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Goals and Performance Measures



2024 Regional Transportation Plan

3 Transportation Planning Goals and Performance Measures

The federal transportation legislation, MAP-21, created the requirement that states and metropolitan planning organizations (MPOs) establish and regularly monitor a performance and outcome-based program. The FAST Act, enacted in 2015, and the current Bipartisan Infrastructure Law (BIL), enacted in November 2021 and also known as the Infrastructure Investment and Jobs Act (IIJA), continue this requirement that there be performance goals in seven topic areas, and states and MPOs are required to establish coordinated performance measures that track their progress in these goal areas with tangible targets. These goal areas can be viewed in Table 3-1.

To fulfill the BIL’s requirements, MassDOT has established statewide performance measures as for each goal area. These statewide performance measures are applicable to the MPOs and Transportation Planning Organizations (TPOs) as well. The Franklin County Transportation Planning Organization (FCTPO) has adopted each of the MassDOT final performance measures as its own for the topic areas available to date. These include Safety (PM1), Bridge (PM2), and System Performance Measures (PM3).

Table 3.1: Highway Performance Goal Areas
Safety
Infrastructure condition
Congestion reduction
System reliability
Freight movement & economic vitality
Environmental sustainability
Reduced project delivery delays

In addition to these formal statewide performance measures, the FCTPO has also created additional regionally focused measures that take into consideration Franklin County’s unique rural character. These regional measures have been identified and validated through extensive public outreach. Both of these types of performance measures are described in more detail further in this chapter.

Implementing Performance Measures and Goals

The recommendations found throughout this Regional Transportation Plan (RTP) all work toward the realization of the goals and performance measures outlined in this chapter. They will be implemented through coordinated regional planning and, in part, specifically through the FCTPO Transportation Improvement Program (TIP) and its Unified Planning Work Program (UPWP). These shorter-term planning documents reflect the priorities of the RTP, while guiding how and

when projects should be implemented within the financial constraints of anticipated Federal and State Funding. While the FRCOG will continue to strive to meet the goals and performance measures, it should be noted that the implementation of some of the goals are out of its control and depend on federal and state funding and policy decisions.

The Transportation Improvement Program (TIP) is a prioritized, five-year program for the implementation of transportation improvement projects in Franklin County that receive federal funds. It is updated annually and is adjusted to the changing fiscal environment, but always reflects the RTP's goals and priorities. Each potential project considered for inclusion in the TIP is scored using the Transportation Evaluation Criteria (TEC). The FRCOG staff and FCTPO are in the process of transitioning from the current TEC scoring method to a revised method with more specificity in each scoring metric. The current TEC rates projects in six criteria categories on a scale of -3 to +3, with a total possible score of -18 to +18. The categories include: Condition, Mobility, Safety, Community Effects, Land Use & Economic Development, and Environmental Effects. A project's total score relates to the impact it will have in each of the categories. The TEC score is determined through a cooperative process among FRCOG Transportation Planning staff, MassDOT Office of Transportation Planning, and MassDOT Highway Division District 1 and District 2 staff. The TEC score, along with project readiness, funding availability, and how well it meets the RTP's goals, are considered in the selection of projects for the TIP.

The revised TEC method is in the process of being tested and validated by FRCOG Transportation Planning staff. It includes all the same criteria categories as the current method, but adds specific measures for scoring each metric in the evaluation criteria. Scores are weighted by regional and state priority, and the final TEC scores will be a percentage score out of 100 potential points.

The Unified Planning Work Program (UPWP) is also an annual document that describes the work tasks to be conducted during the year by the transportation planning staff of the FRCOG on behalf of the FCTPO. Like the TIP, the UPWP is based upon the priorities that have been identified in the RTP and works toward implementing those goals.

MassDOT Tracker

As part of the Bipartisan Infrastructure Legislation's focus on measuring and tracking performance, MassDOT has created an interactive, web-based report card called "Tracker."¹ The Tracker report is a review of MassDOT's progress, designed to track and clarify where goals are or are not being met. Performance is reported by the five MassDOT divisions:

¹ <https://massdottracker.com/>

Highway, Aeronautics, Registry of Motor Vehicles, Rail and Transit, and the MBTA. Each Division of MassDOT reports on performance measures in the areas of Customer Experience, Safety, System Condition, Sustainable and Healthy Transportation, and Budget and Capital Performance.

