

Appendix C: Performance Based Planning and Programming (PBPP)

MAP-21 and subsequent FAST Act require State DOTs and MPOs to establish and use a performance-based approach to transportation decision making. This includes tracking performance measures, setting data-driven targets for each measure, and selecting projects to help meet those targets. The FAST Act also requires that the TIP include a description of its anticipated effect toward achieving the established performance targets, linking investment priorities to those performance targets.

The goal of Performance-Based Planning and Programming (PBPP) is to ensure targeted investment of federal transportation funds by increasing accountability and transparency and providing for better investment decisions that focus on key outcomes related to seven national goals:

- Safety
- Infrastructure preservation
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays

FHWA has issued three Transportation Performance Measurement (TPM) related rules to date: The first is the Safety Performance Measures, often referred to as PM1. The second set of rules are those pertaining to the pavement and bridge conditions; often referred to as the PM2 rules. The third set is the System Performance Measures, including Freight and CMAQ Measures. These are often referred to as PM3 rules. There are also the Transit Performance Rules, issued by FTA.

Appendix C-C1: Safety Performance Management Measures Rule (PM1)

Safety is the first national goal identified in the FAST Act and has the earliest deadline for addressing progress towards meeting targets in the TIP. For more information about the development and implementation of FHWA's TPM policy and rulemaking, see www.fhwa.dot.gov/tpm.

In March 2016, the FHWA Highway Safety Improvement Program and Safety Performance Management Measures Rule (Safety PM Rule) was finalized and published in the Federal Register. These are often referred to as the PM1 rules. The rule requires State DOTs and MPOs to set annual targets for five safety-related performance measures with the understanding that reaching zero fatalities on all public roads will require time and significant effort. A target is defined in 23 CFR 490.101 as a quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a set time period required by FHWA. The federal safety performance measures are consecutive five-year rolling averages for:

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled (VMT)
- Number of serious injuries
- Rate of Serious Injuries per 100 million VMT
- Number of non-motorized fatalities and non-motorized serious injuries (combined)

State DOTs report baseline values, targets, and progress toward meeting the targets to FHWA in an annual safety report. MPOs may either establish quantitative targets for their metropolitan planning area or agree to adopt the statewide targets. FHWA requires DOTs and MPOs to establish safety targets on an annual basis, beginning with targets for calendar year (CY) 2018. Extensive collaboration took place between NJDOT, the New Jersey Division of Highway Traffic Safety (NJDHTS), DVRPC, NJTPA, and SJTPO leading up to establishing the CY 2018 statewide safety targets, which was subsequently adopted by the SJTPO Policy Board at its January 28, 2018 meeting. At the July 22, 2019 meeting, the SJTPO Policy Board adopted a resolution supporting NJDOT's statewide safety targets for CY 2020.

To strengthen communication and coordination efforts, various technical safety experts and planning staff from the MPOs and NJDOT meet regularly to discuss Highway Safety Improvement Program (HSIP) project advancement and Performance Measure Targets and Goals.

FHWA will determine whether a state has met or made significant progress toward its safety performance targets. A state is considered to have met or made significant progress when at least four out of the five safety performance targets are met or the actual outcome for the safety performance target is better than baseline performance.

NJDOT Statewide Safety Targets and Goals

In 2015, NJDOT published its [Strategic Highway Safety Plan](http://www.state.nj.us/transportation/about/safety) (SHSP), which is available online at <http://www.state.nj.us/transportation/about/safety>. The SHSP was developed in collaboration with the NJDHTS and New Jersey's three MPOs to focus on activities that will be most effective in reducing fatalities and serious injuries. This document adopted a goal to support the national vision for highway safety – *Toward Zero Deaths: A National Strategy on Highway Safety*. The SHSP is data-driven, sets long-term goals, and is a coordinated statewide plan that identifies the most significant infrastructure and behavioral safety issues on New Jersey's public roads. It identifies 16 key safety emphasis areas, including: Lane Departure, Drowsy and Distracted Driving, Aggressive Driving, Intersections, Pedestrians and Bicyclists, and Mature Drivers in the top priority tier, as well as 10 others in the second and third tiers, and the supporting strategies that are likely to have the largest impact on improving safety on public roadways. The SHSP also guides the allocation of safety funding and resources to reduce highway fatalities and serious injuries on New Jersey's public roadways.

The SHSP sets a statewide goal to reduce serious injuries and fatalities by 2.5 percent annually. Various agencies, including FHWA, NJDOT, NJDHTS, and the MPOs, recognize that reaching zero fatalities will require time and significant effort by many different partner agencies. Therefore, annual targets must be data-driven, realistic, and achievable. Targets are important for agencies to make interim progress toward the long-term goal of *Toward Zero Deaths* in the SHSP. The goal of setting data-driven, realistic, and achievable performance targets each year will help agencies better utilize their safety resources in ways that can result in the greatest reduction in fatalities and serious injuries over time.

NJDOT and the MPOs in New Jersey adopted targets, which has involved a great deal of coordination and analysis among these agencies. Safety stakeholders in New Jersey aim to reduce the number of fatalities, serious injuries, and non-motorized fatalities and serious injuries in New Jersey. The following table details New Jersey's statewide safety targets for CY 2020, which represents the second round of collaborative statewide target setting in New Jersey.

Table 1: New Jersey's Statewide Safety Targets - CY 2020

Performance Measure	5-Year Rolling Averages	
	Baseline CY 2016-2020 5-Year Rolling Average	Target CY 2014-2018 5-Year Rolling Average
Number of Fatalities	582.8	581.6
Rate of Fatalities per 100 million vehicle miles traveled (VMT)	0.744	0.759
Number of Serious Injuries	1,167.9	1,110.8
Rate of Serious Injuries per 100 million VMT	1.489	1.449
Number of Non-Motorized Fatalities and Serious Injuries	407.9	392.7

Source: NJDOT

CY 2018 marked the first round of quantifying progress toward safety improvement through target-setting. These targets were established after careful consideration of previous trends, recently constructed projects, and the current socioeconomic environment. The targets are based on five-year rolling averages of fatalities and serious injuries and are reported to satisfy federal requirements with the understanding that New Jersey's safety vision is to achieve zero deaths on all public roads over time. This long-term safety vision requires time to change attitudes and behaviors and to construct infrastructure improvements that reduce the frequency and severity of crashes.

Using a 5-year rolling average and projected numbers in the target calculation, as required, can result in a higher target number than baseline number in the short term. Because of these uncertainties, NJDOT and other states took a data-driven approach to setting targets, based on historical trend, and SJTPO supported the state targets to align regional efforts with state goals.

NJDOT and the MPOs are committed to directing resources to infrastructure related safety strategies as they strive to drive down fatalities and serious injuries with an ultimate safety vision of zero deaths. While there are various federal funding sources other than HSIP funds that can support safety goals, HSIP-funded projects must adhere to performance-based goals focusing resources on areas of greatest need and potential for the highest rate of return on the investment of HSIP funds on all public roads.

Projects that apply for these HSIP funds, must undergo a Highway Safety Manual (HSM) analysis and include a benefit-cost analysis. These analyses are meant to demonstrate that the project will have a tangible safety benefit and that the benefit will exceed the cost of construction.

