

Summary Narrative of Amendment 3 to the FFY 2019-2023 Transportation Improvement Program for the Northern Middlesex Region

The following summarizes a proposed amendment to Fiscal Year 2019 of the FFY 2019-2023 Transportation Improvement Program (TIP). **Amendment 3** involves the programming of funding for two projects to ensure that they are fully funded for construction. Also included within the amendment is an update to the narrative documenting the compliance of the TIP with adopted performance measures and targets. The proposed revisions are summarized below:

- Provide a funding increase for intersection improvements at Route 129 and Riverneck Road in Chelmsford. The cost estimate at final design increased from \$4,871,227 to \$5,736,167. The added cost increase is covered by target STP funding sources.
- Provide a funding increase for intersection improvements at Main Street, Salem Road and South Street in Tewksbury. The cost estimate at final design increased from \$3,296,077 to \$3,778,724. The increase is covered by target CMAQ and state CMAQ funding sources.
- Per federal guidance, the FFY 2019-2023 TIP must incorporate NMMPO adopted performance measures and targets. This amendment includes a narrative outlining the MPO's adopted targets, target setting procedures and linkage to priority investments.

The TIP is a federally mandated document that programs federal transportation funding for the region. The TIP contains the program of projects for the LRTA and the NMMPO public participation process satisfies the LRTA's public participation requirements for the program of projects.

The NMMPO has released this amendment for a 21-day public comment period, as allowed under the NMMPO's Public Participation Plan. A public meeting to hear comments on this amendment will be held on May 14, 2019 at 5:30 PM. The MPO will reconvene on May 22, 2019 to hear comments and consider endorsement of this amendment.

Please refer any comments to Justin Howard, Transportation Program Manager at jhoward@nmcog.org or 978-454-8021, ext. 121.

Performance Based Approach to Planning

The FAST Act continues many of the policies of the Moving Ahead for Progress in the 21st Century Act (MAP-21), which created a performance-based and outcome-based program to address the many challenges facing the U.S. transportation system. The objective of the performance-based program is to invest resources in projects that collectively advance the achievement of national goals.

The USDOT continues to develop performance goals for each emphasis area. MassDOT and the NMMPO are currently developing performance measures and targets to include in project evaluation and prioritization. The TIP development process considers these performance measures in making transportation investment decisions that address the achievement of performance goals.

The FAST Act includes the following national goal areas:

- Safety;
- Infrastructure Condition;
- Congestion Reduction;
- System Reliability;
- Freight Movement and Economic Vitality;
- Environmental Sustainability;
- Accelerated Project Delivery;
- Improving transportation system resiliency and reliability and reducing (or mitigating) the stormwater impacts of surface transportation; and
- Enhancing travel and tourism.

FHWA has released Final Rules establishing performance measures regarding safety, pavement condition, bridge condition, the National Highway System, freight movement, congestion, and Congestion Mitigation Air Quality (CMAQ), as shown in Table 1. Each rule has an effective date. Once effective, MassDOT established performance targets for each national performance measure outlined in the rulemakings. The NMMPO then worked with MassDOT and regional partners to establish regional targets, either adopting state targets or developing new goals.

TABLE 1: NATIONAL PERFORMANCE MANAGEMENT RULES AND PERFORMANCE MEASURES

National Performance Management Rule		
	National Performance Measures	Final Rule Effective Date
National Performance Management Measures to Assess Safety (PM1: 23 CFR 490.207)	# of Fatalities	14-Apr-16
	Rate of Fatalities per 100 million VMT	
	# of Serious Injuries	
	Rate of Serious Injuries per 100 million VMT	
	# of Non-motorized Fatalities and Serious Injuries	

TABLE 1: NATIONAL PERFORMANCE MANAGEMENT RULES AND PERFORMANCE MEASURES

National Performance Management Rule		
Rule	National Performance Measures	Final Rule Effective Date
National Performance Management Measures to Assess Pavement Condition (PM2: 23 CFR Part 490.307)	Percentage of pavements of the Interstate System in Good Condition	20-May-17
	Percentage of pavements of the Interstate System in Poor Condition	
	Percentage of pavements of the non-Interstate NHS in Good condition	
	Percentage of pavements of the non-Interstate NHS in Poor condition	

Prior to establishment of the national rulemakings, the NMMPO worked with MassDOT on performance management activities. The Unified Planning Work Program (UPWP) includes a task on development and assessment of performance measures. The 2016 Regional Transportation Plan outlined initial performance measures aimed at achieving targets outlined in the plan. Other regional activities in performance-based planning are categorized under Safety, Travel Time Reliability and Peak Hour Excessive Delay, Bridge Performance, pavement condition, Air Quality and State of Good Repair, as discussed in this section.

