NJ-2022-001

NJDOT Highway Safety Improvement Program Implementation Plan

FINAL REPORT

July 2022

Submitted by

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16. Abstract

The New Jersey Department of Transportation Bureau of Safety, Bicycle & Pedestrian Programs (BSBPP) engaged Cambridge Systematics (CS) to assist with the development of the current Highway Safety Improvement Program Implementation Plan, which was a necessary document that BSBPP had to develop after not meeting their Federal safety performance measure targets. The development of this HSIP Implementation Plan was data-driven with safety stakeholder input, a review of New recent fatal and serious injury crashes, and historical HSIP program expenditures and performance. As a result of this analysis, New Jersey will dedicate HSIP funds in excess of $57.3 M for safety projects to address these deficiencies. Additionally, New Jersey identified several opportunities and actions to explore and advance in an effort to address challenges, such as aligning project development and safety investments with the New Jersey 2020 SHSP, increasing the development and implementation of HSIP-funded pedestrian and bicycle projects in underserved communities, conducting annual safety summits for relevant stakeholders, engaging MPO partners to develop Local Strategic Highway Safety Plans, and streamlining the Capital Delivery Process to HSIP projects. These actions will allow New Jersey to meet their Federal safety performance targets in subsequent years.

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EXECUTIVE SUMMARY

The Federal Highway Administration (FHWA) assesses the Calendar Year (CY) 2019 safety performance targets for all States based on the five-year averages for each performance measure from CY 2015 to CY 2019. According to 23 CFR 490.211(c)(2), a State Department of Transportation (DOT) has met or made significant progress toward meeting its safety performance targets when at least four of the five safety performance targets established under 23 CFR 490.209(a) have been met or the actual outcome is better than the baseline performance for the year prior to the establishment of the target. The measures include fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries. FHWA completed the assessment for New Jersey's Calendar Year CY 2019 safety performance targets. The baseline performance for the CY 2019 assessment is the five-year average from CY 2013 to CY 2017. According to the FHWA assessment, New Jersey has not met or made significant progress toward achieving its safety performance targets. Table 1 provides a summary of these findings.

Table 1 – New Jersey CY 2019 Safety Performance Target Assessment

PERFORMANCE MEASURE	2015-2019 TARGET	2015-2019 ACTUAL	2013-2017 BASELINE	MET TARGET?	BETTER THAN BASELINE?	MET OR MADE SIGNIFICANT PROGRESS?
Number of Fatalities	605.0	581.8	577.0	Yes	N/A	No
Rate of Fatalities (per HMVMT)	0.780	0.754	0.760	Yes	N/A	
Number of Serious Injuries	1,101.4	1,469.2	1,083.6	No	No	
Rate of Serious Injuries (per HMVMT)	1.422	1.900	1.428	No	No	
Number of Non-Motorized Fatalities & Serious Injuries	393.9	465.0	379.8	No	No	

The New Jersey Department of Transportation (NJDOT) developed the New Jersey Highway Safety Improvement Program (HSIP) Implementation Plan for Fiscal Year (FY) 2022 to evaluate the challenges impacting the State's ability to meet the safety performance targets and assess available opportunities and actions needed to make progress towards meeting the targets in future years. The development of this HSIP Implementation Plan is data-driven with safety stakeholder input, a review of New Jersey's 2015 – 2019 fatal and serious injury crashes, and historical HSIP program expenditures and performance. The plan acknowledges the mandatory change in

serious injury reporting, in compliance with Federal standards, as a significant factor for not meeting the 2019 targets.

For FY 2022, NJDOT will dedicate HSIP funds in excess of $57.3 million to currently programmed projects on the State and Local systems. The purpose is to progress towards New Jersey's safety goal of a three percent per year reduction of fatalities and serious injuries, as defined in the New Jersey 2020 Strategic Highway Safety Plan (SHSP), while also making progress towards meeting or exceeding the safety performance targets.

As part of the development of the HSIP Implementation Plan, New Jersey identified several opportunities and actions to explore and advance in an effort to address challenges. Highlights of these actions include:

- Align project development and safety investments with the New Jersey 2020 SHSP, while including equity in the process.

- Increase the development and implementation of HSIP-funded pedestrian and bicycle infrastructure projects with a focus on underserved communities.

- Conduct annual safety summits to update stakeholders on the status and progress of the SHSP actions and goals while maintaining partnerships for future safety plans and initiatives.

- Engage with Metropolitan Planning Organization (MPO) partners to initiate the development of Local Strategic Highway Safety Plans.

- Lead efforts to streamline the Capital Project Delivery Process for HSIP projects.

New Jersey continues to consistently use national best practices in their program. The development of this plan is viewed as an opportunity to re-assess the program, identify any challenges and continue to engage with safety stakeholders to optimally plan on meeting the obligation requirements. These efforts strive to reduce fatalities and serious injuries in subsequent years and may help meet safety performance targets.

INTRODUCTION

Purpose

The Fixing America's Surface Transportation Act (FAST Act) continues the HSIP as a core Federal-aid program with the purpose of achieving a significant reduction in transportation fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads with a focus on performance. The HSIP consists of three main components which include the Strategic Highway Safety Plan, State HSIP or program of highway safety improvement projects, and the Railway-Highway Crossings Program (RHCP).

Within the HSIP, each State is required to establish annual safety performance targets for five measurements:

- Number of Fatalities
- Fatality Rate - number of fatalities per hundred million vehicle miles traveled (HMVMT)
- Number of Serious Injuries
- Serious Injury Rate - number of serious injuries per HMVMT
- Number of Non-motorized Fatalities and Serious Injuries

If the State does not meet or make significant progress towards meeting its annual safety performance targets, the State must comply with the provisions set forth in 23 U.S.C. 148(i) for the subsequent fiscal year. Within these provisions, the State must:

- Use obligation authority equal to the HSIP apportionment for the year prior to the year for which the targets were not met or significant progress was not made (only for HSIP projects).
- Submit an annual HSIP Implementation Plan that describes actions the State will take to meet or make significant progress towards meeting its subsequent targets, including:
    - Identify roadway features that constitute a hazard to road users;
    - Identify highway safety improvement projects based on crash experience, crash potential, or other data-supported means;
    - Describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented;
    - Describe how the proposed projects, activities, and strategies funded under the State HSIP will allow the State to make progress toward achieving the safety performance targets; and
    - Describe the actions the State will undertake to achieve the performance targets.
- Meet HSIP planning requirements under 23 U.S.C. 148(c)(2)(B) & (E) and 23 CFR Part 924.9 and consider those requirements as part of its HSIP Implementation Plan development efforts.

The FHWA reviewed and issued a letter, seen in appendix B, for the State of New Jersey's 2019 safety performance targets in March 2021. The review, which was based on five-year averages for 2015-2019, indicated that New Jersey has not met or made

significant progress towards achieving its safety performance targets. The targets were not met for three of the five tracked performance measurements, as seen in table 2, which include:

- Number of Serious Injuries
- Serious Injury Rate - number of serious injuries per HMVMT
- Number of Non-motorized Fatalities and Serious Injuries

As a result of not meeting or making significant progress toward the State's safety performance targets, New Jersey must comply with the following actions per 23 U.S.C. 148(i):

- Develop and submit an HSIP Implementation Plan for Fiscal Year (FY) 2022 to the FHWA Division Office by June 30, 2021, that meets the applicable statutory requirements.
- Use obligation authority equal to the State's FY 2018 HSIP apportionment in the amount of $57,333,425 only for HSIP projects in FY 2022, as per 23 U.S.C. 148(i)(1).

It should be noted that, the formula obligation limitation associated with the HSIP penalty is only available for one fiscal year. In unique circumstances where a State is unable to utilize its formula obligation limitation to obligate HSIP funds in full, as required by the penalty by the end of the fiscal year, the State must return any unused obligation limitation for the annual August Redistribution. Worth noting, returning such limitation will not negatively impact a State's eligibility to request additional formula obligation under August Redistribution.

Table 2 – Target Assessment: Fatalities and Serious Injuries

PERFORMANCE MEASURE	2015-2019 TARGET	2015-2019 ACTUAL	2013-2017 BASELINE
Number of Fatalities	605.0	581.8	577.0
Rate of Fatalities (per HMVMT)	0.780	0.754	0.760
Number of Serious Injuries	1,101.4	1,469.2	1,083.6
Rate of Serious Injuries (per HMVMT)	1.422	1.900	1.428
Number of Non-Motorized Fatalities & Serious Injuries	393.9	465.0	379.8

This Implementation Plan documents the HSIP funding and project decisions for the Fiscal Year 2022 to meet or make significant progress toward meeting its safety performance targets in subsequent years while acknowledging a contributing factor to

the rise in number of serious injuries is the compliance to the Model Minimum Uniform Crash Criteria (MMUCC) guidelines, discussed in more detail in “Changes affecting Target Setting Process”. This Implementation Plan is a commitment to deliver programmed HSIP projects towards meeting the State’s safety goal of reducing fatalities, serious injuries, and total crashes by 14 percent over the five-year cycle of the New Jersey 2020 Strategic Highway Safety Plan, which in turn allows New Jersey to make progress on the safety performance targets. This plan also provides transparency of the safety performance process while exploring program opportunities for future efficiencies with the continued focus of achieving the greatest potential for reducing fatalities and serious injury crashes.

New Jersey Target Setting Process

Target Setting Approach

NJDOT engages with its partners through a nationally recognized interagency forum, “Complete Team”. It was this forum that was engaged in the target development process that met technical requirements and adequately considered policy issues. The Complete Team includes representatives of the three MPOs, along with NJ Transit, the Port Authority of New York and New Jersey, the CATT Lab of the University of Maryland, the Transportation Operations Coordinating Committee (TRANSCOM), and FHWA's New Jersey Division Office. This process was used as a model for setting performance safety targets by a core group of safety stakeholders implementing safety performance.

Targets are developed in consultation with representatives from:

- New Jersey Department of Transportation
- Federal Highway Administration
- Governors Highway Safety Office
- Port Authority of New York and New Jersey
- North Jersey Transportation Planning Authority
- South Jersey Transportation Planning Organization
- Delaware Valley Regional Planning Commission
- New Jersey Turnpike
- New Jersey Transit
- CATT Lab of the University of Maryland
- TRANSCOM

The NJDOT takes the lead in establishing the five safety performance targets and coordinates with the MPOs and the Division of Highway Traffic Safety (DHTS) to:

- Share data for the measures.
- Develop and discuss methods to set statewide targets.
- Discuss preliminary targets using an agreed-upon methodology.

The targets are established by assessing recent trends in statistical forecasting to predict probable outcomes, recently built projects, and the current socioeconomic environment. The targets are based on five year rolling averages and satisfy Federal requirements and New Jersey's safety goal of moving Towards Zero Deaths on all public roads. The five-year rolling average provides a better long-term understanding of the trends, reduces the impact of the annual outlier changes, and provides a mechanism to account for a regression toward the mean. Regression to the mean suggests that if a significantly high or low number of fatalities and/or serious injuries occur in one year, it is expected that the totals will return to the long-term average in subsequent years.

This long-term safety goal of Towards Zero Deaths requires effort over time to change culture through education and implement infrastructure improvements along with proper enforcement strategies. The actions recommended within this plan align with both the short-term and long-term goals that drive New Jersey's performance targets as defined in NJ 2020 SHSP.

At the time of finalizing this report, the 2022 targets were being developed.

Align with the SHSP and Other Safety Plans

During the development of the NJ 2020 SHSP, emphasis areas were determined based on crash records contributing factors, including the roadway features that constitute a hazard to road users. The data established the five-year totals of fatalities and serious injuries for 14 of the NJ 2015 SHSP emphasis areas under consideration for the 2020 Plan's focus areas. Some areas combined to reduce duplication of resources and strategies. Data was included as a risk, not a feature, as it is the basis of safety investments. The NJ 2020 SHSP includes seven emphasis areas to address the hazardous features as follows:

- Intersection
- Lane Departure
- Pedestrians and Bicyclists
- Driver Behavior
- Other Vulnerable Road Users

- Data
- Equity

Many of the benefits outlined within the HSIP Implementation Plan are the result of strong partnerships and coordination among safety-related efforts in the State.

