

Transportation Performance Management

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 ensures that the Pennsylvania Department of Transportation (PennDOT) and the Metropolitan/Rural Planning Organizations (MPOs/RPOs) collectively invest Federal transportation funds efficiently towards achieving national goals. The Southern Alleghenies RPO follows these same requirements.

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 Areas	
Safety	<ul style="list-style-type: none"> To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
Infrastructure Condition	<ul style="list-style-type: none"> To maintain the highway infrastructure asset system in a state of good repair
Congestion Reduction	<ul style="list-style-type: none"> To achieve a significant reduction in congestion on the National Highway System
System Reliability	<ul style="list-style-type: none"> To improve the efficiency of the surface transportation system
Freight Movement and Economic Vitality	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced Project Delivery Delays	<ul style="list-style-type: none"> 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

Pennsylvania continues to follow a Performance Based Planning and Programming (PBPP) process, with a focus on collaboration between PennDOT, FHWA, and MPOs/RPOs at the county and regional levels. These activities are carried out as part of a cooperative, continuing, and comprehensive (3C) planning process which guides the development of many PBPP documents, including:

- Statewide and Regional Long Range Transportation Plans (LRTPs)
- Twelve-Year Transportation Program (TYP)
- State Transportation Improvement Program (STIP)
- Regional Transportation Improvement Programs (TIPs)
- Transportation Asset Management Plan (TAMP)
- Transit Asset Management (TAM) Plans

- Pennsylvania Strategic Highway Safety Plan (SHSP)
- Comprehensive Freight Movement Plan (CFMP)
- Regional Operations Plans (ROPs)

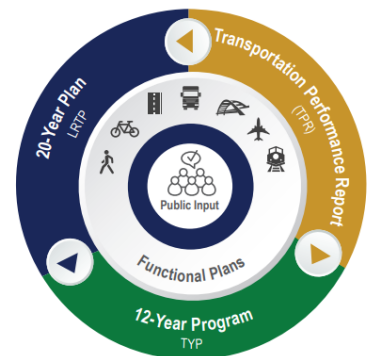
The above documents in combination with data resources including PennDOT’s bridge and pavement management systems, crash databases, historical travel time archives, and the CMAQ public access system provide the resources to monitor federal performance measures and evaluate needs across the state. Based on these resources, PennDOT and MPOs/RPOs have worked together to (1) create data driven procedures that are based on principles of asset management, safety improvement, congestion reduction, and improved air quality, (2) make investment decisions based on these processes, and (3) work to set targets that are predicted to be achieved from the programmed projects. Aligning goals and performance objectives across national (FHWA), state (PennDOT) and regions (MPOs/RPOs) provide a common framework for decision-making.



PennDOT, in cooperation with the MPOs/RPOs, has developed written provisions for how they will cooperatively develop, and share information related to the key elements of the PBPP process including the selection and reporting of performance targets. These PBPP written provisions are provided later in the TIP. In addition, PennDOT has updated their Financial Guidance to be consistent with the PBPP provisions. The Financial Guidance provides the near term revenues that support the STIP and is provided.

Evaluating 2023-2026 STIP Performance

The Federal Fiscal Year (FFY) 2023-2026 State Transportation Improvement Program (STIP) supports the goal areas established in PennDOT’s current long range transportation plan (Pennsylvania 2045). These include safety, mobility, equity, resilience, performance and resources. The goals are aligned with the national goal areas and federal performance measures and guide PennDOT in addressing transportation priorities.



The following sections provide an overview of the federal performance measures. Since asset management, reliability and CMAQ targets have not yet been set for the 2022-2025 performance period, the current project selection process for the FY2023-2026 TIP is highlighted and related to meeting future targets. Over the 4-year STIP, nearly 85% of the total funding is associated with highway and bridge reconstruction, preservation, and restoration projects. However, these projects are also anticipated to provide significant improvements to highway safety and traffic reliability for both passenger and freight travel. Through these performance measures, PennDOT will continue to track performance outcomes and program impacts on meeting the transportation goals and targets. Decision support tools including transportation data and project-level prioritization methods will be continually

developed and enhanced to meet PennDOT and MPO/RPO needs. Dashboards and other reporting tools will be maintained to track and communicate performance to the public and decision-makers.