Safety Measures and Targets

In 2016, FHWA published the Safety Performance Management Measures Final Rules (PM1) with an effective date of April 14, 2016. The Safety PM rule supports the Highway Safety Improvement Program final rule (23 CFR Part 490 Subpart A, B and Part 924), as it established performance measures to carry out the HSIP and to assess serious injuries and fatalities on all public roads. Massachusetts set initial statewide safety measures and targets in August 2017 and the NMMPO considered and adopted the statewide targets in January 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 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 NMMPO 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 NMMPO, 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 Tracker¹ and will be establishing safety targets for the MPO to consider for adoption each calendar year. While the NMMPO 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 NMMPO adopted 2020 state targets at the February 27th, 2019 meeting. Adoption of these targets means that the NMMPO agrees to plan and program projects designed to achieve the State’s goals. Table 2 outlines the currently adopted safety performance measures and targets.

TABLE 2: SAFETY PERFORMANCE TARGETS AND MEASURES

Category	Performance Measures	Current Performance - Rolling Five Year Average 2012-2016	CY 2019 Performance Target - Rolling Five Year Average 2015-2019
Safety	Fatalities	364	353
	Rate of Fatalities per 100 million VMT	0.61	0.58
	Incapacitating Injuries	3,146	2,801
	Rate of Incapacitating Injuries per 100 million VMT	5.24	4.37
	Total Number of Non-Motorized Incapacitating Injuries and Fatalities	541	541

Pavement and Bridge Condition Measures

The final rule on pavement condition and bridge condition performance measures (PM2) was made effective on May 20, 2017 (23 CFR Part 490 Subparts A, C and D), with Massachusetts setting targets in May of 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.

¹ <https://www.mass.gov/lists/tracker-annual-performance-management-reports>

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.

The NMMPO considered and adopted statewide performance measures and targets at the October 24, 2018 meeting, agreeing to program projects aimed at achieving the State’s goals. Table 3 describes the pavement measures and targets adopted.

TABLE 3: PAVEMENT AND BRIDGE PERFORMANCE TARGETS AND MEASURES

Performance Measures	Current Condition 2017	2020 Performance Target	2022 Performance Target
Interstate Pavement Condition			
% of pavement in Good Condition ²	74.2%	70%	70%
% of pavement in Poor Condition	0.1%	4%	4%
Non-Interstate Pavement Condition			
% of pavement in Good Condition	32.9%	30%	30%
% of pavement in Poor Condition	31.4%	30%	30%
Bridges			
% of Bridges in Good Condition ³	15.22%	15%	16%
% of Bridges in Poor Condition	12.37%	13%	12%

System Performance Measures

As part of MAP-21 and the FAST Act’s performance based planning process, FHWA passed a systems performance measure rule aimed at improving the efficiency of the system and freight movement, reducing traffic congestion and reducing emissions. In May of 2018, MassDOT adopted and targets for the following measures:

- **Level of Travel Time Reliability (LOTTR):** the consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day. LOTTR is based on the

² Pavement condition on National Highway System Roads is based on International Roughness Index (IRI) value and one or more pavement distress metrics. FHWA sets thresholds to determine whether metric value is good or poor.

³ Bridge Condition on National Highway System roads is based on condition ratings of deck, superstructure and substructure. National Bridge Inventory data is used to rate these components. The worst component rating is the overall rating of the bridge.

amount of time it takes to drive the length of a road segment and is the percentage of person-miles traveled that are “reliable”. LOTTR is calculated by dividing the 80th/50th percentile travel time. If it falls below 1.50, the segment is “reliable”. The percentage of road segments that are “reliable” is used as the target.