The NJ 2020 SHSP provides a data driven approach to implement activities and strategies to improve safety using the HSIP funds. The SHSP identifies the emphasis areas New Jersey's safety partners must prioritize to reduce the State's fatalities and serious injuries. The primary infrastructure emphasis areas from the NJ 2020 SHSP are:

- Intersections
- Lane Departures
- Pedestrians and Bicyclists

The Highway Safety Plan (HSP) identifies the National Highway Traffic Safety Administration's (NHTSA) Section 402 Highway Safety Program and Section 405 National Priority Programs the State will address using behavioral countermeasures each year to reduce fatalities and serious injuries. The HSP performance targets defined by the New Jersey DHTS must be identical to the NJDOT targets for common performance measures (fatality, fatality rate, and serious injuries) reported in the HSIP annual report, as defined by the goals established in the SHSP. New Jersey was identified as a Pedestrian and Intersection safety focus State because the rate of pedestrian and intersection crashes in New Jersey is higher than the national average crash rate. This created and continues a focused effort as defined in the SHSP to reduce these crash types using both engineering and behavioral approaches towards New Jersey's future success in improving safety across all transportation modes.

Recommend Improvements to HSIP Processes

New Jersey is taking this opportunity to review guidelines and methodologies for identifying, selecting, and evaluating projects and programs within this plan, including noteworthy New Jersey practices that are likely to help meet or make significant progress on achieving performance targets. Future opportunities and recommendations are also documented in this HSIP Implementation Plan with the intent of continuously improving the HSIP process, filling potential gaps and addressing known challenges with established best practices to continue New Jersey's goal towards zero fatalities and serious injuries.

Provide Transparency

This Implementation Plan is also a tool for sharing the methodologies, processes, performance, and strategies of the program. The State's HSIP is a very collaborative program, continuously seeking input from internal and external stakeholders and their

actions. This plan serves as confirmation that stakeholder input in this and other State programs is being utilized effectively and the safety efforts statewide are aligned.

Improve Processes to Evaluate Effectiveness

The goal of HSIP evaluation is to estimate the effectiveness of highway safety improvements. New Jersey is taking this opportunity to review how projects and programs funded using HSIP monies are evaluated and to consider process improvements to these methodologies. The State has long understood that improvements to safety are measured in a wide variety of quantitative and qualitative ways. Safety evaluation and the measurement of effectiveness of various countermeasures or projects is constantly changing and improving. As part of this plan, New Jersey will identify opportunities to continue practicing substantive safety improvements through program and project evaluations to ensure proper investments while incorporating a Safe System Approach to address various crash risks.

Under the NJ 2020 SHSP, a holistic evaluation of progress toward eliminating fatalities and serious injuries will be performed annually throughout the five-year implementation. A periodic review of the implementation process will be performed to assess how the process is working and to identify potential opportunities for improvement. Evaluations are conducted at both the process level and at the performance level of SHSP implementation, forming a feedback loop that is both informed by and to inform the safety targets.

Changes Affecting Target Setting Process

FHWA's review indicated that New Jersey performed better than the target for number of fatalities and fatality rate by 3.83 and 3.33 percent, respectively. However, the State did not meet the target for number of serious injuries, serious injury rate, and number of non-motorized fatalities and serious injuries by 33.4, 33.6 and 18.05 percent, respectively. The potential reasoning for New Jersey not meeting or not making significant progress towards meeting the targets was reviewed by NJDOT.

Changes to the New Jersey Crash Record Form

Beginning in 2019, recording serious injuries on the New Jersey Crash Record form (NJTR-1) changed to follow the "Suspected Serious Injuries" definition in the MMUCC 4th Edition definition per 23 CFR 490.207(c). FHWA sent a letter confirming New Jersey was compliant in October 2019.

As a result of the required revision to the NJTR-1 crash form, crash injuries not previously attributed to the serious injury classification were included in the total, resulting in a significantly higher number of serious injuries reported compared to previous years. Regarding goal setting as part of the SHSP process, this creates a challenge by not having a significant history of serious injury data to use as a basis of establishing a goal to set the performance safety targets. As a result, total injuries will be used with the assumption that the percentage of serious injuries will statistically match total injuries, and for this reason, the NJ 2020 SHSP will track total injuries along

with fatalities and serious injuries. New Jersey anticipates the five-year rolling average to continue to increase over the next several years until the data stabilizes when 2019 is the base year.

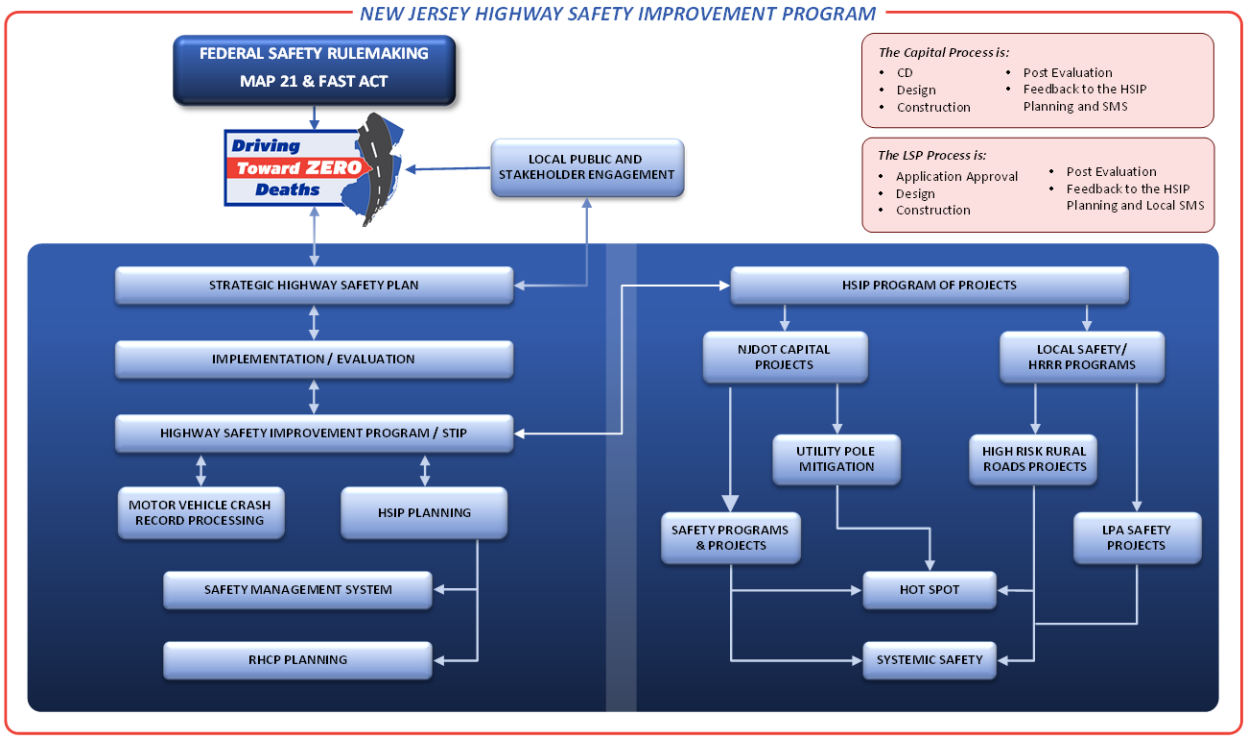


Figure 1. New Jersey Highway Safety Improvement Program Flowchart

BACKGROUND INFORMATION

This section summarizes New Jersey's HSIP stakeholder outreach, safety funding expenditures, and performance, as well as potential gaps and opportunities for improvement to the program methodology or process changes.

Stakeholder Outreach

The development of the NJ 2020 SHSP provided an opportunity for collaboration and coordination on a statewide level including active engagement by safety stakeholders representing all levels of government, non-profit organizations, private sector stakeholders, and the general public. This collaboration provided an opportunity for key safety stakeholders to provide input on statewide goals, strategies, and even performance targets that overlap with the HSIP. This stakeholder engagement will be carried forward into the Implementation Plan activities, and the decisions linked to their input will be shared.

Stakeholder engagement for the NJ 2020 SHSP included several opportunities to engage a broad group of safety stakeholders throughout the State of New Jersey.

These opportunities included three Safety Summits conducted from November 2019 to June 2020 where each summit was attended by approximately 200 people.

In addition to the Safety Summits, public outreach included the creation of a website, SafeRoadsForAllNJ.com, to share information and provide a forum for stakeholders to submit questions and comments.

Internal HSIP Stakeholder Engagement

Regular meetings are conducted between Planning, Multimodal and Grants Administration (PMGA) and staff from Division of Project Management (DPM) to monitor and assist as the projects move through project development to advertisement. Quarterly meetings with Bureau of Safety, Bicycle & Pedestrian Programs (BSBPP), Bureau of Transportation Data & Support, Bureau of Utilities, Bureau of Structural & Railroad Engineering Services, DPM, Capital Investment and Program Development (CIPD), and other subject matter experts (SME) are conducted led by the Office of the Assistant Commissioner, PMGA.

External HSIP Stakeholder Coordination

NJDOT supports the advancement of projects under local jurisdictions by participating in the Technical Assistance Team for local safety projects. The Technical Assistance Team includes NJDOT's Safety, Environmental, and Local Aid staff. NJDOT's Division of Local Aid, under the Assistant Commissioner of PMGA is responsible for coordinating with the MPOs in the selection, authorization and oversight of projects implemented on the local road network.

Quarterly meetings are also held with Bureau of Safety, Bicycle & Pedestrian Programs, Division of Local Aid, Bureau of Environmental Program Resources, and the MPOs to monitor and administer the Local Safety/High Risk Rural Roads (HRRR) Program. This meeting is also led by the Office of the Assistant Commissioner of PMGA.

Coordination with local government agencies is facilitated through the MPOs, Division of Local Aid & Economic Development, and BSBPP. The three MPOs, North Jersey Transportation Authority (NJTPA), South Jersey Transportation Planning Organization (SJTPO) and Delaware Valley Regional Planning Commission (DVRPC), provide extensive support and assistance to their subregions in managing their Local Safety/HRRR Programs with quarterly meetings conducted between NJDOT and the MPOs to manage the program of local safety projects.

HSIP Funding Portfolio

The New Jersey HSIP historically faced several challenges early on. Organizational and staffing changes led to delays in developing an understanding of the program and the program’s requirements, which also impeded the performance. New Jersey was obligating less than 25 percent of New Jersey’s $24 Million annual HSIP apportionment in 2012. Therefore, New Jersey had a $90 million backlog of unexpended HSIP funds at risk of lapsing. This problem was compounded by a substantial increase through the

Moving Ahead for Progress in the 21st Century Act (MAP-21) in July 2012, causing New Jersey's annual HSIP apportionment to more than double to $54 Million in 2013. The New Jersey FHWA HSIP allocation for Federal fiscal year 2021 is $58 million, and while the apportionments have stayed steady at $58 million, programmed amounts and authorizations are around $45 million and $37 million, respectively.

In 2016, NJDOT's senior leadership collaborated with FHWA Division Office to establish a formal policy for the delivery of HSIP Program and developed New Jersey's first HSIP Manual and Implementation Guide. Prior to the 2016 HSIP Manual and Implementation Guide, safety improvements were low-cost quick-fix improvements. Following the formalization of the Manual, safety projects follow the Capital Project delivery process and implement substantive safety improvements. HSIP projects are now required to complete a Highway Safety Manual (HSM) analysis during the Concept Development (CD) phase, in line with the Data Driven Safety Analysis requirement listed in the Manual.