Progression Towards Targets

NJDOT develops an annual safety investment strategy for all HSIP funded activities and projects. The annual investment strategy demonstrates the linkage between the objectives of the SHSP and the projects being implemented to focus on the most effective safety improvements. SJTPO has made safety a central component of its work, as described in [Transportation Matters - A Plan for South Jersey](#), SJTPO's long-range Regional Transportation Plan, which sets the direction for all SJTPO activities. One of the goals in Transportation Matters is to "Improve transportation safety, which includes the following as strategies SJTPO identified to advance this goal:

- Evaluate all transportation projects that receive funding through the SJTPO process for their inclusion of safety countermeasures for all roadway users.
- Improve the safety of roadway user behavior through the continued dissemination and development of safety education programs.
- Ensure that safety investments are aligned with priorities established with the State's Strategic Highway Safety Plan, which was developed in collaboration with MPOs and other statewide partners.
- Continue and expand state and regional partnerships to identify and reduce barriers to safety project advancement.
- Work with regional partners to develop and prioritize projects that improve safety on the bicycle and pedestrian network.

Consistent with this goal and supporting strategies, projects that meet safety goals have been and will continue to be programmed into our biennial TIP. SJTPO's FY 2020-2029 TIP includes a \$2 million annual line item for HSIP funded safety projects and programs (DBNUM 04314 Local Safety/ High Risk Rural Roads Program). At the NJDOT statewide and SJTPO regional levels, projects and programs are selected for HSIP funding in New Jersey to help achieve a significant reduction of traffic fatalities and serious injuries on all public roads to support achieving safety targets.

To be consistent with *Transportation Matters* and to adhere to the objective of the New Jersey Local Safety Program, to reduce fatal and serious injury crashes, SJTPO follows a five step, data-driven process to ensure the greatest potential safety benefit in the projects that are advanced for HSIP funding.

1. **Location Selection:** Project locations must generally be selected in one of two ways: using the "hot spot" approach, by selecting a location from one of several NJDOT-approved Network Screening lists, or using the systemic approach, which identifies the risk, demonstrated by data, that exists in roadways with particular geometric traits and applies

countermeasures at a series of locations based on the existence of those traits. SJTPO works to incorporate safety improvements based on both the hot spot and systemic approaches.

2. **Problem Identification:** A detailed analysis of a selected site's crash history is needed to understand the problem and ensure appropriate improvements are selected. Road Safety Audits are a valuable tool in problem identification.
3. **Countermeasure Selection:** Selecting an appropriate countermeasure to address the problems at a location is a key step in the process. For locations selected based on network screening, countermeasures must address the specific types of crashes at the location. For a systemic approach, countermeasures must address the specific risk, demonstrated by data, that exists given particular geometric roadway features, and are typically applied to a number of locations with similar geometric conditions. FHWA has studied and identified twenty proven safety countermeasures that should be considered in all local safety projects. SJTPO continues to work with its subregions to promote the use of these proven safety countermeasures throughout the region.
4. **Benefit-Cost Analysis:** SJTPO uses the HSM to evaluate the effectiveness of each safety improvement. The HSM evaluation is intended to ensure the identified safety improvement can be expected to demonstrate a data-driven safety benefit and ultimately determine if the benefit of the project will exceed its cost.
5. **Technical Committee Review:** The final step is review by a Technical Review Committee (TRC), comprised of SJTPO and NJDOT staff including Local Aid, Bureau of Environmental Resources, and Bureau of Safety, Bicycle, and Pedestrian Programs. In addition to reviewing applications for quality, the TRC assesses whether projects are "shovel ready," and determines if there are any "fatal flaws" that require delaying the project.

More information about SJTPO's Local Safety Program can be found at www.sitpo.org/HSIP. More information about New Jersey's statewide Local Safety Program can be found in the New Jersey [Highway Safety Improvement Program Manual](http://www.state.nj.us/transportation/about/safety), which is available at <http://www.state.nj.us/transportation/about/safety>.

In addition, NJDOT has developed and expanded its Systemic Pilot Program for Roundabouts to provide an opportunity to implement modern roundabouts on local roadways in each county with a streamlined review process, consistent with the systemic approach. This systemic approach to advancing roundabout projects is based on an understanding that roundabouts have a uniquely strong proven safety benefit that addresses the inherent risks associated with stop-controlled and signalized intersections.

SJTPO's FY 2020-2029 TIP includes a \$2.0 million annual line item dedicated to HSIP funded safety projects and programs via the Local Safety Program and High Risk Rural Roads Program; DBNUM 04314 Local Safety/ High Risk Rural Roads Program. HSIP funds are set aside every Federal Fiscal Year (FFY) in the SJTPO TIP and NJDOT STIP to advance projects that are evaluated and prioritized based on Benefit/Cost analysis, HSM analysis, fatal and injury crashes, application of systemic improvements, improvements on local roads, and deliverability. The NJDOT-approved Network Screening Lists, which identify the locations that may be eligible for HSIP-funded hot spot improvements, result from a data-driven analysis prepared for the SJTPO region. These lists prioritize fatal and serious injury crash concentrations in four categories: intersections, high risk rural roads, pedestrian corridors, and pedestrian intersections. Design and construction projects at these roadway locations are eligible for HSIP funding.

Projects currently identified for Local Safety Program funding totals over \$7 million over the first four years of the TIP. While this total represents more than four years of SJTPO's annual line item, SJTPO will work with NJDOT and roadway owners to identify an appropriate funding source.

SJTPO, county, municipal partners, in partnership with NJDOT staff work together to develop substantive safety projects at project locations. Potential projects are evaluated by using the HSM to ensure the identified safety improvement will have a positive benefit/cost ratio that meets NJDOT standards for advancement through the Local Safety Program. These projects are noted in Table 2.

Table 2: Projects Utilizing Federal Highway Safety Improvement Program (HSIP) Funds (FY 2020-2029)

DB#	Sponsor	Project Name	Emphasis Area	Funding Status
04314	Cape May County	Cape May County Centerline Rumble Strip Project	Lane Departure	Construction in FY20 programmed
04314	Cape May County	Cape May County Pilot Roundabout 1 (West Perry)	Intersections	HSIP eligibility currently under NJDOT review
04314	Cumberland County	Cumberland County Pilot Roundabout (West Park Drive)	Intersections	Construction in FY21 programmed
04314	City of Vineland	Garden Road & Mill Road Traffic Signalization	Intersections	ROW and CON in FY20 programmed
04314	Salem County	Salem County Roundabout (Six Points)	Intersections	Final Design in FY20 programmed
04314	Salem County	Salem County Pilot Roundabout (Five Points)	Intersections	Final Design in FY20 programmed
04314	City of Salem	City of Salem Roadway Corridor and Intersection Safety Improvements	Pedestrians and Bicyclists	Planned for Concept Development in FY20

In addition to the Local Safety Program, NJDOT has several statewide programs that provide funding to improve safety throughout the State of New Jersey:

Safety Programs (DB #19370) - \$14.25 million annual program (\$14 million HSIP/\$250,000 STATE) that provides funding to support eligible Safety Engineering Projects and Pedestrian Safety Improvement Projects, including engineering, right-of-way, and construction activities intended to reduce fatalities and serious injuries on New Jersey roadways.

Highway Safety Improvement Program Planning (DB #09388) - \$4 million annual program for Safety Management System (SMS) and Rail-Highway safety improvement projects. Through the guidance of the HSIP (23 CFR 924), it identifies, prioritizes and implements safety programs and projects associated with safe corridors and intersection improvement programs to reduce crashes and crash severity on New Jersey's roadways.

Utility Pole Mitigation (DB #15344) - \$175,000 annual program that seeks to identify and mitigate locations with incidents of high recurring utility pole accidents throughout New Jersey.