Safety Performance Measures (PM1)

Background		
The FHWA rules for the <i>National Performance Management Measures: Highway Safety Improvement Program</i> (Safety PM) and <i>Highway Safety Improvement Program</i> (HSIP) were published in the Federal Register (81 FR 13881 and 81 FR 13722) 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 23 CFR 490 Subpart B and 23 CFR 924 . Targets for the safety measures are established on an annual basis.		
Data Source		
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).		
2022 Safety Measures and Targets (Statewide)		
Measure	Baseline (2016-2020)	Target (2018-2022)
Number of fatalities	1,140.6	1,113.7
Rate of fatalities per 100 million VMT	1.157	1.205
Number of serious injuries	4445.6	4,490.8
Rate of serious injuries per 100 million VMT	4.510	4.860
Number of non-motorized fatalities & serious injuries	761.2	730.1
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 Strategic Highway Safety Plan (SHSP) , crash data analysis and the desire to support the national initiative Toward Zero Deaths.		

Progress Towards Target Achievement and Reporting:

PennDOT and the Southern Alleghenies RPO continue efforts to ensure the STIP, regional TIPs, and Long-Range Transportation Plans (LRTPs) are developed and managed to support progress toward the achievement of the statewide safety targets.

PennDOT's Strategic Highway Safety Plan (SHSP) serves as a blueprint to reduce fatalities and serious injuries on Pennsylvania roadways and targets 18 Safety Focus Areas (SFAs) that have the most influence on improving highway safety throughout the state. Within the SHSP, PennDOT identifies 3 key emphasis areas to improve safety – impaired driving, lane departure crashes, and pedestrian safety.

2022 SHSP Safety Focus Areas			
Lane Departure Crashes	Speed & Aggressive Driving	Seat Belt Usage	Impaired Driving
Intersection Safety	Mature Driver Safety	Local Road Safety	Motorcycle Safety
Pedestrian Safety	Bicycle Safety	Commercial Vehicle Safety	Young & Inexperienced Drivers
Distracted Driving	Traffic Records Data	Work Zone Safety	Transportation Systems Management & Operations
Emergency Medical Services	Vehicle-Train Crashes		

Pursuant to 23 CFR 490.211(c)(2), a State Department of Transportation (DOT) has met or made significant progress toward meeting its safety performance targets when at least 4 of the 5 safety performance targets established under 23 CFR 490.209(a) have been met or the actual outcome is better than the baseline performance for the year prior to the establishment of the target. For Pennsylvania's 2020 targets, the FHWA determined in March 2022 that Pennsylvania did not meet the statewide targets and is subject to the provisions of 23 U.S.C. § 148 (i). This requires the Department to submit an implementation plan that identifies gaps, develops strategies, action steps and best practices, and includes a financial and performance review of all HSIP funded projects. In addition, the Department is required to obligate in Federal Fiscal Year (FFY) 2023 an amount equal to the FFY 2019 HSIP apportionment.

As part of the Highway Safety Improvement Program Implementation Plan, the Department identified gaps and best practices to support further reducing serious injuries and fatalities. The following opportunities were identified as ways to assist with meeting future targets: (1) appropriate project selection, (2) expanding local road safety in HSIP, (3) assessing programs that support non-motorized safety, (4) expanding use of systemic safety projects, (5) improved project tracking for evaluation purposes and (6) project prioritization for greater effectiveness.

PennDOT continues to provide feedback on statewide and MPO/RPO-specific progress towards target achievement. The progress helps regional MPOs/RPOs understand the impacts of their past safety investments and can guide future planning goals and strategy assessments.

Evaluation of STIP for Target Achievement:

The following will ensure that planned projects in the STIP will help to achieve a significant reduction of traffic fatalities and serious injuries on all public roads:

- PennDOT receives federal funding for its Highway Safety Improvement Program (HSIP). The 2023-2026 STIP includes \$520 million of HSIP funding. The Department distributes nearly 70% of this funding to its regions based on fatalities, serious injuries, and reportable crashes. In addition, a portion of the HSIP funding is reserved for various safety initiatives statewide. A complete listing of the HSIP projects is included in **Appendix**.
- All projects utilizing HSIP funds are evaluated based on a Benefit/Cost (B/C) analysis, Highway Safety Manual (HSM) analysis, fatal and injury crashes, application of systemic improvements, improvements on high-risk rural roads, and deliverability. Specifically, as part of PennDOT's HSIP application process, a data-driven safety analysis in the form of B/C analysis or HSM analysis is required. Performing this analysis early in the planning process for all projects will help ensure projects selected for inclusion in the TIP will support the fatality and serious injury reductions goals established under PM1.