Also, to correct the early HSIP Program challenges, a Program management strategy was established. Quarterly Funds Status meetings with the Office of the Assistant Commissioner, PMGA are held throughout the Federal Fiscal Year (FFY) to track the Local Safety/HRRR and NJDOT Capital HSIP authorizations. BSBPP uses the reports presented at the quarterly meetings, under the guidance of the Assistant Commissioner, to track the program budget and to manage the funds for the current year, as well plan project programming a for a minimum of two additional future years, while ensuring consistency with the Statewide Transportation Improvement Program (STIP). This management and administration strategy has earned national accolades for New Jersey.

New Jersey is apportioned approximately $58 million annually for the HSIP Program, which is distributed at approximately 55 percent to local roadways and 45 percent to State roads based on fatalities and serious injuries data. See figure 1 for an illustration of the Decision Support Framework for State and Local HSIP projects as part of the overall HSIP Program.

State HSIP Funding

New Jersey's State HSIP funding is distributed to Capital Projects, including safety programs and utility pole mitigation, through funding for concept development, design, right-of-way (ROW), utilities, construction, and construction inspection of safety improvements on State roadways. Safety improvements are identified through both hot-spot and systemic safety approaches.

BSBPP develops Problem Statements based on the Safety Management System (SMS), a data driven network screening process, for HSIP eligible safety projects, and provides subject matter expertise on their development through Construction. The HSIP eligibility is assessed on all the projects using a quantitative (HSM) or qualitative analysis.

Systemic Safety Improvement projects are advanced if they are identified through a focused analysis of roadway risk factors. New Jersey's systemic approach involves problem identification, countermeasure selection, and project location prioritization. The systemic approach begins by looking at the system-wide data to analyze and identify systemic safety problems on particular roadway types. The approach then moves to a micro-level analysis to conduct a quantitative or qualitative risk assessment of similar locations across the network. This leads to the selection of relevant mitigating strategies most appropriate for broad implementation across those locations. All applications for systemic safety improvements will be evaluated by BTDS and approved FHWA's Division Office for eligibility prior to authorization submission.

Local HSIP Funding

The Local Safety and HRRR Programs provide Federal Highway Safety Improvement Program funding for design, construction, and construction inspection of safety improvements on county and local roadways. Local roadways are eligible for HSIP improvements through a competitive application process through their respective MPOs. All local roadways in New Jersey are covered by one of three MPOs – NJTPA, SJTPO, or DVRPC. NJDOT oversees the production of network screening lists for each of the MPO regions, including both County and Municipal owned roadways, which assist the MPOs in prioritizing their projects.

The MPOs solicit local officials for submission of candidate projects annually. Each MPO screens the applications for completeness and to verify all required elements are included. The MPO then submits copies of the applications to the Technical Review Committee. New Jersey's HSIP Local Safety Program (LSP) Technical Review Committee (TRC) is made up of representatives from NJDOT's BSBPP, Division of Local Aid, Bureau of Environmental Program Resources and the respective MPO Safety Offices. The New Jersey FHWA Division Office serves in an advisory capacity on the committee. The LSP TRC assists local agencies throughout the process for identifying and developing local safety and HRRR projects on roadways under local jurisdiction. The TRC evaluates each application and determines if it should be recommended for HSIP funding. The TRC also determines the year best suited for construction authorization based on project complexity, size and/or level of design assistance needs. Selected projects are administered by county and municipal governments with oversight by NJDOT's Division of Local Aid. An update of the LSP is provided to BSBPP at the quarterly meetings.

Railway-Highway Crossings Funding

The RHCP has funds set-aside from the HSIP apportionment for the elimination of hazards at railway-highway crossings. The program funds are programmed for projects at public crossings, including roadways, bike trails and pedestrian paths where 50 percent of the funding is dedicated to the installation of protective devices at crossings. The remainder of the funds are used for hazard elimination projects, including protective devices. The HSIP portfolio historically includes the RHCP planning activities and other projects programmed with Highway Infrastructure Program funds.

Review of HSIP Performance Dashboard

Following guidance from the Office of the Assistant Commissioner, PMGA, in 2018, the Safety Programs section from merged with the Office of Bicycle and Pedestrian Programs, which is now BSBPP. The Bureau of Transportation Data & Safety was renamed Bureau of Transportation Data & Support.

The BSBPP is responsible for management and administration of the HSIP Program and many bicycle and pedestrian planning and program activities, including the Complete Streets initiative. The Bureau also provides safety subject matter expertise on a wide variety of analyses, programs, projects, and initiatives, including the Safe Routes to School program.

The reorganization provided the ability to capture more pedestrian and bicycle safety projects in the HSIP portfolio, while maintaining the other safety projects. Figure 2 shows this reorganization.

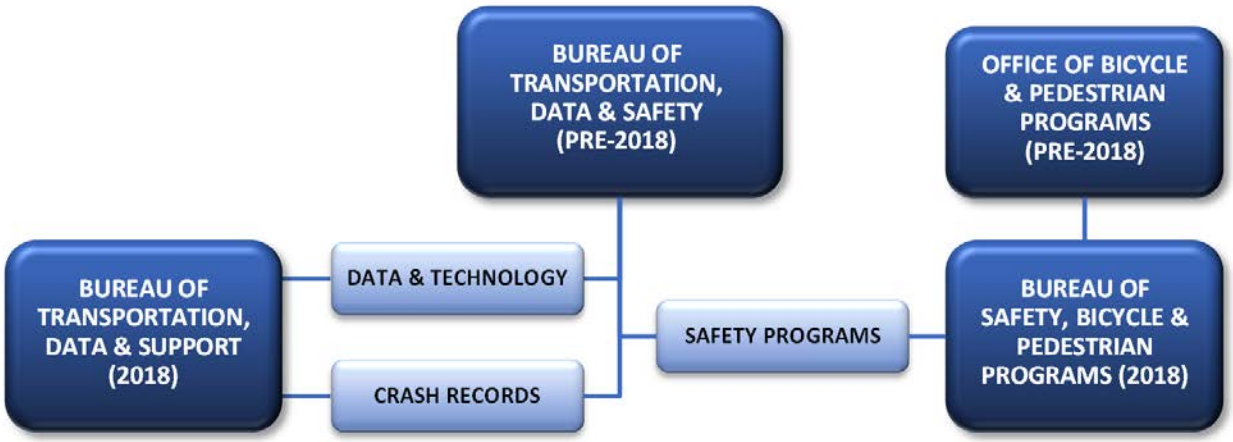


Figure 2. BSBPP Reorganization

Project Performance

The 2020 HSIP Annual Report provided before and after implementation collision data for several project locations. The collision data, as well as a benefit-cost ratio analysis was utilized to measure and promote the effectiveness of specific countermeasures in New Jersey's unique roadway network. Projects ranged from traffic signal improvements and pedestrian signals to roadway diets and centerline rumble strips. New Jersey understands the limitation of using standalone observed crash data while ignoring how crash frequency and severity can change, even over a three-year period. This also includes limitations in safety data for improving the safety and mobility of alternative modes.

Program and Project Performance

NJDOT currently evaluates the program and projects based on before and after crash data and includes a benefit-cost ratio of projects funded by the HSIP. New Jersey measures effectiveness using the following metrics:

- Benefit-Cost Ratio
- Change in numbers of fatalities and serious injuries
- Economic Effectiveness (cost per crash ratio)
- Number of lives saved

The HSIP Safety Performance Target charts and trends provides an understanding of New Jersey's performance on a networkwide basis in traffic and pedestrian/bicycle safety. These performance report-outs are included in the HSIP Annual Safety Report (ASR).

NJDOT updates the HSIP Portfolio on a quarterly basis, tracking the projects within the program in terms of authorizations and delivery. After discussions with FHWA, the New Jersey HSIP Program will explore evaluation alternatives and implement them in the next New Jersey HSIP Manual update.

SAFETY DATA

This section displays safety data for New Jersey. Fatalities and serious injuries are broken down by functional classification, location, primary infrastructure emphasis areas, and jurisdiction to identify patterns in collision data.

Performance Measure Trends

This section presents the safety performance measure trends for New Jersey since 2011. These safety performance trends, shown in figure 3 through figure 7, are the basis for the Implementation Plan, as if the State has not met or made significant progress towards its safety performance targets, which are referenced in table 1, it must complete an Implementation Plan.

Figure 3 shows the number of fatalities (as opposed to the number of fatal crashes) per year from 2011 to 2019 and the five-year average of the same measure starting in 2015. Except for 2015 to 2016, the five-year average has increased. From 2016 to 2019, the five-year average of fatalities has increased from 570 to 583, an increase of approximately two percent.

As noted in table 1, New Jersey met this performance target as the goal was to have a 2015-2019 average below 605 fatalities.

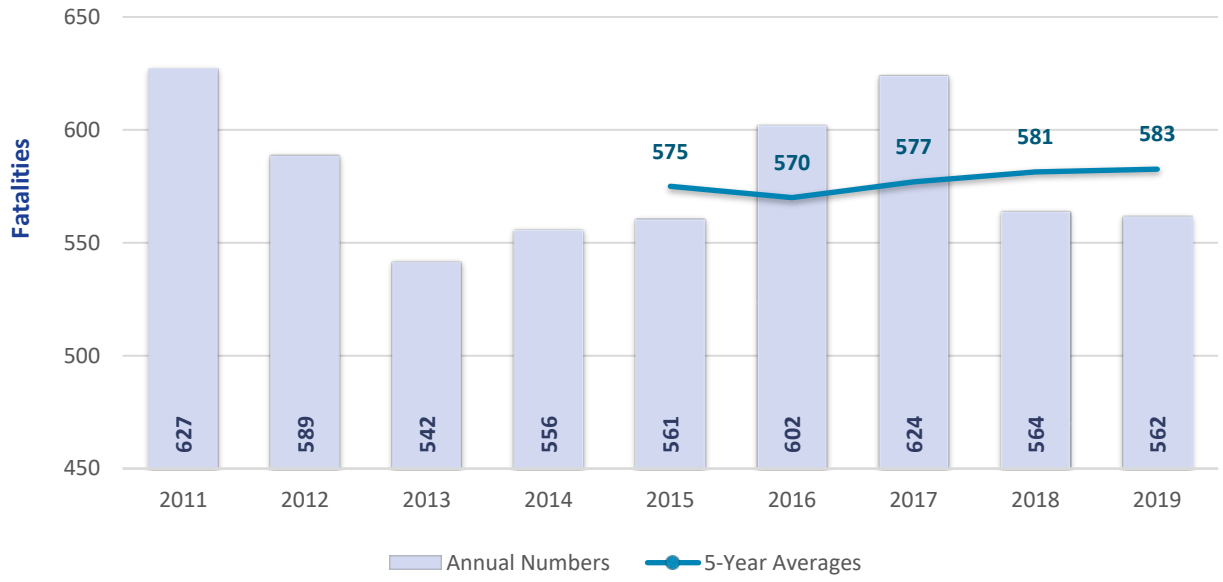


Figure 3. Fatalities per Year (2011-2019)

Figure 4 shows the number of serious injuries per year from 2011 to 2019 and the five-year average of the same measure starting in 2015. There is a noticeable spike in 2019 in which the number of serious injuries increased from 1,284 in 2018 to 2,798 in 2019, an increase of over 100 percent. As noted in "Changes affecting Target Setting Process" and within figure 4, this is most likely not an actual increase in total crashes, but instead how officers reported serious injury crashes because of the reclassification of "Incapacitating Injury" to "Suspected Serious Injuries" on the NJTR-1 form. Except for the year 2019 and 2018, the five-year average steadily decreased each year from 2015 to 2017.

As noted in table 1, New Jersey did not meet its serious injury performance target of 1,101.4, as the 2015-2019 average (1,469 serious injuries) was greater than the target of 1,235 serious injuries. Again, the 2019 reclassification of injuries on the NJTR-1 Crash Investigation Report Form significantly increased the 2019 number of reported serious injuries and could explain why the serious injury target was not met.