Adopted Performance Measures

The following section describes the performance measures required by the FAST Act & continuing under BIL. These measures were developed by MassDOT and adopted by the FCTPO in 2023.

Safety Performance Measures (PM1)

The FCTPO has chosen to adopt the statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2023. 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.

Total Fatalities and Fatality Rate

Due to higher rates of speeding caused by decreased vehicle miles traveled (VMT) amid pandemic shutdowns in 2020 and the lingering impacts in 2021, 2020 and 2021 fatalities increased relative to previous years. Since the Infrastructure Investment and Jobs Act (IIJA) requires “performance targets to demonstrate constant or improved performance,” MassDOT would be unable to use a pure trendline approach to set CY 2023 targets. Therefore, MassDOT developed targets for CY 2023 by projecting 2022 fatalities to be equal to 3% higher than the state’s lowest year in recent history (2019), and projecting 2023 fatalities to be equal to 3% lower than 2019. This methodology was developed in order to project a future downward trend based on the data available at the time. This analysis resulted in five-year average fatalities decreasing from 360 (2017-2021) to 355 (2019-2023), a reduction of 1.69%. Fatalities are expected to decrease based on MassDOT efforts in the areas of speed management and safe systems, among other safety strategies. As always, MassDOT’s overarching goal is zero deaths and this goal will be pursued by implementing Strategic Highway Safety Plan (SHSP) strategies.

The fatality rate represents five-year average fatalities divided by five-year average VMTs. The COVID-19 pandemic greatly impacted VMT, causing fatality rates to spike in 2020 with significantly lower VMT and slightly higher fatalities, along with lingering impacts in 2021. The 2023 projection is now 0.59 fatalities per 100 million VMT (five-year average of 2019-

2023). The long-term goal is towards zero deaths, so the long-term fatality rate target is 0 fatalities per 100 million VMTs.

Total motor vehicle fatalities in Franklin County declined in 2020 but rose in 2021. The five-year average number of fatalities for 2017-2021 was 6.8 per year, up from 6.4 per year in 2016-2020. The five-year rolling rate of fatalities per 100 million vehicle miles (VMT) traveled increased from 0.69 to 0.74 fatalities per 100 million VMT.

Total Serious Injuries and Serious Injuries Rate

The 2020 – 2022 serious injury data were not finalized in the statewide crash system at the time of target setting, so MassDOT used the information that was available as of April 2022. Due to higher rates of speeding caused by decreased VMT amid pandemic shutdowns in 2020 and the lingering impacts in 2021, 2020 and 2021 serious injuries increased relative to previous years. Therefore, MassDOT developed targets by projecting the 2022 annual serious injuries to be equal to the lowest year in recent history and the 2023 annual serious injuries to continue downward at a roughly 10% annual decrease, which reflects the average decreases in the years in which the state experienced reductions in serious traffic injuries. This approach resulted in a 5-year average number of serious injuries dropping from 2,626 (2017-2021) to 2,569 (2019-2023), a reduction of 1.99%.

Similar to the fatality rate, serious injury rates were greatly impacted due to COVID. Following the methods above, the projection is now 4.25 serious injuries per 100 million VMT (2019-2023), down from 4.30 serious injuries per 100 million VMT (2017-2021), a reduction of 1.57%. The long-term goal is towards zero deaths and serious injuries, so the long-term serious injury rate target is 0.0 serious injuries per 100 million VMT.

There was an increase in serious motor vehicle injuries in Franklin County in 2020, resulting in a five-year average of 31.8 serious injuries per year for 2017-2021. The five-year rolling rate of serious injuries per 100 million vehicle miles (VMT) traveled also increased from 3.28 to 3.47 serious injuries per 100 million VMT.

Non-Motorized Fatalities and Serious Injuries

The number of non-motorists fatalities and serious injuries decreased dramatically during the start of the pandemic in 2020, followed by an increase in 2021 and further movement in the wrong direction to start 2022. This fluctuation made tracking the trend in this area difficult. Therefore, non-motorized fatalities and serious injuries for 2022 were set to be equal to 3% higher than our recent lowest year, and 2023 were set to be 3% lower than the recent lowest year. This results in a 5-year average of non-motorist fatalities and serious injuries going from 467 (2017-2021) to 437 (2019-2023), a reduction of 6.86%.