- **Level of Truck Travel Time Reliability (TTTR):** the consistency or dependability in truck travel times, as measured from day-to-day and/or across different times of the day. TTTR is based on the amount of time it takes trucks to drive the length of a road segment and is an index of 50th/95th percentile travel times. The TTTR index is reported as a weighted average of the largest period for each segment.

The Northern Middlesex MPO - an agency whose planning area includes communities in the Boston Urbanized Area (UZA), and as a signatory to the 2018 Boston UZA Memorandum of Understanding (Boston UZA MOU)—has also adopted 2-year (2020) and 4-year (2022) Boston UZA-wide congestion performance measure targets. These performance measures are the percentage of non-single occupancy vehicle (SOV) travel and the Peak Hour Excessive Delay (PHED). Targets were developed in coordination with state Departments of Transportation and neighboring MPOs with planning responsibility for portions of the Boston UZA.

- **Percentage of Non-Single Occupancy Vehicle (SOV) Travel:** The metric is based on the percentage of people commuting to work using a mode other than a single occupancy vehicle (e.g. carpool, van, public transit, walking, bicycling, or telecommuting). The targets are determined from available Census journey to work data in the Boston urbanized area. In the Boston UZA, the proportion of non-SOV travel has been steadily increasing and is projected to continue increasing at a rate of 0.32% annually.
- **Peak hour Excessive Delay (PHED):** a measurement of annual hours of excessive delay per capita on the National Highway System (NHS) between 6 am and 10 am, and 3 pm and 7 pm, divided by the total UZA population. As of target-setting, there was only one year of data available. As such, the performance targets have been set flat until further data is available. The threshold is based on the travel time at 20 miles per hour or 60% of the posted speed limit, whichever is greater.
- **Emissions Reductions:** The on-road mobile source emissions measure is calculated by summing 2-and 4-year totals of emissions reductions in kilograms per day. Emissions reduction targets are measured as the sum total of all emissions reductions anticipated through CMAQ-funded projects in non-attainment or air quality maintenance areas (currently the cities of Lowell, Springfield, Waltham, and Worcester, and the town of Oak Bluffs) identified in the Statewide Transportation Improvement Program (STIP). This anticipated emissions reduction is calculated using the existing CMAQ processes.

The NMMPO is required to report on performance of vehicle emission reductions for carbon monoxide because of Lowell’s non-attainment status and has done so in an October 2018 CMAQ Congestion and Emissions Performance report.

In October 2018, the NMMPO voted to adopt 2-year (2020) and 4-year (2022) statewide reliability, congestion, and emissions performance measures and targets set by MassDOT. Table 4 summarizes each system performance measure and target adopted by the NMMPO.

TABLE 4: SYSTEMS PERFORMANCE TARGETS AND MEASURES

Performance Measures	2017 Current Conditions	2020 Target	2022 Target
Percentage of Travel Time Reliability	68% Interstate (State); 66.9% Interstate (Region) 80% Non-Interstate (State); 80.6% Non-Interstate (Region)	68% Interstate 80% Non-Interstate	68% Interstate 80% Non-Interstate
Level of Truck Travel Time Reliability	1.85 (State); 2.481 (Region)	1.85	1.85
Peak Hour Excessive Delay (annual hours per capita – Boston UZA)	18.31	18.31	18.31
Non-SOV Travel (Boston UZA)	33.60% (2016)	34.50%	35.10%
CO Benefit (kg/day)	11.76 kg/day (FFY14-17 regional baseline) 24.452 kg/day (State baseline condition)	0.00 (FFY 18-19 regional target) 1,596.514 (State target)	0.00 (FFY 2018-2022 regional target) 1,596.514 (State target)
NOx Emissions Reduction (kg/day)	0.742 (FFY 14-17 Obligated STIP Projects using CMAQ Funding)	0.500	1.600
VOC Emissions Reduction (kg/day)	1.667 (FFY 14-17 Obligated STIP Projects using CMAQ Funding)	0.600	0.900
Ozone (kg/day)	FFY 14-17 baseline condition	497.9	1.1

Transit Asset Management

The Federal Transit Administration’s (FTA) Final rule (49 CFR Part 625) outlined a requirement for transit providers to implement performance management through Transit Asset Management Plans. LRTA, as a Tier II Provider⁴, adopted their respective TAM Plan on August 28, 2018. The NMMPO reviewed and adopted the performance measures outlined in the plan on February 27, 2019. The TAM plan covers a horizon period of Federal Fiscal Years 2018-2022. The purpose of the plan is to:

- Provide implementation actions that offer enabling support and direction for management of transit assets; and
- Provide direction and expectations for asset class owners and department managers regarding lifecycle management planning and processes.

