

## Transportation Performance Management

### Introduction

The Bipartisan Infrastructure Law (BIL) continues the requirements established in Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act for performance management. These requirements aim to promote the most efficient investment of Federal transportation funds. Performance-based planning will ensure that the Pennsylvania Department of Transportation (PennDOT), the Erie Metropolitan Planning Organization (MPO), and the Erie Metropolitan Transit Authority (EMTA) collectively invest Federal transportation funds efficiently towards achieving national goals.

Transportation Performance Management (TPM) is a strategic approach that uses data to make investment and policy decisions to achieve national performance goals. [23 USC 150\(b\)](#) outlines the national performance goal areas for the Federal-aid program. This statute requires the Federal Highway Administration (FHWA) to establish specific performance measures for the system that address these national goal areas. The regulations for the national performance management measures are found in [23 CFR 490](#).

National Goal	Objective
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System
System Reliability	To improve the efficiency of the surface transportation system
Freight Movement & Economic Vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
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

### Performance Based Planning and Programming Overview

The Erie MPO follows a Performance Based Planning and Programming (PBPP) approach, with a focus on collaboration between PennDOT District 1-0 and the Center for Program Development and Management (CPDM), FHWA, FTA and EMTA. These activities are carried out as part of a cooperative, continuing, and comprehensive (3C) planning process which guides the development of the project categories in this 2023-2026 Transportation Improvement Program (TIP).

The categories are:

- Highway and Bridge Program
- Interstate Management Program
- Public Transportation Program

Data resources are increasingly being utilized to inform the programming of projects. Resources include, but are not limited to, PennDOT crash databases, historical travel time archives, PennDOT’s bridge and pavement management systems, and traffic count data (both through traditional traffic counts and larger snapshots collecting real-time data through on-board travel data collection).

New in this TIP update cycle are the Network Screening Tool to determine safety problems on segments and intersections with a positive excess cost. Also, data from the Pavement Asset Management System (PAMS) and the Bridge Asset Management System (BAMS) are being consulted to program repairs based on the lowest lifecycle cost to extend the service life of roads and bridges.

### **Evaluating Performance in the 2023-2026 TIP**

The following sections provide an overview of the federal performance measures, established targets, and how the Erie MPO’s 2023-2026 TIP will support target achievement. Through these performance measures, PennDOT will continue to track performance outcomes and program impacts on meeting the transportation goals and targets.

PennDOT, the Erie MPO, and EMTA are required to jointly adopt performance targets and agree on written provisions for how information will be cooperatively developed and shared. These agreements are separated into Performance Measure (PM) categories. Signed Erie MPO Performance Measures Target Letters are in Appendix A.

Performance Measure	Factors Measured
PM1	Safety performance measures
PM2	National Highway System (NHS) pavements, bridges carrying the NHS, and pavements on the Interstate measures
PM3	Performance of the NHS, freight movement on the Interstate, and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program
TAM	Public Transit Asset Management
Transit Safety	Public Transit Safety targets

