

Appendix B. 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 (7) national goals:

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

FHWA has issued three (3) Transportation Performance Measurement (TPM) related rules to date. The first rule is the Safety Performance Measures, often referred to as PM 1. 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, the Transit Asset Management Rules, and the Transit Safety Rules, both issued by FTA.

Appendix B-B1: Safety Performance Management Measures Rule (PM 1)

Safety

Safety is the first national goal identified in the FAST Act and had 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 of 2016, the FHWA Highway Safety Improvement Program and Safety Performance Management Measures Rule (Safety PM Rule or PM 1 Rules) was finalized and published in the Federal Register. The rule requires State DOTs and MPOs to set annual targets for five (5) safety-related performance measures with the understanding that reaching zero (0) 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 timeframe required by FHWA. The federal safety performance measures are consecutive five-year rolling averages for:

- Number of fatalities
- Rate of fatalities per 100 million 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 towards meeting the targets to FHWA in an annual safety report. MPOs may either establish quantitative targets for their MPA 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 takes place each year between NJDOT, the New Jersey Division of Highway Traffic Safety (NJDOTS), DVRPC, NJTPA, and SJTPO leading up to establishing New Jersey's annual statewide safety targets. Due to this extensive collaboration, SJTPO elects to adopt the statewide safety targets. The most recent safety targets for 2021 were adopted by the SJTPO Policy Board at its September 28, 2020, meeting.

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

FHWA will determine whether a state has met or made significant progress towards its safety performance targets. A state is considered to have met or made significant progress when at least four (4) out of the five (5) 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 2020, NJDOT published its [Strategic Highway Safety Plan](#) (SHSP), which is available online at www.saferoadsforallnj.com. The SHSP was developed in collaboration with a broad coalition of stakeholders, including NJDOTS, New Jersey's three (3) MPOs, and many others to take a data-driven approach on activities that will be most effective in reducing fatalities and serious injuries. The SHSP is driven by a vision that no deaths on New Jersey's roads are acceptable. The SHSP identifies seven (7) key safety emphasis areas, including: Lane Departure, Intersections, Driver



Behavior, Pedestrians and Bicyclists, and Other Vulnerable Road Users, with Data and Equity serving as overarching emphasis areas that are integral and interrelated to all areas. The SHSP is largely organized around these emphasis areas with Emphasis Area Teams who are responsible for overseeing the issues in these areas and working towards advancing the goals, objectives, and strategies of each. 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 three (3) percent annually. Various agencies, including FHWA, NJDOT, NJDHTS, and the MPOs, recognize that reaching zero (0) 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 towards the long-term goal of zero (0) fatalities 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 2021, which represents the third round of collaborative statewide target setting in New Jersey.

Table 1: New Jersey’s Statewide Safety Targets - CY 2021

Performance Measure	5-Year Rolling Averages	
	Baseline CY 2015-2019 5-Year Rolling Average	Target CY 2017-2021 5-Year Rolling Average
Number of Fatalities	582.6	574.0
Rate of Fatalities per 100 million VMT	0.756	0.740
Number of Serious Injuries	1,469.2	2,124.8*
Rate of Serious Injuries per 100 million VMT	1.900	2.724
Number of Non-Motorized Fatalities and Serious Injuries	463.7	588.5

Source: NJDOT

*It is important to note that beginning in 2019, New Jersey updated the police report to be consistent with the federally required injury classifications – Killed, Suspected Serious Injury, Suspected Minor Injury, Possible Injury, and No Apparent Injury.



These targets were established after careful consideration of previous trends. 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 (0) 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.

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 (0) 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 SJTPO’s Regional Transportation Plan 2050 (RTP 2050), which sets the direction for all SJTPO activities. One (1) of the goals in RTP 2050 is to “Improve Transportation Safety,” which includes the following as strategies SJTPO identified to advance this goal:

- A. Promote and Advance Safety Countermeasures:** Educate the public and stakeholders about the benefits of the Federal Highway Administration’s Proven Safety Countermeasures, including roundabouts, road diets, and others that offer major safety benefits, but may be subject to misinformation and work to include them in SJTPO projects. Work to ensure these countermeasures are included in projects, as dictated by safety needs.
- B. Safety in all Projects:** Evaluate all transportation projects that receive funding through the SJTPO process to ensure they identify and address the safety needs of all roadway users. Utilize the updated Project Pre-Evaluation Screening process to consider crash history when evaluating all projects and utilize Network Screening Lists to identify locations with the greatest need for safety improvement.