Franklin County experienced a sharp decline in non-motorized (i.e. bicycle and pedestrian) fatalities and serious injuries in 2020: only one serious injury was reported to a cyclist. In the following year, 2021, there were 5 fatalities and serious injuries reported. The result is that the five-year average of 4.2 non-motorized serious injuries & fatalities per year was unchanged for 2017-2021.

The safety measures MassDOT has established for CY 2023, and that Franklin TPO has adopted, are summarized in Table 3-2:

Table 3-2. Safety Performance Measures, FCTPO vs. Statewide

Safety Performance Measure	CY2023 Target	Statewide Average, 2017-2021	Franklin County Average, 2017-2021
Number of Fatalities	355	360	6.8
Fatalities per 100 million VMT	0.59	0.59	0.74
Number of Serious Injuries	2,569	2,626	31.8
Serious Injuries per 100 million VMT	4.25	4.30	3.47
Number of Serious Injuries + Fatalities, Non-motorized Modes	437	467	4.2

Bridge & Pavement Performance Measures (PM2)

The FCTPO has chosen to adopt the 2-year (2024) and 4-year (2026) statewide bridge and pavement performance measure targets set by MassDOT. MassDOT was required to adopt a statewide target by December 16th, 2022. 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 2022 Transportation Asset Management Plan (TAMP). Current conditions and targets set by MassDOT are summarized in Table 3-3.

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 (2024), 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 Measures 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 3-3: Bridge and Pavement Performance Measure Data

Performance Measure	Current (2021)	2-year target (2024)	4-year target (2026)
Bridges in good condition	16%	16%	16%
Bridges in poor condition	12.2%	12%	12%
Interstate Pavement in good condition	71.8%	70%	70%
Interstate Pavement in poor condition	0.0%	2%	2%
Non-Interstate Pavement in good condition		30%	30%
Non-Interstate Pavement in poor condition		5%	5%

Reliability, Congestion, & Emissions Performance Measures (PM3)

The FCTPO has chosen to adopt the 2-year (2024) and 4-year (2026) statewide reliability, congestion, and emissions performance measure targets set by MassDOT. MassDOT was required to adopt a statewide target by December 16, 2022, with MPOs either adopting the statewide target or establishing their own by June 2023. MassDOT followed FHWA regulation in measuring Level of Travel Time Reliability (LOTTR) on both the Interstate and non-Interstate NHS as well as Truck Travel Time Reliability (TTTR) on the Interstate system using the National Performance Management Research Dataset (NPMRDS) provided by FHWA.

These performance measures aim to identify the predictability of travel times on the roadway network by comparing the average travel time along a given segment against longer travel times. For LOTTR, the performance of all segments of the Interstate and of the nonInterstate NHS are defined as either reliable or unreliable based on a comparison

between the 50th percentile travel time and the 80th percentile travel time, and the proportion of reliable segments is reported. For TTTR, the ratio between the 50th percentile travel time and the 90th percentile travel time for trucks only along the Interstate system is reported as a statewide measure. Current conditions and targets set by MassDOT are shown in Table 3-4.

Table 3-4: Reliability, Congestion & Emissions Performance Measures

Performance Measure	Current (2021)	2-Year Target (2023)	4-Year Target (2025)
Interstate Level of Travel Time Reliability (LOTTR)	84.2%	74.0%	76.0%
Non-Interstate Level of Travel Time Reliability (LOTTR)	87.2%	85.0%	87.0%
Truck Travel Time Reliability	1.61	1.8	1.75
Emissions Reductions: PM2.5			
Emissions Reductions: NOx	0.490	0.000	0.000
Emissions Reductions: VOC	0.534	0.000	0.000
Emissions Reductions: PM10			
Emissions Reductions: CO	6.637	0.354	0.354

Transit Asset Management (TAM) Plan

The FAST Act requires that all public transit providers monitor and manage their public transportation assets to improve safety, increase reliability and performance, and to establish performance measures. To accomplish this, transit providers of a certain size must create a Transit Asset Management (TAM) Plan and update it every four years. The FRTA falls into the Tier II level of reporting, due to the size of its transit fleet. In Massachusetts, regional transit authorities have the option of accepting a MassDOT-created TAM plan as their own or creating their own. The FRTA adopted MassDOT’s plan, which was created in December 2018 and provides an inventory of each participating public transportation provider’s assets, details their condition, and outlines a project-based prioritization of investments with the goal of achieving and maintain a state of good repair of its assets. The following Table 3-5 describes the 2021 and 2023 targets for the FRTA regarding the maintenance of its assets.