## Safety Performance Measures (PM1)

Background				
The FHWA rules for the <i>National Performance Management Measures: Highway Safety Improvement Program</i> and <i>Highway Safety Improvement Program</i> (HSIP) were published in the Federal Register ( <a href="#">81 FR 13881</a> and <a href="#">81 FR 13722</a> ) on March 15, 2016, and became effective on April 14, 2016. These rules established five safety performance measures (commonly known as PM1). The current regulations are found at <a href="#">23 CFR 490 Subpart B</a> and <a href="#">23 CFR 924</a> . Targets for the safety measures are established on an annual basis.				
Data Source				
PennDOT developed a methodology on establishing the State's safety targets and provided the Erie MPO with existing baseline data and regional (Erie County) targets. Data for the fatality-related measures are taken from the Fatality Analysis Reporting System (FARS) and data for the serious injury-related measures are taken from the State motor vehicle crash database. The Vehicle Miles of Travel (VMT) are derived from the Highway Performance Monitoring System (HPMS).				
Statewide Safety Measures and Targets				
Measure	Baseline (2014-2018)	Baseline (2016-2020)	Target (2016-2020)	Target (2018-2022)
Number of fatalities	1,182.0	1,140.6	1,171.9	<b>1,113.7</b>
Rate of fatalities per 100 million VMT	1.169	1.157	1.148	<b>1.205</b>
Number of serious injuries	3839.6	4445.6	4,400.3	<b>4,490.8</b>
Rate of serious injuries per 100 million VMT	3.797	4.510	4.309	<b>4.860</b>
Number of non-motorized fatalities & serious injuries	679.0	761.2	781.7	<b>730.1</b>
Erie County Safety Measures and Targets				
Measure	Baseline (2014-2018)	Baseline (2016-2020)	Target (2016-2020)	Target (2018-2022)
Number of fatalities	23.3	23.2	27.2	<b>18.2</b>
Rate of fatalities per 100 million VMT	1.085	1.129	1.301	<b>0.958</b>
Number of serious injuries	83.1	85.8	78.8	<b>79.4</b>
Rate of serious injuries per 100 million VMT	3.871	4.175	3.768	<b>4.180</b>
Number of non-motorized fatalities & serious injuries	20.5	18.0	16.4	<b>14.6</b>
Methods for Developing Targets				
An analysis of Pennsylvania's historic safety trends was utilized as the basis for PennDOT and MPO/RPO coordination on the State's safety targets. The targets listed above are based on a 2% annual reduction for fatalities and maintaining levels for suspected serious injuries, which was derived from the actions listed in the <a href="#">Strategic Highway Safety Plan (SHSP)</a> , crash data analysis and the desire to support the national initiative Toward Zero Deaths.				

The Erie MPO received these most recent targets in October 2021 and agreed—as in past years—to contribute toward the accomplishment of statewide targets at the December 2021 Coordinating Committee meeting.

## Progress towards Target Achievement and Reporting

Safety is the most important factor of project selection at the Erie MPO. This is evidenced by the MPO’s LRTP Project Prioritization Criteria, the addition of a safety line item to the Highway/Bridge TIP, and through increasingly close and detailed collaboration of the allocation of Highway Safety Improvement Program (HSIP) dollars with PennDOT District 1-0’s Traffic Safety staff. Crash data (including the type and frequency of crashes) and the cost-benefit ratio of anticipated safety improvements are discussed between the MPO and the District using the outputs from the Network Screening Tool. Programming-level decisions are made as a direct result of these conversations.

Federal funds specially allocated to safety projects are named Highway Safety Improvement Program funds (HSIP). Erie County is allocated \$6,694,000 million in HSIP funds over the four years of the Highway/Bridge TIP. Additional HSIP can be applied for called HSIP Set-Aside (sHSIP). Set-Aside funds are applied for through the MPO and PennDOT District 1-0 as needed.

## Evaluation of 2023-2026 Erie MPO TIP for Target Achievement

The network screening tool was used to determine projects that would improve safety. There were 77 intersections and 66 segments with positive excess costs in Erie County. Projects in those areas qualify for HSIP funding. The Long Range Transportation Plan made use of the network-screening tool to develop projects. The plan was adopted March 9, 2022 and there was not enough time to attach them to the draft 2023 Transportation Improvement Program. Therefore, over \$8 million of the Erie MPO’s base allocation of HSIP funding was put in a line item to be assigned to projects from the Long Range Transportation Plan as later amendments.

MPMS projects receiving the Erie MPO’s base allocation of HSIP funds are listed in the chart below.

Projects on the 2023-2026 Highway/Bridge TIP with HSIP base funding		
HSIP Funding	MPMS Number	Name of Project
\$253,753	99729	US 20 : Zuck Road to Chestnut Street
\$8,479,247	106421	Erie Highway/Bridge Line Item

In addition, PennDOT District 1-0 applied for the statewide HSIP Set Aside funding that was open from August 1 to September 30, 2021. A data-driven safety analysis in the form of Benefit/Cost (B/C) Life Cycle analysis or Highway Safety Manual (HSM) analysis was required for each application. Project evaluation criteria included fatal and injury crashes, application of systematic improvements, and deliverability. Funds awarded by PennDOT Program Center appear as sHSIP.