- The process for selecting safety projects for inclusion in the TIP begins with the Network Screening Evaluation that the Department has performed on a statewide basis. Selecting locations with an excess crash frequency greater than zero from this network screening is key to identifying locations with a high potential to improve safety. This evaluation has been mapped and is included in PennDOT's OneMap to ease use by PennDOT's partners. At the current time, this is not all inclusive for every road in Pennsylvania. Locations not currently evaluated may be considered by performing the same type of excess crash frequency evaluation the Department utilizes. Once this analysis has been performed, the data is used by the Engineering Districts and planning partners to assist MPO/RPO's in evaluating different factors to address the safety concern
- PennDOT continues to improve on the methods to perceive, define and analyze safety. This includes integration of Regionalized Safety Performance Functions (SPFs) that have been used to support network screening of over 20,000 locations.¹
- PennDOT continues to identify new strategies to improve safety performance. PennDOT is actively participating in EDC 5 to identify opportunities to improve pedestrian safety as well as reduce rural roadway departures. These efforts new strategies are incorporated into future updates to the SHSP.
- Safety continues to be a project prioritization criterion used for selecting other STIP highway and bridge restoration or reconstruction projects. Many of these projects also provide important safety benefits.
- PennDOT continues to evaluate procedures to help in assessing how the STIP supports the achievement of the safety targets. As HSIP projects progress to the engineering and design phases, Highway Safety Manual (HSM) predictive analyses are completed for the project in accordance with PennDOT Publication 638. The HSM methods are the best available state of practice in safety analysis and provides quantitative ways to measure and make safety decisions related to safety performance. PennDOT will continue to identify ways to expand the application of HSM analyses to support more detailed assessments of how the STIP is supporting achievement of the safety targets.
- The Southern Alleghenies RPO 2023-2026 TIP has approximately \$10.5 million allocated to safety projects.

Pavement/Bridge Performance Measures (PM2)

Background

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 for these measures as part of a four-year performance period, the first was 2018 to 2021. This TIP includes projects that will impact the second four-year performance period of 2022 to 2025.

Data Source

¹ For more information on SPFs: <https://www.penndot.gov/ProjectAndPrograms/Planning/Research-And-Implementation/Pages/activeProjects/Safety-Performance-Functions.aspx>

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).

2022-2025 Pavement Performance Measure Targets (Statewide) – Due October 1st 2022

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
% of Interstate pavements in Good condition	71.5%	TBD	60.0%
% of Interstate pavements in Poor condition	0.4%	TBD	2.0%
% of non-Interstate NHS pavements in Good condition	37.6%	35.0%	33.0%
% of non-Interstate NHS pavements in Poor condition	2.0%	4.0%	5.0%

Bridge Performance Measure Targets (Statewide)

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
% of NHS bridges by deck area in Good condition	27.0%	25.8%	26.0%
% of NHS bridges by deck area in Poor condition	5.1%	5.6%	6.0%

Methods for Developing Targets

Pennsylvania’s pavement and 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.² 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.

Progress Towards Target Achievement and Reporting:

PennDOT continues to implement enterprise asset management for programming and decision-making as outlined in the TAMP.³ 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

PennDOT’s analyses pertaining to life cycle management, risk management, financial planning, and any performance gaps culminate in an investment strategy to support the objectives and goals established in the TAMP.

PennDOT and the RPO continue to ensure the STIP, regional TIPs, and LRTPs are developed and managed to support progress toward the achievement of the statewide pavement/bridge objectives and targets that will be established for the 2022-2025 performance period. Pennsylvania’s pavement and

² For more information on LLCC: <https://www.penndot.gov/ProjectAndPrograms/Asset-Management/Documents/Lowest-Life-Cycle-Cost-Infographic.pdf>

³ PennDOT TAMP: <https://www.penndot.pa.gov/ProjectAndPrograms/Asset-Management/Pages/default.aspx>

bridge projects provided in the FY2023-2026 TIP were selected through extensive coordination with PennDOT's Asset Management Section in accordance with the TAMP. The projects 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.

After the 2022-2025 performance targets are set, PennDOT will provide feedback on statewide and RPO-specific progress towards target achievement. The progress helps each region understand the impacts of their past bridge and pavement investments and can guide future planning goals and strategy assessments.

The Southern Alleghenies RPO, in coordination with PennDOT District 9-0, has continued to monitor trends in support of the statewide targets. Examination of the trends of bridge and pavement conditions in the RPO has allowed the RPO and PennDOT to maximize transportation funding in the region and allocate the proper amount of funding to bridge and pavement projects.