- C. **Bicycle and Pedestrian Safety Projects:** Work with regional partners to develop and prioritize projects that improve safety for bicyclists and pedestrians, both on the existing bicycle and pedestrian network as well as in all projects.
- D. **Reduce Barriers to Safety:** Continue and expand State and regional partnerships to identify and reduce barriers to safety project advancement, including offering design assistance support to better ensure projects reach construction.
- E. **Align Safety with State Priorities:** Ensure that safety investments are aligned with priorities established with the State’s SHSP, which was developed in collaboration with New Jersey’s MPOs and other statewide partners.
- F. **Safety Outreach and Education:** Improve the safety of roadway user behavior through the continued dissemination and development of safety education programs.
- G. **No Roadway Death is Acceptable:** Guide all transportation decision-making to incorporate the Vision Zero philosophy, which states that any loss of life on our roadways is unacceptable and preventable.

Consistent with this goal and supporting strategies, projects that meet safety goals have been and will continue to be programmed into the TIP. SJTPO’s FFY 2022-2031 TIP includes a \$2.0 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 RTP 2050 and to adhere to the objective of the New Jersey Local Safety Program, to reduce fatal and serious injury crashes, SJTPO follows a five (5) 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 (1) of two (2) ways: using the hotspot approach, by selecting a location from one (1) of several NJDOT-approved Network Screening Lists, or using the systemic approach, which identifies the risk, demonstrated by data, that exists in roadways with certain 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 hotspot 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 certain geometric roadway features, and are typically applied to a number of locations with similar geometric conditions. FHWA has studied and identified twenty (20) 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 most safety improvements. 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.sjtpo.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 FFY 2022-2031 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 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 hotspot improvements, result from a data-driven analysis prepared for the SJTPO region. These lists prioritize fatal and serious injury crash concentrations in five (5) categories: corridors, intersections, high risk rural roads, bicycle and pedestrian corridors, and bicycle and pedestrian



intersections. Design and construction projects at these roadway locations are eligible for HSIP funding.

SJTPO, county partners, and municipal partners, in partnership with NJDOT staff work together to develop substantive safety projects at locations with demonstrated safety needs. Potential projects are evaluated using the five-step, data-driven process, detailed above to ensure the identified safety improvements are substantive, address the specific needs of the project site, and have a benefit that justifies the cost. Projects anticipated to be advanced through the Local Safety Program are noted in the table below.

Table 2: Projects Utilizing Federal Highway Safety Improvement Program Funds (FFY 2022-2031)

DB#	Sponsor	Project Name	Emphasis Area	Funding Status
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 FY 22 programmed
04314	Salem County	Salem County Roundabout (Six Points)	Intersections	Construction in FY 23 programmed
04314	Salem County	Salem County Pilot Roundabout (Five Points)	Intersections	Construction in FY22 programmed
04314	SJTPO	High Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Preliminary Engineering anticipated in FY23
04314	SJTPO	3 rd Street/Wheaton Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Preliminary Engineering anticipated in FY23
04314	SJTPO	East Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Preliminary



				Engineering anticipated in FY23
04314	SJTPO	Atlantic Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Preliminary Engineering anticipated in FY23
04314	SJTPO/Cumberland County	Irving Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Preliminary Engineering anticipated in FY23
04314	SJTPO	High Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Final Design anticipated in FY25
04314	SJTPO	3 rd Street/Wheaton Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Final Design anticipated in FY25
04314	SJTPO	East Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Final Design anticipated in FY25
04314	SJTPO	Atlantic Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Final Design anticipated in FY25
04314	SJTPO/Cumberland County	Irving Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Final Design anticipated in FY25
04314	City of Millville	High Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Construction anticipated in FY26
04314	City of Millville	3 rd Street/Wheaton Avenue Corridor	Pedestrians and Bicyclists	Application in development,

		Pedestrian Safety Improvements		Construction anticipated in FY27
04314	City of Vineland	East Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Construction anticipated in FY27
04314	Cumberland County	Atlantic Street Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Construction anticipated in FY26
04314	Cumberland County	Irving Avenue Corridor Pedestrian Safety Improvements	Pedestrians and Bicyclists	Application in development, Construction anticipated in FY26

