

Table 2
MassDOT Performance Measures and Targets for NHS Bridges

Performance Measure	**Current Condition (2017)**	**2-Year Target (2020)**	**4-Year Target (2022)**
% Bridges in Good Condition	15.22%	15%	16%
% Bridges in Poor Condition	12.37%	13%	12%

System Performance Measures (Congestion, Reliability, and Emissions) (PM3)

Through its goal and objectives for capacity management and mobility, the MPO seeks to maximize the region's existing transportation system so that both people and goods can move reliably and connect to key destinations. Portions of the Old Colony Region are densely developed, which creates challenges to making major changes to its transportation infrastructure to address access, reliability, and congestion mitigation needs. In order to determine how well the region's roadways are performing with respect to mobility, the MPO applies performance measures that gauge the duration, extent, intensity, and reliability (or regularity) of the occurrence of congestion.

Table 3
MassDOT System Performance Measures and Targets
Congestion, Reliability, and Emissions

Performance Measure	Current (2017)	2-Year Target (2020)	4-Year Target (2022)
Level of Travel Time Reliability (LOTTR)	68% Interstate	68% Interstate	68% Interstate
	80% Non-Interstate	80% Non-Interstate	80% Non-Interstate
Truck Travel Time Reliability (TTTR)	1.85	1.85	1.85
Peak Hour Excessive Delay (PHED) (Boston UZA) (Annual hours per capita)	18.31	18.31	18.31
Non-SOV Travel	33.60% (2016)	34.82%	35.46%
Emissions Reductions	Baseline (FFY 2014-2017)	1,622 CO	TBD CO - Springfield
		497.9 Ozone	1.1 Ozone

Old Colony MPO staff analyzes congestion in the region using the Congestion Management Process (CMP). The CMP is, "a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs." The CMP includes consideration of the implementation of strategies that provide the most efficient and effective use of existing and future transportation facilities. This process allows for monitoring transportation systems for congestion, reviewing and endorsing plans by local communities that make up the region, and revising monitoring of strategies and overall plans to account for a dynamic management system. In both metropolitan and non-metropolitan areas, consideration needs to be given to strategies that reduce single occupancy vehicle (SOV) travel and improve existing transportation system efficiency. Documentation of the operational Congestion Management Process occurs during the Transportation Management Area (TMA) Certification Review conducted every four (4) years.

In general, the root causes of congestion may be summarized into two main categories:

- Traffic volume on a facility exceeds the available physical capacity of the facility - There is a limited amount of traffic that can be moved on a roadway for a given time, or only so many transit customers that can be accommodated by a given number of buses or trains. This is

considered the physical capacity of the system. Bottlenecks occur at locations where the physical capacity is restricted, with flows from upstream sections (with higher capacities) being funneled into smaller downstream segments. When traffic flow breaks down to stop-and-go conditions, capacity is actually reduced. Bottlenecks can be very specific chokepoints in the system, such as a poorly functioning freeway-to-freeway interchange, or an entire highway corridor where a "system" of bottlenecks exists, such as a closely spaced series of interchanges with local streets.

- Traffic Incidents - In addition to the physical capacity, external events can have a major effect on traffic flow. These include traffic incidents such as crashes and vehicle breakdowns; work zones; inclement weather; special events; and poorly timed traffic signals. When these events occur, their main impact is to subtract physical capacity from the roadway. Events also may cause changes in traffic demand by causing travelers to rethink their trips.

The cost of congestion can be measured in dollars as well as time. There is a direct link between transportation investment, travel conditions (congestion and reliability), and economic productivity. Two key trends have a substantial impact on the total cost of moving freight:

- As congestion extends into the midday, which is typically the peak travel period for trucks, costs that are more direct will be incurred.
- Reliability - For trucks, the ability to secure delivery windows predictably will decrease and will add even more costs as firms struggle to optimize delivery schedules. This is especially a problem for truckers who must meet "just-in-time" delivery schedules set by shippers, manufacturers, and retailers.