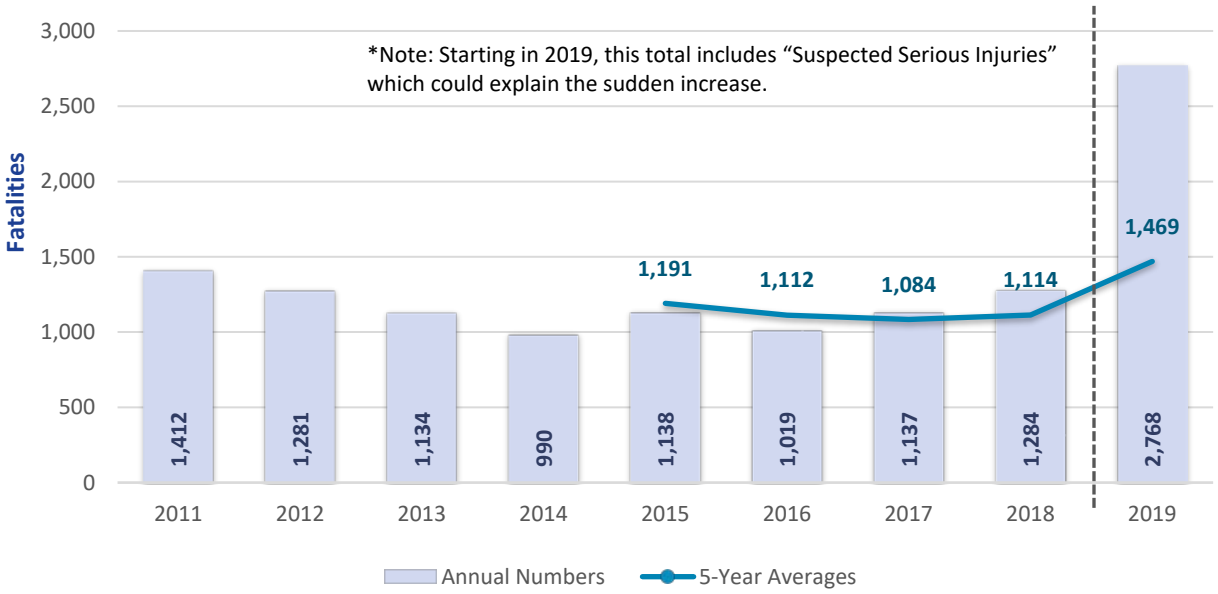


Figure 4. Serious Injuries per Year (2011-2019)

Figure 5 shows the fatality rate (number of fatalities per Hundred Million Vehicle Miles Traveled). This measure attempts to normalize the total number of fatalities based on the total number of motor vehicle miles traveled in New Jersey each year to understand the relationship and possible mitigating circumstances of the fatalities. The five-year average fatality rate decreased slightly or remained consistent for all years after 2015, decreasing from 0.77 fatalities per HMVMT in 2015 to 0.76 fatalities per HMVMT in 2019.

As noted in table 1, New Jersey met or made significant progress on the fatality rate target, as the actual five-year rolling average (2015-2019) of 0.76 fatalities per HMVMT was lower than the target of 0.78.

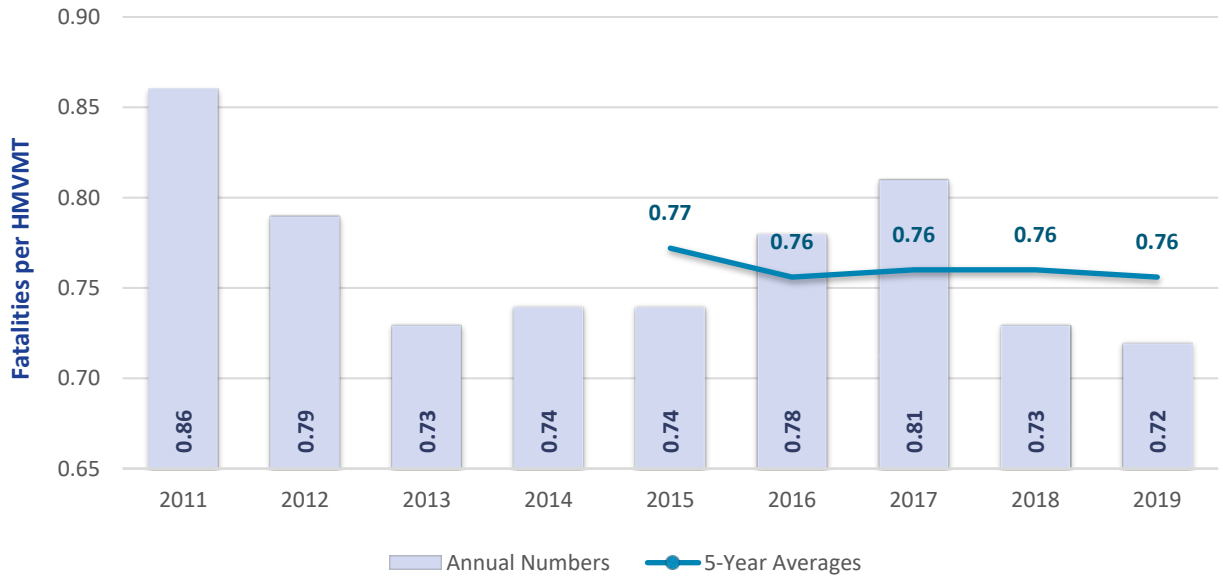


Figure 5. Fatality Rates (2011-2019)

Figure 6 shows the serious injury rate (number of serious injuries per HMVMT), revealing a trend similar to figure 4 in that the five-year rolling average decreases steadily from 2015 to 2017 until slightly increasing in 2018 and significantly increasing in 2019 by approximately 30 percent. This is also likely a result of the NJTR-1 serious injury reclassification change. As noted in table 1, New Jersey did not meet or make significant progress toward the target goal for the serious injury rate; the five-year rolling average for 2019 is 1.90 (the 2015-2019 average) and is higher than the 1.422 serious injury rate target.

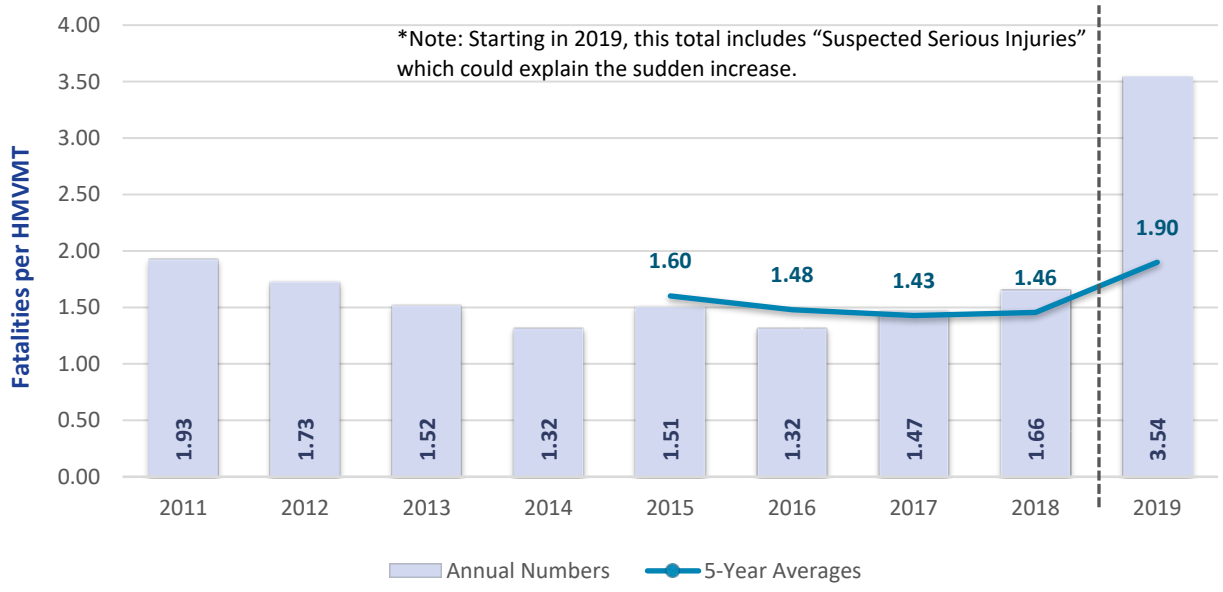


Figure 6. Serious Injury Rates (2011-2019)

Figure 7 identifies the total number of Non-motorized Fatalities and Serious Injuries per year. This includes fatalities and serious injuries for both pedestrians and bicyclists. The five-year average of this performance measure decreased six percent from a high of 403 non-motorized fatalities and serious injuries in 2015 to 378 in 2017, before increasing slightly in 2018 and significantly again in 2019. Although the redefined serious injury classification significantly contributed to not making progress or meeting the 2019 target, it is worth noting that the five-year average was rising in 2018 before the serious injury definition change in 2019. This 2018 increase was due to a rise in serious injuries from 202 in 2017 to 234 in 2018, an increase of 16 percent.

As noted in table 1, New Jersey did not meet their 2015-2019 goal of 393.9 non-motorized fatalities and serious injuries.

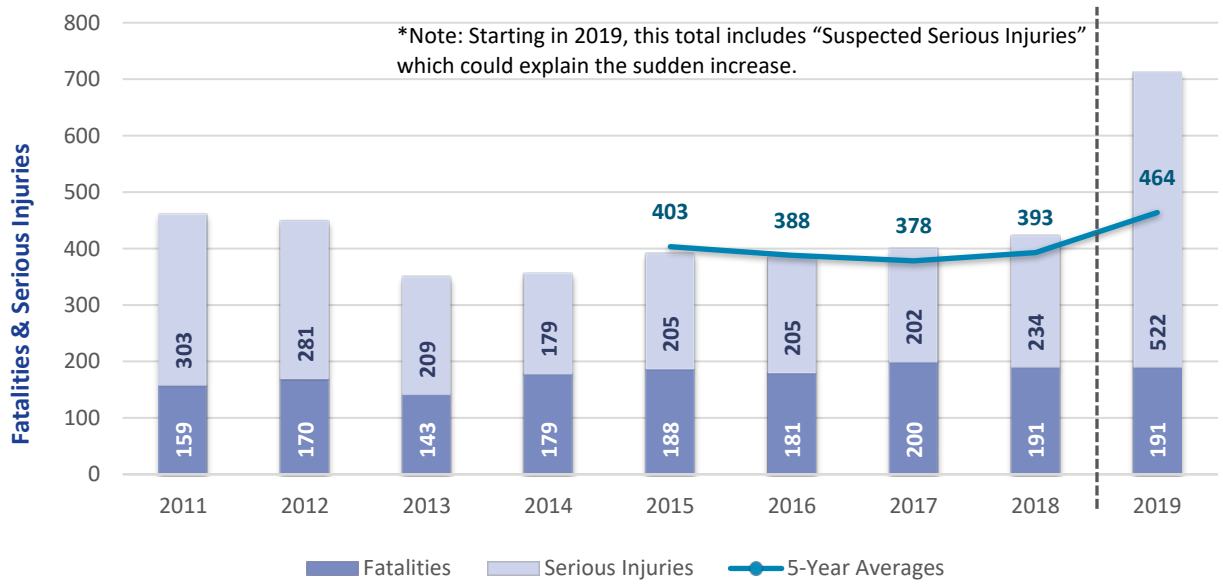


Figure 7. Non-Motorized Fatalities & Serious Injuries (2011-2019)

NJ Crashes by Functional Classifications

This section breaks down fatalities and serious injuries by the functional classification of the roadway on which they occurred.

Figure 8 shows the distribution of the total number of fatalities and serious injuries (F & SI) between 2015 and 2019 based on the roadway functional classification. Principal Arterials (Other) is identified as the functional classification with the greatest number of fatalities and serious injuries with over 3,000 F & SI in the five-year period. This equates to approximately 34 percent of the total fatalities and serious injuries in the State. Minor arterials see a similarly large share of fatalities and serious injuries with 27 percent, and the remaining functional classes experience approximately 8-10 percent each, except for minor collectors which accounts for approximately one percent of the total F & SI.