The sHSIP projects awarded to the Erie MPO are listed in the chart below.

Projects on the 2023-2026 Highway/Bridge TIP with sHSIP funds		
sHSIP Funding	MPMS Number	Name of Project
\$1,000,000	109147	Zuck Road: Zimmerly to SR20 (26 <sup>th</sup> St)
\$824,000	117991	Erie County High Friction Surface Treatments

Several other, non-HSIP-funded projects on the TIP are likely to achieve significant and measurable safety benefits. An example is below.

Additional projects on the 2023-2026 Highway/Bridge TIP that will enhance safety			
Type of Funds	Amount of funding	MPMS Number	Name of Project
RRX	\$350,000	111147	Huntley Road Railroad Crossing in Springfield Township

Through the PennDOT Connects process, District 1-0 and the Erie MPO consider ways to work with municipalities to enhance all projects to make them safer. New for the 2023-2026 Highway/Bridge TIP is a line item for safety improvements. This line item is state funding with the purpose of completing low-cost projects that HSIP funds cannot fund. This line item is 100% State 581 funded with a total of \$1,000,000 over four years.

Additional projects on the 2023-2026 Highway/Bridge TIP that will enhance safety		
Type of Funds	MPMS Number	Name of Project
581	90384	Erie County Safety line item \$250,000/year

## Pavement/Bridge Performance Measures (PM2)

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The FHWA rule for the National Performance Management Measures; Assessing Pavement and Bridge Condition for the National Highway Performance Program was published in the Federal Register ([82 FR 5886](#)) on January 18, 2017 and became effective on February 17, 2017. This rule established six measures related to the condition of the infrastructure on the National Highway System (NHS). The measures are commonly known as PM2. The current regulations are found at [23 CFR 490 Subpart C and Subpart D](#). Targets are established biennially for these measures as part of a four-year performance period, the first of which began in 2018.

Data for the pavement and bridge measures are based on information maintained in PennDOT's Roadway Management System (RMS) and Bridge Management System (BMS). The VMT are derived from the Highway Performance Monitoring System (HPMS).

### Pavement

Federal regulations require that no more than 5 percent of Pennsylvania's NHS Interstate lane miles be in Poor pavement condition. If that requirement is not met, restrictions are placed on how PennDOT can allocate federal NHPP and Surface Transportation Program (STP) funds. Although FHWA has not established a minimum condition for NHS non-Interstate roadways, PennDOT has established performance targets for the non-Interstate NHS roadways. The Erie MPO has adopted federal interstate and PennDOT's non-Interstate NHS roadways pavement targets.

Pavement performance is measured by distress components:

<b>International Roughness Index (IRI)</b>	Quantifies how rough the pavement is by measuring the longitudinal profile of a traveled wheel track and generating a standardized roughness value in inches per mile
<b>Cracking</b>	Measures the percentage of pavement surface that is cracked
<b>Rutting</b>	Measures the depth of ruts (surface depression) in bituminous pavement in inches
<b>Faulting</b>	Quantifies the difference in elevation across transverse concrete pavement joints in inches

These distress measurements translate to a composite score of Good, Fair, or Poor. The table below shows the percentage of lane miles in both poor and good condition in 2017 and 2019 as measured by PennDOT. The table also shows the statewide targets for 2019, 2021 and 2023. While not specific to Erie County, these statewide targets were formally adopted by the Erie MPO in November of 2018. The pavement targets remained the same for 2023, and were reaffirmed by the Erie MPO in December of 2020.