Evaluation of STIP for Target Achievement:

The following has helped to ensure that planned projects in the STIP will help to maintain a desired state of good repair in bridge and pavement conditions for the interstate and NHS roadways:

- Nearly 85% of PennDOT's STIP funding is directed to highway and bridge preservation, restoration, and reconstruction projects. Many of these projects are focused on our state's interstate and NHS roadways.
- Pennsylvania's investment strategy, reflected in the statewide 2023 Twelve Year Program (TYP) and 2023-2026 STIP, is the result of numerous strategic decisions on which projects to advance at what time. PennDOT continues to address the challenges of addressing local needs and priorities, while ensuring a decision framework is applied consistently across the state.
- The TAMP provides a 12-year outlook that includes the financial strategy for various work types and is a driver for the TIP, STIP and LRTP development. The TAMP projects the levels of future investment necessary to meet the asset condition targets and contrasts them with expected funding levels. This helps PennDOT to make ongoing assessments and to reevaluate data associated with its future investment decisions.
- In support of the STIP development, PennDOT and MPOs/RPOs jointly developed and approved General and Procedural Guidance and Transportation Program Financial Guidance documents.⁴ The guidance, which is consistent with the TAMP, formalizes the process for Districts, MPOs/RPOs and other interested parties as they identify projects, perform a project technical evaluation, and reach consensus on their portion of the program.
- The Procedural Guidance also helps standardize the project prioritization process. The guidance is key to resolving issues between programming to lowest life-cycle cost, managing current infrastructure issues and risk mitigation. The resulting methodology allows data-driven, asset management-based decisions to be made with human input and insight based on field evaluations to achieve maximum performance of the available funds. The guidance document is revised for each STIP cycle as PennDOT's asset management tools and methods evolve and enhance its ability to program to lowest life cycle cost.
- In the short term, candidate projects are defined, and the proposed program is compared to Pavement Asset Management System (PAMS) and Bridge Asset Management System (BAMS)

⁴ The 2023 Financial Guidance can be found at: <https://talkpatransportation.com/how-it-works/tip>

outputs to verify that the program is developed to the lowest practical life cycle cost. The percentages of good and poor can also be projected for evaluation of how the program may impact the national performance measures. When PAMS and BAMS are further implemented and improved, then planners can use the systems to optimize the selection of projects to achieve optimal performance within the funding constraints. Draft programs can then be analyzed in relation to the PM2 measures.

Southern Alleghenies RPO PM-2 Performance Targets:

Federal pavement and bridge performance measures were implemented in 2017. PennDOT established initial Statewide Targets in August 2017. On December 16, 2020, the Southern Alleghenies RPO adopted supporting Pennsylvania’s Statewide Performance Measure Targets for PM-2.

PM-2 Baseline and Target Values for Pavement and Bridge Performance Measures

		Performance Measures	2017 Baseline	2-Year (2019) Performance	2-Year Target	4-Year Original Target	4-Year Adjusted Target
PM-2	Pavement (Statewide)	Percentage of Pavements of the Interstate System in Good Condition		71.5%		60.0%	
		Percentage of Pavements of the Interstate System in Poor Condition		0.4%		2.0%	
		Percentage of Pavements of the Non-Interstate NHS in Good Condition	47.8%	49.0%			
		Percentage of Pavements of the Non-Interstate NHS in Good Condition		37.6%	35.0%	33.0%	
		Percentage of Pavements of the Non-Interstate NHS in Poor Condition	15.9%	15.2%			
		Percentage of Pavements of the Non-Interstate NHS in Poor Condition		2.0%	4.0%	5.0%	
	Bridge (Statewide)	Percentage of NHS Bridges Classified as in Good Condition	23.7%	27.0%	25.8%	26.0%	
		Percentage of NHS Bridges Classified as in Poor Condition	5.1%	5.1%	5.6%	6.0%	

Roadway Projects:

District 9 updates its roadway inventories annually, which is used to update the Roadway Management System (RMS). This information is then used to update the District’s Roadway “5-Year Plan” process, where roadway needs are assessed and planned utilizing cycles that follow PennDOT’s Pavement Policy Manual. Utilizing this Plan, projects are then funded on the TIP/TYP. Factors for which projects are picked from the 5-Year Plan are: projects on the Decade of Investment (DOI) plan that still need to be constructed; fulfillment of and maintaining acceptable levels on the scorecard of influence; hierarchy (Business Plan Network) of the roadway (i.e., Interstate gets more preference than a 4-digit state route); current roadway conditions; and the next needed pavement treatment cycle.

Bridge Projects:

Replacements:

1. The current poor population and the condition 5 population are evaluated.

2. Prioritization by Business Plan Network: Interstate top priority and Non-NHS with less than 2,000 ADT lowest priority.
3. Consider roadway projects to determine if we can combine the bridge replacements, rehabilitations, and preservations with the roadway projects.

