

CHAPTER 4: Performance-Based Planning and Programming (PBPP)

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 DVRPC, PennDOT, and regional transit agencies 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) and the Federal Transit Administration (FTA) 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

Regulations required by the USDOT have established final rules on performance measures that address the seven goals, accordingly:

- Roadway fatalities and serious injuries, both number and rate per vehicle miles traveled, on all public roads;
- roadway pavement condition on the Interstate system and on the remainder of the NHS;
- bridge condition on the NHS;
- performance (system reliability) of the Interstate system and non-Interstate NHS;
- freight movement on the Interstate system;
- traffic congestion;
- on-road mobile source emissions
- transit rolling stock, equipment, facilities, and infrastructure; and
- transit fatalities, injuries, safety events, and system reliability.

The FHWA has established three performance measure regulations for roadway safety (PM1), bridge and pavement condition (PM2), and system performance (PM3). The FTA has established performance measures for Transit Asset Management (TAM) and Transit Safety. MPOs may either choose to support the respective state DOT and transit operator targets and the agencies' efforts to achieve the targets or develop their own regional targets. DVRPC has memoranda of agreements (MOAs) with various pertinent planning partners, including state DOTs, transit operators, and other MPOs for each of the performance measure areas. The agreements outline how the planning partners will select and report performance targets, and the reporting of performance. For additional information or to view the latest TPM targets, updates, and MOAs visit www.dvrpc.org/TPM.

DVRPC continues to follow a Performance Based Planning and Programming (PBPP) process, with a focus on collaboration between stateDOT, FHWA, FTA, and regional transit operators 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:

- DVRPC and Statewide Long-Range Transportation Plans (LRTPs)
- DVRPC Transportation Improvement Programs (TIPs)
- PennDOT Twelve-Year Transportation Program (TYP)
- PennDOT State Transportation Improvement Program (STIP)
- PennDOT's Transportation Asset Management Plan (TAMP)
- Transit Asset Management (TAM) Plans
- Public Transportation Agency Safety Plans (PTASP)
- Pennsylvania Strategic Highway Safety Plan (SHSP)
- Comprehensive Freight Movement Plan (CFMP)
- DVRPC and PennDOT Congestion Mitigation and Air Quality (CMAQ) Performance Plans
- DVRPC Congestion Management Process (CMP)
- 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. Based on these resources, DVRPC, PennDOT, and transit operators 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/FTA), state (PennDOT) and regions (MPOs and transit operators) provide a common framework for decision-making.

Evaluating FY2025-2028 TIP Performance

The Federal Fiscal Year (FFY) 2025-2028 Transportation Improvement Program supports the focus areas and goals established in DVRPC's current long range transportation plan, *Connections 2050*. These include equity, resilience, sustainability, safety, asset management, access, and performance. The goals are aligned with the national goal areas and federal performance measures and guide DVRPC in addressing transportation priorities.

The following sections provide an overview of the federal performance measures and how the current project selection process for the FY2025-2028 TIP supports meeting future targets. Over the 4-year TIP, over 84% of the total funding is associated with roadway and bridge reconstruction, preservation, and restoration projects. However, these projects are also anticipated to provide significant improvements to roadway safety and traffic reliability for both passenger and freight travel. Through the federal performance measures, DVRPC 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 DVRPC, PennDOT, and transit agency needs. Dashboards and other reporting tools will be maintained to track and communicate performance to the public and decision-makers.

The *Plan-TIP Project Evaluation Criteria* evaluate candidate transportation projects relative to the Vision and goals of the *Connections 2050* Long-Range Plan ('Plan') and federal Transportation Performance Management performance measure (PM) targets for roadway safety (PM-1), bridge and pavement condition (PM-2), and system performance (PM-3); and transit safety and asset management. The criteria were developed in collaboration with DVRPC's Financial Planning Subcommittee of the Regional Technical Committee (RTC). They consist of: (1) a screening to compare candidate consistency with the Plan's equity, sustainability, and resiliency principles, and to ensure Major Regional Projects (MRPs) are funded in the region's Plan before being programmed in the region's Transportation Improvement Program (TIP); and (2) a set of project evaluation criteria based on the Plan's focus areas—the environment, communities, transportation, and the economy—and the federal PMs. More information about the *Plan-TIP Project Evaluation Criteria* can be found in Appendix D.

Table 13: 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) (81 FR 13881 and 81 FR 13722) 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). MPOs can either support the state DOT's targets or develop their own regional targets. Beginning in 2022, after a focused exploration of data trends and best practices, the DVRPC partners have adopted annual regional safety targets in support of Regional Vision Zero 2050. Statewide targets are also shown for reference.		
2024 Safety Measures and Targets (DVRPC)		
Measure	Baseline (2018-2022)	Target (2020-2024)
Number of fatalities	443.0	418.8
Rate of fatalities per 100 million VMT	1.150	1.029
Number of serious injuries	1647.6	1543.8
Rate of serious injuries per 100 million VMT	4.279	3.794
Number of non-motorized fatalities & serious injuries	463.0	408.0
2024 Safety Measures and Targets (PennDOT Statewide)		
Measure	Baseline (2018-2022)	Target (2020-2024)
Number of fatalities	1,157.4	1,164.1
Rate of fatalities per 100 million VMT	1.182	1.219
Number of serious injuries	4682.4	4,721.0
Rate of serious injuries per 100 million VMT	4.783	4.939
Number of non-motorized fatalities & serious injuries	804.6	817.6
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 the five-year rolling average value for each measure from 2020-2024. The 2023 and 2024 values are projected from the actual 2022 values. A determination of having met or made significant progress toward meeting the 2022 safety targets will be issued by the FHWA in April 2024.		

PennDOT Efforts Toward PM1 Target Achievement

DVRPC and PennDOT continue efforts to ensure the TIP, STIP, and 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 three key emphasis areas to improve safety – impaired driving, lane departure crashes, and pedestrian safety.

Table 14: SHSP Safety Focus Areas

2024 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 four of the five 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 2021 targets, the FHWA determined in April 2023 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) 2024 an amount equal to the FFY 2020 HSIP apportionment.

The FHWA has established certain special rules for HSIP under [23 U.S.C. 148\(g\)](#). Among them is the Vulnerable Road User Safety special rule created by IIJA-BIL [23 U.S.C. 148\(g\)\(3\)](#). This new special rule provides that the total annual fatalities of vulnerable road users in a state should be less than 15% of the total annual crash fatalities in the state. [Additional guidance](#) on the Vulnerable Road Users Safety special rule was released by FHWA on February 2, 2022.

PennDOT was notified by FHWA in April 2023 that Pennsylvania triggered the Vulnerable Road Users Safety special rule. For calendar year 2021, the number of Vulnerable Road Users fatalities exceeded 15% of the total annual crash fatalities. PennDOT is therefore required to obligate in FFY 2024 not less than 15% of the amount apportioned under 23 U.S.C. 104(b)(3) for highway safety improvement projects to address the safety of vulnerable road users.

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.

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 2025-2028 STIP includes \$534 million of HSIP funding. The Department distributes over 60% 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 statewide safety initiatives. A complete listing of the HSIP projects begins on page 64.
- 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. A data-driven safety analysis is generated through an HSM analysis is required as part of PennDOT's HSIP application process. Performing this analysis early in the planning process for all projects will help ensure projects selected for inclusion in the STIP will support the fatality and serious injury reductions goals established under PM1.
- The process for selecting safety projects for inclusion in the STIP 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 for ease-of-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 FHWA's Every Day Counts round 5 (EDC-5) to identify opportunities to improve pedestrian safety as well as reduce rural roadway departures. These new strategies are to be 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 restoration or reconstruction 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.