Statewide Pavement Performance Measure Targets*					
Measure	Baseline Performance 2017	2-Year Performance 2019	2-Year Target 2019	4-Year Target 2021	4- Year Target 2023
% of Interstate pavements in Good condition	67.2 %	71.5%	N/A	60.0 %	60.0 %
% of Interstate pavements in Poor condition	0.4 %	0.4%	N/A	2.0 %	2.0 %
% of non-Interstate NHS pavements in Good condition	36.8 %	37.6%	35.0 %	33.0 %	33.0 %
% of non-Interstate NHS pavements in Poor condition	2.3 %	2.0%	4.0 %	5.0 %	5.0 %

**Methods for Developing Statewide Targets**

\*Pennsylvania’s pavement will be established by October 2022 through extensive coordination with a Transportation Asset Management Plan (TAMP) steering committee and workshops with MPOs/RPOs and FHWA’s Pennsylvania Division. The targets will be consistent with PennDOT’s asset management objectives of maintaining the system at the desired state of good repair, managing to lowest life cycle costs (LLCC), and achieving national and state transportation goals.<sup>1</sup> Targets are expected to be calculated based general system degradation (deterioration curves) offset by improvements expected from delivery of the projects in the TIP along with planned state funded maintenance projects.

<sup>1</sup> For more information on LLCC: <https://www.penndot.gov/ProjectAndPrograms/Asset-Management/Documents/Lowest-Life-Cycle-Cost-Infographic.pdf>

The Erie MPO relies on PennDOT to implement asset management decision-making as outlined in the TAMP.<sup>2</sup> PennDOT is transitioning to the new TAMP that was finalized in the summer of 2022. The tools and methodologies are continually evaluated to prioritize state-of-good repair approaches that preserve transportation system assets. Within the TAMP, PennDOT identifies the following key objectives:

- TAMP Objectives {
- Sustain a desired state of good repair over the life cycle of assets
  - Achieve the lowest practical life-cycle cost for assets
  - Achieve national and state goals

After the 2022-2025 performance targets are set, PennDOT will provide feedback on statewide and Erie MPO-specific progress towards target achievement. The progress will help the MPO understand the impacts of their past pavement investments and can guide future planning goals and strategy. The MPO also relied on PennDOT’s use of the Pavement Assets Management System (PAMS) to determine priority projects.

### Progress towards Target Achievement and Reporting

The only roads in Erie County that contribute to PM2 targets are on the NHS. This includes the three interstates that go through Erie County—I-90, I-79 and I-86. It also includes principal arterials. Both are shown on the following map. The light blue indicates Interstate Highways and the pink indicates principal arterials.