Motor Vehicle Crash Record Processing (DB #X233) - \$2.5 million annual program that provides the in-house Crash Records unit with upgraded equipment and new methodology. The comprehensive crash record database will include driver/crash correlation, crash location, data for driver updates, and database cleaning (correction) process.

Further, NJDOT's **Rail Highway Grade Crossing Program** is intended to reduce the number and severity of train collisions with vehicles and pedestrians at public highway-rail grade crossings.

SJTPO recognizes that HSIP is not the only funding program available that can impact safety. Many other TIP projects funded with federal non-HSIP funds will provide some safety benefits to the roadway system. Resurfacing, guiderail and vegetation maintenance, and bridge improvement projects are all expected to provide safety improvements and should help decrease fatality and serious injury crashes. In addition, congestion relief projects also have collateral safety benefits. However, SJTPO is actively working to ensure that all projects funded through the SJTPO process incorporate appropriate safety design elements and that project locations, that appear on an approved Network Screening List, include substantive safety measures that address the present safety issues.

In addition to the above projects and programs, SJTPO is unique among MPOs for its extensive safety outreach work. For twenty years, SJTPO has offered outreach programs that work to educate drivers and others on how their behaviors can impact safety. SJTPO's safety education has grown over the years and includes partnerships with several organizations on programs that address different facets of safety. These programs and presentations include:

- **Defensive Driving** – a program suitable for drivers of all ages to help them understand the concept of “defensive driving,” which in turn will help reduce the likelihood of being involved in a crash
- **Share the Keys** - a high school program that works to educate parents and encourages active involvement with their new teen drivers
- **Car Crashes - It's Basic Physics** - a high school program that teaches students about the crash dynamics and the physical impact of crashes on the body.

- ***Most Dangerous Place on Earth*** - a high school program that covers the actual statistical likelihood of being involved in a crash and gives a realistic picture of the potential danger anyone faces when part of the traffic mix.
- ***Occupant Protection for Middle School Students*** - a middle school program that provides an overview of crash dynamics and forces experienced during a vehicle crash and provides hands-on training in properly adjusting a seatbelt for maximum safety and comfort.
- ***Belts on Bones*** - a program designed for early elementary school students that teaches the importance of proper seat belt usage
- ***Belts, Bones, and Buses*** - an elementary school program that is very similar to the Belts on Bones program with the added component of school bus safety, both on and off the bus.
- ***Bicycle and Pedestrian Safety*** - an elementary or middle school program that addresses using proper safety equipment, while emphasizing the rules and laws pertaining to bicycle safety.
- ***Car-Fit for Senior Drivers*** - an AAA/AARP program designed to provide a quick but comprehensive check of how well a driver and his/her vehicle work together.
- ***Child Passenger Safety (CPS)—Car Seat Inspection Program*** - a program that provides education for parents and caregivers on how to properly install a child restraint system in their vehicles.
- ***CPS-Transporting Children Safely*** - a course that covers the proper selection, direction, location, and installation of child seats, including tips and techniques for parents and caregivers to ensure their passengers are riding safely.
- ***CPS-Child Passenger Safety Technician Training*** - a program that offers Child Passenger Safety (CPS) Technician Certification status to individuals who successfully complete the course.
- ***CPS-Restraint Systems on School Buses National Training*** - a course for school district staff that addresses proper use and installation of child seats on school transport vehicles.

More information on these and other safety education programs that SJTPO is involved in can be found at www.sitpo.org/education/.

Appendix C-C2: Pavement and Bridge Condition Performance Measures (PM2)

Pavement Conditions

As described previously, a second set of regulations, commonly referred to as the PM2 rules, addresses infrastructure performance measures; specifically, pavement and bridge performance on the National Highway System (NHS). The four pavement condition performance measures assess the percentage of the entire NHS (by lane-mile) in both “good” and “poor” condition. The performance measures are broken out into separate values for the Interstate and non-Interstate NHS. Note that statewide, the NHS includes roads owned and maintained by a variety of entities, including NJDOT (63% of centerline miles), various transportation authorities and commissions (14%), counties (20%), and municipalities (3%).

FHWA calls upon the State DOT’s to establish targets, regardless of ownership, for the full extent of the Interstate and non-Interstate NHS. As with the Safety Performance measures, the MPOs must also establish targets, or support the State’s targets, as SJTPO did. A general description of the metrics and methodology utilized by NJDOT is outlined below.

NJDOT Statewide Pavement Targets and Goals

NJDOT measured the condition of each tenth-mile segment of pavement using various metrics depending on the type of pavement, including ride quality (using the International Roughness Index), rutting, cracking, and faulting. Three of these metrics apply to each type of pavement. Each segment was characterized as either “good,” “fair,” or “poor” for each of the applicable metrics, using criteria specified by FHWA. If a segment was rated as “good” for all three-applicable metrics, the segment was considered to have “good” pavement condition. If a segment was rated as “poor” on two out of the three applicable metrics, the segment was considered to have “poor” pavement condition. All other combinations of metric ratings were assigned a “fair” pavement condition.

The four pavement condition performance measures were calculated by summing the lane-miles in “good” and “poor” condition on the Interstate segments and on the non-Interstate NHS segments, and dividing by the total number of lane-miles on the Interstate and non-Interstate NHS, respectively.

NJDOT pavement subject matter experts analyzed current 2016 pavement conditions using these measures along with preliminary data for 2017. Forecasts using the NJDOT pavement management system were also examined, accounting for pavement projects anticipated in the

current STIP. This analysis led to the following table of baseline and 2- and 4-year targets for each measure:

Table 3: New Jersey’s Statewide Pavement Targets - 1st Performance Period (CY 2018-CY 2021)

Measure	Estimated Current Conditions (2016)	Reported Baseline*	2-year target (2019)	4-year target (2021)
% Interstate pavement in good condition	61.25%		**	50%
% Interstate pavement in poor condition	1.01%		**	2.5%
% non-Interstate NHS pavement in good condition		41.9%	25%	25%
% non-Interstate NHS pavement in poor condition		26.5%	2.5%	2.5%

*For some of these measures, the baseline conditions weren’t required to be reported, but a number was still used to calculate the targets. Where this applied, this number was included in the “Estimated Current Conditions” column.

**2-year targets for Interstates are not required for the first performance period

Although the 2-year and 4-year targets assume a short-term worsening of pavement condition, NJDOT remains committed to a long-term goal of improving pavement conditions, achieving a sustainable “state of good repair.”

Progress Towards Targets

Roadway maintenance is a major focus area of NJDOT’s Capital Investment Strategy (CIS). According to the [Statewide Capital Investment Strategy FY 2013-2022](#), more than \$260 million (approximately 8%) of the annual investments is going towards road assets. Further, “Restore, Preserve, and Maintain the Existing Transportation System,” is a goal in SJTPO’s Regional Transportation Plan, *Transportation Matters*. It should be noted that most of the programmed money for the Local Lead projects, over which SJTPO has the most discretion, goes toward roadway resurfacing projects. Over the first four years (FY 2020-2023) of the current FY 2020-2029 TIP, \$47 million is made available to SJTPO through the Surface Transportation Block Grant Program (STBGP), although only \$8.2 million (approximately) is for roadways on the NHS system. NJDOT has programmed more than \$83 million for State-led roadway resurfacing projects, which are all on the NHS system. These projects are listed in Section 2 [Regional Highway Projects/Programs](#) of the SJTPO TIP. SJTPO remains committed to improving pavement conditions on roadways within its region and working with regional partners and NJDOT staff to

develop roadway resurfacing projects that will inevitably improve pavement performance and help to meet these State targets.