DVRPC Region Efforts Toward PM1 Target Achievement

Regional partners adopted Regional Vision Zero 2050 with a goal of no fatalities or serious injuries from traffic crashes by 2050 as part of the *Connections 2050* long-range plan. Since that time, the goal has been incorporated into the work of the Regional Safety Task Force and the RSTF format has been reframed to embrace FHWA's safe system approach. These holistic changes help to advance our safety culture and

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

increase the priority of safety initiatives. In 2023 DVRPC launched the Regional Vision Zero 2050 Program effort using a Safe Streets and Roads for All grant. This effort includes close coordination with county-partner sub-awardees to collaboratively develop the plan which includes engagement with municipal partners.

DVRPC continues to include crash analyses in our work program projects to advance substantive infrastructure safety improvements. To date, two City of Philadelphia HIN Safety Corridor Studies have been completed, an examination of context-based speed limit setting to address speeding-related crashes has begun, a road diet network screening analysis for PennDOT District 6-0 has been completed, and staff continues to screen roadway maintenance plans for bicycle facility opportunities. Close collaboration with county partners helps to raise the profile of regional safety needs, and connects them to funding opportunities.

Safety is the highest-weighted criteria, at 23.2%, in the *Plan-TIP Project Evaluation Criteria*. Roadway projects score by implementing safety strategies with high-crash reduction potential; and by addressing department of transportation (DOT)-identified high-crash locations, crashes in communities of concern, or safety concerns on a city, county, or regionally identified high-injury network.

Table 15: Projects in the DVRPC TIP Utilizing Federal HSIP Funds

County	Project	Description	HSM Benefit/Cost	Funding Status
Bucks	Route 113 and Minsi Trail Road Roundabout (MPMS #115418)	Roundabout at Souderton Road and Minsi Trail Road	1.01	Ongoing Regional
	US 202/Route 263 (York Road) Roundabout (MPMS #115419)	Roundabout at US 202/Route 263 & York Road	1.31	
Chester	Route 23 Corridor Safety Improvements (MPMS #115423)	Install retroreflective back plates, pedestrian countdown timers and pushbuttons, new signal; eliminate passing lane	17.13	Ongoing Regional
	Chichester Avenue Corridor Safety Improvements (MPMS #111022)	Traffic signal installation; modify left-turn signal phases	1.55	Ongoing Statewide
	Macdade Boulevard Corridor Safety Improvements (MPMS #110951)	Road diet from Woodcrest Road to Grays Avenue	6.59	
Delaware	Landsdowne Avenue Corridor Safety Improvements (MPMS #115427)	Installation of retroreflective back plates, pedestrian countdown timers, additional lighting, and raised and high-visibility crosswalks	5.33	Ongoing Regional
	Haverford Road Corridor Safety Improvements (MPMS #115426)	Installation of road diet, left-turn lanes, actuated advanced warning dilemma zone protection system	8.81	
	Smithbridge Road Connector (MPMS #107642)	Construction of 8 ft. multi-use trail along Smithbridge Road	1.12	

Projects Utilizing Federal HSIP Funds (cont.)

County	Project	Description	HSM Benefit/Cost	Funding Status
Montgomery	Main Street Corridor Safety Improvements (MPMS #110971)	Turn lane and signal modifications along corridor; relocate roadside fixed objects along corridor	2.1	Ongoing Statewide
	Lancaster Avenue and Remington Road Intersection Improvements (MPMS #114948)	Add left-turn lanes, install pedestrian countdown timers, add ADA ramps, upgrade existing mast arm and add additional primary signal head	2.66	
	Sumneytown Pike Intersection Improvements (MPSM #115428)	Install left-turn lanes, remove skew angle of road, install intersection lighting	1.27	Ongoing Regional
	Belmont Avenue and St. Asaphs Road Roundabout (MPMS #115429)	Installation of a roundabout	2.1	
Philadelphia	Castor Avenue Corridor Safety Improvements (MPMS #111194)	Implement a road diet, upgrade signals, and add left turn lanes to the project area.	9.27	Ongoing Regional
	Frankford Ave. Corridor Safety Improvements (MPMS #115434)	Various safety improvements along Frankford Avenue	14.44	
	63 rd St. Corridor Safety Improvements (MPMS #115435)	Various safety improvements along 63 rd Street	9.28	
	Washington Ln. Corridor Safety Improvements (MPMS #115440)	Various safety improvements along Washington Lane	2.77	
	Vine St. Corridor Safety Improvements (MPMS #115442)	Road Diet of Vine Street between 8th Street and Broad Street (SR 0611)	2.87	
	Wyoming Ave. Corridor Safety Improvements (MPMS #115444)	Convert signals from pedestal-mounted to mast arm and provide flashing beacons at unsignalized intersections	5.41	
	5 th St. Corridor Safety Improvements (MPMS #115445)	Convert all signals from pedestal to mast arm and install pedestrian countdown timer signal heads	6.24	

Projects Utilizing Federal HSIP Funds (cont.)

County	Project	Description	HSM Benefit/Cost	Funding Status
Philadelphia	Cobbs Creek Pkwy: Market – Woodland (MPMS #120762)	Various safety improvements on Cobbs Creek Parkway for the first phase of the 6.9 mile corridor	Breakout of MPMS #115425	Ongoing Regional
	Castor Avenue Roundabout (MPMS #110958)	Reconstruction of the intersection of Castor Avenue (SR 1005) and Wyoming Avenue	1.3	Ongoing Statewide
	US 1: Broad St - Adams Ave (MPMS #119822)	Intersection and roadway improvements along US 1 from Broad Street to Adams Avenue	N/A	New Regional
	US 1: Adams Ave - Old Lincoln Hwy (MPMS #119836)	Intersection improvements along US 1 from Adams Avenue to Old Lincoln Highway	N/A	
Various	Systemic Improvements: Wrong Way Countermeasures (MPMS #82089)	Address interchange ramp locations with a higher potential for wrong way entrance to a limited access highway.	N/A	New Statewide
	Systemic Improvements: High Friction Surface Treatments (MPMS #82095)	Installation of high friction surface treatment (HFST), new/refreshed pavement markings, and center/edge-line rumble strips at various locations.	N/A	
	Systemic Intersection Improvement Program (MPMS #82087)	“Intersection Safety Implementation Plan” to address the top ranked feasible locations	N/A	New Statewide VRU
	Systemic Vulnerable User Improvements (MPMS #82088)	Implement systematic safety improvements at stop-controlled and signalized intersections, such as basic signing and pavement markings.	N/A	

Source: DVRPC, 2024

Table 16: 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 (82 FR 5886), also known as PM2, 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 current regulations are found at 23 CFR 490 Subpart C and Subpart D . DOTs and MPOs establish targets for these measures as part of a four-year performance period. The TIP and STIP includes projects that will impact future performance periods based on when projects are constructed or completed.			
Data Source			
Data for the pavement and bridge measures are based on information maintained in PennDOT’s Roadway Management System (RMS) and Bridge Management System (BMS).			
2022-2025 Pavement Performance Measure Targets (Statewide)			
Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
% of Interstate pavements in Good condition	68.8%	69.0%	65.0%
% of Interstate pavements in Poor condition	0.4%	2.0%	2.0%
% of non-Interstate NHS pavements in Good condition	37.2%	31.0%	29.0%
% of non-Interstate NHS pavements in Poor condition	1.5%	6.0%	6.5%
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	27.5%	28.0%	28.0%
% of NHS bridges by deck area in Poor condition	4.4%	7.5%	7.5%
Methods for Developing Targets			
PennDOT’s pavement and bridge targets were established in late 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 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. ² Targets are calculated based on general system degradation (deterioration curves) offset by improvements expected from delivery of the projects in the TIP/STIP along with planned state funded maintenance projects.			

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PennDOT Efforts Toward PM2 Target Achievement

Improving Pennsylvania’s pavement and bridges is a critical part of the strategic investment strategy for Pennsylvania’s transportation network at the regional, State and Federal level. Improving the condition and performance of transportation assets is a prominent goal of DVRPC’s *Connections 2050* Long-Range Plan and the 2045 Statewide LRTP. With limitations on available resources, the preservation of pavement and bridge assets using sound asset management practices is critical. Asset management is a key piece of FHWA’s TPM program and is a vital force behind infrastructure performance.