Table 3-5: Transit Asset Management Plan Performance Measures

Asset Category – Performance Measure	FTA Asset Class	2021 Target	2023 Target
Revenue Vehicles			
Age - % of revenue vehicles within a particular class that have met or exceeded their Useful Life Benchmark (ULB)	BU – Bus	10%	0%
	Cu – Cutaway	16%	0%
	MB – Minibus	10%	0%
	VN - Van	10%	0%
Equipment			
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non-Revenue / Service Automobiles	33%	33%
	Trucks & Other Rubber Tire Vehicles	10%	10%
Facilities			
Condition - % of facilities with a condition rating below 3.0 on the FTA Term Scale	Administrative / Passenger Facility	0%	0%
	Maintenance Facility	100%	100%

Regional Performance Measures

The following section describes the performance measures developed by the FCTPO to reflect the regional vision that was presented in Chapter 1. Each performance measure seeks to evaluate the progress the region is making towards achieving that vision and its associated goals and objectives. When applicable, a data source that will be used to assess progress for each objective is also listed.

❖ **Goal 1: Maintain infrastructure to facilitate the mobility of people and goods traveling to, from, and through Franklin County.**

Objective A) Maintain condition of on and off-system bridges.

Measure: Bridge condition rating (PM2).

Target: 16% of bridges in good condition; 12% of bridges in poor condition by 2024 (Table 3-3).

Data Source: MassDOT Performance Measures Tracker

Objective B) Maintain the condition of the region’s roadways.

Measure: Interstate + Non-interstate pavement condition rating (PM2).

Target: Interstate pavement in 70% good condition, 2% poor condition; Non-interstate pavement in 30% good condition, 5% poor condition by 2026 (Table 3-3).

Data Source: MassDOT Performance Measures Tracker

Objective C) Maintain the region’s transit fleet.

Measure: Transit vehicle age (TAM Plan Measures).

Target: No transit vehicles exceeding their Useful Life Benchmark by 2023 (Table 3-5).

Data Source: FRTA+MassDOT

Discussion: There are many projects currently on the TIP or under design that will help achieve Goal 1. In fact, a total of \$211,011,384 is anticipated to be expended on highway and bridge improvement projects in Franklin County between 2024 and 2028, with \$156,335,168 for bridges and \$54,676,216 for highway projects programmed in the State Transportation Improvement Program.

❖ **Goal 2: Improve safety and security of transportation network.**

Objective A) Reduce the number of fatal and injury crashes on roadways.

Measure: Number of fatal and incapacitating injury crashes (Safety PM 1).

Target: 355 fatal injuries and 2,569 serious injuries statewide in CY 2023 (Table 3-2).

Data Source: MassDOT Performance Measures Tracker

Objective B) Expand emergency preparedness and training.

Measure: Identify transportation infrastructure vulnerabilities and plan for natural disasters and other emergencies.

Target: Continue involvement with the Regional Emergency Preparedness Committee and the Western Region Homeland Security Advisory Council.

Data Source: Regional Emergency Preparedness Committee and the Western Region Homeland Security Advisory Council.

Objective C) Identify dangerous locations for pedestrians and bicyclists and improve the safety for all users.

Measure: Identify potentially dangerous locations and conduct complete streets assessments with safety recommendations.

Target: Conduct 10 complete street site assessments with recommendations by 2030.

Data Source: FRCOG and municipal planning staff.

Discussion: The FRCOG continues to work with local towns to become certified Complete Streets Communities, identify projects, and implement projects through the Complete Street grant program.

❖ **Goal 3: Increase transportation options and reduce vehicle emissions.**

Objective A) Expand the transit system.

Measure: Increase the frequency of fixed route service, expand the hours of service, and increase the number of fixed transit routes.

Target: (1) Increase the frequency of routes to at least average 30 minute headways on routes in Greenfield and Montague; 60 minute headways on routes connecting to Orange, Northampton, and Amherst/Sunderland; 120 minute headways on routes connecting to Charlemont.

(2) Add weekend and evening service.

(3) Add routes to currently unserved areas.

Data Source: FRTA staff

Objective B) Expand bicycling and walking network.

Measure: Increase the number and safety of bicycling and walking facilities.

Target: Increase share of walkers and bicyclists to 8% in 10 years.

Data Source: U.S. Census Bureau

Objective C) Provide transportation alternatives.

Measure: Increase the use of the park and rides throughout the region and promote the use of ridesharing.