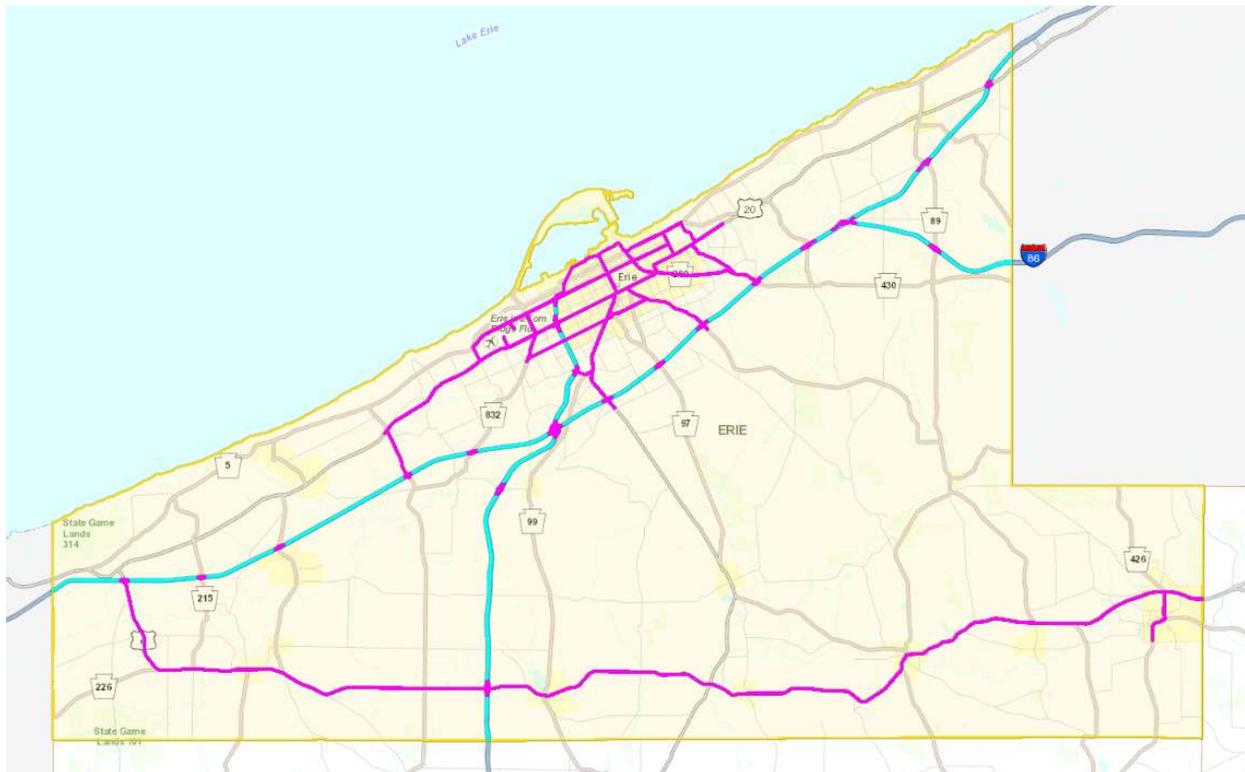


Figure 1: Performance measures 2 and 3 are calculated on the NHS system only. The map above shows the NHS system in Erie County. The blue roads are Interstate Highways and the pink roads are principal arterials. Image from [PennDOT One Map](#).

<sup>2</sup> PennDOT TAMP: <https://www.penndot.pa.gov/ProjectAndPrograms/Asset-Management/Pages/default.aspx>

Interstate projects are found on the Interstate Program managed by the Interstate Steering Committee (ISC). PennDOT formed the ISC in summer of 2015 with representation from PennDOT’s Center for Program Development and Management (CPDM), the Bureau of Maintenance Operations (BOMO), the Bureau of Project Delivery (BPD), and the Districts. The ISC works with PennDOT, MPO/RPOs, Federal Highway Administration (FHWA) and State Transportation Commission (STC) on the development and management of the IM Program.

The projects in Erie County that will contribute to pavement condition targets on the Instate Highways are listed below.

<b>Interstate Projects on the 2023-2026 Erie MPO TIP</b>			
<b>Type of Funds</b>	<b>MPMS Number</b>	<b>Name of Project</b>	<b>Funding</b>
NHPP	102039	I-90: MP 3.5 to 7 Reconstruct - #1	\$15,570,960
581, NHPP	102041	I-90: MP 10.5 to 14.5 Reconstruct - #6	\$7,477,412
581, NHPP	102044	I-90: MP 14.5 - 18, Reconstruct - #6	\$318,606

In addition to the interstates, Erie County has roads other roads on the National Highway System. For example, US Route 20 (26th Street) from Fairview Township to Harborcreek Township is part of the NHS. These roads are show in pink on the map in Figure 1. Projects on these roads are found on the Highway/Bridge Program. The following table shows 12 of the 20 pavement projects on the Highway/Bridge program will increase the amount of pavement in good condition on non-Interstate NHS routes and contribute to Pennsylvania’s targets.