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 (ROW), 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 includes 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 for 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 traffic safety outreach work. For over twenty (20) years, SJTPO has offered traffic safety outreach programs that work to educate drivers and others on how their behaviors can impact safety. SJTPO's traffic safety outreach work has grown over the years and includes partnerships with several organizations on programs that address different facets of safety. These programs and presentations include:

- **Belts on Bones** is a program designed for early elementary school students that teaches the importance of proper seat belt usage.
- **Belts, Bones, and Buses** is 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.
- **Car Crashes – It's Basic Physics** is a high school program that teaches students about the crash dynamics and the physical impact of crashes on the body.
- **Car-Fit for Senior Drivers** is an American Automobile Association (AAA)/ American Association of Retired Persons (AARP) program designed to provide a quick but comprehensive check of how well a driver and his/her/they vehicle work together.
- **Child Passenger Safety (CPS) – Car Seat Inspection Program** is a program that provides education for parents and caregivers on how to properly install a child restraint system in their vehicles.
- **Child Passenger Safety – Child Passenger Safety Technician Training** is a program that offers CPS Technician Certification status to individuals who successfully complete the course.
- **Child Passenger Safety – Restraint Systems on School Buses National Training** is a course for school district staff that addresses proper use and installation of child seats on school transport vehicles.
- **Child Passenger Safety – Transporting Children Safely** is 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.



- **Defensive Driving** is 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.
- **Most Dangerous Place on Earth** is 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** is 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.
- **Share the Keys** is a high school program that works to educate parents and encourages active involvement with their teen drivers.

Beginning in mid-March of 2020, the COVID-19 pandemic pushed many operations from in-person to virtual in accordance with local, State, and Federal health and social distancing guidance. SJTPO’s traffic safety outreach programs were impacted but have adapted to meet the virtual learning environment of educational instructors and students, the audience for many of SJTPO’s programs. SJTPO’s traffic safety outreach team continues to offer the same, high quality, engaging, and informative presentations in the virtual environment as a part of its effort to work to ensure everyone makes it home safely. As the situation surrounding the COVID-19 pandemic is everchanging, SJTPO will continue to adapt its traffic safety programs. Safety protocols are and will continue to be met. Virtual programs will continue to be offered, with in-person programs to resume when it is safe and prudent to do so.

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

Appendix B-B2: 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 NHS. The four (4) 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



percent of centerline miles), various transportation authorities and commissions (14 percent), counties (20 percent), and municipalities (3 percent).²

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 are 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 (3) 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 (3) applicable metrics, the segment was considered to have “good” pavement condition. If a segment was rated as “poor” on two (2) out of the three (3) 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 (4) 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 the 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:

² Data current as of 2019.



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%	15%***

* For some of these measures, the baseline conditions were not 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

***The 15percent target is an adjustment from the initial 2.5 percent target. The two-year performance metric of 10.7 percent, reported in October 2020, exceeded this target, which led to this adjustment.

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 SGR.

Progress Towards Pavement Targets

As part of NJDOT’s Mid-Performance Period Progress Report submitted to FHWA in October 2020, progress towards meeting the targets were evaluated. The four-year target for Percentage of the Non-Interstate NHS in “poor” condition was changed from 2.5 percent to 15 percent. The reason behind this change was because the two-year performance metric of 10.7 percent greatly exceeded the original 2.5 percent target. NJDOT attributed this exceedance due to the unreliability of the baseline data and the limited performance history using these specific metrics. The SJTPO Policy Board adopted [Resolution 2101-05](#) supporting this revised target at its January 25, 2021, Policy Board meeting.

Roadway maintenance is a major focus area of NJDOT’s CIS. The [FFY 2013-2022 Statewide Capital Investment Strategy](#), calls for more than \$260.0 million (approximately 8 percent) of the annual investments to go towards road assets. Further, “Restore, Preserve, and Maintain the Existing Transportation System,” is a goal in SJTPO’s Regional Transportation Plan, RTP 2050. It should be



noted that most of the programmed money for the Local Lead projects, over which SJTPO has the most discretion, goes towards roadway resurfacing projects. Over the first four (4) years (FFY 2022-2025) of the current FFY 2022-2031 TIP, \$44.2 million is made available to SJTPO through the Surface Transportation Block Grant Program (STBGP), although only \$9.1 million (approximately) is for roadways on the NHS system. NJDOT has programmed more than \$64.0 million for State-led roadway resurfacing projects, which are all on the NHS system. These projects are listed in [Section 2](#). 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.