Target: (1) Increase the utilization rates of the park and ride lots by 50% over 10 years.

(2) Increase the share of workers commuting by carpool to 10% in 10 years.

(3) Increase the number of Transportation Network Company (TNC) vehicles by 100% in 5 years.

Data Source: FRCOG Park and Ride Surveys and MassDOT DPU Rideshare Report

Objective D) Increase passenger rail options.

Measure: Establish an expanded passenger rail system between Greenfield and Springfield and advocate for east-west passenger rail service.

Target: (1) Establish a passenger rail system between Greenfield and Springfield that runs at least 3 round trips per day.

(2) Complete a feasibility study for east-west passenger rail service between Boston and Greenfield.

Discussion: There are several projects under development in the Franklin Region that will increase the safety of bicyclists and pedestrians. Several projects in the 2024-2028 TIP will include new bicycle and pedestrian facilities, including Montague City Road and Downtown Main Street in Greenfield, and Route 112 in Buckland. In addition, the FRCOG is planning to install way-finding signs on the remaining portions of the Franklin County Bikeway in 2023.

❖ **Goal 4: Promote economic development of the region while maintaining its rural character.**

Objective A) Encourage regional tourism.

Measure: (1) Promote motorist and bicycling touring in the region.

(2) Preserve natural, scenic, cultural, and historic resources.

(3) Increase access to regional recreational resources.

Target: (1) Launch a bicycle promotional campaign for Franklin County in the next 5 years.

(2) Preserve natural, scenic, cultural, & historically significant land along the region's byways.

(3) Identify gaps in access to important regional recreational resources and recommend corrective measures.

Data Source: FRCOG staff

Objective B) Ensure that freight movement is efficient and effective.

Measure: Truck travel time reliability (Reliability PM3).

Target: Truck travel time reliability of 1.75 by 2025 (Table 3-4).

Data Source: MassDOT Performance Measures Tracker

Objective C) Improve transportation alternatives to advance workforce development in the region.

Measure: Increase the availability of rideshare in the region and create a micro-transit service for the region.

Target: (1) Increase the availability of rideshare vehicles by 100% in the region in 5 years;

(2) Creation of a micro-transit service for the region.

Data Source: FRCOG and MassDOT DPU Rideshare Report

Discussion: The FRCOG has completed several projects in recent years to promote regional economic development in relation to transportation and outdoor recreation, including a successful bike safety promotional campaign, an outdoor recreation inventory and mapping project, and supporting the return of north-south rail service through the region. The FRTA has recently implanted a micro-transit program called Access that provides weekend service, and continues to work on extending service hours.

❖ **Goal 5: Promote sustainable transportation, reduce greenhouse gas emissions, and prepare for climate change.**

Objective A) Ensure roadways accommodate all non-motorist users.

Measure: Promote adoption and implementation of Complete Streets policies.

Target: A minimum of 20% of Franklin County towns have adopted Complete Streets policies over next 5 years.

Data Source: FRCOG staff

Objective B) Improve transit system.

Measure: Increase the frequency of fixed route services, expand the hours of service, and increase the number of fixed transit routes.

Target: (1) Increase the frequency of routes to at least average 30 minute headways on routes in Greenfield and Montague; 60 minute headways on routes connecting to Orange, Northampton, and Amherst/Sunderland; 120 minute headways on routes connecting to Charlemont.

(2) Add weekend and evening service.

(3) Add routes to currently unserved areas.

Data Source: FRTA staff

Objective C) Minimize potential negative impacts on transportation infrastructure from climate change.

Measure: Identify vulnerable roadways/culverts and other transportation infrastructure susceptible to climate change.

Target: Conduct a rolling assessment of vulnerability every five years in Franklin County towns.

Data Source: FRCOG staff

Discussion: Of the 26 Towns in Franklin County, 12 (46%) have adopted Complete Streets Policies. Nine of these Towns have approved Complete Streets Prioritization Plans in place, with two more pending approval in 2023. Eight Towns have been awarded construction funding for Complete Streets Project implementation, for a total of \$3,895,006 in Complete Streets funding awarded in Franklin County.

To date, the FRCOG has assisted eleven municipalities with comprehensive culvert inventories and assessments, and provided support to municipalities with identified vulnerable culverts to apply for funding for replacement either through grant programs, Chapter 90, or the TIP. FRCOG staff continues to work with FRTA on expanding fixed route service.