<b>Other NHS Projects on the 2023-2026 Erie MPO TIP</b>			
<b>Type of Funds</b>	<b>MPMS Number</b>	<b>Name of Project</b>	<b>Funding</b>
NHPP	90283	US 6: PA 8 to DOT Shed	\$1,500,000
NHPP	99753	SR 3006: SR 20 to SR 226	\$2,278,000
581	99750	PA 832: 26th St to Presque Isle State Park	\$5,301,000
NHPP	114067	SR 19: I-90 to Rotunda Drive	\$2,830,000
STP	99729	US 20 : Zuck Road to Chestnut Street (Millcreek, City of Erie)	\$254,000
NHPP, 581	113882	US 20: Schley St to Harborcreek (City of Erie and Wesleyville)	\$4,114,000
581	87030	US 20: SR 98 to Millfair Rd (Fairview)	\$5,588,000
NHPP	99023	PA 77: Church St to SR 426	\$1,500,000
581	109141	PA 426: 2020 and SR 2029 in the City of Corry	\$5,800,000
NHPP	99000	PA 290: Bayfront Connector	\$3,797,000
NHPP	73242	SR 430: SR 290 to Shannon Rd	\$1,725,000
NHPP, BUILD, 581, e581, sSTP	108952	Central Bayfront Parkway Multimodal	\$16,357,000

## Bridges

The FHWA final rulemaking of PM2 also established performance measures for all mainline Interstate Highway System and non-Interstate NHS bridges regardless of ownership or maintenance responsibility, including bridges on ramps connecting to the NHS and NHS bridges that span a state border. FHWA’s performance measures aim to assess bridge condition by deriving the percentage of NHS bridges rated in good and poor condition by deck area on the NHS.

Separate bridge structure condition ratings are collected for deck, superstructure, and substructure components during regular inspections using the National Bridge Inventory (NBI) Standards. For culvert structures, only one condition rating is collected (the culvert rating). A rating of 9 to 0 on the FHWA condition scale is assigned to each component. Based on its score, a component is given a good (value of 7-9), fair (5-6), or poor (0-4) condition score rating. A structure’s overall condition rating is determined by the lowest rating of its deck, superstructure, substructure, and/or culvert. If any of the components of a structure qualify as poor, the structure is rated as poor.

23 CFR 490.411(a) requires that no more than 10 percent of a state’s total NHS bridges by deck area are in poor condition. PennDOT’s BOMO and Engineering Districts utilize the Bridge Asset Management System (BAMS). The targets are consistent with PennDOT’s asset management objectives of maintaining the system at the desired state of good repair, managing to lowest life cycle costs (LLCC), and achieving national and state transportation goals. As was done with pavement condition, statewide performance targets (as shown below) were adopted by the Erie MPO in November of 2018. While the targets did not change, the 4-year goals were reaffirmed in 2020.

Statewide Bridge Performance Measure Targets*					
Measure	Baseline 2017	2-Year Performance 2019	2-year Target 2019	4-Year Target 2021	4-Year Target 2023
% of NHS bridges in Good condition	25.6 %	27.0%	25.8%	26.0 %	26.0 %
% of NHS bridges in Poor condition	5.5 %	5.1%	5.6%	6.0%	6.0%
Methods for Developing Statewide Targets					
<p>*Pennsylvania’s bridge targets will be established by October 2022 through extensive coordination with a Transportation Asset Management Plan (TAMP) steering committee and workshops with MPOs/RPOs and FHWA’s Pennsylvania Division. The targets will be consistent with PennDOT’s asset management objectives of maintaining the system at the desired state of good repair, managing to lowest life cycle costs (LLCC), and achieving national and state transportation goals.<sup>3</sup> Targets are expected to be calculated based general system degradation (deterioration curves) offset by improvements expected from delivery of the projects in the TIP along with planned state funded maintenance projects.</p>					

<sup>3</sup> For more information on LLCC: <https://www.penndot.gov/ProjectAndPrograms/Asset-Management/Documents/Lowest-Life-Cycle-Cost-Infographic.pdf>

## Progress towards Target Achievement and Reporting

As with pavement targets, the only bridges in Erie County that contribute to PM2 targets are on the NHS shown in Figure 1. Bridges on the three Interstate Highways in Erie County are included in the Interstate program. Those bridges are listed in the chart below. Their deck condition contributes to the statewide bridge performance targets. In addition to those bridges, the Highway/Bridge TIP contains 13 bridges that go over interstates. However, because those bridges do not intersect with the NHS, their deck condition does not contribute to the statewide targets, and are therefore not listed here.