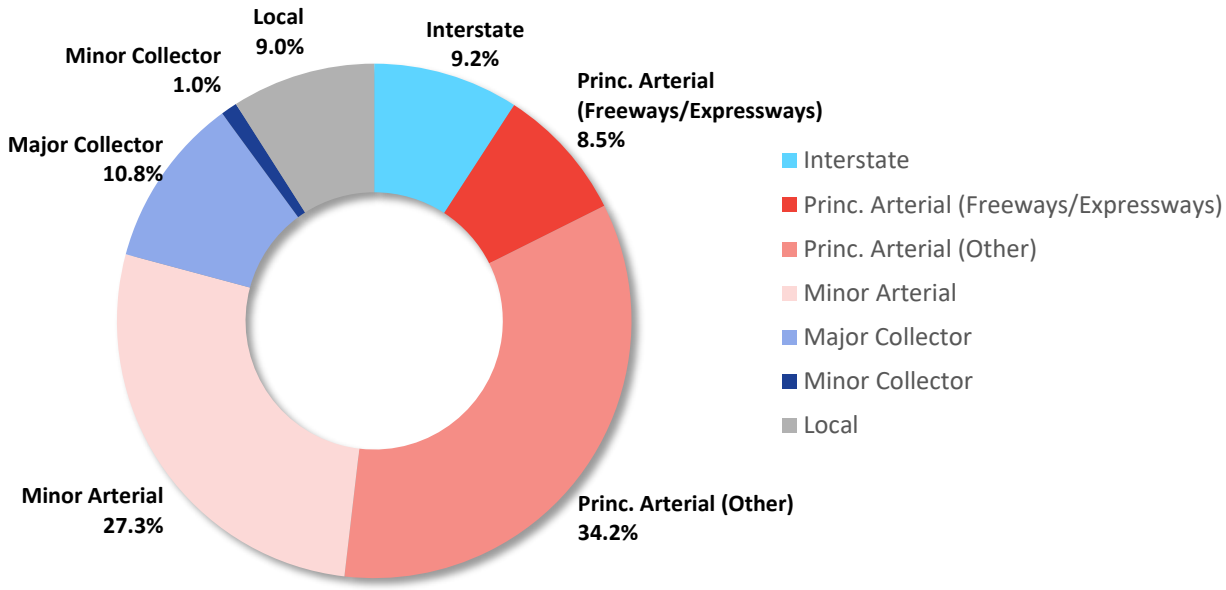


Figure 8. Fatalities & Serious Injuries by Functional Classification (2015-2019)

Figure 9 redefines the analysis from figure 8 to develop crash rates based on the total vehicle miles traveled in each of the functional classifications. Similar to figure 8, the three functional classes that were the highest based on the *total number* continue to represent the highest rate but in a different ranking order. Minor Arterials are identified as having the highest fatality and serious injury rate with approximately 4.35 fatalities and serious injuries per HMVMT, followed by Major Collectors (3.66 HMVMT) and Principal Arterials (Other) (3.61 HMVMT). The remaining functional classes are relatively the same and fall between 1.0 and 1.4 fatalities and serious injuries per HMVMT. The Interstate Functional Classification appears to have the lowest rate at just under 1.0 fatality and serious injury per HMVMT.

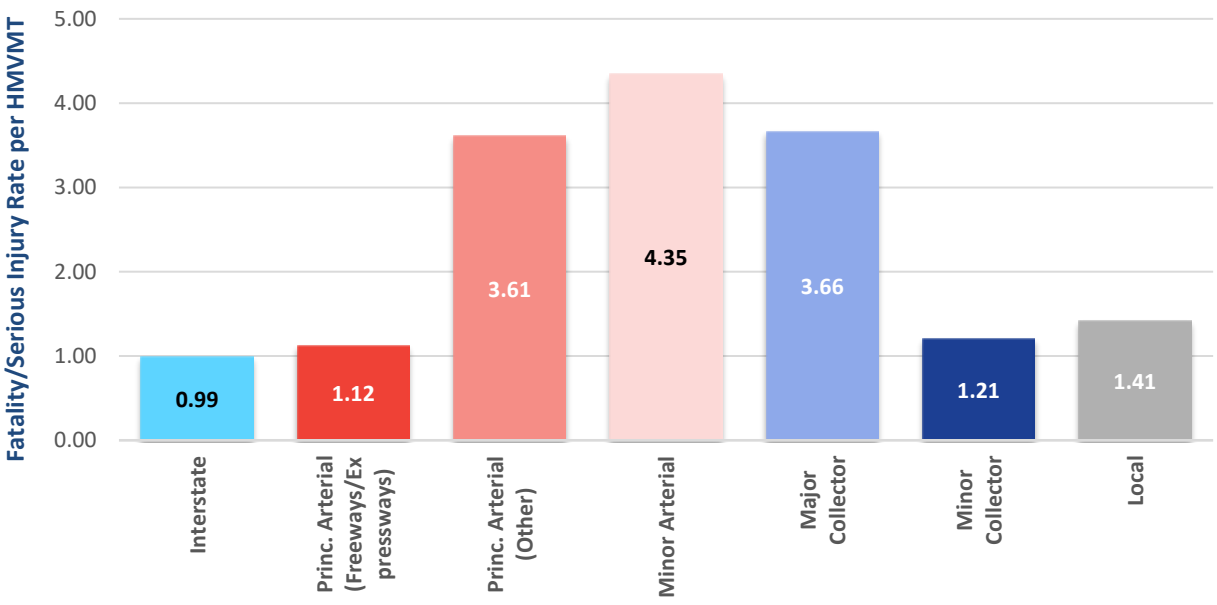


Figure 9. Fatality & Serious Injury Rates by Functional Classification (2015-2019)

NJ Crashes by Location

Figure 10 shows the number of fatalities and serious injuries per year from 2015 to 2019 aggregated by urban or rural areas. Fatalities and serious injuries in urban areas greatly outnumber those in rural areas, which correlates with the higher population and vehicle-miles traveled in urban areas. Every year since 2016, the share of urban fatalities and serious injuries has increased, from 88 percent in 2016 to 93 percent in 2019.

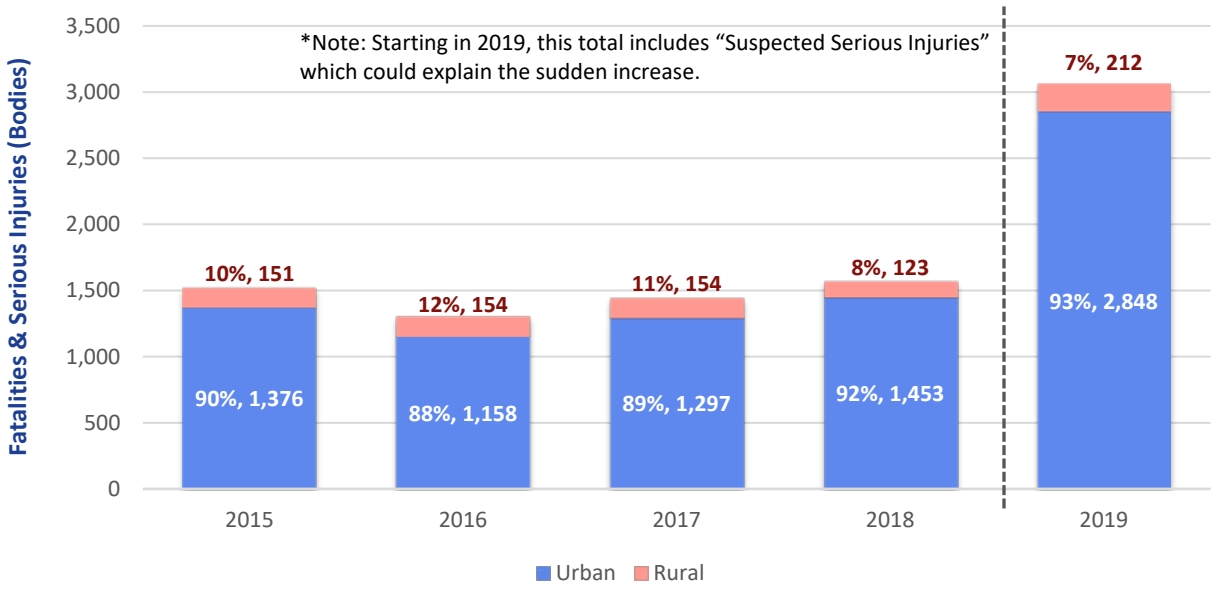


Figure 10. Urban vs. Rural Fatalities & Serious Injuries (2015-2019)

Figure 11 shows the fatality and serious injury rate per HMVMT from 2015 to 2019 in rural and urban areas. Converting the number of Fatality and Serious Injuries into a rate allows for a more complete analysis based on the number of vehicle miles traveled in each area type. In all studied years, the urban rate is consistently lower than the rural rate. The highest gap occurs in the years 2015-2017 with a maximum of 1.61 fatalities and serious injuries per HMVMT separating the two area types in 2016, and is incrementally smaller in 2018 and 2019, with a minimum gap of 0.38 fatalities and serious injuries per HMVMT in 2019 while comparing the two area types.

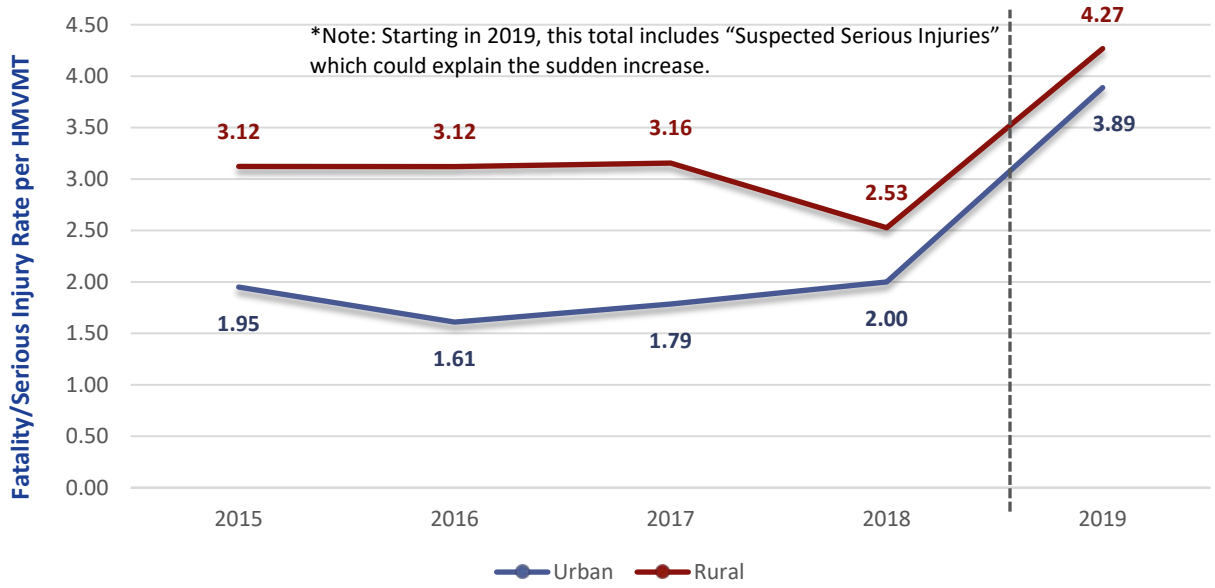


Figure 11. Urban vs. Rural Fatality & Serious Injury Rates (2015-2019)

NJ Crashes by Primary Infrastructure Emphasis Areas

The NJ 2020 SHSP contains seven emphasis areas, as shown below in figure 12.