Rehabilitations:

Rehabilitations use the same logic as replacements but are usually on bridges where the condition ratings can be raised to a 6 or greater for all three major bridge components (substructures, superstructures and deck).

Preservation:

1. Rely on cycles for each preservation treatment:
 - a. 10 to 20-year cycle for deck overlays (depends on type of overlay and traffic volumes);
 - b. 10-year replacement cycle for expansion dam strip seal glands;
 - c. 15-year replacement cycle for tooth dam expansion troughs;
 - d. 50 to 75-year cycle to replace entire expansion dams;
 - e. 30 to 40-year cycle for painting steel girder bridges; and
 - f. 15 to 20-year cycle for painting steel trusses and steel through plate girders.
2. Most of the deck and joint preservations are included with roadway projects on Business Plan Networks 1 to 3.
3. Standalone group bridge preservation projects are established for:
 - a. Painting projects,
 - b. To get bridges on cycle when no roadway projects are planned,
 - c. To address Business Plan Network 4 when Department Forces cannot complete the work, and
 - d. Scour or substructure repairs.
4. Prioritize by Business Plan Network and by the highest cost assets (major river crossings).

Local Bridges: Through an RPO wide solicitation process, local bridge needs and priorities are prioritized by their respective counties. The RPO then compiles these priorities and submits them to District 9 for analysis against the Local Bridge Risk Assessment. The Rural Transportation Technical Committee's Local Bridge Sub-Committee reviews the county priorities and then submits an RPO local bridge priority list from which District 9 programs projects in priority order, until available funds are consumed.

Other Projects:

The 2023-2026 Southern Alleghenies TIP may also include funds for several projects that received funding from programs allocated on a statewide basis, including the following:

- Transportation Alternatives Set-Aside,
- Appalachian Regional Commission Local Access Road Program,
- Automated Red Light Enforcement and Green Light-Go Programs,
- Multimodal Transportation Fund,
- Congested Corridor Improvement Program,
- Rapid Bridge Replacement Program (P3),

- Highway-Rail Grade Crossing Safety Program (RRX), and
- Highway Safety Improvement Program (HSIP) Statewide Set-aside.

As new projects are successful in obtaining funding through these programs, Southern Alleghenies RPO will consider adding the projects to the approved TIP.

System Performance Measures (PM3)

Background			
<p>The FHWA final rule for the <i>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</i> 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, the first was 2018 to 2021. This TIP includes projects that will impact future performance periods based on when projects are constructed or completed.</p>			
Data Source			
<p>The Regional Integrated Transportation Information System (RITIS) software platform is used to generate the travel time-based measures. Data from the American Community Survey (ACS) and FHWA's CMAQ annual reporting system are used for the non-SOV travel and mobile source emissions measures, respectively.</p>			
Travel Time and Annual Peak Hour Excessive Delay Targets - Due October 1 st 2022			
Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
Interstate Reliability (Statewide)	89.9%	89.8%	89.5%
Non-Interstate Reliability (Statewide)	88.5%	TBD	87.4%
Truck Reliability Index (Statewide)	1.36	1.34	1.40
Annual Peak Hour Excessive Delay Hours Per Capita (Urbanized Area)	<i>Philadelphia - TBD</i>	14.6%	17.2%
	<i>Pittsburgh - TBD</i>	10.1%	11.8%
	<i>Reading</i>	TBD	TBD
	<i>Allentown</i>	TBD	TBD
	<i>Harrisburg</i>	TBD	TBD
	<i>York</i>	TBD	TBD
	<i>Lancaster</i>	TBD	TBD
Non-SOV Travel Measure Targets			
Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
Percent Non-Single Occupant Vehicle Travel (Urbanized Area)	<i>Philadelphia - TBD</i>	28.0%	28.1%
	<i>Pittsburgh - TBD</i>	24.6%	24.4%
CMAQ Emission Targets			
Measure		2-year Target 2023	4-year Target 2025
VOC Emissions (Statewide)		109.460	201.730
NOx Emissions (Statewide)		337.700	612.820
PM2.5 Emissions (Statewide)		10.760	20.490
PM10 Emissions (Statewide)		9.540	0.000
CO Emissions (Statewide)		567.700	250.000
Methods for Developing Targets			
<p>The System Performance measure targets will be established by October 2022 in coordination with MPOs/RPOs within the state. PennDOT continues to evaluate historic variances in performance measures in relation to project completion to assist with the target setting process.</p>			

Progress Towards Target Achievement and Reporting:

PennDOT and the RPO continue efforts to ensure the STIP, regional TIPs, and LRTPs are developed and managed to support the improvement of the reliability and CMAQ performance measures. 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.