In addition to the projects identified in the TIP, SJTPO is involved in numerous technical studies with the intent that hopefully, they will evolve into actual projects that will improve roadway conditions. Examples of these types of projects include the collection of pavement condition data on more than 1,400 lane-miles of county roadways within the 4-county region. It is the intent that the data collected as part of this study will help SJTPO and its planning partners prioritize pavement resurfacing projects and ensure that the funding is spent as cost-effectively as possible.

Bridge Conditions

In addition to the pavement condition measures, the PM2 rule also calls for the assessment of Bridge conditions. As with the pavement condition measures, SJTPO relied upon NJDOT for calculation of bridge condition metrics and supported NJDOT's Statewide targets. The two bridge condition performance measures assess the percentage of NHS bridges (by deck area) in both "good" and "poor" condition. Note that NHS bridges include all bridges and culverts greater than 20 feet wide on NHS facilities, including on- and off-ramps connected to the NHS. Bridges that cross state borders are included in their entirety. Statewide, NHS bridges are owned and maintained by a variety of entities, including NJDOT (52% by deck area); transportation authorities and commissions (38%); and counties, municipalities, NJ TRANSIT, various other agencies, and private owners (10%).

NJDOT Statewide Bridge Targets and Goals

NJDOT reported the condition of various components of each NHS bridge to the National Bridge Inventory (NBI), on a scale of 0 to 9. The FHWA measure incorporates the condition of four NBI components: bridge deck, superstructure, substructure, and culvert, and rates each component as either "poor" (rating of 0, 1, 2, 3, or 4), "fair" (rating of 5 or 6), or "good" (rating of 7, 8, or 9). If a bridge receives ratings of "good" on all applicable components, the bridge is considered in good condition. If the bridge receives a rating of "poor" on any applicable component, the bridge is considered in poor condition. Any other combinations of ratings are considered a fair condition. It is important to note that a rating of "poor" does not correlate to the safety rating of the bridge. The bridge condition performance measures are calculated by summing the deck area of bridges in "good" and "poor" condition and dividing by the total deck area of all NHS bridges.

NJDOT bridge subject matter experts analyzed 2017 bridge conditions using these measures, along with five years of historical data and forecasts from the NJDOT bridge management system,

incorporating programmed bridge improvements anticipated in the current STIP. This analysis led to the following table of baseline and 2- and 4-year targets for each measure:

Table 4: New Jersey’s Statewide Bridge Targets - 1st Performance Period (CY 2018-CY 2021)

Measure	Reported Baseline (2017)	2-year target (2019)	4-year target (2021)
% NHS bridge deck area in good condition	21.7%	19.4%	18.6%
% NHS bridge deck area in poor condition	6.5%	6.5%	6.5%

Although the 2-year and 4-year targets allow for a slight short-term worsening of bridges in good condition and maintaining the current percentage of bridges in poor condition, NJDOT remains committed to a long-term goal of increasing bridge condition, achieving a sustainable “state of good repair.” These short-term targets will serve as useful benchmarks toward achieving that long-term goal.

Progress Towards Targets

The current FY 2020-2029 TIP contains over \$110 million in bridge improvement projects. Most of these projects are on State-highways and listed in Section 2 [Regional Highway Projects and Programs](#) (of the SJTPO TIP), along with numerous other projects.

A resolution supporting the PM2 Performance Targets for Pavement and Bridge Conditions, respectively, was adopted by the SJTPO Policy Board on September 24, 2018 under [Resolution 1809-19](#). Moving forward, SJTPO remains committed to improving bridges within its region and working with county and city partners as well as NJDOT staff to identify critical bridges needing improvements that will help to meet these targets.

Appendix C-C3: System Performance Measures (PM3)

As described previously, this third set of regulations, often referred to as PM3, address the performance of the transportation system: Is traffic congestion being reduced? Is efficiency of the system improving? Is the system protecting the environment? Are project deliveries being delayed? PM3 encompasses the following four sets of measures, listed below with their corresponding Subpart from 23 CFR Part 490: National Performance Management Measure Rule: (E) Travel Time Reliability, (F) Freight, (G) Congestion, and (H) Emissions, described in more detail below.

Travel Time Reliability (Subpart E)

The first major performance area under system performance is travel time reliability. Reliability refers to the variability of travel times on road segments experienced by travelers. The less variability there is for any given set of roadway segments, the more reliable those segments are. Travel time reliability does not mean eliminating traffic congestion but reducing its extremes to maintain consistent traveler expectations.

The measures for Travel Time Reliability are the percentage of person-miles traveled (PMT) on the Interstate on the NHS with reliable travel times, and the percentage of PMT on the non-Interstate NHS with reliable travel times. The measures are calculated using the Level of Travel Time Reliability metric, defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile). As with the previous Performance Measures, rather than creating their own, the SJTPO Policy Board adopted a resolution supporting NJDOT’s Statewide targets on September 24, 2018.

NJDOT Statewide Travel Time Reliability Targets and Goals

Travel time reliability is assessed using archived real-time vehicle probe data contained in the National Performance Management Research Data Set (NPMRDS) and calculated with the assistance of the Probe Data Analytics Suite. The Probe Data Suite was created and maintained by the University of Maryland Center for Advanced Transportation Technology Laboratory (UMD CATT Lab), following FHWA guidance. Only current and some historical data is available through the Probe Data Analytics Suite; forecasts for these measures are not. The NJDOT Complete Team (consisting of planning and operations staff from NJDOT, the three NJ MPOs, NJ TRANSIT, PANYNJ, NJ Turnpike Authority, and FHWA-NJ) had several meetings to discuss the underlying data, calculation tools and methods, baseline results, and target-setting approaches.

Long term policies for the agencies support improvements to reliability. Given traffic growth and near-term projects and programs, the consensus was to have the required targets represent a maintenance of current values for each travel time reliability measure, as shown in the table below.

Table 5: New Jersey’s Statewide Travel Time Reliability (TTR) Baseline and Targets

Measure	Estimated Current Conditions (2017)	Reported Baseline (2017)	2-year target (2019)	4-year target (2021)
% PMT on Interstates NHS with reliable travel times		82.1%	82.0%	82.0%
% PMT on non-Interstate NHS with reliable travel times	84.1%		*	84.1%

*2-year target for non-Interstate NHS is not required for the first performance period

Progress Towards Targets

Currently, NJDOT and NJ TRANSIT sponsor numerous statewide programs that improve travel time reliability. Many of these are funded through the Congestion Mitigation and Air Quality Program (CMAQ), which is described in more detail under the [Emissions Reduction](#) section (Subpart H) below. SJTPO remains committed to improving reliability on roadways within its region, as well as working with regional partners and NJDOT staff to develop projects that will inevitably improve travel time reliability and help to meet these State targets. In addition to the statewide projects and programs mentioned above, SJTPO has programmed and is planning several local CMAQ-funded congestion relief projects within the region, led by subregional partners. As with the Statewide projects and programs, these, too, are described in more detail in the [Congestion](#) (Subpart G) section below.

While congestion and reliability are related, they are not the same thing. Traffic congestion occurs when the amount of traffic, (travel demand), far exceeds the physical capacity of the system, generally measured by the number of travel lanes on the roadway, the number of intersections, access points, and numerous other factors. Reliability is used in reference to the level of consistency in the transportation service provided by a roadway. For example, a roadway can be heavily congested, but if the amount and time of day when the congestion occurs on it is consistent, it is considered reliable. The US DOT established performance measures pertaining to reliability because empirical evidence exists to suggest that the traveling public values reliability more than straight travel times. The [Traffic Congestion and Reliability: Linking Solutions to Problems](#) is available on the FHWA website.