The CMP is also designed to identify intersections and road segments that demonstrate congestion, excessive delays, and circulation problems. The CMP identifies these congested facilities through studies completed by OCPC and other agencies and organizations, and through the ongoing monitoring of facilities. Standard operating procedures have been adopted for data collection that allows the monitoring of intersections within the region specifically targeted due to congestion. The CMP identifies numerous congested intersections, based on a threshold of LOS "D" or less, within the Old Colony region.

In addition to the intersection locations, there are several community centers in the region including, Bridgewater Center (Central Square), Downtown Brockton, East Bridgewater Center, Stoughton Center, and West Bridgewater Center, that experience chronic congestion and circulation problems requiring on-going efforts to improve traffic flow and access, and reduce delays.

When making investments in the region's transportation system, the Old Colony Region MPO seeks to invest in projects and programs that reduce greenhouse gases (GHGs) and other transportation related pollutants, and otherwise minimize negative environmental impacts. If climate change trends continue as projected, the conditions in the Old Colony Region will include a rise in sea level coupled with storm-induced flooding, and warmer temperatures that would affect the region's infrastructure, economy, human health, and natural resources. Massachusetts is responding to this challenge by taking action to reduce the GHGs produced in the state, including those generated by the transportation sector. To that end, Massachusetts passed its Global Warming Solutions Act (GWSA), which requires reductions of GHGs by 2020, and further reductions by 2050, relative to 1990 baseline conditions. To meet GWSA

requirements, the MPO works with MassDOT and other stakeholders to anticipate the GHG impacts of projects included in the TIP.

Transit System Asset Condition Performance Measures and Targets

Table 4 lists a set of federally required infrastructure condition performance measures for transit systems along with BAT's Performance Targets. These transit asset management (TAM) measures, which focus on a specific subset of all transit assets, were established in the FTA's TAM Rule. Brockton Area Transit presented this information along with supporting documentation to the Old Colony MPO in August 2018. The Old Colony MPO has adopted BAT's FY 2019 Brockton Area Transit Authority (BAT) Transit State of Good Repair Targets in their entirety and as their own and for the Old Colony Region, in accordance with the certified 3C Transportation Planning Process.

Table 4
Brockton Area Transit Authority Performance Measures and Targets

Performance Targets by Asset Category						
Category	**Class**	**Metric**	**Performance Target for FY 2019**	**Total Number of Vehicles**	**# of Vehicles that exceed ULB - FY 2018**	**% of Fleet that exceeds ULB - FY 2018**
Rolling Stock	Buses	X% of fleet that exceeds default ULB of 14	0.00%	46	0	0.00%
	Cutaway Buses	X% of fleet that exceeds default ULB of 10	0.00%	4	0	0.00%
	Vans	X% of fleet that exceeds default ULB of 8	5.00%	58	6	10.34%
Equipment	Non-Revenue Service Vehicle	X% of non-revenue service vehicles that exceeds default ULB of 8	20.00%	10	2	20.00%
Facilities	Admin/ Maintenance Facility	X% of facilities rated under 3.0 on Term scale	0.00%	3	0	0.00%

FTA defines ULB as "the expected lifecycle of a capital asset for a particular transit provider's operating environment, or the acceptable period of use in service for a particular transit provider's operating environment." For example, FTA's default ULB value for a bus is 14 years. FTA's Transit Economic

Requirements Model (TERM) scale, which pertains to the facilities measure, is a rating system that describes asset condition. The scale values are 1 (*poor*), 2 (*marginal*), 3 (*adequate*), 4 (*good*), and 5 (*excellent*). Because each measure is intended to represent the share of transit assets that are not in a state of good repair, the goal is to minimize the value for all four measures. FTA grantees, including transit agencies and agency sponsors, such as MassDOT, are required to develop targets for these TAM measures each fiscal year. MPOs, in turn, are required to set targets for their regions. BAT submitted agency-level targets for state fiscal year (SFY) 2019 (July 2018 through June 2019) to the Old Colony MPO. Their targets reflect the most recent data available on the number, age, and condition of their assets, and their expectations and capital investment plans for improving these assets during SFY 2019.