Within its asset management framework, it was necessary for PennDOT to transition away from a “worst-first” programming methodology to a true overall risk-based prioritization and selection of projects for its system assets based on LLCC. “Worst-first” prioritization focuses work on the poorest condition assets at the expense of rehabilitation and preventative maintenance on other assets in better condition. PennDOT’s revised strategy reflects its asset management motto and guiding principle: “The right treatment at the right time.” This is reflective of Federal TAMP requirements that are centered on investing limited funding

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

resources in the right place at the right time to produce the most cost-effective life-cycle performance for a given investment.

PennDOT's [TAMP](#) formally defines its framework for asset management, which is a data-driven approach coupled with a risk-based methodology. It outlines the investment strategies for infrastructure condition targets and documents asset management objectives for addressing risk, maintaining the system at the desired state-of-good repair, managing to LLCC, and achieving national and state transportation goals. The TAMP is developed by the PennDOT Asset Management Division (AMD) in consultation with PennDOT Executive leadership, Center for Program Development and Management (CPDM), Bureau of Planning and Research (BPR), PennDOT Districts, the Pennsylvania Turnpike Commission (PTC), the MPOs/RPOs and FHWA.

With each program update, PennDOT has made substantial advances in its asset management tools and practices. A risk-based, data-driven approach to project selection helps ensure that the right projects are prioritized, and the transportation system is managed optimally to the lowest practical life-cycle cost. PennDOT's Pavement Asset Management System (PAMS) and Bridge Asset Management System (BAMS) are the foundations for this asset management approach. These systems forecast condition and investment needs by asset class using deterioration models and treatment matrices developed for PennDOT infrastructure and based on historical data. PennDOT has developed both predictive and deterministic models that support multi-objective decision-making based on current average work costs and estimated treatment lifespans. These models allow PennDOT to predict infrastructure investment needs and future conditions under a range of scenarios.

As part of its asset management strategy, PennDOT strives to maintain as many highway and bridge assets as possible in a state-of-good repair. PennDOT defines its desired state-of-good repair as meeting the FHWA minimum condition thresholds for pavements and bridges: no more than five percent of NHS Interstate lane-miles shall be rated in poor condition and no more than 10 percent of total NHS bridge deck area shall be rated as poor. However, the ability to achieve these condition thresholds is funding dependent.

PennDOT uses its PAMS and BAMS systems to assist with prioritizing preservation activities to extend asset life. This methodology allows PennDOT to manage assets to the lowest practical life-cycle cost and help the department to achieve its asset condition and performance targets. Implementation of these improved asset management practices are applied to all state and local networks.

The following has helped to ensure that planned projects in the TIP/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 2025 Twelve Year Program (TYP), 2025-2028 STIP, and 2025-2028 DVRPC TIP 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.
- In support of the TIP/STIP development, PennDOT and MPOs/RPOs jointly developed and approved General and Procedural Guidance and Transportation Program Financial Guidance documents.³ 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

³ The 2025 Financial Guidance can be found at: <https://talkpatransportation.com/how-it-works/tip>

achieve maximum performance of the available funds. The guidance document is revised for each TIP/STIP cycle as PennDOT's asset management tools and methods evolve and enhance its ability to program to lowest life cycle cost.

- PAMS and BAMS outputs are the basis for determining project programming to achieve LLCC. PennDOT District 6-0 works with DVRPC to generate the lists of recommended treatments by work type (such as highway resurfacing and bridge rehabilitation), based on LLCC and condition projections derived from PennDOT's PAMS and BAMS. PennDOT AMD provides any necessary support. For the 2025 Program Update, as PennDOT integrates PAMS and BAMS into the TIP/STIP and TYP development, AMD provides the PAMS and BAMS outputs for the District and MPO. Those areas that have the capability may produce their own outputs. PAMS and BAMS outputs define recommended treatments and forecasted conditions, but not necessarily complete project scopes and limits. These outputs serve as a guide to assist in the prioritization and selection of new projects to be considered for the program. Performance can be compared if projects are considered that do not align with PAMS and BAMS outputs.
- As part of the regional TIP development process mentioned above, the MPOs and PennDOT Districts must document the differences between the PennDOT asset management system treatment and funding level recommendations and their selected projects as part of their TIP submissions. They must also document the coordination with the PennDOT District(s) and Central Office that occurred as part of this decision-making process. This information is used by PennDOT AMD to improve future asset management policy and procedures, sharing of information and tools, and system functionality.

DVRPC Region Efforts Toward PM2 Target Achievement

DVRPC is dedicated to system preservation for pavement and bridges. The DVRPC Long-Range Plan places an increased emphasis and analysis related to transportation system preservation needs and funding, which in turn informs the fiscally constrained list of projects included in the Long-Range Plan and TIP. In the DVRPC Pennsylvania subregion, the Plan identified \$34.207 billion needed for pavement and bridge preservation projects.⁴ Programmed funding in the regional TIP does not include the majority of the I-95 reconstruction, which is listed on the statewide IMP. DVRPC updated the *Plan-TIP Project Evaluation Criteria* in FY2023 (DVRPC Publication Number 23128), and the new federal and state regulations are reflected in the updated criteria.

Per Table 49 in the DVRPC-Board-adopted *Connections 2050 Plan for Greater Philadelphia: Process and Analysis Manual* (DVRPC Publication Number 21028), system preservation receives the most funding of all roadway project categories. Of the \$23.5 billion allocated to roadway improvements in the Pennsylvania state subregion, 55 percent or \$12.9 billion is allocated to bridge preservation, followed by 21.5 percent or \$5.1 billion for pavement preservation over the life of the Plan. Tables 20 and 22 in the *Process and Analysis Manual* list the funding needs by plan period to maintain the existing system of roadways and bridges.

Facility and Asset Condition is the third-highest-ranked criterion in *DVRPC's Plan-TIP Project Evaluation Criteria*, accounting for 12.5 percent of the investment recommendation. Projects score well by being consistent with the scope and timing of PennDOT's PAMS and BAMS model recommendations, which are based on lowest life cycle cost assessment.

PennDOT and DVRPC work together to develop and manage a regional TIP that supports progress toward the achievement of the current statewide pavement/bridge objectives and the targets that have been established for the 2022–2025 performance period. PennDOT has transitioned to the new TAMP, which 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.

⁴ See Tables 20 and 22 of the DVRPC *Connections 2050 Plan for Greater Philadelphia; Process and Analysis Manual*: www.dvrpc.org/Products/21028.

The pavement and bridge projects provided in DVRPC’s FY2025 TIP were selected through an evaluation of PennDOT’s Asset Management Systems 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 LLCC, and achieving national and state transportation goals. Based on the 2022–2025 performance targets, PennDOT has provided feedback on statewide and MPO/RPO-specific progress toward 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.

Of the 9 bridge and 22 FHWA-funded projects that have been added to the TIP, \$25.75 million is going toward newly-identified bridge projects, while \$196.85 million is going to address new FHWA-funded projects. This includes projects that were competitively selected by the federal government, like MPMS #120993 – North Philadelphia School Zones RAISE 23 project, or from PennDOT, like MPMS #82088 – Systemic Vulnerable User Improvements. Of the 31 new projects that were selected, 22 projects address safety, operational improvements, and bicycle/pedestrian improvements that may include some pavement reconstruction. Totals of \$536.23 million in highway funds and \$144.14 million in bridge funding are focused on reconstructing highway and bridge structures that were pushed out of the 12-year plan during the FY2021 TIP update due to inadequate funding. The FY2025 TIP for Pennsylvania programmed \$216.23 million in SPIKE Discretionary NHPP and STP funds to be spent on bridge and pavement improvements. Overall, the draft FY 2025 Pennsylvania TIP will preserve or improve nearly 12 million square feet of bridge deck area and 216.9 miles of pavement.