Freight/Truck Travel Time Reliability (Subpart F)

The national performance measure for freight is the Truck Travel Time Reliability (TTTR) Index. This measure is like the “Travel Time Reliability” measure and metric described above, but it is focused primarily on truck traffic. TTTR is the ratio between the “longest” (95th percentile) and “normal” (50th percentile) truck travel times. This metric is averaged for all Interstate road segments in the state, weighted by distance, resulting in the TTTR Index for the state. Unlike the travel time reliability measures, there is no “threshold” that determines whether a segment is reliable or unreliable for trucks.

NJDOT Statewide Travel Time Reliability Targets and Goals

As with the previous measures, SJTPO adopted a resolution supporting the Statewide policy metrics and targets. As with the travel time reliability measures, the Truck Travel Time Reliability performance measure was calculated using the UMD CATT Lab NPMRDS Analytics Suite tool but uses travel times specifically reported from trucks (where available). Further, as with the previous measures, the NJDOT Complete Team had several meetings to discuss the underlying data, calculation tools and methods, baseline results, and target-setting approaches. Again, long term policies for the agencies support improvements to freight reliability. The identified targets represent a slightly worsening value in both the 2-year and 4-year targets, considering the anticipated increase in traffic (both overall and trucks specifically) and near-term projects and programs in the current STIP, as shown in the table below.

Table 6: New Jersey’s Statewide Truck Travel Time Reliability (TTR) Baseline and Targets

Measure	Baseline (2017)	2-year target (2019)	4-year target (2021)
Truck Travel Time Reliability (TTTR) Index	1.82	1.90	1.95

Progress Towards Targets

In 2017, NJDOT released its [Statewide Freight Plan](#), which has “Improve Reliability and Efficiency,” as one of its goals. The Plan provides a well-defined blueprint for NJDOT investment, identifying discrete projects that immediately address critical freight system improvements. It also includes a fiscally constrained Freight Investment Plan (FIP) that identifies and prioritizes freight-related transportation projects. There are two projects identified within the Freight Project Areas within the SJTPO region:

Table 7: STIP Projects along Freight Project Areas, SJTPO

DBNUM	County	Route	Project Name	Project Type
11343A	Cumberland	55	Route 55, SB Schooner Landing Road to Sherman Avenue	Pavement
04308	Salem	40	Route 40, Woodstown Intersection Improvements	Safety

SOURCE: New Jersey Statewide Freight Plan. 2017.

In addition to the Statewide Freight Plan cited above, NJDOT is spearheading numerous initiatives with the specific intent of improving infrastructure conditions for goods movement in New Jersey. These include:

- Freight Management System
- Freight Performance Measures
- Truck Monitoring Program

SJTPO has also been an active participant in NJDOT’s Freight Advisory Committee and served on the Stakeholder group for the development of this Plan.

Goods movement is an overarching area of concern within the SJTPO region as well. As part of SJTPO’s Regional Transportation Plan *Transportation Matters’* goal of “Supporting the Regional Economy,” SJTPO strives to “work with regional partners to evaluate truck routes and other critical freight corridors for accessibility, reliability, safety, and other system performance measures to develop and prioritize projects.” SJTPO promotes and supports projects that improve goods movement.

There are also several grant programs (outside of SJTPO) administered by the State and the Federal government specifically targeting freight. A prominent one is the [Local Freight Impact Fund](#), a recent program established by NJDOT for assisting counties and local municipalities with the mitigation of impacts on the local transportation system associated with the State’s freight industry. The [Better Utilizing Investments to Leverage Development](#) (BUILD) grant program, with the expressed intent of funding major investments in roads, rail, transit and port infrastructure is an example of a Federally-administered program.

Congestion (Subpart G)

The next set of measures and metrics govern the performance measures and metrics directly related to attributes of projects funded by the CMAQ Program. These next two measures are specifically intended to reduce congestion. Unlike all the other federally-required performance

measures described in [Appendix C](#), these specific measures apply to Urbanized Areas with a population over 1 million. As a small portion of the SJTPO region (specifically western Salem County, including parts of Salem City, Pennsville and Carney's Point, and western Atlantic County, in and around Collings Lakes), falls within the Philadelphia, PA-NJ-DE-MD Urbanized Area with a population of approximately 5.4 million, the SJTPO, as well as all the other entities comprising the Philadelphia, PA-NJ-DE-MD Urbanized Area must establish a single unified target for each of these measures.

Pursuant to the FAST Act and MAP-21, and the ensuing requirements of 23 CFR Part 490, the National Performance Management Measures Final Rule, the State DOT and MPOs must establish a single unified target for the congestion measures of:

- Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita
- Percent of Non-Single Occupancy Vehicle (non-SOV) travel

For the PHED per capita measure, only a four-year target is required now, while for the Percent non-SOV measure, both two and four-year targets are required from the base year. Their definitions as well as specific citations in the rule, are as follows:

1. **Peak Hour Excessive Delay (PHED):** Annual hours of peak hour excessive delay (PHED) per capita on the National Highway System (NHS). The threshold for excessive delay is based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whatever is greater, and is measured in 15-minute intervals. The actual rule containing all the details can be found at [23 CFR 490.707\(a\)](#).
2. **Percent non-SOV:** Percent of non-SOV travel in a specific urbanized area. Non-SOV travel may include travel via carpool, van, public transportation, commuter rail, walking or bicycling as well as telecommuting. The actual rule containing all the details can be found at [23 CFR 490.707 \(b\)](#).

SJTPO staff worked closely with multiple agencies in developing realistic targets for each of these two measures, including: DVRPC, NJTPA, NJDOT, Pennsylvania Department of Transportation (PennDOT), Delaware Department of Transportation (DelDOT), Maryland State Highway Administration (SHA), Wilmington Area Planning Council (WILMAPCO), and the Lancaster County Transportation Coordinating Committee (LCTCC), all of which comprise this urbanized area.

The targets are:

- Peak Hour Excessive Delay (PHED) Per Capita
 - Baseline Measure (2017): **16.8** hours/capita

- 4-year target (2021): **17.2** hours/capita (Assuming a growth of +0.6%/year)
- Non-SOV Travel
 - Baseline (Based on 2012-2016 American Community Survey (ACS): **27.9%**
 - 2-year target (2016-2018): **28.0%**
 - 4-year target (2016-2020): **28.1%**

Both congestion baseline measures and targets were approved by the SJTPO Policy Board on May 21, 2018 under [Resolution 1805-08](#).

Progress Towards Targets

Like the roadway maintenance projects mentioned earlier, congestion relief is another major focus area of NJDOT's Capital Investment Strategy (CIS). Per the [Statewide Capital Investment Strategy FY 2013-2022](#), almost \$480 million, (approximately 15%), of annual capital investments goes towards congestion relief projects. Further, "Mitigate Traffic Congestion" is a goal in SJTPO's Regional Transportation Plan, *Transportation Matters*. SJTPO receives \$1.9 million annually of CMAQ funds for local projects. Two projects were approved for CMAQ funding on NHS roadways: Atlantic County Route 629 Pedestrian and Traffic Signal Improvements project and Cape May County Route 621 Improvements project. However, much of the congestion within the SJTPO region occurs on State-owned and maintained highways, which are part of the NHS, and NJDOT has invested a significant amount of resources in congestion relief programs statewide, as described in more detail below. As such, progress is being made towards meeting the congestion relief targets.