PennDOT remains committed to expand and improve system mobility and integrate modal connections despite the large percentage of funding dedicated to infrastructure repair and maintenance. PennDOT’s LRTP provides objectives to address mobility across the transportation system that will guide investment decisions. The federal systems performance measures will be used to assess future progress in meeting these objectives and the associated targets.

PennDOT LRTP Mobility Goal and Objectives

MOBILITY

Strengthen transportation mobility to meet the increasingly dynamic needs of Pennsylvania residents, businesses, and visitors.

- Continue to improve system efficiency and reliability.
- Continue to improve public transportation awareness, access, and services throughout Pennsylvania.
- Provide and prioritize multimodal transportation choices to meet user needs, expand mobility options, and increase multimodal system capacity and connectivity.
- Implement regional transportation, land use standards, and tools that result in improved multimodal coordination and complementary development.
- Adapt to changing travel demands, including those associated with e-commerce and post-COVID-19 pandemic changes.
- Work with private sector partners to establish data standards for mobility services and their applications (e.g., Uber and Lyft, carsharing services, bikeshares, etc.)

Southern Alleghenies RPO PM-3 Performance Targets:

Federal reliability and air quality performance measures were implemented in 2017. PennDOT established initial Statewide Targets in August 2017. On December 16, 2020, the Southern Alleghenies RPO adopted supporting Pennsylvania's Statewide Safety Performance Measure Targets for PM-3.

Summary of MPO/RPO PM-3 Reliability Performance

Area (MPO/RPO)	Interstate Reliability			Non-Interstate Reliability			Truck Travel Time Reliability Index		
	2017 Baseline	2018	2019	2017 Baseline	2018	2019	2017 Baseline	2018	2019
Statewide Total	89.8%	89.6%	89.9%	87.4%	88.2%	88.4%	1.34	1.39	1.36
Statewide Target	89.8% -> Adjusted to 89.5% 2 & 4-Year Target			87.4% 4-Year Target			1.34 -> Adjusted to 1.40 2 & 4-Year Target		

Adams	Not Applicable			86.2%	89.8%	93.4%	Not Applicable		
Altoona	100.0%	100.0%	100.0%	82.7%	83.9%	84.4%	1.21	1.25	1.18
Centre	100.0%	100.0%	100.0%	91.3%	93.2%	94.9%	1.13	1.33	1.15
DVRPC	65.5%	66.0%	66.6%	81.2%	82.6%	83.2%	2.01	2.04	1.99
Erie	100.0%	100.0%	100.0%	83.8%	86.7%	88.2%	1.25	1.23	1.29
Franklin	100.0%	100.0%	100.0%	93.8%	96.5%	94.6%	1.08	1.11	1.09
Harrisburg	91.3%	92.7%	92.4%	91.0%	92.4%	90.3%	1.32	1.33	1.31
Johnstown	Not Applicable			93.0%	94.5%	95.6%	Not Applicable		
Lancaster	100.0%	100.0%	100.0%	95.2%	95.3%	92.1%	1.09	1.12	1.17
Lebanon	100.0%	100.0%	100.0%	97.5%	97.7%	95.4%	1.12	1.14	1.15
Lehigh Valley	100.0%	100.0%	99.5%	86.4%	84.6%	85.4%	1.32	1.34	1.35
NEPA	100.0%	100.0%	99.9%	91.9%	90.9%	93.1%	1.26	1.25	1.28
North Central	100.0%	100.0%	100.0%	93.0%	95.7%	95.6%	1.10	1.11	1.50
Northern Tier	100.0%	100.0%	100.0%	98.8%	99.1%	94.7%	1.24	1.17	1.18
Northwest	100.0%	100.0%	100.0%	87.5%	91.5%	91.8%	1.18	1.32	1.17
Reading	100.0%	100.0%	100.0%	93.2%	94.2%	95.0%	1.12	1.38	1.19
S. Alleghenies	100.0%	100.0%	100.0%	95.9%	96.7%	94.2%	1.11	1.13	1.16
Scranton	98.3%	98.3%	98.2%	87.4%	90.3%	90.1%	1.39	1.28	1.35
SEDA-COG	100.0%	100.0%	100.0%	95.7%	96.4%	96.2%	1.11	1.11	1.12
SPC	92.9%	91.6%	92.1%	87.0%	87.7%	88.9%	1.42	1.49	1.46
SVTS	99.3%	99.2%	100.0%	95.1%	96.7%	95.9%	1.18	1.59	1.14
Wayne	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1.11	1.12	1.17
Williamsport	100.0%	100.0%	100.0%	98.4%	98.3%	97.4%	1.16	1.18	1.19
York	100.0%	97.5%	94.9%	90.0%	89.6%	90.7%	1.22	1.32	1.28

Table Notes:

- The 2- and 4-year reliability targets only apply statewide. MPO/RPO values are provided for informational purposes only.
- At the mid-performance period (2019), Pennsylvania met the established 2-year target for interstate reliability. The state did not meet the 2-year truck travel time reliability index target. Although a 2-year target is not applicable to the non-interstate reliability measure, the mid-performance period data exceeds the 4-year target.