The TAM Plan uses transit asset condition to guide the management of capital assets and prioritizations of funding to improve/maintain a State of Good Repair (SGR). SGR performance measures and targets

⁴ Tier II Provider: 100 or fewer vehicles across all fixed routes.

were set for rolling stock, equipment and facilities. Table 5 outlines the MPO adopted TAM performance measures and targets.

TABLE 5: TRANSIT ASSET PERFORMANCE TARGETS AND MEASURES

Asset Category - Performance Measure	Asset Class	2019 Target	2020 Target	2021 Target	2022 Target	2023 Target
REVENUE VEHICLES						
Age -% of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark	BU -Bus	12%	20%	10%	5%	3%
	CU -Cutaway Bus	11%	24%	35%	13%	4%
EQUIPMENT						
Age -% of vehicles that have met or exceeded their Useful Life Benchmark	Non-Revenue/Service Automobile	50%	0%	0%	0%	0%
	Trucks and other Rubber Tire Vehicles	70%	70%	70%	70%	70%
	Maintenance Equipment*	30%	30%	22%	22%	10%
	Facilities Equipment*	0%	0%	0%	0%	0%
FACILITIES						
Condition -% of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration	0%	0%	0%	0%	0%
	Maintenance	0%	0%	0%	0%	0%
	Parking Structures	0%	0%	0%	0%	0%
	Passenger Facilities	50%	50%	0%	0%	0%

Table 6 outlines the programmed FFY 2019-2023 TIP projects and identifies the performance measure categories impacted by the planned improvements to the regional transportation system.

TABLE 6: FFY 2019-2023 TIP PROJECTS WITH PM CATEGORY ADDRESSED

Community	Project #	Project Description	Proposed TIP Year	2019-2023 TIP Funding	Performance Measures Category
Tewksbury	608346	TEWKSBURY- INTERSECTION IMPROVEMENTS AT MAIN STREET, SALEM ROAD AND SOUTH STREET	2019	\$3,296,077	Safety, Pavement, Air Quality, Travel Time Reliability and Delay

TABLE 6: FFY 2019-2023 TIP PROJECTS WITH PM CATEGORY ADDRESSED

Community	Project #	Project Description	Proposed TIP Year	2019-2023 TIP Funding	Performance Measures Category
Lowell	608257	LOWELL- DECK REPLACEMENT, L-15-068 (2H5) AND (2HG), LOWELL CONNECTOR OVER INDUSTRIAL AVENUE EAST (Bridge Project outside targets)	2019	\$4,007,143	Bridge Performance
Tewksbury	607534	TEWKSBURY- BRIDGE REPLACEMENT, T-03-003, MILL STREET OVER SHAWSHEEN RIVER (Bridge Project outside targets)	2019	\$2,160,000	Bridge Performance
Chelmsford	608344	CHELMSFORD- INTERSECTION IMPROVEMENTS AT ROUTE 129 AND RIVERNECK ROAD	2019	\$4,871,226	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
LRTA	RTD0006707	PREVENTATIVE MAINTENANCE	2019	\$1,685,063	State of Good Repair
LRTA	RTD0006709	BUY CAPITAL SPARE PARTS	2019	\$100,000	State of Good Repair
LRTA	RTD0006718	TERMINAL & BUILDING EQUIPMENT AND MAINTENANCE	2019	\$140,000	State of Good Repair
LRTA	RTD0006725	BUY REPLACEMENT 35-FT BUS (10)	2019	\$4,600,000	State of Good Repair
Dracut	608350	DRACUT- IMPROVEMENTS ON NASHUA ROAD	2020	\$5,740,800	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
Lowell	604694	LOWELL- CONNECTOR RECONSTRUCTION, FROM THORNDIKE STREET TO GORHAM STREET	2020	\$975,000	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
Lowell	607885	LOWELL-PEDESTRIAN WALKWAY & BICYCLE CONNECTION AT PAWTUCKET FALLS OVERLOOK FROM VANDENBERG ESPLANADE TO SCHOOL STREET (Statewide CMAQ)	2020	\$2,549,986	Air Quality
Chelmsford	608375	CHELMSFORD- INTERSECTION IMPROVEMENTS AT BOSTON ROAD AND CONCORD ROAD	2020	\$2,577,173	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
LRTA	RTD0006712	PREVENTATIVE MAINTENANCE	2020	\$1,732,189	State of Good Repair
LRTA	RTD0006714	BUY CAPITAL SPARE PARTS	2020	\$130,000	State of Good Repair
LRTA	RTD0006716	BUY REPLACEMENT 35-FT BUS (5)	2020	\$2,204,000	State of Good Repair
LRTA	RTD0005611	REHAB INTERMODAL HUB	2020	\$300,000	State of Good Repair
LRTA	RTD0007205	BUY ASSOC CAP MAINT ITEMS	2020	\$200,000	State of Good Repair
LRTA	RTD0006726	BUY REPLACEMENT VAN (2)	2020	\$230,000	State of Good Repair