As part of its Congestion Management Process, using the Probe Data Analytics Suite as described earlier, SJTPO generates a list of the top 10 bottlenecked locations for both State and Authority roadways, and County and Local Roadways. This list is part of the updated Congestion Management Methodology Report, located at: www.sjtpo.org/CMP. In addition to these actual projects, SJTPO is currently in the process of developing Problem Statements for future congestion relief projects that will hopefully result in improved travel time reliability

As will be explained in more detail below, SJTPO administers the local CMAQ Program for its four subregions. The CMAQ Program is a federal program that funds projects that reduce congestion and improve air quality. SJTPO receives an annual allotment of \$1.9 million for CMAQ. While the SJTPO's CMAQ -funded projects are detailed in the [emissions](#) section below, many of them also have a congestion mitigation benefit as well.

Emissions (Subpart H)

These next measures pertain to the emissions reduction objectives of CMAQ projects. As noted previously, SJTPO falls within the Philadelphia-Wilmington-Atlantic City PA-NJ-MD-DE 8-Hour Ozone Nonattainment Area. FHWA regulations state that MPOs that contain nonattainment or maintenance areas that overlap an urbanized area with a population above 1 million people, must establish quantitative 2-year and 4-year targets for the CMAQ emissions reduction measures. The entire SJTPO region has been designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area for ozone, and a small portion of the SJTPO region overlaps the Philadelphia, PA-NJ-DE-MD Urbanized Area, (which contains more than 5 million people). As such, SJTPO is required to set targets for pollutant emissions reductions from CMAQ projects. Separate emission reduction targets are required for each pollutant, or precursor, for which a region is in nonattainment or maintenance. For the SJTPO Region, the required pollutants are the ozone precursors of Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NO_x).

The required emissions reduction targets identify the amount of pollutant emissions (in kilograms per day, or kg/day) estimated to be reduced by CMAQ-funded projects within the corresponding nonattainment or maintenance area(s), summed over the applicable fiscal years. The 2-year target represents the emissions reductions from CMAQ projects that will be first authorized within FY 2018 and FY 2019, while the 4-year target represents the emissions reductions from CMAQ projects that will be first authorized within FYs 2018, 2019, 2020, and 2021.

The New Jersey Air Quality Working Group (consisting of subject matter experts from NJDOT, NJDEP, SJTPO, and the other two NJ MPOs) worked to identify and agree upon MPO-level baselines and targets for the emissions reductions from CMAQ projects. The estimated baseline and final targets for the SJTPO region are listed in Table 8:

Table 8. CMAQ Emissions Performance Measures--SJTPO Forecasts and Targets*

Fiscal Year (FY)	Total Emissions Benefits Projections (kg/day)	
	VOC	NO _x
Baseline (FY 2014-17)	9.466	22.446
2018	2.207	5.226
2019**		
2020	2.007	4.642
2021	1.929	4.377
Sum '18-'19 (2-Year Target)	2.207	5.226
Sum '18-'21 (4-Year Target)	6.142	14.245

* No CO or PM_{2.5} as SJTPO meets the NAAQS for these pollutants

** SJTPO anticipates completing backlog in FY2020 with no new projects

The three MPO-level baselines and targets covering the State of New Jersey were added together to create the statewide baseline and targets. These were submitted by NJDOT to FHWA on May 16, 2018. The SJTPO Policy Board approved these Mobile Source Emissions Reduction targets on September 24, 2018 under [Resolution 1809-20](#).

Progress Towards Targets

The improvement of air quality is part of an overarching goal of SJTPO's Regional Transportation Plan, *Transportation Matters: "Protect and Enhance the Environment."* Because the SJTPO region falls within the Philadelphia-Wilmington-Atlantic City PA-NJ-MD-DE 8-Hour Ozone Nonattainment Area, it must make sure that all its projects embodied in the TIP conform to National Ambient Air Quality Standards (NAAQS). It does this via the formal conformity determination process, which involves running a complex model to ensure that future projected emissions fall below federally-mandated emissions budgets.

Beyond the air quality conformity process, pursuant to Federal Performance Management Regulations (23 CFR 490.107(c)(3)), the SJTPO was responsible for preparing a CMAQ Performance Plan, which details the baseline emissions reduction conditions and the targets, as well as how future planned projects will help the SJTPO region meet its targets. This Plan was submitted as part of the NJDOT Baseline System Performance Report to the US Department of Transportation in September 2018. Table 9 below, lists those specific CMAQ-funded projects that SJTPO anticipates will help the region meet its CMAQ mobile source emissions targets identified above, as well as their funding status. Note that many of these projects have a congestion benefit as well as an air quality benefit, which help in meeting the congestion reduction targets mentioned above.

Table 9. Projects Utilizing Federal Congestion Mitigation Air Quality (CMAQ) Funds (FY 2020-2029)

DB#	Sponsor	Project Name	Funding Status
X065	Atlantic County	Margate-Ventnor Bicycle Infrastructure Project	Design in progress, construction in FY20 programmed
X065	Atlantic County	Atlantic County Route 629 Pedestrian and Traffic Signal Improvements	Design in progress, construction in FY20 programmed
X065	Atlantic County Transportation Unit	Purchase of eight (8) Replacement Paratransit Passenger Buses	Construction in FY21 programmed
X065	Cape May County Municipal Utilities Authority	Natural Gas-Powered Vehicle Purchase	Construction in FY21 programmed
X065	Cape May County	Improving Air Quality and Reducing Traffic Congestion through Biking in Ocean City	Construction in FY20 programmed
X065	Cape May County	Roosevelt Blvd./34 th Street Advanced Traffic Signal Project	Design in FY20 programmed, construction in FY21 programmed
X065	Cape May County	Cape May County Route 621 (New Jersey Ave) Improvements	Construction in FY20 programmed
X065	Cape May County Fare Free Transportation	Procurement of 7 low emission, unleaded fuel, body on chassis mini-busses	Construction in FY21 programmed
X065	City of Vineland	Landis & Mill, Landis & Orchard Traffic Signal Upgrades	Construction in FY20 programmed
X065	Cumberland County/Millville	Millville Broad Street Traffic Signal Upgrades	Design in progress, construction in FY20 programmed
X065	NJDEP	It Pay\$ to Plug in: New Jersey's Electric Vehicle Charging Grants Program	Construction in FY21 programmed

In addition to the Local CMAQ Program, NJDOT and NJ TRANSIT have several statewide programs that utilize CMAQ funding to reduce emissions (as well as congestion), throughout the state. These are listed below:

Active Traffic Management System (ATMS) (DB #13303) - This program will provide funding for the deployment program for the first Active Traffic management System (ATMS) in the State including all phases of design. This program will include funding for the complete delivery of the Final Design document for Active Traffic Management System (ATMS) for a candidate highway (I-80, I-295 or I-78). The design document will be used to deploy and carry out the actual construction of this technology for automatic operation and handling of traffic. Funding is provided in the amount of, \$3 million in FY 2020, and \$1 million in FY 2021.

Bicycle & Pedestrian Facilities/Accommodations (DB #X185) - This is a comprehensive program to insure the broad implementation of the Statewide Bicycle and Pedestrian Master Plan, Complete Streets Policy and the implementation of federal and state policies and procedures pertaining to bicycle, pedestrian, transit and ADA access and safety. This program includes addressing bicycle, pedestrian, transit and ADA travel needs through the development of improvements on state, county and local system either by independent capital projects or through grants to counties and municipalities. Projects must make full consideration for the needs of all users. Funding is provided annually from three sources: \$1.5 million in CMAQ, \$4 million in STATE, and \$1.5 million in TAP.