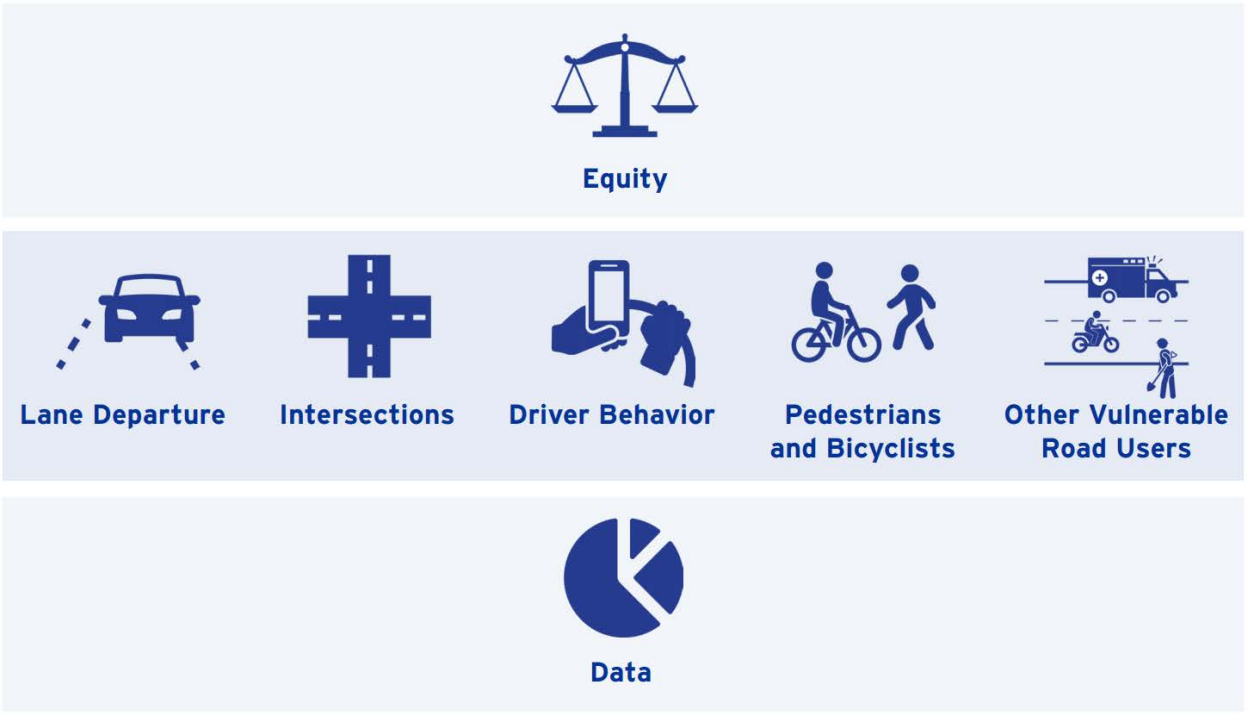


Figure 12. NJ 2020 SHSP Emphasis Areas

Of these seven emphasis areas, fatality and serious injury data will be analyzed in the following sections for the three primary infrastructure emphasis areas: Lane Departure Crashes, Intersection Crashes, and Pedestrian and Bicyclist Crashes. These three are considered the primary infrastructure emphasis areas for the HSIP as they impact the highest number of crashes in New Jersey and would be most affected by improvements in roadway design as opposed to improvements in enforcement.

Intersections Emphasis Area

Intersection crashes include crashes that occur within or on the approaches to intersections. Intersection crashes generally involve multiple vehicles and can include both rear-end and right-angle crashes.

Figure 13 shows the fatality and serious injury rates for intersection crashes from 2006 to 2019. The five-year rolling average consistently decreased from 0.98 fatalities and serious injuries per HMVMT in 2010 to 0.66 in 2018 before jumping in 2019 to 0.82, revealing an increase of almost 25 percent. However, the annual numbers reached a low crash rate in 2016 with 0.59 combined fatalities and serious injuries per HMVMT and incrementally increased during the next two years which was before the NJTR-1 change that caused an even larger increase in 2019.

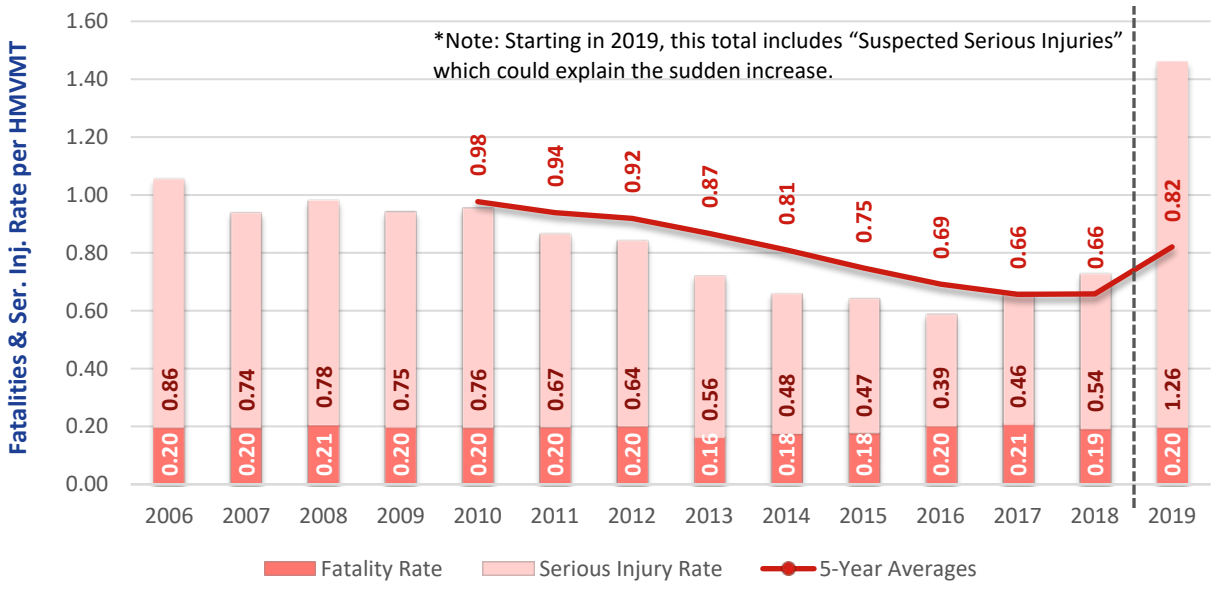


Figure 13. Intersection Fatality & Serious Injury Rates (2006-2019)

Lane Departure Emphasis Area

Lane departure crashes occur when a vehicle leaves the travel lane. Vehicles may run off the roadway and collide with a fixed object, or hit another moving object, like another vehicle. These crashes often occur at high rates of speeds and can lead to side-swipe crashes, fixed object crashes or head-on collisions.

Figure 14 displays the fatality and serious injury rate for roadway departure crashes from 2006 to 2019. Like the previous performance measure, the five-year average was consistently reduced from 1.04 fatalities and serious injuries per HMVMT in 2010 to 0.73 in 2018 (a decrease of approximately 30 percent), before increasing rapidly in 2019 to 0.83. However, the rate of the decrease from 2010 to 2014 was more significant compared to rate of decrease from 2015 to 2018, where the number of fatalities and serious injuries per HMVMT remained relatively steady.

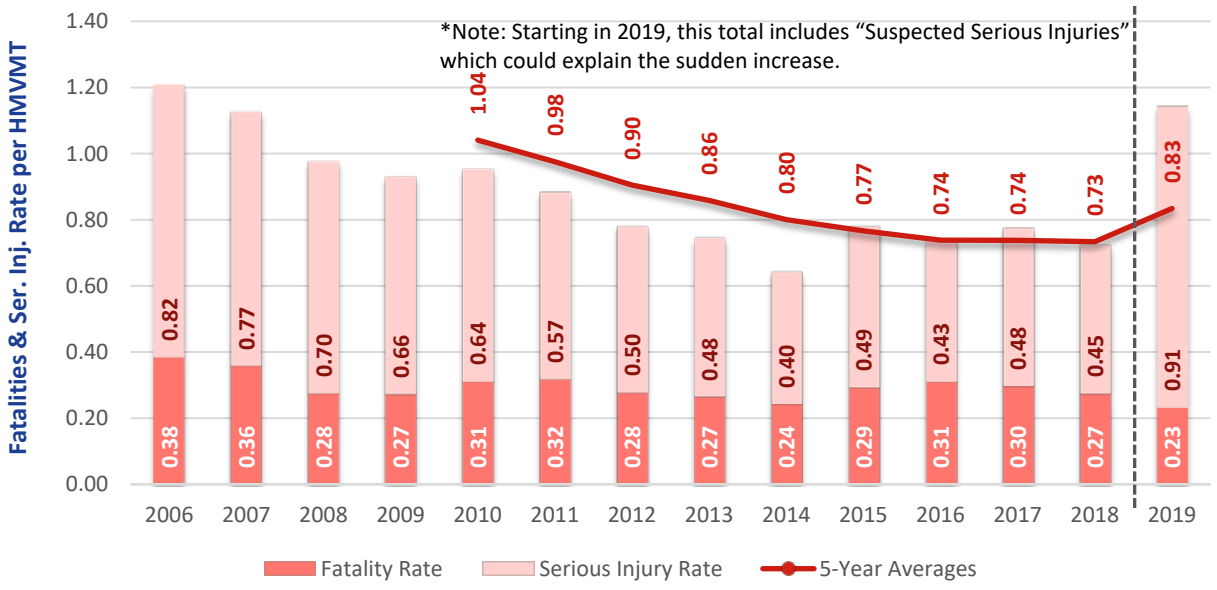


Figure 14. Lane Departure Fatality & Serious Injury Rates (2006-2019)

Pedestrians and Bicyclists Emphasis Area

This emphasis area includes crashes involving pedestrians and bicycles, which are non-motorized road users. It is worth noting that a bicyclist walking a bicycle in a crosswalk is considered a pedestrian under this category. These crashes are often severe because the road users have less protection, especially when struck by vehicles traveling at higher rates of speed. As previously discussed, New Jersey is a Pedestrian Focused State because the pedestrian fatalities and serious injuries crashes and rates exceed the national average rates. The designation of a Focus State provides priority access to technical assistance and courses to address the pedestrian safety issues in the identified focus State.

Figure 15 displays the fatality and serious injury rate for pedestrian/bicycle crashes from 2006 to 2019. The five-year average shows a steady decline from 2010 to 2017 in pedestrian & bicyclist fatalities and serious injuries (a decline of 21 percent), but the annual numbers show that the combined rate has been generally increasing slightly since 2013, before jumping in 2019 as a potential result of the NJTR-1 serious injury designation change.

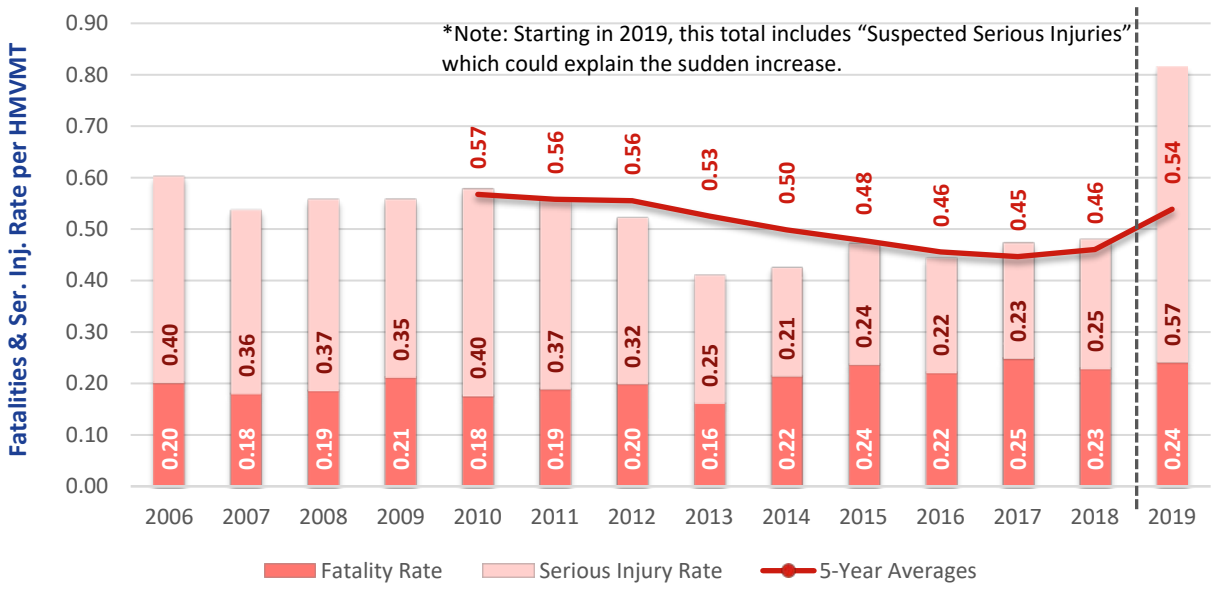


Figure 15. Pedestrian & Bicycle Fatality & Serious Injury Rates (2006-2019)

NJ Crashes by Functional Classification and Location

Table 3 notes the fatality and serious injury rate per HMVMT stratified by both functional class and area type (urban vs. rural). Cells shaded a darker red indicates the cell has a greater crash rate for the functional class and area type in combination. The table reinforces the information provided in figure 8 and figure 9 in that Principal Arterials (Other), Minor Arterials, and Major Collectors have the highest fatality and serious rates of the functional classes and urban roads generally have lower crash rates compared to rural roads. However, this table illustrates an even greater disparity in that rural major collectors experience 5.53 fatalities and serious injuries per HMVMT while urban interstates are below 1.00, a difference of over 450 percent. It also shows that minor collectors have the second-highest fatality and serious injury rate of functional classes in rural locations, while having one of the lowest in urban settings.

