

2021-2024 Transportation Improvement Program (TIP)

Project Selection Process

North Central Pennsylvania Regional Planning and Development Commission (North Central)

The federal Fixing America's Surface Transportation (FAST) Act legislation and the federal *Statewide and Metropolitan Transportation Planning Final Rule* (Title 23 U.S.C. Section 34 and Title 49 U.S.C. Section 1607) require that local and state officials work cooperatively to maintain a continuous and comprehensive long-range transportation planning program in all urbanized areas with a population of over 50,000 persons in the United States. This Federal mandate is carried out by a formal group called a "Metropolitan Planning Organization (MPO)." The FAST Act also recognizes the designation of Regional Transportation Planning Organizations (RTPOs) to carry out these processes outside of urbanized areas. The FAST Act and the federal rule specify the primary roles and responsibilities of MPOs and RTPOs. North Central is responsible for fulfilling these federal requirements in the counties of Cameron, Clearfield, Elk, Jefferson, McKean and Potter counties.

Every two years Pennsylvania's MPO and RTPO Planning Partners, including North Central, work in partnership with PennDOT, local transit providers and area local officials to identify priority transportation needs and develop a new Transportation Improvement Program (TIP) to address these needs over the next four-year period.

The TIP details the planned expenditure of federal funds and state capital funds for specific programs and projects within specified limits of fiscal constraint. In order to be included on the TIP, programs and projects must be included on the Planning Partner's adopted Long Range Transportation Plan (LRTP) or addressed through reserve line items included on the LRTP. The TIP years are based on the federal fiscal year, which extends from October 1 to September 30.

The list of projects on the TIP coincides with the First Four Year segment of the Commonwealth of Pennsylvania's Twelve Year Program (TYP), which is developed by PennDOT and adopted by the State Transportation Commission (STC) every two years, at the same time as the TIP.

In addition to the FAST Act, the Clean Air Act Amendments (CAAA) of 1990 specifies planning activities for areas exhibiting air quality that is not in attainment with acceptable standards. Prior to 2004, air quality in all counties within the NCRPDC area was in attainment with the standards in the CAAA, and there were no special planning activities or processes required of the partners. Air quality standards that became effective in June 2004 designated Centre and Clearfield Counties as non-attainment areas for ozone. However, subsequent air quality measurements enabled both counties to be redesignated as attainment "maintenance" areas.

In 2013, legal proceedings at the federal level resulted in a change of standards, and both Centre and Clearfield Counties were determined to be "attainment" areas. Thus, special planning activities and air quality conformity analysis are no longer required as part of preparation of the LRTP and TIP. The last air quality conformity analysis was completed in 2012 for the 2013-2016 TIP.

North Central works to educate the general public on transportation programs and encourages interested citizens to participate in the STC public involvement process. The public is notified of the opportunity to provide input via the STC Twelve Year Program update outreach processes and the Planning Partners

review of public feedback compiled by the STC. North Central also regularly solicits public input on transportation priorities through public meetings, press releases, surveys, comment forms on websites, etc.

Project Selection:

Projects in the TIP address a variety of transportation modes including improvements to roadways, bridges, transit, bicycle and pedestrian facilities, rail freight facilities and airports. In recent years, system maintenance has required a growing share of the Commonwealth of Pennsylvania's limited resources. Consequently, the TIP places high priority on projects that rehabilitate, reconstruct, and renew the existing and aging transportation infrastructure. Fiscal constraints also mean that very few new projects are typically added to the TIP during each update.

The projects selected for inclusion on the 2021-2024 TIP, which were not carryovers from the previous TIP, are consistent with PennDOT's "Transportation Investment Plan." The purpose of the Transportation Investment Plan is to make ongoing assessments and to reevaluate the data associated with the transportation decision-making process by ensuring that each dollar invested is being directed in a fashion that meets a "strategic direction" and that enhances the overall "performance" of the Commonwealth's transportation system. The Investment Plan focuses on the following four priority areas:

- Bridges on the National Highway System (NHS)
- Roadway conditions on the NHS
- Bridges on the remainder of the roadway system
- Roadway conditions on the remainder of the system

In addition, projects are also programmed from the following sources:

- Project priorities and line items specified in each region's LRTP
- Recommendations in each region's Coordinated Public Transit – Human Services Transportation Plan
- Priorities of key project sponsors such as PennDOT Engineering District staff, local fixed route and shared ride transit providers
- Project priorities identified through Transportation Asset Management Plans
- Safety needs identified through statewide Intersection Safety Implementation and Roadway Departure Implementation Plans and regional safety plans

Meetings are also held with PennDOT Districts 2 and 10 and County Planning staff to review candidate lists of projects for possible inclusion in the TIP, considering previous public involvement and undertaking a consistency check with LRTPs and with local/county priorities. The project priorities and essential project information are compiled in the Draft TIP documentation made available to the public as part of a 30-day public comment period before adoption by North Central.

For North Central, an effort was made to select the suite of projects that would provide the greatest possible improvement in asset conditions and improve the "performance" of the overall transportation system.