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 percent by deck area); transportation authorities and commissions (38 percent); and counties, municipalities, NJ TRANSIT, various other agencies, and private owners (10 percent).

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 (4) 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 (5) 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%	21.3%^
% NHS bridge deck area in poor condition	6.5%	6.5%	6.8%^

^ Both of these four-year targets are adjustments from the original 4-year targets set in October 2018.

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

Progress Towards Bridge Targets

As part of NJDOT’s Mid-Performance Period Progress Report submitted to FHWA in October 2020, progress towards meeting the targets were evaluated. The four-year target for percentage of bridges in “good” condition was changed from 18.6 percent to 21.3 percent. The 4-year target for bridges in “good” condition was increased to account for the fact that more major bridge projects were completed in a two-year period, and the data showed that the deterioration of other bridges was not as rapid as expected. The four-year target for percentage of bridges in “poor” condition increased from 6.5 percent to 6.8 percent. While the overall percentage of bridges in the SJTPO region in “poor” condition actually decreased from 2018 to 2020, this reduction was outweighed by the unexpected worsening of a large NJ Turnpike bridge in northern New Jersey, which led to NJDOT’s decision to raise the 4-year target for bridges in “poor” condition.

The current FFY 2022-2031 TIP contains over \$152.0 million in bridge improvement projects. Most of these projects are on State-highways and listed in [Section 2](#), 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 January 25, 2021, under [Resolution 2101-05](#). 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 B-B3: 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 (4) 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 [Resolution 1809-19](#) at the September 24, 2018, Policy Board meeting.

[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 Analytics Suite was created and is maintained by the University of Maryland Center for Advanced Transportation Technology Laboratory, 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 (3) 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 Travel Time Reliability Targets

Currently, NJDOT and NJ TRANSIT sponsor numerous Statewide programs that improve travel time reliability. Many of these are funded through CMAQ, which is described in more detail under the [Emissions Reduction](#) (Subpart H) section. 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, 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.

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 USDOT 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 Truck 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 University of Maryland Center for Advanced Transportation Technology Laboratory 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)
TTR Index	1.82	1.90	1.95

Progress Towards Truck Travel Time Reliability Targets

In 2017, NJDOT released its [Statewide Freight Plan](#), which has “Improve Reliability and Efficiency,” as one of its goals. The Statewide Freight 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. Two (2) of the projects identified in Freight Project Areas within the SJTPO region have been completed. DBNUM 04308 was authorized for \$3.228 million in 2018 and DBNUM 11343A was authorized in 2016 for \$11.324 million. These projects are listed in the table below. In 2021, NJDOT is updating its Statewide Freight Rail Strategy. In June of 2021, NJDOT will begin the process to develop the FY 2022 Statewide Freight Plan.



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, 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 been an active participant in NJDOT’s Freight Advisory Committee and served on the stakeholder committee for the development of the Statewide Freight Plan.

Goods movement is an overarching area of concern within the SJTPO region. As part of the RTP 2050 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.

The SJTPO Regional Freight Plan Data Collection and Analysis technical study will be conducted during FFY 2022. This work is included as a two-year study in the [SJTPO FY 2021 UPWP](#). The study will support regional freight planning by collecting and analyzing freight data. The project scope includes identifying major freight generators and the regional freight network (local and State). The study will also conduct a data-driven performance-based analysis. This analysis will identify issues in the freight network that would benefit from infrastructure investments.

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 [Rebuilding American Infrastructure with Sustainability and Equity](#) (RAISE) grant program, with projects selected through consideration of safety, environmental sustainability, quality of life, economic competitiveness, SGR, innovation, and partnership, is an example of a Federally-administered program.



Congestion Measures (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 (2) measures are specifically intended to reduce congestion. Unlike all the other federally required performance measures, these specific measures apply to Urbanized Areas with a population over 1.0 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-Wilmington-Atlantic City, PA-NJ-DE-MD Urbanized Area, the SJTPO as well as all the other entities comprising the Philadelphia-Wilmington-Atlantic City, 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:

- **Peak Hour Excessive Delay:** Annual hours of PHED per capita on the NHS. The threshold for excessive delay is based on the travel time at 20 miles per hour or 60 percent 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\(a\)](#).
- **Percent non-Single Occupancy Vehicle:** 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:

- 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 Congestion Targets

Like the roadway maintenance project, congestion relief is another major focus area of NJDOT’s CIS. Per the [SFY 2021-2022 Statewide Capital Investment Strategy](#), almost \$480 million (approximately 15 percent) of annual capital investments goes towards congestion relief projects. Further, “Mitigate Traffic Congestion and Promote Efficient System Operation” is a goal in SJTPO’s RTP 2050. SJTPO receives \$1.9 million annually of CMAQ funds for local projects. One (1) project was approved for CMAQ funding on NHS roadways – Roosevelt Blvd/34th Street Advanced Traffic Signal Project in Cape May County. 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 number of resources in congestion relief programs Statewide, as described below. As such, progress is being made towards meeting the congestion relief targets.