TABLE 6: FFY 2019-2023 TIP PROJECTS WITH PM CATEGORY ADDRESSED

Community	Project #	Project Description	Proposed TIP Year	2019-2023 TIP Funding	Performance Measures Category
Tewksbury	608297	TEWKSBURY- RESURFACING AND SIDEWALK RECONSTRUCTION ON ROUTE 38 BEGINNING AT COLONIAL DRIVE NORTH TO THE INTERSECTION OF OLD BOSTON ROAD APPROXIMATELY 1.5 MILES	2021	\$4,542,720	Pavement
Dunstable	608603	DUNSTABLE-IMPROVEMENTS ON MAIN STREET (ROUTE 113), FROM PLEASANT STREET TO 750 FT EAST OF WESTFORD STREET	2021	\$4,814,065	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
LRTA	RTD0006719	TERMINAL & BUILDING EQUIPMENT AND MAINTENANCE	2021	\$100,000	State of Good Repair
LRTA	RTD0006721	BUY CAPITAL SPARE PARTS	2021	\$100,000	State of Good Repair
LRTA	RTD0006723	PREVENTATIVE MAINTENANCE	2021	\$1,761,733	State of Good Repair
LRTA	RTD0006734	BUY REPLACEMENT FIXED ROUTE VANS (2)	2021	\$230,000	State of Good Repair
LRTA	RTD0006735	BUY REPLACEMENT 35-FT HYBRID BUSES (2)	2021	\$1,180,000	State of Good Repair
LRTA	RTD0006736	BUY REPLACEMENT 35-FT DIESEL BUSES (6)	2021	\$2,706,000	State of Good Repair
Westford	608830	WESTFORD- BRIDGE REHABILITATION BEAVER BROOK ROAD OVER BEAVER BROOK (W-26-014)	2022	\$1,822,280	Bridge Performance
Westford	608861	WESTFORD-BRIDGE REPLACEMENT STONY BROOK ROAD OVER STONY BROOK (<i>Bridge project outside targets</i>)	2022	\$2,205,120	Bridge Performance
Billerica	605178	BILLERICA- REHABILITATION ON BOSTON ROAD (ROUTE 3A) FROM BILLERICA TOWN CENTER TO FLOYD STREET	2022	\$7,048,259	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
LRTA	RTD0006729	PREVENTATIVE MAINTENANCE	2022	\$1,855,777	State of Good Repair
LRTA	RTD0006732	BUY ASSOC CAP SPARE PARTS	2022	\$130,000	State of Good Repair
LRTA	RTD0006737	BUY REPLACEMENT 35-FT HYBRID BUSES (2)	2022	\$1,300,000	State of Good Repair
Chelmsford	607401	CHELMSFORD- TRAFFIC SIGNAL INSTALLATION AT ROUTE 110 & ROUTE 495 (2 LOCATIONS)	2023	\$1,371,659	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
Billerica	608227	BILLERICA-YANKEE DOODLE BIKE PATH CONSTRUCTION (PHASE I) (<i>Statewide CMAQ outside targets</i>)	2023	\$10,102,215	Air Quality
Lowell	605966	LOWELL-RECONSTRUCTION & RELATED WORK ON VFW HIGHWAY	2023	\$7,271,683	Safety, Pavement, Air Quality, Travel Time Reliability and Delay