Roadway Projects

The District 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 or County maintenance plans. Factors for which projects are picked from the 5-Year Plan may include 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

Sufficiency ratings are a single-digit number that describes the physical condition of the superstructure compared to its original as-built condition. A number is assigned by state-certified bridge inspectors during each inspection of the bridge, which occurs at least every two years. Bridge condition ratings fall in a number range from nine to zero. A rating of 4 or below indicates poor conditions that result in a "Poor" classification.

A. Replacements:

1. The current Poor population and the condition 5 or less 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 with the roadway projects
4. Evaluate if Department Forces can possibly complete the work

B. Rehabilitations:

Same logic as Replacements, but mostly look for bridges that we can raise the condition ratings to a 6 or greater for all three major bridge components (substructures, superstructures and deck).

C. Preservation:

1. Rely on evaluations and where appropriate 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
 - f. 15 to 20-year cycle for painting steel trusses and steel through plate girders
2. If appropriate, 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
 - d. Scour or substructure repairs

4. Prioritize by Business Plan Network and by the highest cost assets (major river crossings)

North Central’s 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)
- Highway Safety Improvement Program (HSIP) Statewide Set-aside

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

Performance Measures and Target Setting

Safety

Federal safety performance measures were implemented in 2016, and targets for measuring safety performance were established by PennDOT and North Central in 2017. Pennsylvania’s current [Strategic Highway Safety Plan \(SHSP\)](#) was updated in early 2017. It contains statewide goals for fatalities and serious injuries over the next 3-4 years. The SHSP was developed in conjunction with over 45 stakeholders including federal, state, local and private sector agencies; Pennsylvania’s Metropolitan Planning Organizations (MPO)/Rural Planning Organizations (RPO), both safety engineering and driver behavior partners.

The North Central RPO has adopted the State’s SHSP performance targets for the region.

Regional Safety Targets

Performance Measure	5 Year Rolling Average		
	Target 2016-2020	Actual 2016-2020	Baseline 2014-2018
Number of Fatalities	37.2		37.2
Rates of Fatalities	1.593		1.536
Number of Serious Injuries	136.3		115.2

Rate of Serious Injuries	5.835		4.756
Number of Non-Motorized fatalities & Serious Injuries	11.7		9.4

Rate of fatalities and serious injuries per 100 Million VMT

The 2021-2024 TIP includes roadway safety improvement projects that are intended to help improve the performance of the roadway system relative to the five federal safety performance measures, which are also included in North Centrals LRTP. The following has helped to ensure planned HSIP projects in the North Central region achieve a significant reduction of traffic fatalities and serious injuries on all public roads:

- Implementing the strategies in the 2017 Strategic Highway Safety Plan (SHSP) through a data driven safety analysis, and the utilization of low-cost safety improvements system-wide to support achieving these reductions
- Projects are being planned and completed that were associated with the Intersection Safety Implementation Plan (ISIP) and Roadway Departure Safety Implementation Plan (RDIP)
- Conducting review of candidate locations with District 2-0, 10-0 and North Central staff
- Conducting PennDOT Connect field view of candidate locations with District 2-0, 10-0, North Central and county/municipal officials from the subject locations

Public Transportation

The TIP includes Public Transportation projects and line items being carried forward from the previous 2019-2022 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 LRTP
2. The recommendations in North Central’s adopted Coordinated Public Transit – Human Services Transportation Plan
3. The priorities expressed by the Area Transportation Authority
4. PennDOT’s Capital Planning Tool

Highway and Bridger Performance Measures

PennDOT will coordinate with North Central RPO on the development of the measures and selection of targets to ensure consistency, to the maximum extent practicable. PennDOT BOMO in coordination with CPDM will be responsible for scheduling and conducting TAMP Steering committee meetings. PennDOT CPDM will be responsible for scheduling and conducting Planning Partner meetings and conference calls, where coordination on target setting will occur. PennDOT is required to set State 2-year and 4-year targets biennially. PennDOT will have the option to adjust the four-year targets in the Mid Performance Period Progress Report. PennDOT will report the targets as part of FHWA required Performance Reporting. PennDOT CPDM will share the reporting submissions and/or another type of notification of the state targets with the North Central RPO in a timely manner

Pavement performance measures required for FHWA reporting include the following four distress components:

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

The pavement and bridge performance measures, collectively referred to as the PM2 measures include:

- % of Interstate pavements in Good condition
- % of Interstate pavements in Poor condition
- % of non-Interstate National Highway System pavements in Good condition
- % of non-Interstate National Highway System pavements in Poor condition
- % of National Highway System bridges by deck area classified in Good condition
- % of National Highway System bridges by deck area classified in Poor condition

The most recently available baseline and proposed targets for the Pavement/Bridge performance measures statewide are given below:

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

PennDOT’s pavement condition targets (its desired state of good repair) for NHS Interstate roadways mirrors the federal standard: no more than 5 percent of Pennsylvania’s NHS Interstate pavements shall be rated in poor condition.

PennDOT’s pavement condition targets are consistent with its 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.