Table 17: Key Bridge and Pavement Projects in the Region

County	MPMS	Project	Primary Improvement Focus
Bucks	93446	Route 1 Improvements Frontage Corridor (Section RC3)	Highway and Bridge Reconstruction
Chester	14698	US 422, Reconstruction (M2B) SR:0422	Highway Reconstruction
Delaware	104343	US 322 over CSX	Bridge Replacement
Montgomery	16738	US 422 Expressway Section M1B	Highway and Bridge Reconstruction
Philadelphia	69828	Market Street Bridges (3) over Schuylkill River and CSX Railroad (MSB)	Bridge Rehabilitation/ Replacement

Source: DVRPC, 2024

Table 18: Anticipated Pavement and Bridge Deck to Be Preserved or Improved

	FY23–FY34
Anticipated Bridge Deck Area to be Preserved or Improved (including IMP)	11,984,334 square feet
Anticipated Lane Miles of Pavement to be Preserved or Improved*	216.91 miles

Source: PennDOT, 2024

Table 19: System Performance Measures (PM3)

Background			
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 (82 FR 5970)</i> became effective on May 20, 2017. This rule established six measures related to transportation performance (commonly known as PM3). The current regulations are found at <u>23 CFR 490 Subparts E, F, G & H</u> . Targets are established for these measures as part of a four-year performance period. This TIP includes projects that will impact future performance periods based on when projects are constructed or completed.			
Data Source			
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 emissions measures.			
Travel Time and Annual Peak Hour Excessive Delay Targets			
Measure	Area	2-year Target 2023	4-year Target 2025
Interstate Reliability	Statewide	89.5%	89.5%
Non-Interstate Reliability		88.0%	88.0%
Truck Reliability Index		1.40	1.40
Annual Peak Hour Excessive Delay Hours Per Capita (Urbanized Area)	Philadelphia UZA	15.2	15.1
Non-SOV Travel Measure Targets			
Measure	Area	2-year Target 2023	4-year Target 2025
Percent Non-Single Occupant Vehicle Travel (Urbanized Area)	Philadelphia UZA	30.0%	30.0%
CMAQ Emission Targets			
Measure	Area	2-year Target 2023	4-year Target 2025
VOC Emissions (kg/day)	Statewide	18.000	36.000
NOx Emissions (kg/day)		392.000	785.000
PM2.5 Emissions (kg/day)		46.000	93.000
CO and PM10 Emissions (kg/day)		0.000	0.000
Methods for Developing Targets			
The System Performance measure targets were established in early 2023 in coordination with PennDOT and other MPOs in the Philadelphia Urbanized Area. DVRPC and PennDOT continue to evaluate historic variances in performance measures in relation to project completion to assist with the target setting process.			

PennDOT Efforts Toward PM3 Target Achievement

PennDOT and the MPOs/RPOs work to ensure that the STIP, regional TIPs, and LRTP are crafted and managed to support the improvement of the reliability and Congestion Mitigation and Air Quality (CMAQ) performance measures. These efforts are further supported by auxiliary plans such as the Regional Operations Plans (ROPs), Congestion Management Processes (CMPs), and CMAQ Performance Plans.

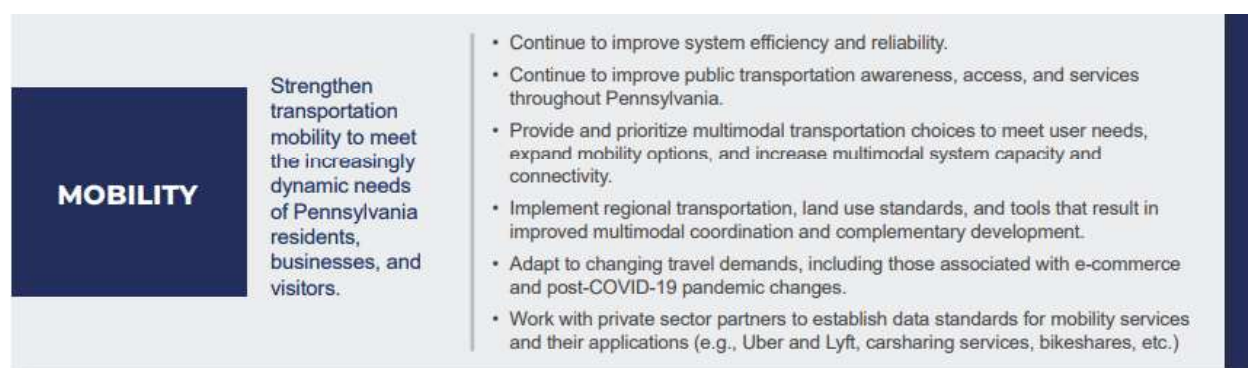
For each biennial report, the Bureau of Operations (BOO) within PennDOT scrutinizes statewide reliability and delay data, examining it for overarching trends. Working in synergy, BOO and CPDM pool their efforts to construct statewide and regional performance summaries (in the form of tables or maps) to be shared with the MPOs/RPOs. These summaries may be enriched by supplemental data, such as insights on the root causes of congestion. Such detailed information helps MPOs/RPOs, in collaboration with each PennDOT District, to assess progress and pinpoint areas for capacity or traffic flow improvements in order to meet the

established targets more effectively. These initiatives are coordinated with the LRTP, ROP, and CMP in each respective region.

Tracking performance trends also supports assessing the influence of completed investments on performance measures, provided that data is accessible pre- and post-project construction. These project impacts offer invaluable insights into the efficacy of historical funding, as well as potential benefits of future investments on traffic congestion and reliability.

Despite a significant portion of funding being allocated towards infrastructure repair and maintenance, PennDOT remains steadfast in its commitment to improve system mobility and enhance modal connections. PennDOT's LRTP lays out objectives aimed at fostering mobility across the transportation system, thereby steering investment decisions. Federal systems performance measures will be harnessed to evaluate future advancements in meeting these objectives and the associated targets.

Figure 12: PennDOT LRTP Mobility Goal and Objectives



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 ROPs that integrate with the MPO CMP to identify STIP projects. A TSMO funding initiative was established in 2018 to further support these efforts. The 2025-2028 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.
- The statewide CMAQ program and Carbon Reduction Program (CRP) provides over \$700 million of funding on the STIP for projects that benefit regional air quality or greenhouse gases. PennDOT has worked with Districts and MPO/RPOs to develop more robust CMAQ/CRP project selection procedures to maximize the air quality and carbon reduction benefits from these projects.
- 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 PM3 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.

DVRPC Region Efforts Toward PM3 Target Achievement

Travel Time Reliability and Freight/Truck Time Travel Reliability Targets

DVRPC is committed to improving reliability on roadways within its region in Pennsylvania, as well as working with its county, city, and transit partners, and PennDOT staff to develop projects that will improve TTR and help meet state targets. Reliability is a component of the Plan-TIP Project Evaluation Criteria, with a weight of 6.9 percent. The criterion reflects Plan goals to increase reliability and mobility, and reduce congestion and VMT; and PM-3. Projects score by being on or surrounded by roads with a high Planning Time Index (PTI), or improving on-time performance for fixed guideway transit routes. The CMP is a key part of DVRPC's commitment to improving TTR. DVRPC facilitates a CMP Planning Advisory Committee that is part of an overall, systematic, and ongoing process to determine where traffic congestion exists, identify causes, prioritize congested locations according to congestion and other CMP objective measures, and to help develop strategies to reduce congestion and improve reliability. The goals of the Long-Range Plan provide guidelines for developing DVRPC CMP objectives. These objectives include:

- minimizing growth in recurring congestion and improving mobility;
- improving TTR;
- improving accessibility, including providing transit where it is most needed;
- maintaining the existing core transportation network;
- improving safety;
- maintaining goods movement;
- improving security and maintaining transportation preparedness for major events;
- integrating federal PM3 system performance, freight, and CMAQ performance measures;
- supporting DVRPC Long-Range Plan land use and other principles;
- advancing equity and fostering diversity; and
- ensuring that all transportation investments support DVRPC Long-Range Plan principles.

