

Appendix C: Performance Based Planning and Programming (PBPP) *updated 1/28/19*

The Moving Ahead for Progress in the 21st Century Act (MAP-21) and subsequent Fixing America's Surface Transportation (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

The Federal Highway Administration (FHWA) has issued three 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 the FTA.

Appendix C-C1: Safety Performance Management Measures Rule

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 Transportation Performance Measurement (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. 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 the New Jersey Department of Transportation (NJDOT), the New Jersey Division of Highway Traffic Safety (NJDHTS), the Delaware Valley Regional Planning Commission (DVRPC), the North Jersey Transportation Planning Authority (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 23, 2018 meeting, the SJTPO Policy Board adopted a resolution supporting NJDOT's statewide safety targets for CY 2019.

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 2019, which represents the second round of collaborative statewide target setting in New Jersey.

Table 1: New Jersey’s Statewide Safety Targets- CY 2019

Performance Measure	5-Year Rolling Averages	
	Baseline CY 2013-2017 5-Year Rolling Average	Target CY 2015-2019 5-Year Rolling Average
Number of Fatalities	577.6	605.0
Rate of Fatalities per 100 million vehicle miles traveled (VMT)	0.761	0.780
Number of Serious Injuries	1,092.5	1,101.4
Rate of Serious Injuries per 100 million VMT	1.439	1.422
Number of Non-Motorized Fatalities and Serious Injuries	379.1	393.9

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

The 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 2018-2027 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:** The 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.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 FY 2018-2027 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 \$13 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 2018-2027)

DB#	Sponsor	Project Name	Emphasis Area	Funding Status
04314	Egg Harbor Township	Egg Harbor Township Centerline Rumble Strips	Lane Departure	Construction in FY19 programmed
04314	Cape May County	Cape May County Centerline Rumble Strip Project	Lane Departure	Construction in FY19 programmed
04314	Cape May County	Cape May County Pilot Roundabout 1 (West Perry)	Intersections	HSIP eligibility currently under NJDOT review
04314	Cape May County	Cape May County Pilot Roundabout 2 (Woodbine)	Intersections	Construction in FY19 programmed
04314	Cumberland County	Cumberland County Pilot Roundabout (West Park Drive)	Intersections	HSIP eligibility currently under NJDOT review
04314	Cumberland County	Cumberland County Flashers (10 Locations)	Intersections	Construction in FY19 programmed
04314	Cumberland County	Cumberland County Systemic High Friction Surface Treatment Program - HRRR	Lane Departure	Construction in progress
04314	Cumberland County	Cumberland County Systemic High Friction Surface Treatment Program - Non-HRRR	Lane Departure	Construction in progress
04314	SJTPO	Cumberland County Ped & Bike Action Plan	Pedestrians and Bicyclists	Planning in progress
04314	City of Vineland	Garden Road & Mill Road Traffic Signalization	Intersections	ROW and CON in FY19 programmed
04314	Salem County	Salem County Roundabout (Six Points)	Intersections	Preliminary Engineering in FY19 programmed
04314	Salem County	Salem County Pilot Roundabout (Five Points)	Intersections	Preliminary Engineering in FY19 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:

Crash Reduction Program (DB #X242) - \$5 million annual program designed to improve conditions with enhancements that may include pavement improvements, protection or removal of fixed objects, and utility pole relocation or replacement. It will also develop and implement a systemic approach to the installation of lane and roadway departure technologies to prevent vehicles from leaving their respective lanes and causing crashes, injuries, and/or deaths.

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.

Intersection Improvement Program (Project Implementation) (DB #98333) - \$3.25 million annual program (\$5 million HSIP/\$250,000 State) that provides for the implementation of safety and operational improvements at intersections.

Segment Improvement Program (DB #15807) - \$2 million annual program that provides for the identification and implementation of safety improvements along segments which show crash rates above the statewide average. The safety improvements proposed are: striping, signage, crosswalks, bus shelters, handicap ramps, bicycle accommodations, travel lane modifications, resurfacing, changes in accommodating "U" turns, pedestrian refuge islands, designing for mature drivers, corner modifications and innovative technology.

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.

Pedestrian Safety Improvement Program (DB #06401) - \$4 million annual program to reduce pedestrian crashes and/or fatalities. Locations/segments are identified through crash history data and estimated rates of exposure to motor vehicles/pedestrian conflicts. Locations/segments are examined by NJDOT'S Pedestrian Safety Impact Teams who will conduct Road Safety Audits and make recommendations for improvements. This program also funds the implementation of recommendations.

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:

- **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.
- ***Motorcycle Refresher for Law Enforcement*** - a course for law enforcement officers that addresses the requirements of title 39, including licensing, and discusses the importance of identifying improper safety issues impacting motorcyclists and the others who share the road.

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