Table 3 – Fatality & Serious Injury (F+SI) Rates by Functional Classification and Location (2015-2019)

FUNCTIONAL CLASSIFICATION	URBAN (F+SI PER HMVMT)	RURAL (F+SI PER HMVMT)
Interstate	0.98	1.13
Principal Arterial (Freeways/Expressways)	1.08	2.19
Principal Arterial (Other)	3.57	4.40
Minor Arterial	4.10	4.15
Major Collector	3.20	5.53

FUNCTIONAL CLASSIFICATION	URBAN (F+SI PER HMVMT)	RURAL (F+SI PER HMVMT)
Minor Collector	1.54	4.69
Local	1.23	2.70

NJ Crashes by Jurisdiction

Figure 16 shows fatality and serious injury rates per HMVMT for State-maintained roads under the jurisdiction of New Jersey Department of Transportation and roads maintained by other agencies and local jurisdictions. The local jurisdiction designation includes, county, municipal (township, borough, and city), and some private road ownership. A comparison of the fatal and serious injury rates by jurisdictional ownership reveals that the State agency rate paralleled the other agency rates but at a much lower rate (approximately a 25 to 33 percent gap) until 2018, when the rates were generally equivalent from that point forward. Both rates decreased until 2016-2017, at which point they started to rise. The significant increase in 2019 can again be attributed to the change in NJTR-1 crash form.

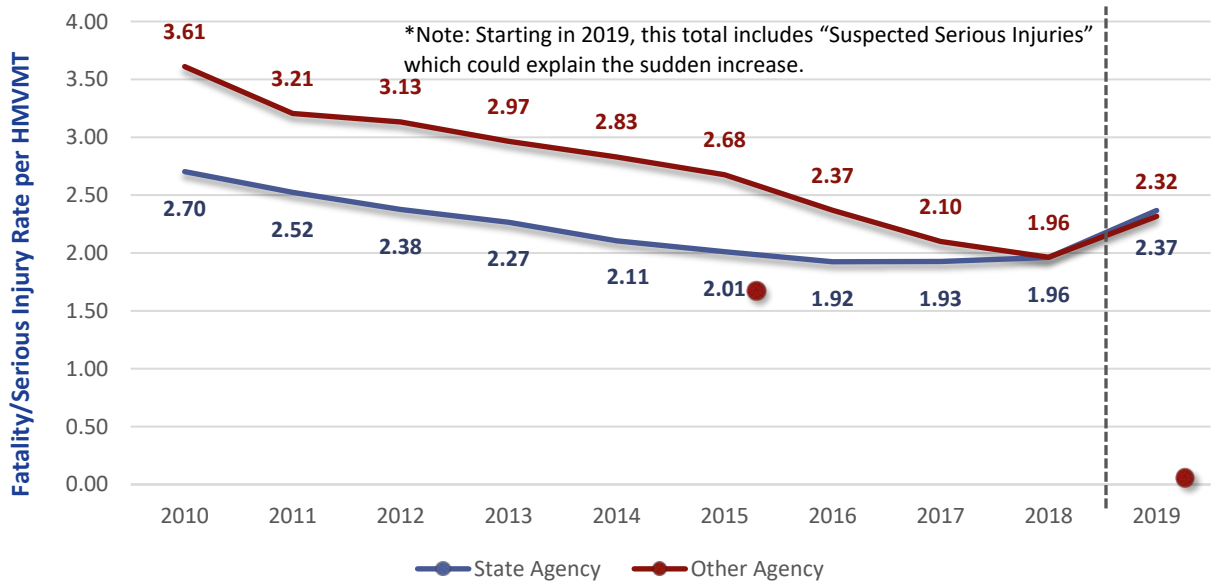


Figure 16. Fatality & Serious Injury Rates by Jurisdiction (2010-2019)

ALIGNMENT OF HSIP FUNDING AND CRASH DATA

This section of this plan reviews the authorized funding by the stratifications discussed in "Safety Data" section to analyze the funding allocation's relationship to crash data. This is performed by breaking the authorized funding down three ways: by jurisdiction, by area type, and by the specific emphasis area. Fatalities and serious injuries and authorized funding are then recorded for each separate category and converted to percentage distribution to allow an analytical comparison against each of the separate

categories. In general, the funding percent distribution should be closely aligned with the emphasis area distribution; I.e., if a specific emphasis area accounts for approximately one third of the crashes, the emphasis area should receive approximately one third of the total authorized funds. Obviously, there may be other logical exceptions; however, in general the allocation should reflect the number of crashes. An obvious exception would be for any systemic program funding since system programs tend to fund predictive crashes as opposed to “hot spot” or reported crashes incidents.

Funding Data

This section contains basic funding data for the years between 2015 and 2019. This will be used in the following sections to compare to the crash data and identify any differences between authorized fund allocation and crash distribution.

Funding by Jurisdiction

Figure 17 shows funding by jurisdiction type (State vs. local jurisdictions, such as counties, cities, towns, etc.). Authorized funding for other jurisdictions made up approximately 58 percent of the total authorized funds from 2015 to 2019, while State funding accounts for the other 42 percent.

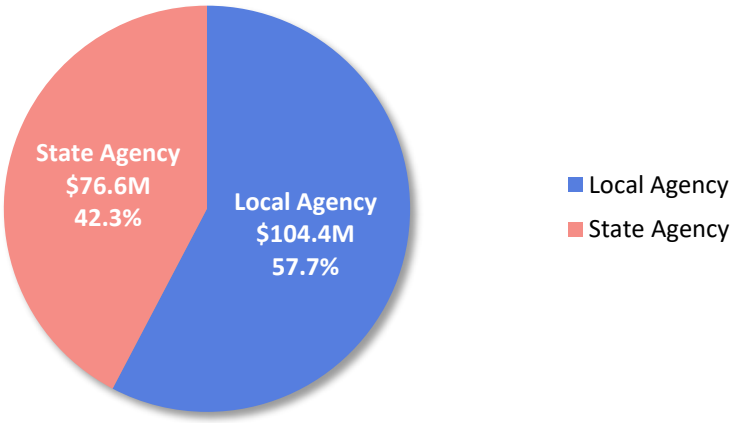


Figure 17. Authorized Funding by Jurisdiction (2015-2019)

Funding by Area Type

Figure 18 displays funding by Area Type (Urban vs. Rural). An “other” funding category is included for statewide investments or non-infrastructure investments. Urban authorized funds make up approximately $98 million worth of authorized HSIP funds over the last five years, which is just over 54 percent, while Rural funding makes up 13 percent with just under $24M. Other statewide and non-infrastructure funds account for 33 percent of total authorized funds with $59 million.

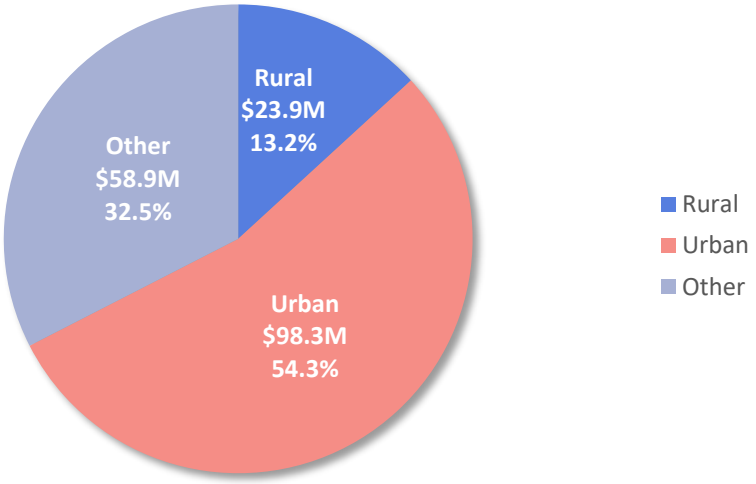


Figure 18. Authorized Funding by Location (2015-2019)

Funding by Emphasis Area

Figure 19 shows authorized funds by the three primary infrastructure emphasis areas. There are more emphasis areas than just the three listed, however, the three listed areas reflect the three highest crash incidents and crash rates discussed in the "NJ Crashes by Primary Infrastructure Areas" section. Intersections accounted for 53 percent of the total authorized funds over the past five years with almost $73M, while Lane Departure and Pedestrian Safety followed with $51M (37 percent) and $14M (10 percent), respectively.

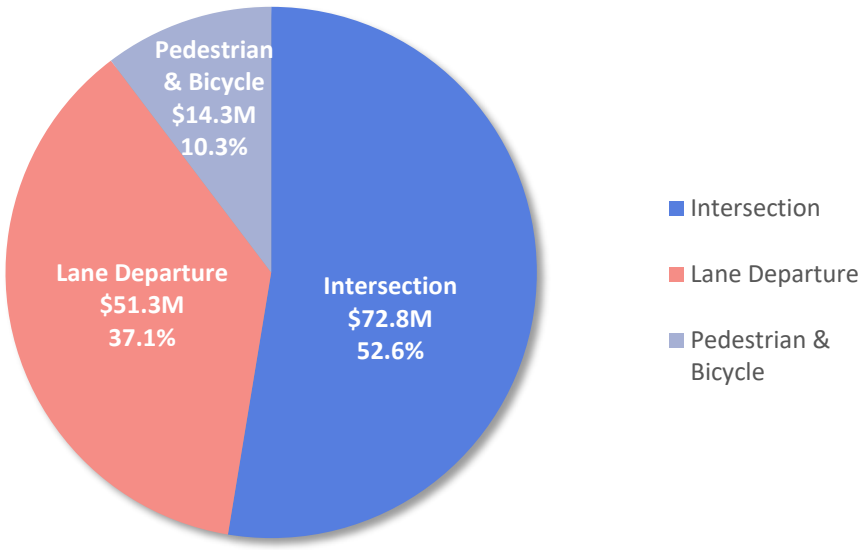


Figure 19. Authorized Funding by Primary Infrastructure Emphasis Area (2015-2019)

Note that the total amount of this graph will not sum to the same number as the other graphs because there are more than these three emphasis areas.

Funding by Method of Site Selection

Authorized funding can also be broken down by its method of site selection, or if the project is based on a Spot ("hot spot" with a high number of crash incidents) or a Systemic Project (based on a predictive method). Figure 20 shows the breakdown by the method of site selection. In addition, some funds can be attributed to non-infrastructure projects, which are included in the "Other" category below.