DVRPC proactively seeks to include freight as a primary planning factor through its Long-Range Plan, TIP development, and the conduct of technical studies. Truck counts are a component of the Multimodal Use criterion in DVRPC's *Plan-TIP Project Evaluation Criteria*. Candidates rate based on the number of daily trucks using the facility, if the project is on a facility appropriate for truck use and it maintains or enhances freight activity.. This criterion accounts for 3.9 percent of the project-level investment decision recommendations for new candidates. One of DVRPC's goals is to serve the region's freight stakeholders and maintain the Greater Philadelphia region as a premier freight transportation gateway. At the forefront of DVRPC's freight planning program is the Delaware Valley Goods Movement Task Force, a broad-based freight advisory committee that provides a forum for the private- and public-sector freight community to include its unique perspectives on regional plans and specific projects.

In the FY2025 DVRPC TIP for Pennsylvania, the following projects are programmed within a DVRPC designated Freight Center that supports freight TTR:

- I-95 Reconstruction (MPMS#s 17821, 47812, 47813, 79828, 79905, 79910, 103557, 103558, 103559, 103561, 116391, 119730, 119977)
- State Road Rehabilitation (MPMS # 64778)
- Bridgewater Road Extension (MPMS # 79329)
- Girard Point Bridge Rehabilitation - Phase 1 (MPMS # 81225)
- I-95 Congestion Management (MPMS # 98207)
- John Fries Highway Widening (MPMS # 99431)
- PA 291 Drainage Improvement (MPMS # 99668)
- I-95: Delaware Avenue Extension (BS5) (MPMS # 103563);
- Citywide Resurfacing- Front Street from Oregon Avenue to Pattison Avenue (MPMS # 112500)

- US 322: Chelsea Parkway to Market Street Interchange (Section 103) (MPMS # 114034)
- I-95 Bridge Rehabilitation: Island Avenue-Philadelphia Navy Yard (MPMS # 115805)
- US 1: Adams Avenue - Old Lincoln Highway (MPMS # 119836)
- Preliminary Design for Concord Road / McDonald Blvd. Intersection Improvements (MPMS # 120688)

The FAST Act established, and the IJA/BIL continues, the National Highway Freight Program (NFP) to improve the efficient movement of freight on the NHFN. NFP's eligibility criteria require that a project contribute to the efficient movement of freight and be identified in the state's freight investment plan. States may use up to 10 percent of NFP funding each year for public or private freight rail, water facilities (including ports), and/or intermodal facilities. There are only nine projects in the entire state of Pennsylvania that are programmed with federal NFP funds, and three of them are located in the DVRPC region:

- **I-95 Northbound: Race to Shackamaxon (GR5) (MPMS #79828)** provides for the reconstruction, rehabilitation, and widening of I-95 northbound between Race Street and Shackamaxon Street, and the reconstruction of the northern Vine Street interchange ramp connection with I-95. This project includes rehabilitation, deck replacement, demolition, and replacement of eight bridges.
- **I-95 Southbound: Ann Street to Wheatsheaf Lane (AF4) (MPMS #103558)** provides for the reconstruction of I-95 from Clearfield Street to Wheatsheaf Lane, including reconstruction of the southbound on-ramp and southbound off-ramp at Allegheny Avenue.
- **I-95: Betsy Ross Mainline Southbound (BR4) (MPMS #103559)** provides funding for southbound mainline construction from Wheatsheaf Lane to SR 0095 north of Margaret Street. This contract will also remove the southbound collector/distributor and ramp that connects Aramingo Avenue, Harbison Avenue, Tacony Street, and Bridge Street to I-95 southbound and the Betsy Ross Bridge.

This list will be updated pending the Primary Highway Freight System meeting.

Finally, there are also several grant programs (outside of DVRPC) administered by the state and federal governments specifically targeting freight. PennDOT's Rail Freight Assistance Program (RFAP), and Rail Transportation Alternatives Program (RTAP) provide assistance with investment in rail freight infrastructure. USDOT's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program (formerly known as BUILD and TIGER), National Infrastructure Project Assistance Program and INFRA grant program (formerly known as the Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies, or FASTLANE program) provides for major investments in roads, rail, transit, and port infrastructure.

CMAQ Congestion and Emissions Reduction Targets

There are numerous projects in the TIP that will help the MPO and state meet two-and four-year targets for traffic congestion and on-road mobile source emissions. Table B-1 in DVRPC's *Congestion Mitigation and Air Quality Final Performance Plan (2018–2021) and Baseline Report (2022-2025)* (Publication # TR23003) identifies all TIP projects in the Pennsylvania portion of the DVRPC region from FY2022 to FY2025.

As part of DVRPC's CMP, DVRPC facilitates a CMP Planning Advisory Committee and generates a list of the top 10 bottleneck locations for state, county and local roadways. Much of the congestion within the DVRPC region occurs on state-owned and maintained highways, which are part of the NHS. Congestion Management is a component of the *Plan-TIP Project Evaluation Criteria* and is weighted at 6.4 percent of the total score. It aligns with the Plan's goals to increase reliability, and reduce congestion and VMT; and PM-3. Projects score based on location in a CMP congested subcorridor only if they implement a CMP strategy appropriate for that subcorridor. Therefore, PennDOT has invested a significant amount of resources in congestion relief programs statewide.

DVRPC will continue to promote and develop projects and programs with air quality benefits to its counties and planning partners. Greenhouse Gas Emissions and Air Quality is a criterion of the Plan-TIP Project Evaluation Criteria, weighted at 7.2 percent. It pertains to the Plan's goals to attain net-zero greenhouse gas (GHG) emissions by the year 2050, reduce vehicle miles traveled (VMT), and improve air quality. TIP projects

score on their ability to reduce GHG and National Ambient Air Quality Standards (NAAQS) pollutant emissions.

Progress is being made toward meeting the congestion relief and on-road mobile emissions reductions targets. DVRPC has been working with stakeholders on selecting projects for DVRPC’s Travel Options Program, which funds innovative transportation demand management projects to provide better access to more travel options across the region and welcomes capital projects, operating projects, and education and marketing campaigns.

Over \$515 million of federal CMAQ funding is programmed in the FY2025 TIP, including setting aside over \$325 million, from FY2025 to FY2035, for the flexing of CMAQ funds to SEPTA for Trolley Modernization, Bus Revolution, and Rail Fleet Replacements projects. This program strengthens the region’s access to transportation infrastructure that is in good repair and produces lower emissions.

Table 20: SPIKE Funding Projects That Help Support Achieving PM3 Targets in DVRPC Pennsylvania Subregion

County	MPMS #	Project	Spike Amount	Primary Improvement Focus
Chester	107551	US 30/PA 10 to Business 30 Int. Improvements	\$40 million	Turning lanes
Chester	107553	US 30 & Airport Road Int. Improvements	\$30 million	Intersection reconfiguration
Chester	107554	US 30 & PA 82 Int. Improvements	\$30 Million	Intersection reconfiguration

Source: DVRPC, 2024

Besides the individual CMAQ-funded projects, there are several continuing programs that utilize CMAQ funding to reduce emissions (as well as congestion), throughout the state. These projects and programs are listed below.

Air Quality Action Supplemental Services (MPMS #115970)—This program funds supplemental services performed by contractors in the implementation of the Air Quality Action program. Types of services may include design and production of education and outreach materials and advertising, printing, and placement of advertising on television, online, radio, and in newspapers. Advertisements educate the public about ozone and PM_{2.5} pollution and encourage actions to reduce activities that contribute to air pollution, especially on days that are forecast as unhealthy for people susceptible to ozone and PM_{2.5} pollution. Funding is provided in the amount of \$125,000 in FY2025 and \$125,000 in FY2026.