NHS Bridges in the 2023-2026 Interstate TIP			
Type of Funds	MPMS Number	Name of Project	Funding
185	115467	Interstate 79 Conrail Bridges	\$10,600,000

There are a total of 28 bridge projects included in the Highway/Bridge TIP. Of these projects, 6 bridges are on the NHS network. The projects listed below will increase the percentage of bridges by deck area that are in Good condition and work towards Pennsylvania's targets.

NHS Bridges in the 2023-2026 Highway/Bridge TIP			
Type of Funds	MPMS Number	Name of Project	Funding
185	97157	SR 5 Bridge over CSX Railroad	\$500,000
NHPP, 185	97240	US 6 Bridge over French Creek Tributary	\$125,000
185	995	US 6 Bridge on Columbus Ave over Hare Creek	\$625,000
185	97206	SR 8 Bridge over Mill Creek	\$100,000
185	97178	SR 290 Bridge over Broad St (US 20)	\$150,000

## System Performance Measures (PM3)

The FHWA final rule for the *National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program* was published in the Federal Register ([82 FR 5970](#)) on January 18, 2017 and became effective on May 20, 2017. This rule established six measures related to various aspects of the transportation system (commonly known as PM3). The current regulations are found at [23 CFR 490 Subparts E, F, G & H](#). Targets are established for these measures as part of a four-year performance period. As with PM2, these performance measures apply only to roadways on the NHS.

Statewide targets are established for a four-year performance period that are reviewed biennially by PennDOT. The first performance period began in 2018. The Regional Integrated Transportation Information System (RITIS) software platform is used by PennDOT to generate all the travel time-based measures.

The three statewide targets that relate to Erie County are:

- Percent of Person-miles Traveled on the Interstate System that are Reliable
- Percent of Person-miles Traveled on the Non-Interstate NHS that are Reliable
- Truck Travel Time Reliability Index – Interstate System Only

The Erie MPO formally adopted PennDOT’s statewide targets for PM3 in November 2018. A revision to interstate reliability and truck reliability was adopted by the Erie MPO in December 2020. PennDOT will evaluate the 2021 Baseline data and develop 2-year targets for 2023 and 4-year targets for 2025. These will be established by October 2022. The most recent PM3 targets adopted by the Erie MPO are illustrated in the following table.

<b>Statewide Travel Time and Annual Peak Hour Excessive Delay Targets</b>				
<b>Measure</b>	<b>Baseline 2017</b>	<b>2-Year Target 2019</b>	<b>4-Year Target 2021</b>	<b>4-Year Target 2023</b>
Interstate Reliability	89.8 %	89.8 %	89.8 %	89.5%
Non-Interstate Reliability	87.4 %	N/A	87.4 %	87.4%
Truck Reliability Index	1.34	1.34	1.34	1.40
<b>Methods for Developing Targets</b>				
PennDOT will updated System Performance measure targets by October 2022 in coordination with the Erie MPO. PennDOT continues to evaluate historic variances in performance measures in relation to project completion to assist with the target setting process.				

### **Progress towards Target Achievement and Reporting**

PennDOT and the MPO continue efforts to ensure the TIP is developed and managed to support progress toward the achievement of the statewide system reliability targets. This future progress will be measured against the targets established for the 2022-2025 performance period. PennDOT continues to monitor the impacts of completed investments on performance measures to better evaluate investment strategies. These efforts include evaluating the causes of historic reliability and delay issues, identifying freight bottlenecks, and assessing completed projects that provided the most benefits to reliability.

At the mid-performance period (2019), Pennsylvania met the established 2-year target for interstate reliability. Although a 2-year target is not applicable to the non-interstate reliability, the mid-performance period data already met and exceeded the 4-year target. However, the state did not meet the 2-year truck travel time reliability index target.

PennDOT provided Erie County Travel Times for informational purposes. Erie County NHS reliability follows the trends of the state. At the mid-performance period (2019) Interstate reliability on I-90, I-79 and I-86 in the County was maintained from the 2017 baseline data at 100%. The reliability on non-Interstate NHS improved over the two-year period. However, like the rest of the state, the truck reliability index decreased in Erie County indicating more delay from the 2017 baseline data.