TABLE 6: FFY 2019-2023 TIP PROJECTS WITH PM CATEGORY ADDRESSED

Community	Project #	Project Description	Proposed TIP Year	2019-2023 TIP Funding	Performance Measures Category
Tewksbury	608774	TEWKSBURY-ROUTE 38 INTERSECTION IMPROVEMENTS FROM LOWELL LINE TO PIKE STREET/ ASTLE STREET (<i>Outside Targets</i>)	2023	\$3,005,529	Safety, Pavement, Air Quality, Travel Time Reliability and Delay
LRTA	RTD0006115	BUY CAP MAINT ITEMS	2023	\$15,000	State of Good Repair
LRTA	RTD0005593	BUY REPLACEMENT FIXED ROUTE 35-FT BUS (1)	2023	\$550,000	State of Good Repair
LRTA	RTD0007208	PREVENTATIVE MAINTENANCE	2023	\$2,211,871	State of Good Repair
LRTA	RTD0007210	BUY ASSOC CAP MAINT ITEMS SPARE PARTS	2023	\$130,000	State of Good Repair
LRTA	RTD0005603	TERMINAL & BUILDING EQUIPMENT AND MAINTENANCE	2023	\$100,000	State of Good Repair

2019 Northern Middlesex 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 ▼ <i>Present information as follows, if applicable:</i> 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
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

AMENDMENT:Increase Cost	Intersection Improvements	608346	Northern Middlesex	Tewksbury	TEWKSBURY-INTERSECTION IMPROVEMENTS AT MAIN STREET, SALEM ROAD AND SOUTH STREET	4	CMAQ	\$ 3,208,068	\$ 2,566,454	\$ 641,614	Construction; Total Project Cost: \$3,778,724; CMAQ; NMMPO TEC Score 7.17 out of 18.
AMENDMENT:Increase Cost	Intersection Improvements	608344	Northern Middlesex	Chelmsford	CHELMSFORD-INTERSECTION IMPROVEMENTS AT ROUTE 129 AND RIVERNECK ROAD	4	STP	\$ 5,499,387	\$ 4,399,510	\$ 1,099,877	Construction; Total Project Cost: \$5,781,296; STP, TAP; NMMPO TEC Score: 6.65 out of 18; TAP Proponent: Town of Chelmsford.
	Intersection Improvements	608344	Northern Middlesex	Chelmsford	CHELMSFORD-INTERSECTION IMPROVEMENTS AT ROUTE 129 AND RIVERNECK ROAD	4	TAP	\$ 281,909	\$ 225,527	\$ 56,382	Construction; Total Project Cost: \$5,781,296; STP, TAP; NMMPO TEC Score: 6.65 out of 18; TAP Proponent: Town of Chelmsford.
Regionally Prioritized Projects subtotal ►								\$ 8,989,364	\$ 7,191,491	\$ 1,797,873	◀ 80% Federal + 20% Non-Federal

► Section 1A / Fiscal Constraint Analysis

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)** Non-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.

Total Regional Federal Aid Funds Programmed ►	\$ 8,989,364	\$ 8,989,364	◀ Total	\$ -	Target Funds Available
STP programmed ►	\$ 5,499,387	\$ 4,399,510	◀ STP		
HSIP programmed ►	\$ -	\$ -	◀ HSIP		
CMAQ programmed ►	\$ 3,208,068	\$ 2,566,454	◀ CMAQ		
TAP programmed ►	\$ 281,909	\$ 225,527	◀ TAP		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

AMENDMENT:Add Project	Other Federal Aid	NM0002	Northern Middlesex	Lowell	Extend Merrimack Riverwalk pedestrian path & construct a plaza/overlook, and deck for viewing	4	Other FA	\$ 293,311	\$ 235,000	\$ 58,311	Construction: Total Project Cost: \$2,964,631.52 with PLHD, FLAP and non federal funding sources. PLHD (\$2,671,321) is 100% Federal. FLAP (\$293,311) is an 80/20 split and will be transferred to EFL. The 20% non federal match will be provided by the City of Lowell.
Other Federal Aid subtotal ►								\$ 293,311	\$ 235,000	\$ 58,311	◀ Funding Split Varies by Funding Source