Some additional examples of projects that help improve air quality and reduce congestion include:

Complete Streets Resurfacing Program (MPMS #63406)— The purposes of this project is to (1) place an engineering consultant on retainer to undertake the necessary design work to retrofit bike lanes and bicycle-friendly shoulders where appropriate, coincident with resurfacing projects and (2) maintain existing and future bicycle facilities, including installation, maintenance, and replacement of striping and damaged and missing signs. Work would include bike lanes, edge line striping, signs, and revising traffic signal permit drawings to continue edge line revisions through signalized intersections. Work would be limited to Bucks, Chester, Delaware, and Montgomery counties, and the City of Philadelphia. Funding is provided annually, using state highway dollars, in the amount of \$300,000 in FY2025 and \$300,000 in FY2026.

Signal Retiming Program (MPMS #84457)—This signal retiming program provides for the evaluation of existing signals along an identified corridor, with the goal of improving traffic operations along said corridor

through revised signal timing plans. CMAQ funding is provided in the amount of \$350,000 in both FY2025 and FY2027.

Table 21: Key Congestion-Relief Projects in DVRPC Pennsylvania Subregion

County	Project	Primary Improvement Focus
Bucks	114096 Falls Twp. Adaptive Signals	Signal system upgrade on Lincoln Highway, West Trenton Avenue, Oxford Valley Road and Tyburn Road
Chester	114166 PA 401 & Valley Hill Road Improvement	This project involves adding turn lanes with designated left turn phases for PA 401 in Charlestown Township
Delaware	107642 Smithbridge Road Corridor	Construction of an eight-foot multiuse trail connecting residential neighborhoods school district campus, intersection improvements, and a roundabout
Montgomery	102273 Ridge Pike/Germantown Pike Intersection Realignment - Phase 1, Perkiomen	Intersection realignment project will replace the intersection of Germantown Pike, Ridge Pike, and River Road—which currently sits near the Ridge Pike Bridge over Perkiomen Creek
	114172 Dreshertown Road CC Trail Extension (Competitive CMAQ)	Trail through Fort Washington Office Park
Philadelphia	98207 I-95 Congestion Management	Provide for Congestion Management Activities related to the reconstruction of I-95 through Bucks, Delaware, and Philadelphia counties. This is to further the ongoing congestion mitigation as the construction activity increases on the corridor
	107648 N. 5th Street Reformatting Signals	Provide for traffic signal upgrades, fiber connection, geometric improvements, and traffic calming from Rising Sun Avenue to US 1.

Source: DVRPC, 2024

CMAQ Flex for SEPTA Projects of Significance Line Item (MPMS #118015)— This project is a placeholder for CMAQ funds to be flexed to SEPTA in order to support the Trolley Modernization, Bus Revolution, and Rail Fleet Replacements projects. A total of \$325 million in CMAQ funding is expected to be flexed between FY2025 and FY2035.

Table 22: 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>National Transit Database. DVRPC has adopted SEPTA’s transit asset targets. The TAM rule also 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. DVRPC also supports the PennDOT Group Plan targets and works with transit operators to program projects to support achievement of the targets.</p>				
SEPTA’s Transit Asset Management Targets				
Performance Measure	Asset Class	2022 Target	Current Performance	2023 Target
Rolling Stock (Revenue Vehicles)				
% of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	SEPTA Articulated Bus	0%	0%	0%
	SEPTA Bus	10%	9.2%	10%
	SEPTA Heavy Rail Passenger Car	0%	0%	0%
	SEPTA Light Rail Vehicle	0%	0%	0%
	SEPTA Commuter Rail Locomotive	0%	0%	0%
	SEPTA Commuter Rail Passenger Coach	0%	0%	0%
	SEPTA Commuter Rail Self-Propelled Passenger Car	66%	66%	66%
	SEPTA Cutaway Car	0%	0%	0%
	SEPTA Trolley Bus	0%	0%	0%
	SEPTA Vintage Trolley/Streetcar	100%	100%	100%
Equipment (Non-Revenue Vehicles)				
% of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	SEPTA Automobiles	50%	41%	50%
	SEPTA Trucks and Other Rubber Tire Vehicles	45%	45%	50%
	SEPTA Steel Wheel Vehicles	50%	50%	50%
Facilities				
% of facilities with a condition rating below 3.0 on the FTA TERM scale	SEPTA Administrative / Maintenance Facilities	3%	3%	5%
	SEPTA Passenger / Parking Facilities	5%	3.6%	5%

Transit Asset Management Performance Measures (cont.)

Percent of Track Segments with Performance Restrictions				
% of the transit provider's fixed guideway track miles that have performance restrictions.	SEPTA Commuter Rail	10%	3.5%	10%
	SEPTA Heavy Rail	5%	2.6%	5%
	SEPTA Streetcar Rail	3%	0.7%	3%
PennDOT's Group Plan Transit Asset Management Targets				
Performance Measure	Asset Class	2022 Target	Current Performance	2023 Target
Rolling Stock (Revenue Vehicles)				
% of revenue vehicles within a particular asset class that have met or exceeded their Estimated Service Life (ESL)	AO-Automobile	18%	29%	29%
	BR-Over-the-road Bus	18%	20%	20%
	BU – Bus	28%	31%	31%
	CU-Cutaway	52%	53%	53%
	VN-Van	63%	62%	62%
	SV-Sports Utility Vehicle	33%	36%	36%
Equipment (Non-Revenue Vehicles)				
% of non-revenue/service vehicles within a particular asset class that have met or exceeded their ESL	Automobiles	57%	45%	45%
	Trucks / Rubber Tire Vehicles	27%	21%	21%
Facilities				
% of facilities with a condition rating below 3.0 on the FTA TERM scale	Administrative / Maintenance Facilities	14%	14%	14%
	Passenger / Parking Facilities	84%	66%	66%
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>				

PennDOT Efforts Toward Transit Asset Management Target Achievement

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 Bureau of Public Transit (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.

In addition to the decision support tools identified above, PennDOT is in the process of implementing a statewide Fixed Route Intelligent Transportation Systems (FRITS) program. FRITS focuses on modernizing transit technology and creating a standard platform throughout the Commonwealth. One key piece of FRITS is real-time vehicle health monitoring, which will allow agencies to identify problems before they occur on vehicles and prolong vehicle life, while also allowing agencies to better prioritize capital needs.

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
 - Annually agencies are responsible for supplying estimates of directly awarded federal and local funding for capital projects
 - PennDOT works with agencies to facilitate the efficient use of dollars towards maintaining a state of good repair, filling project shortfalls with available state funding
- 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.

DVRPC Region Efforts Toward Transit Asset Management Target Achievement

The Transit Asset Transportation Performance Management Rule requires MPOs to describe how the region’s TIP will help to achieve the TAM targets. The DVRPC FY2025 TIP for Pennsylvania was developed to ensure progress toward target achievement. The *Plan-TIP Project Evaluation Criteria* includes a Facility/Asset Condition component, weighted at 12.5 percent. It relates to the Plan’s goal to rebuild and modernize the

region's transportation assets. Transit projects score by improving the state-of-repair for transit assets. The following steps have been taken by the transit operators to ensure that projects selected for TIP funding help to achieve the TAM targets. Overall, SEPTA has programmed approximately 85 percent of their FY2025 TIP funding for preservation and maintenance of their system.