Erie County Travel Reliability			
Measure	Baseline 2017	2018	2019
Interstate Reliability	100.0%	100.0%	100.0%
Non-Interstate NHS Reliability	83.9%	86.7%	88.2%
Truck Reliability Index	1.25	1.23	1.29

Erie County is not in a Transportation Management Area (TMA) and is not required to monitor congestion. The Erie MPO also does not receive CMAQ funds for congestion management.

### Evaluation of TIP for Target Achievement

PennDOT and the Erie MPO work together to achieve an improvement in the system performance measures for the statewide interstate and NHS road system. The Erie MPO and PennDOT continue the Transportation Systems Management and Operations (TSMO) initiative to program low-cost technology solutions to optimize infrastructure performance. This has included the development of the Western Regional Operations Plans (ROP), which includes Erie County. The Erie MPO has successfully applied for TSMO grant funds for improvements recommended in the Western ROP. Inclusion in the ROP was also used as an evaluation criterion for proposed projects in the Erie MPO's recent update to the Long Range Transportation Plan.

In addition, multimodal projects in the 2023-2026 TIP may help to reduce congestion. These include transit operating costs and transit infrastructure that provides opportunities to reduce vehicle miles of travel (VMT). Other projects will enhance bike and pedestrian access, such as the trail expansion included in the Central Bayfront Multimodal project. In order to encourage these projects, the Erie MPO and PennDOT have been funding and/or supporting Active Transportation Plans in various municipalities in Erie County. The projects and programmed 2023-2026 TIP funding that work towards the statewide travel reliability targets are listed in the chart below.

Erie MPO 2023-2026 TIP Projects that contribute to travel reliability targets			
Type of Funds	MPMS Number	Name of Project	Funding Amount FFY 2023-2026
Transit	77216	Replace Fixed Route Buses	\$5,000,000
Transit	77129	Replace Paratransit Buses	\$1,800,000
Transit	77132	Acquire Miscellaneous Equipment	\$25,908
Transit	NA	Operating Subsidy	\$67,046,392
Highway/Bridge	116638	I-79 Erie County ITS Addition- Interchange-TSMO	\$319,000
Highway/Bridge	116639	I-90 Erie County ITS Addition- SR 19- TSMO	\$319,000
Highway/Bridge	108952	Central Bayfront Multimodal	\$16,357,000







Transit Safety Performance Targets							
2019							
Mode of Transit Service	Fatalities (total)	Fatalities (per 100K VRM)	Injuries (Total)	Injuries (per 100K VRM)	Safety Events (Total)	Safety Events (per 100K VRM)	System Reliability (total)
Fixed-Route	0	0	9	0.88	5	0.49	13,846
Para-Transit	0	0	2	0.40	3	0.60	7,390
2020							
Mode of Transit Service	Fatalities (total)	Fatalities (per 100K VRM)	Injuries (Total)	Injuries (per 100K VRM)	Safety Events (Total)	Safety Events (per 100K VRM)	System Reliability (total)
Fixed-Route	0	0	7	0.48	2	0.14	52,598
Para-Transit	0	0	2	0.29	2	0.29	18,440

**Evaluation of TIP for Target Achievement:**

The Erie MPO and EMTA work together to create and adopt transit safety performance targets. The 2023-2026 Public Transit TIP Operating Subsidy allows EMTA to review, coordinate and update its Safety Plan at any point when information, processes or activities change within the EMTA or when it has been determined that:

- the current approach to mitigating safety deficiencies is ineffective;
- significant changes to service delivery are necessary;
- new processes or procedures that may impact safety have been implemented;
- changes or re-prioritization of resources is necessary to support SMS;
- significant changes in its organizational structure are necessary;
- it has been a year since the last review of the plan.

Projects that address Transit Safety Performance Targets	
Name of Project	Funding
Operating Subsidy	\$67,046,392