Intelligent Traffic Signal Systems (DB #15343) - This program will seek to improve mobility on New Jersey's arterial highways. Arterials contribute almost 70% of total congestion that occurs in New Jersey. This program will focus on dynamically managing NJ's arterials from NJDOT's Arterial Management Center. Existing traffic signals will be strategically, systematically and programmatically upgraded from stand-alone signals to highly sophisticated, coordinated, real time traffic response traffic signals. This upgrade will consist of installing new controllers, intelligent software and algorithms, robust detection and communication. This is a plan to upgrade most of the signals on NJDOT owned highways only. CMAQ funding is provided annually: \$15 million annually in FY 2020 and FY 2023 through FY 2029, then \$10 million from FY 2021 through FY 2022.

Transportation Demand Management Program Support (DB #X43) - This funding is utilized to continue the management of the Owned and Leased Park and Ride Program and the remaining efforts as they relate to the 1-800-CARPOOL program which also includes maintaining the RidePro ride matching software program. This program receives \$0.25 million annually from CMAQ.

Rail Rolling Stock Procurement (DB #T112) - This program provides funds for the replacement of rail rolling stock, including engineering assistance and project management, to replace over-aged equipment including rail cars, revenue service locomotives, and expansion of NJ TRANSIT rolling stock fleet (cars and locomotives) to accommodate projected ridership growth and other system enhancements over the next ten years. Funding is provided to support vehicles/equipment (for rail operations). Annual funds are provided for Comet V single-level car lease payments, Electric Locomotive lease payments, Diesel Locomotive lease payments, Dual Power Locomotives and Multi-Level rail car lease payments and other upcoming rolling stock lease payments. Pay-as-you-go funding is also programmed for Multi-Level vehicles and other rolling stock. This project receives varying funding annually from CMAQ, STATE, SECT 5307, and SECT 5337.

Small/Special Services Program (DB # T120) - Funding is provided for NJ TRANSIT efforts which initiate or promote transit solutions to reduce congestion, manage transportation demand and improve air quality. Included are State funds for the Vanpool Sponsorship Program, Transportation Management Association Program, and Federal funds for East Windsor Community Shuttle operating support. Funding is also provided for capital acquisition/operating expenses for the Community Shuttle Program, Bike/Transit facilitation, and other activities that improve air quality and help reduce congestion. This project receives \$0.096 million annually from STATE.

Beyond the projects listed above, SJTPO will continue to select projects and programs that have a positive air quality benefit in terms of reducing mobile source emissions. SJTPO will also continue to promote and develop projects and programs with air quality benefits to its subregions and planning partners.

Appendix C-C4: Transit Asset Performance Measures

Transit asset management (TAM) is the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles to provide safe, cost-effective, and reliable public transportation. TAM uses transit asset condition to guide how to manage capital assets and prioritize funding to improve or maintain a State of Good Repair. In short, TAM uses asset condition to guide the optimal prioritization of funding at transit properties.

Based on the mandate in MAP-21 (and continued in the FAST Act), FTA developed a rule establishing a strategic and systematic process of operating, maintaining, and improving public transit capital assets effectively through their entire life cycle. The TAM Final Rule 49 USC 625 became effective October 1, 2016. The TAM rule develops a framework for transit agencies to monitor and manage public transportation assets, increase reliability and performance, and establish performance measures. Transit agencies are required to develop TAM plans and submit their performance measures and targets to the National Transit Database. The TAM rule established the following national transit asset management performance measures (49 CFR Part 625 Subpart D):

Rolling stock: In the transit industry, a commonly-used indicator of the number of years an asset is expected to last and be in service is the *Useful Life Benchmark*. Useful Life Benchmark means either the expected life cycle of a capital asset or the acceptable period of use in service as determined by FTA. Each vehicle type's Useful Life Benchmark estimates how many years a vehicle can be in service and still be in a state of good repair. The Useful Life Benchmark considers how long it is cost-effective to operate an asset before ongoing maintenance costs outweigh replacement costs. As stipulated in the TAM Final Rule (49 USC 625), transit agencies must use the required performance measure of the percentage of revenue vehicles (by type) that meet or exceed the useful life benchmark to track the performance of revenue vehicles (rolling stock) and service vehicles (equipment). In addition to measuring performance, transit agencies are to use the Useful Life Benchmark to set their performance measure targets.

Equipment: Transit facilities are rated using the Transit Economic Requirement Model scale. The percentage of non-revenue service vehicles (by type) that meet or exceed the Useful Life Benchmark.

Facilities: The Transit Economic Requirements Model is a Capital Needs Analysis Tool developed and used by FTA to assess the current physical condition and future investment

needs of the nation's transit assets and operators. It rates the condition of particular facilities on a scale of 1 to 5, with "1" denoting an asset in need of immediate repair or replacement and (5) denoting a new asset with no visible defects. The TAM Final Rule stipulates a performance measure of: Percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) scale.

Infrastructure: The percentage of track segments (by mode) that have performance restrictions.

Under the provisions of the Transit Asset Transportation Performance Management rulemaking, transit operators are required to set performance targets for their Transit asset portfolio. MPOs are then required to set their own targets or adopt the transit operators' targets for the transit asset portfolio in their region, beginning in calendar year 2017, based on measures mandated by the rule. The performance measures were selected by the Federal Transit Administration and include:

- Average revenue fleet age;
- Average non-revenue fleet age;
- Percentage of facilities that are below a condition rating of 3 on the Transit Economic Requirements Model scale; and
- Percent of the track system under a performance restriction.

Transit agencies are required to upload their performance targets, as well as a supporting narrative, in their annual National Transit Database (NTD) submission, and report progress against these targets. They are also required to develop a TAM Plan that adheres to the following nine (9) elements to ensure assets are in an SGR:

1. Inventory of Capital Assets
2. Condition Assessment
3. Decision Support Tools
4. Investment Prioritization
5. TAM and SGR Policy
6. Implementation Strategy
7. List of Key Annual Activities
8. Identification of Resources
9. Evaluation Plan

NJ TRANSIT, is the only Tier 1 agency providing public transit service and thus subject to this FTA TAM performance management rules in the SJTPO region. In addition, there are several county bus operators that operate within the SJTPO region, but these are considered subrecipients to NJ TRANSIT and not covered under this Plan.

Coordination on TAM Target Setting

MPOs have 180 days after the Transit agencies set their targets, to decide to either adopt the Transit operators' targets or develop their own metropolitan targets. In May 2019, SJTPO took formal action to adopt the same set of targets as NJ TRANSIT, as they have done with most of the other performance measures. SJTPO has also worked with NJ TRANSIT, NJDOT, and the other MPO's in New Jersey to develop a set of written procedures that outline the coordination process for Transit Asset Management.

NJ TRANSIT Statewide Asset Management Targets and Goals

NJ TRANSIT operates and maintains a large fleet of buses, railroad cars, locomotives, and light rail vehicles in the SJTPO region. To ensure these assets are in a State of Good Repair, NJ TRANSIT has budgeted funds to permit regular ongoing replacement of equipment as it approaches the end of its useful life. This approach also permits NJ TRANSIT to procure newer propulsion and fuel systems for vehicles and railroad equipment as they are proven to be feasible, reliable and cost-effective. This maintenance strategy creates a sustainable financial replacement program and is expected to continue.