To meet the targets for Measure 1: Percentage of Revenue Vehicles That Have Met or Exceeded Their ULB, SEPTA has awarded a contract to replace 340 hybrid buses. Additionally, SEPTA has awarded a contract for the replacement of 130 trolley vehicles in 2023 and plans to award a contract for the replacement of 200 Market-Frankford Line rail cars in 2024. Both procurements are fully funded in the Draft FY2025 TIP. SEPTA has programmed sufficient funding to replace half of the 231 Silverliner IV commuter rail vehicles, which were purchased between 1973 and 1976. Finally, new to the Draft FY2025 TIP, SEPTA has programmed \$700 million for the replacement of the Broad Street Line vehicles towards the end of the 12-year program. In addition to vehicle replacements, SEPTA has programmed funds to upgrade the facilities that support the buses and rail cars to ensure they are maintained in a State of Good Repair throughout their useful life. In addition to daily inspections and routine maintenance, all revenue vehicles receive preventative maintenance on a regular basis through SEPTA's vehicle overhaul (VOH) program. The VOH program is particularly important for rail fleets, where most vehicles are approaching or have aged beyond their ULB. SEPTA is planning for a full transition to zero-emission buses (ZEBs) by the year 2040. The Zero Emission Bus Master Plan lays the groundwork for the bus fleet of the future. SEPTA has completed the first phase of analysis that examines the feasibility of procuring battery electric buses and installing charging infrastructure to support the fleet. The next phase of the plan will evaluate fuel cell electric buses and the necessary fueling infrastructure to support them. To ensure the reliability and continuity of bus operations while the ZEB Master Plan and transition plan is finalized, the Authority contracted with New Flyer to purchase 340 hybrid buses to provide flexibility to transition to a zero-emission bus procurement sooner if technology is available. This bus procurement will allow SEPTA to retire the last of the all-diesel fleet, which is now more than 15 years old (purchased in 2005). Future bus purchases will be guided by the ZEB Playbook and the results of Bus Revolution.

To meet targets that were set for Measure 2: Percentage of Support Vehicles That Have Met or Exceeded Their ULB, SEPTA programs on average \$14.1 million annually in their Utility Fleet Renewal Program—Non-Revenue Vehicles program. These vehicles include automobiles for transit supervisors and operator support personnel; utility vehicles for the inspection, maintenance, and construction of operating facilities, overhead power systems, signal systems, and track; and service vehicles and equipment for use in garages, shops, and operations support functions. In order to have adequate and reliable utility vehicles, SEPTA has developed a program to periodically renew this fleet on a vehicle-by-vehicle basis contingent upon the vehicle's age, condition, and usage within the Authority.

To meet targets that were set for Measure 3, Average Condition of Facilities, SEPTA's 2025–2036 Capital Budget includes provisions of \$982.5 million and \$473.0 million for passenger and maintenance facilities, respectively. Representative passenger facility projects include Ardmore Transportation Center, Malvern Station, Marcus Hook Station, Cornwells Heights Station, and Erie Station on the Broad Street Line. Some examples of maintenance facility projects include Frazer Shop & Yard Expansion, Courtland Shop Improvements, and Victory Shop & Storage Upgrades. SEPTA has programmed \$516 million and \$212 million for Transit and Regional Rail Station, and Maintenance and Transportation Facilities improvements over the next four years, respectively. These investments will help bring various stations, bus and rail maintenance shops, facilities maintenance shops, and office buildings to a state of good repair.

For the last measure, Measure 4: Percentage of Track Segments with Performance Restrictions (by Mode), SEPTA evaluated the scope of planned maintenance work when establishing the performance targets for 2023. SEPTA will continue the cyclical replacement of railroad tie timbers and overhead contact wire. Tie work is generally performed between the hours of 9:00 AM and 3:00 PM; therefore, maintenance projects will continue to cause performance restrictions. In the case of a condition that requires a speed restriction, SEPTA deploys crews to fix the issue as soon as possible. SEPTA's Resiliency and Sustainability Program is performing several projects that will harden the infrastructure against extreme weather events, such as stabilization of four slopes on the Main Line, one slope on the Manayunk/Norristown Line and one slope on

the Norristown High Speed Line, installation of new pumps on the Broad Street Subway, flood mitigation at Jenkintown and Sharon Hill Stations, and emergency power for the signal system.

Table 23: Public Transit Safety Performance Measures

Background				
<p>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 CFR 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 Section 5307 funding to develop and implement safety plans that support the implementation of Safety Management Systems (SMS). At this time, recipients which receive 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 Fatalities, Injuries, Safety Events, and System Reliability. All applicable public transit agencies in the Commonwealth have written safety plans compliant with 49 CFR 673. 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.</p>				
Data Source				
National Transit Database. DVRPC has adopted SEPTA's transit safety targets.				
Transit Asset Management Targets				
Performance Measure	Asset Class	2022 Target	Current Performance	2023 Target
Fatalities				
Total / Rate of fatalities, by mode, across the transit agency's system.	SEPTA*	DNR/26.3	DNR/21.98	DNR/28.62
Injuries				
Total / Rate of injuries, by mode, across the transit agency's system.	SEPTA Bus*	DNR/3.880	DNR/2.62	DNR/3,105
	SEPTA Trolley Bus*	DNR/4.460	DNR/2.27	DNR/2,607
	SEPTA Heavy Rail (MFL)*	DNR/540	DNR/0.37	DNR/433
	SEPTA Heavy Rail (BSL)*	DNR/360	DNR/0.35	DNR/358
	SEPTA Heavy Rail (NHSL)*	DNR/1580	DNR/0.68	DNR/2,049
	SEPTA Light Rail*	DNR/DNR	DNR/DNR	DNR/4,315
	SEPTA Commuter Rail*	DNR/470	DNR/0.16	DNR/356
	SEPTA Employees**	DNR/4.26	DNR/4.82	DNR/4.99
Safety Events				
Total / Rate of safety events, by mode, across the transit agency's system.	SEPTA Bus Vehicle*	DNR/6,770	DNR/7,965	DNR/6,953
	SEPTA Trolley Bus Vehicle*	DNR/7,110	DNR/7,909	DNR/6,573
	SEPTA Heavy Rail (MFL) Vehicle*	DNR/100	DNR/107	DNR/87
	SEPTA Heavy Rail (BSL) Vehicle*	DNR/80	DNR/105	DNR/82
	SEPTA Heavy Rail (NHSL) Vehicle*	DNR/2,040	DNR/3,057	DNR/2,472
	SEPTA Light Rail Vehicle*	DNR/8,330	DNR/10,623	DNR/9,685
	SEPTA Commuter Rail Vehicle*	DNR/80	DNR/106	DNR/95
	SEPTA Heavy Rail (MFL) Station*	DNR/2,800	DNR/499	DNR/3,844
	SEPTA Heavy Rail (BSL) Station*	DNR/960	DNR/191	DNR/1,488

Public Transit Safety Performance Measures (cont.)

	SEPTA Heavy Rail (NHSL) Station*	DNR/860	DNR/324	DNR/2,067
	SEPTA Commuter Rail Station*	DNR/790	DNR/117	DNR/938
	SEPTA Bus Safety Events	471	508	447
	SEPTA Trolley Bus Safety Events	11	9	11
	SEPTA Heavy Rail Safety Events	128	155	148
	SEPTA Light Rail Safety Events	91	63	81
	SEPTA Commuter Rail Safety Events	3	4	5
System Reliability				
The miles traveled between major mechanical failures calculated for each mode that the transit agency operates.	SEPTA Heavy Rail (MFL)	85,000	82,058	105,314
	SEPTA Heavy Rail (BSL)	130,000	163,274	122,436
	SEPTA Heavy Rail (NHSL)	35,000	40,742	32,306
	SEPTA Light Rail (City)	8,000	18,167	11,805
	SEPTA Light Rail (MSHL)	20,000	14,671	21,018
	SEPTA Commuter Rail	30,000	38,004	40,500

*per 100 million miles ** per 200,000 work hours DNR (Did Not Report)

Efforts Toward Transit Safety Target Achievement

Safety is the highest weighted component of the *Plan-TIP Project Evaluation Criteria* at 23.2 percent. It corresponds to the Plan’s goal to achieve Vision Zero—no transportation-related deaths or serious injuries—by 2050. Transit projects score by implementing safety strategies at locations with documented safety issues. SEPTA has developed and implemented various safety programs, rules, and standard operating procedures. In addition to these administrative controls, SEPTA develops engineering controls or eliminates these risks by investing capital funds in various projects. The projects will maintain SEPTA’s state of good repair and reduce risks, improve safety, and help achieve safety performance target goals. Under SEPTA’s FY2025 Capital Program, the Authority is committing \$89.0 million toward Communication, Signal System, and Technology Improvements, \$62.3 million toward Infrastructure Safety Renewal Programs, \$35.6 million toward Safe, Clean, and Secure Program, \$10.0 million toward Resiliency and Sustainability Program, \$113.6 million toward vehicle acquisition and overhauls, and \$276.8 million toward projects of significance for Bus Revolution, Regional Rail Master Plan, Trolley Modernization, and rail transit vehicle acquisition projects. The following highlights several projects that will be implemented to help address each of the targets. For specific details on each of the referenced programs/projects, refer to SEPTA’s Capital Program Report.