Statewide Bridge Performance Targets			
Measure	Baseline 2017	2-year Target 2019	4-year Target 2021
% of NHS bridges by deck area classified in Good condition	25.6 %	25.8 %	26.0 %
% of NHS bridges by deck area classified in Poor condition	5.5 %	5.6 %	6.0 %

PennDOT’s bridge condition targets are consistent with its asset management objectives of maintaining the system at the desired state of good repair, managing to Lowest Lifecycle Cost LLCC, and achieving national and state transportation goals. The North Central RPO has agreed to support the state PM2 targets by planning and programming projects that contribute to meeting or making significant progress toward the established PennDOT performance targets.

System Performance Measures

The FHWA final rule for the National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program was published in the Federal Register (82 FR 5970) on January 18, 2017, and became effective on May 20, 2017.

The PM3 performance measures include:

- Percent of Person-miles Traveled on the Interstate System that are Reliable
- Percent of Person-miles Traveled on the Non-Interstate NHS that are Reliable
- Interstate System Truck Travel Time Reliability Index
- Annual Hours of Peak-Hour Excessive Delay (PHED) per Capita
- Percent Non-Single Occupant Vehicle (SOV) Travel
- On-Road Mobile Source Emissions Reduction for CMAQ-funded Projects

In Pennsylvania, PennDOT CPDM in coordination with BOMO will take the lead and coordinate with MPO/RPO representatives as well as other necessary stakeholders, such as other State DOTs in urbanized areas, to utilize existing workgroups or organize a group to collaborate on the system performance measures and targets. This group will evaluate baseline performance measures tools, trends, and methodologies. Information discussed as part of these group(s) will be shared at Statewide Planning Partner Meetings and conference calls.

To satisfy 23 CFR 490.105(e)(2), PennDOT CPDM and BOMO will coordinate with MPOs/RPOs on the development of the measures and selection of targets to ensure consistency, to the maximum extent practicable. PennDOT CPDM in coordination with BOMO will be responsible for scheduling and conducting group meetings. PennDOT CPDM will be responsible for scheduling and conducting Planning Partner meetings and conference calls, where coordination on target setting will occur.

MPOs/RPOs will be responsible for providing representation on the group(s). All MPOs/RPOs will ensure they participate in Planning Partner meetings and conference calls to provide input into performance measure and target coordination.

PennDOT is required to set State 2-year and 4-year targets biennially. PennDOT will have the option to adjust the four-year targets in the Mid Performance Period Progress Report. PennDOT CPDM in coordination with BOMO will coordinate any adjustments to the targets with the MPOs/RPOs.

The targets for the traffic congestion measures [23 CFR 490.707(a) and (b)] reported by PennDOT and MPOs for an urbanized area must be identical [23 CFR 490.105(f)(5)]. If a multistate MPO is required to establish targets for the traffic congestion measures, all applicable MPOs and State DOTs must establish only one 2-year target and one 4-year target for the entire urbanized area for each traffic congestion measure.

The MPOs/RPOs and State DOTs will collectively develop and implement a mutually agreed upon coordination process so that both MPOs/RPOs and State DOTs meet their respective target establishment and reporting deadlines.

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</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). Targets are established biennially for these measures as part of a four-year performance period, the first of which began in 2018.			
Data Source			
The Regional Integrated Transportation Information System (RITIS) software platform is used to generate all 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.			
Travel Time and Annual Peak Hour Excessive Delay Targets			
Measure	Baseline 2017	2-year Target 2019	4-year Target 2021
Interstate Reliability (Statewide)	89.8 %	89.8 %	89.8 %
Non-Interstate Reliability (Statewide)	87.4 %	N/A	87.4 %
Truck Reliability Index (Statewide)	1.34	1.34	1.34
Annual Peak Hour Excessive Delay Hours Per Capita (Urbanized Area)	DVRPC - 16.8	N/A	17.2
	SPC - 11.1	N/A	11.8
Non-SOV Travel Measure Targets			
Measure	Baseline 2017	2-year Target 2019	4-year Target 2021
Percent Non-Single Occupant Vehicle Travel (Urbanized Area)	DVRPC - 27.9 %	28.0 %	28.1 %
	SPC - 24.8 %	24.6%	24.4 %
CMAQ Emission Targets			
Measure		2-year Target 2019	4-year Target 2021
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	17.470
CO Emissions (Statewide)	567.700	1135.400
Methods for Developing Targets		
<p>The System Performance measure targets were developed in coordination with MPOs/RPOs within the state. Due to potential tool enhancements, limited historic information, and the need for additional research to understand the variances and factors influencing each of the performance measures, PennDOT has established conservative targets. In some respects, these may be more appropriately referred to as benchmarks. PennDOT will track the measures over the reporting period to identify trends and to support future target revisions. Note: The Peak Hour Excessive Delay and Non-SOV measures are only calculated for the urbanized areas. For the first four-year period, it is only the urbanized areas with a population over 1 million (which is Pittsburgh and Philadelphia). In the next performance period (beginning 1/1/2022), this will include urbanized areas with a population over 200,000.</p>		