- PennDOT reliability targets were originally developed based on 2017 baseline values. The goal was to maintain baseline reliability throughout the four-year performance period. MPO/RPO values indicate areas that maintained their regional baseline value (green) or worsened over the baseline (red).

Evaluation of STIP for Target Achievement:

The following has helped to ensure that planned projects in the STIP will help to achieve an improvement in the system performance measures for the statewide interstate and NHS road system:

- PennDOT continues to emphasize their Transportation Systems Management and Operations (TSMO) initiatives to program low-cost technology solutions to optimize infrastructure performance. This has included the development of Regional Operations Plans (ROPs) that integrate with the MPO Congestion Management Process (CMP) to identify STIP projects. A TSMO funding initiative was established in 2018 to further support these efforts. The 2023-2026 STIP includes over \$289 million of funding dedicated to congestion relief projects.
- PennDOT has funded interstate projects to address regional bottlenecks. Mainline capacity increasing projects are limited to locations where they are needed most. These investments will provide significant improvements to mobility that support meeting the interstate and freight reliability targets.
- Over \$210 million is provided in the STIP for multi-modal alternatives. This includes funding for transit operating costs, transit and rail infrastructure, support for regional carpooling and other bike and pedestrian infrastructure within the state. These projects provide opportunities to reduce vehicle miles of travel (VMT) and increase the percentage of non-single occupant vehicles.
- At this time, the potential impact of past and planned STIP investments on PM-3 performance measures are still being evaluated. The timeline for project implementation often prevents an assessment of measurable results until a number of years after project completion. PennDOT continues to monitor the impact of recently completed projects on the reliability and delay measures. As more data is obtained, these insights will help PennDOT in evaluating potential project impacts in relation to other factors including incidents and weather on system reliability and delay.

Transit Asset Management Performance Measures

Background				
<p>In July 2016, FTA issued a final rule (TAM Rule) requiring transit agencies to maintain and document minimum Transit Asset Management (TAM) standards, policies, procedures, and performance targets. The TAM rule applies to all recipients of Chapter 53 funds that either own, operate, or manage federally funded capital assets used in providing public transportation services. The TAM rule divides transit agencies into two categories (tier I and II) based on size and mode. The TAM process requires agencies to annually set performance measure targets and report performance against those targets. For more information see: Transit Asset Management FTA (dot.gov)</p>				
Data Source				
<p>The TAM rule requires states to participate and/or lead the development of a group plan for recipients of Section 5311 and Section 5310 funding, and additionally allows other tier II providers to join a group plan at their discretion. All required agencies (Section 5311 and 5310) and remaining tier II systems except for Centre Area Transportation Authority (CATA), have elected to participate in the PennDOT Group Plan. The Group Plan is available on PennDOT's website at PennDOT Group Plan. The group plan is updated annually with new targets as well as the current performance of the group.</p>				
Transit Asset Management Targets (for all agencies in PennDOT Group Plan)				
Performance Measure	Asset Class	FY2020-21 Target	Current Performance	FY 2021-22 Target
Rolling Stock (Revenue Vehicles)				
<p>Age % of revenue vehicles within a particular asset class that have met or exceeded their Estimated Service Life (ESL)</p>	AO-Automobile	16%	18%	18%
	BR-Over-the-road Bus	12%	18%	18%
	BU – Bus	29%	28%	28%
	CU-Cutaway	42%	52%	52%
	VN-Van	64%	63%	63%
	SV-Sports Utility Vehicle	17%	33%	33%
Equipment (Non-Revenue Vehicles)				
<p>Age % of non-revenue/service vehicles within a particular asset class that have met or exceeded their ESL</p>	Automobiles	46%	57%	57%
	Trucks / Rubber Tire Vehicles	50%	27%	27%
Facilities				
<p>Condition % of facilities with a condition rating below 3.0 on the FTA TERM scale</p>	Administrative / Maintenance Facilities	30%	14%	14%
	Passenger / Parking Facilities	83%	84%	84%
Methods for Developing Targets				
<p>PennDOT annually updates performance targets based on two primary elements: the prior year's performance and anticipated/obligated funding levels. PennDOT requires rolling stock and non-revenue vehicles (equipment) to meet both age and mileage ESL standards prior to being replaced. While the identified annual targets represent only age and condition in line with FTA guidelines, PennDOT will continue to apply age and mileage when making investment decisions.</p>				