NJ TRANSIT has prepared an Enterprise Asset Management Program TAM Plan, dated October 1, 2018. In this plan, NJ TRANSIT sets forth its blueprint to identify, describe, and improve asset management practices, with the vision to maintain the agency's assets in a State of Good Repair. The plan presents a summary inventory of assets, describes the current condition of the assets, sets near-term targets for the required performance measures, and explains how NJ TRANSIT managers develop and present requests for operating/maintenance budgets and capital asset replacements. The plan also identifies NJ TRANSIT programs and projects aimed at helping to achieve their TAM targets. Tables 3.9 to 3.14 in the NJ TRANSIT TAM Plan provide details for the following TAM performance targets for the State of New Jersey:

1. Rolling Stock (Percent of revenue vehicles that have met or exceeded their useful life benchmark)

NJ TRANSIT owns and maintains a fleet of 200 locomotives, 160 self-propelled cars, and 953 locomotive-hauled cars to serve the State of New Jersey. In addition, the agency maintains and operates 15 diesel locomotives and 65 single-level passenger cars owned by the Metro-North Railroad that are configured to operate with NJ TRANSIT's fleet. All locomotives and

loco-hauled cars are operated in push-pull service. NJ TRANSIT’s Commuter Rail Useful Life Benchmark for locomotives, passenger cars, and self-propelled passenger cars is 30 years, which is lower than FTA’s Useful Life Benchmark of 39 years. By 2023, the entire Self-Propelled Passenger Car fleet is expected to be retired and replaced by new Multi-Level Vehicles.

In the SJTPO region, there is only one heavy commuter rail line: the Atlantic City line between Philadelphia’s 30th Street Station and Atlantic City, NJ, with four stations located within the SJTPO region (Hammonton, Egg Harbor City, Absecon, and Atlantic City Rail Terminal).

NJ TRANSIT owns a fleet of over 3,000 buses consisting of two types: Over-the-Road for longer haul commuting services and Transit. The active bus feet in daily service is in a State of Good Repair. NJ TRANSIT has determined that the Useful Life Benchmark for buses should be 12 years for those in transit service. These include articulated buses, transit buses, and suburban buses. NJ TRANSIT’s Useful Life Benchmark for Over-the-Road for commuter service is 14 years.

The draft 2019 targets for Rolling Stock are listed below, with the final targets excepted in March 2019:

Performance Measure 2019 Target (%)

Performance Measure	2019 Target (%)
Articulated Bus	100.00
Automobile	28.89
Over-the-road Bus	26.80
Bus	44.83
Cutaway	13.19
Light Rail Vehicle	0.00
Minivan	4.35
Commuter Rail Locomotive	11.70
Commuter Rail Passenger Coach	16.97
Commuter Rail Self-Propelled Passenger Car	100.00
Van	1.53

2. Equipment (Percent of service vehicles that have met or exceeded their useful life benchmark)

NJ TRANSIT’s non-revenue service vehicle inventory includes ordinary automobiles to locomotives that also include police cruisers and specialized track machinery (e.g. Light Duty Trucks, Heavy Duty Trucks, and Rubber Tire Construction Equipment and Trailers). The current work train locomotive fleet includes five MP-20 locomotives and four GP-40

locomotives. The fleet of work train freight cars totals 81 cars. Of these 81 cars, 68 of them can be interchanged with freight railroads. There are also 80 pieces of steel-wheel maintenance of way equipment and 158 pieces of construction equipment that include trailers and back hoes, loaders, or similar not driven on highways. There are 68 automobiles for management and supervisory use, 275 light trucks for maintenance, and 106 heavy duty trucks. The bus nonrevenue vehicle inventory consists of 58 automobiles for management and supervisory use, 75 light trucks for service calls, and 34 trucks to retrieve buses back to maintenance garage. Further, NJ TRANSIT has a fleet of corporate non-revenue service vehicles (police, technology, maintenance, and administration); and Information Systems equipment such as radio towers, radio repeater equipment, ticket vending machines, and a drone. The 2019 targets for automobiles, trucks and other rubber tire vehicles, and steel wheel vehicles are listed below.

Performance Measure	2019 Target (%)
Automobile	39.00
Trucks and Other Rubber Tire Vehicles	47.00
Steel Wheel Vehicles	25.00

3. Facility (Percent of facilities rated below 3 on the condition scale)

NJ TRANSIT takes a geographic approach (north, central, and south regions) to condition all facilities over a three-year period: North in FY 2018, Central in FY 2019, and South in FY 2020. As of October 2018, there are no NJ TRANSIT facilities in northern New Jersey rated below 3 on the condition scale. The facilities’ assessment for NJ TRANSIT’s Southern Division, (which covers the SJTPO region), are expected to be reported by October 31, 2020. The Facility Performance Targets are listed below:

Performance Measure	2019 Target (%)
Passenger/Parking Facilities	0.00
Administrative/Maintenance Facilities	0.00

4. Infrastructure (Percent of track segments with performance restrictions)

NJ TRANSIT will implement the principles of its TAM policy by adopting a State of Good Repair policy to maintain capital assets to the level where the asset operates at full performance, to provide a safe, reliable, convenient, and cost-effective Transit service to its customers. NJ TRANSIT has committed to improving the resiliency of its systems to prevent future damage and to prepare for possible future extreme weather events and security threats. This includes significant new investments in a series of hardening projects such as new rail vehicle storage,

upgraded power systems, maintenance facilities, emergency control centers, security improvements and signal and communications systems resilience upgrades.

For 2019, it is anticipated that 0.75% of the commuter rail’s Statewide Commuter Rail track segment (to which the Atlantic City Rail Line, the SJTPO Region’s only rail facility, belongs), will experience performance restrictions.

Performance Measure	2019 Target (%)
Commuter Rail	0.75

Progress Towards Targets

The Transit Asset Transportation Performance Management rule requires MPOs to describe how the region’s TIP will help to achieve the Transit Asset Management targets. SJTPO’s FY 2020-2029 TIP was developed to ensure progress towards target achievement. Transit operators have taken steps to ensure that projects selected for TIP funding help to achieve the TAM targets.

Per Section 4 NJ TRANSIT Projects/Programs above, overall, NJ TRANSIT has programmed almost \$146 million over the first four years (FY 2020-2023) of the current FY 2020-2029 TIP and approximately \$264 million over the later Fiscal Years from FY 2024-2029 for transit projects and programs in the SJTPO region. Some of NJ TRANSIT’s projects and programs from the first four years (FY 2020-2023) of the current FY 2020-2029 TIP that have a direct impact on transit asset performance include the following:

- More than \$31 million is programmed for the preventive maintenance of the bus system (see DB #T135). In addition, approximately \$13.4 million is allocated toward rail preventive maintenance program (DB #T39), which is used for the overhaul of rail cars and locomotives, and other preventive maintenance costs;
- \$9.7 million is allocated toward replacing rail cars and locomotives that have reached the end of their useful life (DB #T112), and over \$37 million for replacing buses (DB #T111).
- More than \$7 million is set-aside Transit Enhancements or Transportation Alternatives programs (DB #T210). These are improvements that, in addition to refurbishing transit and transit facilities, also help to encourage more people to use alternative modes of transportation (to driving), such as biking or walking.

NJ TRANSIT’s \$1.4 billion State Fiscal Year (SFY) 2020 Capital Program (from July 1, 2019 to June 30, 2020) (of which more than \$33 million is allocated for the SJTPO region), calls for continued investment in the State’s Transit infrastructure to maintain a state of good repair and provide reliable transit service. An emphasis on better preparing NJ TRANSIT to withstand, and recover

from, future extreme weather events through building a more resilient system remains a key focus of the Capital Program, which invests in railroad bridge rehabilitation, track replacement, signal upgrades, repairs to overhead power lines and electric substations, improvements to rail stations, and bus shelter upgrades.