As part of its CMP, using the Probe Data Analytics Suite, 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 CMP 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.

Emissions Reduction Targets (Subpart H)

These next measures pertain to the emissions reduction objectives of CMAQ projects. As noted, SJTPO falls within the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE 8-Hour Ozone Nonattainment Area. FHWA regulations note that MPOs that contain nonattainment or maintenance areas that overlap an urbanized area with a population above 1.0 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 US EPA as a nonattainment area for ozone, and a small portion of the SJTPO region overlaps the Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD Urbanized Area, which contains more than 5.0 million people. As such, SJTPO is required to set targets for pollutant emissions reductions from CMAQ projects. Separate emissions 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 VOCs and 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 SFYs. The 2-year target represents the emissions reductions from CMAQ projects that will be first authorized within FFY 2018 and FFY 2019, while the 4-year target represents the emissions reductions from CMAQ projects that will be first authorized within FFYs 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 the table below:

Table 8: CMAQ Emissions Performance Measures – SJTPO Forecasts and Targets*

State Fiscal Year (SFY)	Total Emissions Benefits Projections (kg/day)	
	VOC	NOx
Baseline (SFY 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 PM2.5 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, shown in the table below. These were included in the State Biennial Baseline Performance Report for the Performance Period 2018-2021, that was submitted by NJDOT to FHWA on May 16, 2018.



Table 9: CMAQ Emissions Performance Measures – MPO-level Baselines and Targets

Total Emissions Benefits Projections (kg/day)				
	VOC		NOx	
MPO	2-year	4-year	2-year	4-year
SJTPO	2.21	6.142	5.226	14.245
DVRPC (NJ)	1.45	2.864	7.453	14.861
NJTPA	14.026	27.318	101.722	202.745
Total	17.686	36.324	114.401	231.851

At the September 14, 2020, TAC meeting, the CMAQ Mid-Performance Plan was presented. The SJTPO Policy Board approved these Mobile Source Emissions Reduction targets for the SJTPO region on September 24, 2018, under [Resolution 1809-20](#).

Progress Towards Emission Reduction Targets

The improvement of air quality is part of the overarching goal of “Protect and Enhance the Environment and Complement Land Use Planning,” included in RTP 2050. Since the SJTPO region falls within the within the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE 8-Hour Ozone Nonattainment Area, SJTPO must make sure that all its projects embodied in the TIP conform to NAAQS. SJTPO 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\(c\)\(3\)](#)), SJTPO is 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 meets its targets. This Plan was submitted as part of the NJDOT Baseline System Performance Report to the USDOT in September 2018. In September of 2020, the Plan was updated to the CMAQ Mid-Performance Plan, which includes an updated list of projects and their status. As noted in the Mid-Performance Plan, the SJTPO region has achieved its emission goals, exceeding expectations for both the Percent Non-SOV travel measure 2-year and 4-year targets set in 2018, and for the On-Road Mobile Source Emissions measure. This was achieved through shared benefits of Statewide projects implemented by NJDOT and NJ TRANSIT, in addition to SJTPO-funded CMAQ projects.

The table below lists those specific CMAQ-funded projects that SJTPO anticipates will help the region meet its CMAQ mobile source emissions target as well as their funding status. Many of these projects have a congestion benefit as well as an air quality benefit, which help in meeting the congestion reduction target.