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

	Bridge Program		Northern Middlesex		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System

AMENDMENT:Decrease Cost	Bridge Program	607534	Northern Middlesex	Tewksbury	TEWKSBURY-BRIDGE PRESERVATION, T-03-003, MILL STREET OVER SHAWSHEEN RIVER	4	STP-BR-OFF	\$ 517,850	\$ 414,280	\$ 103,570	
	Bridge Program		Northern Middlesex		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ 517,850	\$ 414,280	\$ 103,570	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)

2019 Northern Middlesex 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 ▼ <i>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</i>
	Bridge Program		Northern Middlesex		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		Northern Middlesex		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ▶								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Bridge Program / Systematic Maintenance											
	Bridge Program	608257	Northern Middlesex	Lowell	LOWELL-DECK REPLACEMENT, L-15-068 (2H5) AND (2HG), LOWELL CONNECTOR OVER INDUSTRIAL AVENUE EAST	4	NHPP-On	\$ 4,007,143	\$ 3,205,714	\$ 801,429	
	Bridge Program		Northern Middlesex		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ▶								\$ 4,007,143	\$ 3,205,714	\$ 801,429	◀ Funding Split Varies by Funding Source
► Interstate Pavement											
	Interstate Pavement		Northern Middlesex		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ▶								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal
► Non-Interstate Pavement											
	Non-Interstate Pavement		Northern Middlesex		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ▶								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Roadway Improvements											
	Roadway Improvements		Northern Middlesex		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ▶								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Safety Improvements											
	Safety Improvements		Northern Middlesex		Safety Improvements			\$ -	\$ -	\$ -	
Safety Improvements subtotal ▶								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 2B / State Prioritized Modernization Projects											
► ADA Retrofits											
	ADA Retrofits		Northern Middlesex		ADA Retrofits			\$ -	\$ -	\$ -	
ADA Retrofits subtotal ▶								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Intersection Improvements											
AMENDMENT:Add Project	Intersection Improvements	608346	Northern Middlesex	Tewksbury	TEWKSBURY- INTERSECTION IMPROVEMENTS AT MAIN STREET, SALEM ROAD AND SOUTH STREET	4	CMAQ	\$ 570,656	\$ 456,525	\$ 114,131	Construction; Total Project Cost: \$3,778,724; CMAQ; NMMPO TEC Score 7.17 out of 18.
Intersection Improvements subtotal ▶								\$ 570,656	\$ 456,525	\$ 114,131	◀ Funding Split Varies by Funding Source
► Intelligent Transportation Systems											
	Intelligent Transportation Systems		Northern Middlesex		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
Intelligent Transportation System subtotal ▶								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Roadway Reconstruction											
	Roadway Reconstruction		Northern Middlesex		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ▶								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 2C / State Prioritized Expansion Projects											

2019 Northern Middlesex 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 ▼ <i>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</i>
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► Bicycles and Pedestrians

	Bicycles and Pedestrians		Northern Middlesex		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Capacity

	Capacity		Northern Middlesex		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

			Northern Middlesex		ABP GANS Repayment		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		Award adjustments, change orders, etc.		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		Metropolitan Planning		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		State Planning and Research Work Program I, (SPR I), Planning		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		State Planning and Research Work Program II, (SPR II), Research		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		Railroad Crossings		Multiple	\$ -	\$ -	\$ -	
			Northern Middlesex		Recreational Trails		Multiple	\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

	Non-Federally Aided Projects		Northern Middlesex		Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►								\$ -		\$ -	◀ 100% Non-Federal

2019 Summary

	TIP Section 1 - 3: ▼	TIP Section 4: ▼	Total of All Projects ▼	
Total ►	\$ 14,378,324	\$ -	\$ 14,378,324	◀ Total Spending in Region
Federal Funds ►	\$ 11,503,010		\$ 11,503,010	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 2,875,314	\$ -	\$ 2,875,314	◀ 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>