Progress Towards Target Achievement and Reporting:

The Pennsylvania TAM Group Plan fulfills the PBPP requirement and encourages communication between transit agencies and their respective MPOs and RPOs. In accordance with the plan, the following actions take place that fulfill the PBPP requirement:

- PennDOT provides asset performance reports to transit agencies by August 31 of each year that measure performance against established targets for the previous fiscal year.
- Transit agencies review the content for accuracy and confirm with PennDOT that information related to transportation asset performance has been received and is accurate.
- Transit agencies share performance data with their respective planning partner by the end of each calendar year, or earlier as decided between the partners.
- New performance goals for the upcoming fiscal year are established no later than September 15 of each year and communicated to transit agencies covered under the group plan.
- Transit agencies continue regular coordination regarding the local Transportation Improvement Plan (TIP) and other planning initiatives of the local planning partner.

All transit agencies are required to utilize Pennsylvania's transit Capital Planning Tool (CPT) as part of their capital planning process and integrate it into their TAM process. The CPT is an asset management and capital planning application that works as the central repository for all Pennsylvania transit asset and performance management activities.

Consistent with available resources and in coordination with the PennDOT BPT, transit agencies are responsible for submitting projects consistent with the CPT for the development of the transit portion of the Program. This ensures that projects identified on the TIP are consistent with the TAM approach and respective TAM plans. PennDOT CPDM will update this project information in MPMS and share it with the MPOs/RPOs, PennDOT BPT, and the transit agencies.

Evaluation of STIP for Target Achievement:

The STIP includes an investment prioritization process using established decision support tools. The investment prioritization process occurs annually as part of the capital budgeting process. To prioritize investments at an agency level and at a statewide level, the following basic actions take place:

- Update inventory in the CPT to include age, mileage, condition, and operational status
- Identify assets that are not in a state-of-good-repair, using the following priority process:
 - Vehicles that surpass age and mileage ESL
 - Vehicles that surpass age or mileage ESL and are rated in poor condition or represent a safety hazard
 - Facilities that have a condition rating of less than 3 on the TERM Scale, with priority given to facilities that are the lowest in the scale and represent a critical need to maintain operational capacity
- Determine available funding based on federal and state funding sources
- Develop projects within the CPT Planner based upon funds availability
- Import CPT Planner into DotGrants for the execution of capital grants

Throughout the process, PennDOT reviews projects and works with agencies to approve and move projects forward through the grant process.

Public Transit Safety Performance Measures

In addition to the Transit Asset Management Performance, FTA issued a final rule on Public Transportation Agency Safety Plans (PTASP), effective July 19, 2019. The PTASP final rule (49 C.F.R. Part 673) is meant to enhance safety by creating a framework for transit agencies to manage safety risks in their organization. It requires recipients of FTA funding to develop and implement safety plans that support the implementation of Safety Management Systems (SMS). At this time, recipients of only Section 5311 (Formula Grants for Rural Areas) or Section 5310 (Enhanced Mobility of Seniors and Individuals with Disabilities Program) are exempt from the PTASP requirement.

As part of the plan development process, performance targets must be established for the following areas:

1. Fatalities,
2. Injuries,
3. Safety Events, and System Reliability

All public transit agencies in the Commonwealth have written safety plans compliant with Part 673 as of July 20, 2021. These safety plans must be updated annually based on agency specific execution dates and shared with PennDOT BPT. It is also the transit agency's responsibility to share the updated plan with their respective MPO/RPO, so the new targets and measures can be incorporated into regional planning practices.

Southern Alleghenies RPO Public Transit

Public Transportation Projects:

The TIP includes public transportation projects and line items being carried forward from the previous 2021-2024 TIP and with input by the Bureau of Public Transportation. The transit projects reflect the priorities established by:

1. The project prioritization process for the Southern Alleghenies 2041 LRTP,
2. The recommendations in the Southern Alleghenies Coordinated Public Transit – Human Services Transportation Plan,
3. The priorities expressed by Somerset County Transportation System and the Huntingdon, Bedford, Fulton Area Agency on Aging, and
4. PennDOT's Capital Planning Tool.