Table 10: Projects Utilizing Federal CMAQ Funds, FFY 2022-2031

DB#	Sponsor	Project Name	Funding Status
X065	City of Ventnor	Ventnor Avenue Signal Synchronization Project	Design in FFY22 programmed, construction in FFY23 programmed
X065	Somers Point	Somers Point Bike Path Enhancements	Construction in FFY22 programmed
X065	Atlantic City	Pacific Avenue Traffic Signal Optimization	Design in FFY22 programmed, construction in FFY24 programmed
X065	Atlantic County Transportation Unit	Purchase of eight (8) Replacement Paratransit Passenger Buses	Construction in FFY21 programmed. Funds were flexed to NJ TRANSIT
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	Construction in FFY24 programmed
X065	Cape May County	Cape May County Route 621 (New Jersey Ave) Improvements	Construction in FFY22 programmed
X065	Cumberland County Department of Workforce Development	Cumberland County Department of Workforce Development "To-Work" Transportation Vehicle Replacement	Programmed in FFY23
X056	City of Vineland	Vineland Alternative Fuel Vehicles Phase 1	Programmed in FFY23
X065	City of Vineland	Vineland Alternative Fuel Vehicles Phase 2	Programmed in FFY24
X065	City of Vineland	Landis & Mill, Landis & Orchard Traffic Signal Upgrades	Construction in FFY21 programmed
X065	Cumberland County/Millville	Millville Broad Street Traffic Signal Upgrades	Design in progress, construction in FFY21 programmed



X065	NJDEP	It Pay\$ to Plug in: New Jersey's Electric Vehicle Charging Grants Program	Construction in FFY21 programmed
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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. These are listed below:

Bicycle & Pedestrian Facilities/Accommodations (DB #X185) – This is a comprehensive program to ensure 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 (3) sources: \$1.5 million in CMAQ, \$1.0 million in STATE, and \$1.5 million in TA Set-Aside.

Intelligent Traffic Signal Systems (DB #15343) – This program will seek to improve mobility on New Jersey’s arterial highways. Arterials contribute almost 70 percent of total congestion that occurs in New Jersey. This program will focus on dynamically managing New Jersey’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, and robust detection and communication. This is a plan to upgrade most of the signals on NJDOT owned highways only. CMAQ funding is provided annually: \$8.86 million in FFY 2022, \$11.23 million in FFY 2023, \$11.8 million in FFY 2024, \$14.47 million in FFY 2025, and \$15 million annually in FFY 2026 through FFY 2031.

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, 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 B-B4: Transit Asset Management 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 an SGR. 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 on 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 an SGR. 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 TERM scale. The percentage of non-revenue service vehicles (by type) that meet or exceed the Useful Life Benchmark.

Facilities – The TERM scale 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 certain 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 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 CY 2017, based on measures mandated by the rule. The performance measures were selected by the FTA 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 Transit Asset Management Plan (TAMP) 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 rule 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 the TAM.

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

[NJ TRANSIT Asset Management Performance 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 an SGR, NJ TRANSIT has budgeted funds to permit regular ongoing replacement of equipment as it approaches the end of its useful life. This approach 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 an SGR. The Enterprise Asset Management Program TAM 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 Enterprise Asset Management Program TAM Plan also identifies NJ TRANSIT programs and projects aimed at helping to achieve 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 (1) heavy commuter rail line – the Atlantic City Rail Line between Philadelphia’s 30th Street Station and Atlantic City, New Jersey, with four (4) 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 (2) types – Over-the-Road for longer haul commuting services and Transit. The active bus fleet in daily service is in an SGR. 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 final 2019 targets³ for Rolling Stock are listed below and were adopted through [Resolution 1905-13](#) by the SJTPO Policy Board at its May 2019 meeting.

Table 11.1: TAMP Targets, Targets for Rolling Stock Performance Measure, 2019 Target (%)

Performance Measure	2019 Target (%)
Articulated Bus	100.00
Automobile	28.89
Over-the-road Bus	45
Bus	0
Cutaway	13.19
Light Rail Vehicle	0.00
Minivan	4.35
Commuter Rail Locomotive	6.41
Commuter Rail Passenger Coach	18.26
Commuter Rail Self-Propelled Passenger Car	100.00
Van	1.53

³ At the time of this publication, the TAMP targets for FY 2020 have not yet been finalized.



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 (5) MP-20 locomotives and four (4) 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 not driven on highways, including trailers and back hoes, and loaders. 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.

Table 11.2: TAMP Targets, Targets for Equipment, 2019 Target (%)

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)

The Facility Performance Targets for the entire system are listed below:

Table 11.3: TAMP Targets, Targets for Facilities, 2019 Target (%)

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 an SGR 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, approximately 1.0 percent of the commuter rail’s Statewide Commuter Rail track segment, which includes the Atlantic City Rail Line, the only rail facility in the SJTPO region, experienced performance restrictions.