Fatalities/Injuries and Safety Events

To reduce the number of fatalities, injuries, and safety events, SEPTA is implementing the following projects that will help reduce rail vehicle collisions, grade crossing events, trespassing, and pedestrian safety in and around their operating environments.

Stations, Loops and Parking Improvements (MPMS #77183, Transit and Regional Rail Station Program and MPMS #90497, Infrastructure Safety Renewal Program): The program provides for the construction, reconstruction, or rehabilitation of transit and Regional Rail stations and terminals, bus/trolley loop facilities, transportation centers, bicycle facilities, and parking expansions and improvements. In the FY2025 TIP, SEPTA is scheduled to progress the following projects.

- Ardmore Transportation Center (MPMS #73214);
- Conshohocken Station Parking ,TOD, and surface parking;
- 11th Street Station;
- A Rail Transit Wayfinding and Signage Project;

- Replacing and Adding New ADA Bridge Plates for Regional Rail and Transit Stations;
- Chestnut Hill East ADA Improvements;
- Swarthmore Station Design;
- Willow Grove Station Phase 1 and;
- Center City Concourse.

Signal System Safety Renewal Program (MPMS #102571, Communications, Signals, and Technology Program): SEPTA will be modernizing various signal systems throughout their system, including a positive train control system on the Media-Sharon Hill Line (MSHL), modernizing their Broad Street Line signal system, advancing an Automatic Train Control, and Signal System Renewal on the Norristown High Speed Line. Rail signal modernization projects and interlocking improvements will enhance operational reliability and service quality. These signal system enhancements will provide the improved technology to reduce, if not eliminate, train incidents due to overspeed, close separation, and signal run-throughs.

Track and Right-of-Way Safety Renewal Program (MPMS #102565, Track Improvement Program): This program focuses on the renewal and replacement of track, switches, and special work, including yard and shop areas, track surfacing, culverts, bridges, and retaining walls. In FY2025 SEPTA will be working on the following sections of right-of-way:

- Harrisburg Line Capacity Improvements – Track 2;
- Market-Frankford Line Bridge Street Yard Program;
- Norristown High Speed Line Tie Replacement and Continuous Welded Rail;
- 69th Street Yard Tracks Program;
- Trolley Tunnel Track;
- MFL Haunches Repairs; and
- Removal of Abandoned Trolley Tracks

Elevator Escalator Improvements (MPMS #121367, Safe, Clean, and Secure Program): SEPTA has a program to modernize and upgrade escalators and elevators throughout the system to maintain safe transport and ADA compliance for customers.

SEPTA’s Grade Crossing Enhancement Program (MPMS #121367, Safe, Clean, and Secure Program): This program incorporates upgrades to various grade crossings to help mitigate grade crossing events involving private, over-the-road vehicles and pedestrians. Locations are in Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties.

Fern Rock Transportation Center Security upgrades (MPMS #121367, Safe, Clean, and Secure Program): This project will address trespassing issues and security improvements around the Fern Rock Transportation Center. The work includes a grade-separated pedestrian crossover, platform repairs, and elevator upgrades on the railroad platform, as well as security fencing, lighting, and closed-circuit television (CCTV) upgrades to the Fern Rock Subway rail yard.

System Wide Security: Through the U.S. Department of Homeland Security, the Transit Security Grant Program provides funds to operators of public transportation systems to protect critical surface transportation assets and the traveling public from acts of terrorism, and to increase the resilience of transit infrastructure. From this grant program, SEPTA has funded CCTV cameras on vehicles; multijurisdictional counter-terrorism emergency simulation drills on various transit modes; directing of SEPTA Transit Police Patrols in strategically designated areas during periods of elevated alert using specially trained anti-terrorism teams; hazardous material identification kits for Special Operations and Response Teams (SORT); purchase of explosive detection devices, intrusion detection and surveillance equipment, and bulletproof vests; SORT and K-9 patrol teams; upgraded mobile communications and Control Center monitoring equipment; installation of video surveillance cameras at transit facilities; implementation of a radio interoperability

system; maintenance of a computer-aided dispatch and records management system for the Philadelphia region; and perimeter fencing and security cameras at SEPTA's Fern Rock facility.

System Reliability

To ensure safe, efficient, and reliable service to riders, it is paramount that system infrastructure and revenue fleet equipment remain reliable and minimize failures that can cause SEPTA to suspend or significantly delay service. The following programs will be implemented to help maintain system reliability:

Track and Right-of-Way Renewal Program **Track and Right-of-Way Safety Renewal Program** (MPMS #102565, Track Improvement Program): This program focuses on the renewal and replacement of track switches and special work, including yard and shop areas, track surfacing, culverts, bridges, and retaining walls.

Vehicle Acquisitions and Overhauls (MPMS #60638, Regional Rail Car and Locomotive Acquisitions; MPMS #90512, SEPTA Bus Purchase Program; MPMS #60582, Vehicle Overhaul Program): Under this program, SEPTA's vehicle fleets are overhauled on a planned schedule to maintain a quality, reliable fleet throughout the vehicles' service life. The program also provides for the replacement of vehicles and equipment that have exceeded their useful life and for fleet expansion to meet present and projected increases in ridership demands. The vehicle acquisition includes the purchase of 340 new 40-foot Hybrid Buses and replacements for the Silverliner IV cars.

In addition to these VOH fleet replacements, the rail fleet conducts subcomponent overhauls for additional cars in the fleet. These subcomponents include, but are not limited to, HVAC systems, traction motors, control boxes, software upgrades, and pantographs.

Trolley Modernization (MPMS #115472, Projects of Significance): The goals of the Trolley Modernization program are: a system in full compliance with the ADA; a safe and improved customer experience; and providing faster, higher-capacity service. Specific activities to be addressed include property acquisition for the new trolley car facility/facilities; bridge enhancements to support the new trolley cars; the Trolley Tunnel State of Good Repair Program; coordination with utilities and the City of Philadelphia; development of modern trolley station design standards and identification of locations, based on public input and community engagement; Preliminary Engineering and program management for the overall project; and acquisition of ADA Accessible trolleys.

Rehabilitation of Power Systems and Substations (MPMS #60651, Substations and Power Improvements): This program provides for the design, rehabilitation, and construction of electric traction substations, power systems, and associated components, including catenary and support structures, feeders, transmission lines, and localized and centralized control facilities. The program also includes the procurement of long lead equipment, such as auto transformers and circuit breakers that are required for the substation construction projects. In the FY2025 TIP SEPTA will be working on the following power systems:

- 30th Street West Catenary Replacement;
- RRD Automated Wire Scan;
- Brill Substation;
- Cresheim Valley Substation;
- 18th Street Switching Station; and
- Wayne Junction Static Frequency Converters.

Wheel Truing Machine Rebuilds (MPMS #102569, Maintenance and Transportation Facilities): This program includes reconditioning and rebuilding wheel truing machines that have exceeded their useful life. This critical equipment maintains the rail fleet wheels, keeping the fleet safe and available for service. When rail wheels cannot be trued, the fleet may need to be held out of service and not available for revenue service.

Jenkintown Flood Mitigation Project (MPMS #121366, Resiliency and Sustainability Program): This project will make the station fully ADA accessible. This station will receive new full-length high-level platforms; new pedestrian overpass and elevators; new passenger shelters; accessible pathways and handrails/guardrails; new signage and lighting; stormwater management systems and landscaping.