Table 11.4: TAMP Targets, Targets for Infrastructure, 2019 Target (%)

Performance Measure	2019 Target (%)
Commuter Rail	1.00

The SJTPO Policy Board approved of these targets through [Resolution 1905-13](#) at their meeting on May 28, 2019.

Progress Towards Transit Asset Management Targets

The Transit Asset Transportation Performance Management rule requires MPOs to describe how the region’s TIP will help to achieve the TAM targets. SJTPO’s FFY 2022-2031 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.

As noted in [Section 4](#), NJ TRANSIT has programmed almost \$173.0 million over the first four years (FFY 2022-2025) of the current FFY 2022-2031 TIP and approximately \$255.0 million over the later federal fiscal years from FFY 2026-31 for transit projects and programs in the SJTPO region. Some of NJ TRANSIT’s projects and programs from the first four years (FFY 2022-2025) of the current FFY 2022-2031 TIP that have a direct impact on transit asset performance include the following:

- More than \$35.0 million is programmed for the preventive maintenance of the bus system (see DB #T135). In addition, approximately \$12.6 million is allocated towards rail preventive maintenance program (DB #T39), which is used for the overhaul of rail cars and locomotives, and other preventive maintenance costs.
- \$10.97 million is allocated towards replacing rail cars and locomotives that have reached the end of their useful life (DB #T112), and over \$41.0 million for replacing buses (DB #T111).
- More than \$22.64 million is set-aside for 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 \$1.55 billion SFY 2022 Capital Program (from July 1, 2021, to June 30, 2022) calls for continued investment in the State’s transit infrastructure to maintain an SGR 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.

Public Transportation Agency Safety Plan Safety Performance Targets and Goals

FTA published a final PTASP rule and related performance measures as authorized by [Section 20021](#) of MAP-21. This rule became effective on July 19, 2019. The PTASP rule requires operators of public transportation systems that receive federal financial assistance under [49 USC Chapter 53](#) to develop and certify a PTSAP. The PTSAP must include specific performance targets based on safety performance measures established under the National Public Transportation Safety Plan. The development and implementation of PTSAPs is anticipated to help ensure that public transportation systems are safe nationwide.

As a rail operator as well as an operator of large bus systems – more than 100 vehicles in peak revenue service – NJ TRANSIT must draft and implement its own PTASP. For small operators, defined as those operating 100 or fewer vehicles in peak revenue service, subject to the rule, states must draft and certify a PTASP on their behalf, unless a small provider opts to draft and certify its own safety plan and notifies the state that it will do so. The required transit safety performance measures are listed in the table below.

Table 12: Transit Safety Performance Measures

Category	Measure
Fatalities	Total number of reportable fatalities by mode Rate of reportable fatalities per total vehicle revenue miles (TVRM) by mode
Injuries	Total number of reportable injuries by mode Rate of reportable injuries per TVRM by mode
Safety Events	Total number of reportable safety events by mode Rate of reportable safety events per TVRM by mode
System Reliability	Mean distance between major mechanical failures by mode

On October 5, 2020, NJ TRANSIT released its initial one-year targets for each of these required measures. These measures and targets were also included in NJ TRANSIT’s PTSAP, released in



December of 2020 for CY 2021. The safety performance targets for the bus network are listed in the table below.

Table 12: Transit Safety Performance Targets, Bus for 2021

				Safety Events						
Fatalities/Rate		Customer Injuries/Rate		Collisions/Rate		Employee Injuries/Rate		Major Bus Fire Events/Rate		System Reliability
4	0.055/M . Miles	244	3.35/ M. Miles	264	3.63/ M. Miles	423	7.99/2 00,00 0 Hrs.	12	0.16/M . Miles	135.45/M. Miles

The SJTPO Policy Board endorsed these targets at their March 22, 2021, Policy Board meeting through [Resolution 2103-10](#).

Progress Towards Meeting Transit Safety Targets

At this time, it is too early to assess NJ TRANSIT’s progress towards meeting these targets. SJTPO will continue to work closely with NJ TRANSIT on assessing the agency’s progress towards meeting these transit safety targets and programming projects. Safety across all transportation modes, including transit, is a top priority for the SJTPO as evidenced by “Improve Transportation Safety,” being one of RTP 2050’s goals as well as the Safety Pre-Screening Criterion of SJTPO’s recently adopted Project Selection Process. Also, almost \$413.0 million is programmed in Mass Transit Assets from in the TIP, which undoubtedly includes safety improvements.