Spot projects (projects targeted to a specific location, normally with higher crash rates or number of incidents) make up the majority of the authorized funds with $92M, which is over 50 percent of the total, followed by Systemic Projects (those implemented over a larger scale and not tied to a specific location) with $52M (approximately 28 percent of the total), and finally Other Projects (such as safety plans, improvements to data collection, and/or non-infrastructure programs) with $38M (approximately 21 percent of the total).

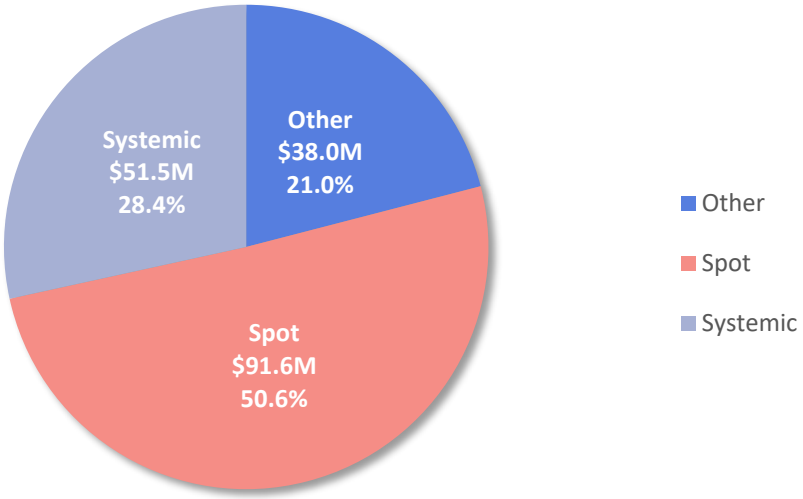


Figure 20. Authorized Funding by Method of Site Selection (2015-2019)

Funding and Crashes by Jurisdiction

Table 4 shows the funding and crashes by jurisdiction. Roadways under State jurisdiction account for 41.3 percent of fatalities & serious injuries while the roadways under the jurisdiction of other agencies account for the remaining 57.7 percent. The HSIP funding mirrors the crash data for State and Local programs.

Another way to review the funding distribution by jurisdiction is a comparison of fatality and serious injury rate per HMVMT. A review of this metric in table 4 indicates that the fatality and serious injury rate on roadways under State jurisdiction is lower than its counterpart on other agency jurisdiction roads. According to this metric, more HSIP funds should be applied to other agency jurisdiction roads as well, which aligns with the conclusion from raw fatalities and serious injuries and reflects the reality of the funding distribution.

Table 4 – Funding and Crashes by Jurisdiction (2015-2019)

JURISDICTION	F+SI (2015-2019)	AUTHORIZED FUNDING (2015-2019)	F+SI (% OF TOTAL)	AUTHORIZED FUNDING (% OF TOTAL)	F+SI PER HMVMT
State Agency	3,606	$76,600,000	35.1%	42.3%	2.37
Other Agency	6,653	$104,400,000	64.9%	57.7%	2.85

Funding and Crashes by Area Type

Table 5 displays the funding and crashes by area type (Urban vs. Rural). Urban locations experience approximately 91 percent of the State's fatalities and serious injuries and receive approximately 80 percent of HSIP funding. The difference in authorized funding could simply be a function of the scope and cost of the projects being advanced in either of the two areas.

Table 5 – Funding and Crashes by Location Type (2015-2019)

LOCATION	F+SI (2015-2019)	AUTHORIZED FUNDING (2015-2019)	F+SI (% OF TOTAL)	AUTHORIZED FUNDING (% OF TOTAL)	F+SI PER HMVMT
Urban	8,132	$98,300,000	91.1%	80.4%	2.25
Rural	794	$23,900,000	8.9%	19.6%	3.24

Note: As seen in figure 18**,** there is also authorized funding that does not fit into either rural or urban, so that is not included in this table.

Funding and Crashes by Primary Infrastructure Emphasis Areas

Table 6 shows the funding and crashes by selected primary infrastructure emphasis areas (intersection, lane departure, and pedestrians and bicyclists). The percentages between fatalities and serious injuries and expenditures lines up well for lane departure (38 percentage and 36 percentage, respectively), but does not line up as well for the intersection and pedestrian safety categories. Pedestrians and bicyclists represent approximately a quarter of the total fatalities and serious injuries but receive only 13

percent of the funding. Comparatively, intersections represent approximately 37 percent of fatalities and serious injuries but receive over half of the funding.

This could be slightly misrepresentative as many intersection projects will naturally contain upgrades to the pedestrian infrastructure as well. Additionally, pedestrian projects that were developed prior to the 2018 merger of Safety Programs with the Office of Bicycle & Pedestrian Programs pursued other funding mechanisms. Since 2018, BSBPP has made significant improvements in developing HSIP eligible pedestrian and bicycle projects.

Table 6 – Funding and Crashes by Primary Infrastructure Emphasis Area (2015-2019)

EMPHASIS AREA	F+SI (2015-2019)	AUTHORIZED FUNDING (2015-2019)	F+SI (% OF TOTAL)	AUTHORIZED FUNDING (% OF TOTAL)	F+SI PER HMVMT
Intersections	3,165	$72,800,000	37.4%	52.7%	0.82
Lane Departure	3,217	$51,300,000	38.0%	37.0%	0.83
Pedestrians and Bicyclists	2,078	$14,300,000	24.6%	10.3%	0.54

NOTEWORTHY PRACTICES

Substantive Safety

New Jersey understands that strategies based on nominal safety improvements based on compliance to standards, warrants, guidelines, and design requirements are not always effective for producing long-term crash mitigation networkwide. New Jersey relies more heavily on substantive safety improvements or improvements based on the actual or expected performance in terms of crash frequency and severity. Substantive safety improvements compare long-term expected crash averages of locations with similar characteristics, including traffic volumes, functional classes, urban vs rural area types, number of travel lanes, and/or facility types using a predictive analysis.

FHWA, in an archived publication, defined the following as quantitative measures of substantive safety:

- Crash frequency (number of crashes per mile or location over a specified time period)
- Crash type (run-off-road, intersection, pedestrian, etc.)
- Crash severity (fatality, injury, property damage)

Assessing a location's substantive safety requires the development and application of statistical models such as safety performance functions (SPF) and crash modification

factor analysis. New Jersey combines this modeling with a benefit/cost ratio analysis to prioritize safety benefits and the expenditure of safety funding throughout the network. The 2016 HSIP Manual requires that all HSIP funded projects have a benefit-cost ratio (BCR) of greater than 1.0. The recent exceptions to this requirement are the pedestrian focused projects because there are not many crash modification factors (CMF) that are pedestrian centric.

Safe System Approach

The Safe System approach emphasizes that traffic fatalities and serious injuries are unacceptable and recognizes that humans will make mistakes that might be susceptible to serious injury or even death. The New Jersey HSIP supports the Safe System Approach and considers recommendations and actions with the goal of ensuring the transportation system is designed and operated to accommodate the common mistakes humans make.

With a Towards Zero Deaths goal, all stakeholders understand that the approach requires a shared responsibility. Through proactive coordination and collaboration, New Jersey continues to prioritize transportation system resilience, understanding that if one part of the system fails, the rest of the system must continue to function to provide safe and reliable mobility to New Jersey's residents, visitors, and businesses.

FHWA guidance highlights Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, and Post-Crash Care as key elements of the Safe System approach and defines them as follows:

- **SAFE ROAD USERS** – The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.

- **SAFE VEHICLES** – Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.

- **SAFE SPEEDS** – Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.

- **SAFE ROADS** – Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.

- **POST-CRASH CARE** – When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.

These crash risks are currently addressed and included in the NJ 2020 SHSP to some degree. In the next cycle of updating the NJ SHSP, further alignment with the Safe System Approach is anticipated.

New Jersey Noteworthy Best Practices

New Jersey prides itself in the following noteworthy practices:

- **Equity Throughout the Planning Process** – The NJ 2020 SHSP prioritizes equity by creating a separate emphasis area dedicated to ensuring that all safety strategies equitably consider all users and communities, particularly those that are historically disadvantaged. Equity is now a component in New Jersey's crash-screening tools and can be utilized on the State's "Safety Voyager" platform, which is discussed in the following "Equity Mapping" subsection.

- **Project Tracking** – There are HSIP quarterly status meetings led by the Office of the Assistant Commissioner, PMGA with Directors, Executive Regional Managers, Program Managers, FHWA, BSBPP, Local Aid, MPOs, and Environmental staff attending and providing input. BSBPP staff also attend separate Capital Program Management (CPM) Advertising Meetings to obtain a better understanding of the challenges of managing the project delivery process.

- **Coordination with Local Stakeholders** – The Assistant Commissioner of PMGA continues to conduct quarterly collaboration meetings with all three MPOs along with SMEs at the NJDOT separate from the HSIP quarterly status meetings. These meetings promote partnering with a focus on safety. NJDOT's Division of Local Aid also coordinates with the MPOs on regular basis to ensure advancement of Local Safety Projects.

Innovation and Technologies

New Jersey is always looking for opportunities to include innovative advancements in technologies, project development, project delivery processes, procurement means, and data visualization tools in the HSIP Program. This section cites current innovative practices employed.

Regional Curve Inventory and Safety Assessment

The NJ 2020 SHSP identified lane departure crashes as a priority emphasis area as over half of all fatal and serious injury crashes in the State involved lane departure incidents. Most of these crashes happen along curves where motorists may lose control or not respond appropriately. New Jersey led the Curve Inventory & Safety Assessment projects in all three MPO regions. These projects also provide a systemic risk-based analysis approach to lane departure crashes along horizontal curves and recommends appropriate safety countermeasures. The Curve Inventory and Safety Assessment Study for DVRPC and SJTPO regions was completed in 2019. The final project, in NJTPA region with 13 counties and two cities, is ongoing.

The first task of the NJTPA project is “Curve Advisory Speed Evaluation” which documents curve statistics, such as length, superelevation, and calculated advisory speeds, for curves on all State, county, and municipal roads in New Jersey that are identified as functional classification “Collectors” and above using the Rieker Curve Advisory Reporting Service (CARS). If it is deemed that the curve requires an advisory sign, the location is reported. Task 2 is to develop a systemic lane departure mitigation program to document common roadway characteristics associated with crash locations and define common systemic risk factors. Potential proven countermeasures are linked to these locations and characteristics to produce, among other things, a priority listing of curve locations with risk factors, project recommendations, and estimated costs.

New Jersey plans to use this information to develop multiple systemic programs, the first being the Horizontal Curve Sign Program. BSBPP is in the process of streamlining the project delivery process by creating a Limited Scope CD Checklist and exploring the use of innovative procurement methods, such as Job Order Contracting (Indefinite Delivery, Indefinite Quantity or ID/IQ).

Equity Mapping

Following the inclusion of Equity in the NJ 2020 SHSP, an Equity Mapping Analysis layer was recently added to the Safety Voyager site that allows users to compare filtered crash data to specific equity information. The equity layer replicates the Underserved Communities Environmental Protection Agency Environmental Justice (EJ) Screening tool information. The EJ Screen demographic indicators that refer to block group levels include:

- Percent of People of Color
- Percent of Low-Income Individuals
- Percent Minority
- Percent of People with Less than a High School Education
- Percent of Households with linguistic isolation
- Percent of People Under the Age of 5
- Percent of People Over the Age of 64
- Primary Demographic Index (a combination of all the above factors)

New Jersey Department of Transportation, in alignment with New Jersey Department of Environmental Protection, addresses Demographic Index percentage of 35 percent and above, with the baseline indices of percent minority and percent low income, for all Safety projects.

Safety Voyager is an online software application available to Federal, State, and local agencies that was designed to provide a quick and easy visual perspective of crash data. Data can be displayed in both 2D and 3D, filtered with numerous crash filters, quickly summarized by defined areas, linked with annual average daily traffic volume (AADT) data, and more.

A screenshot of this tool with the equity layer shown in red and yellow block groups is shown below in figure 21.

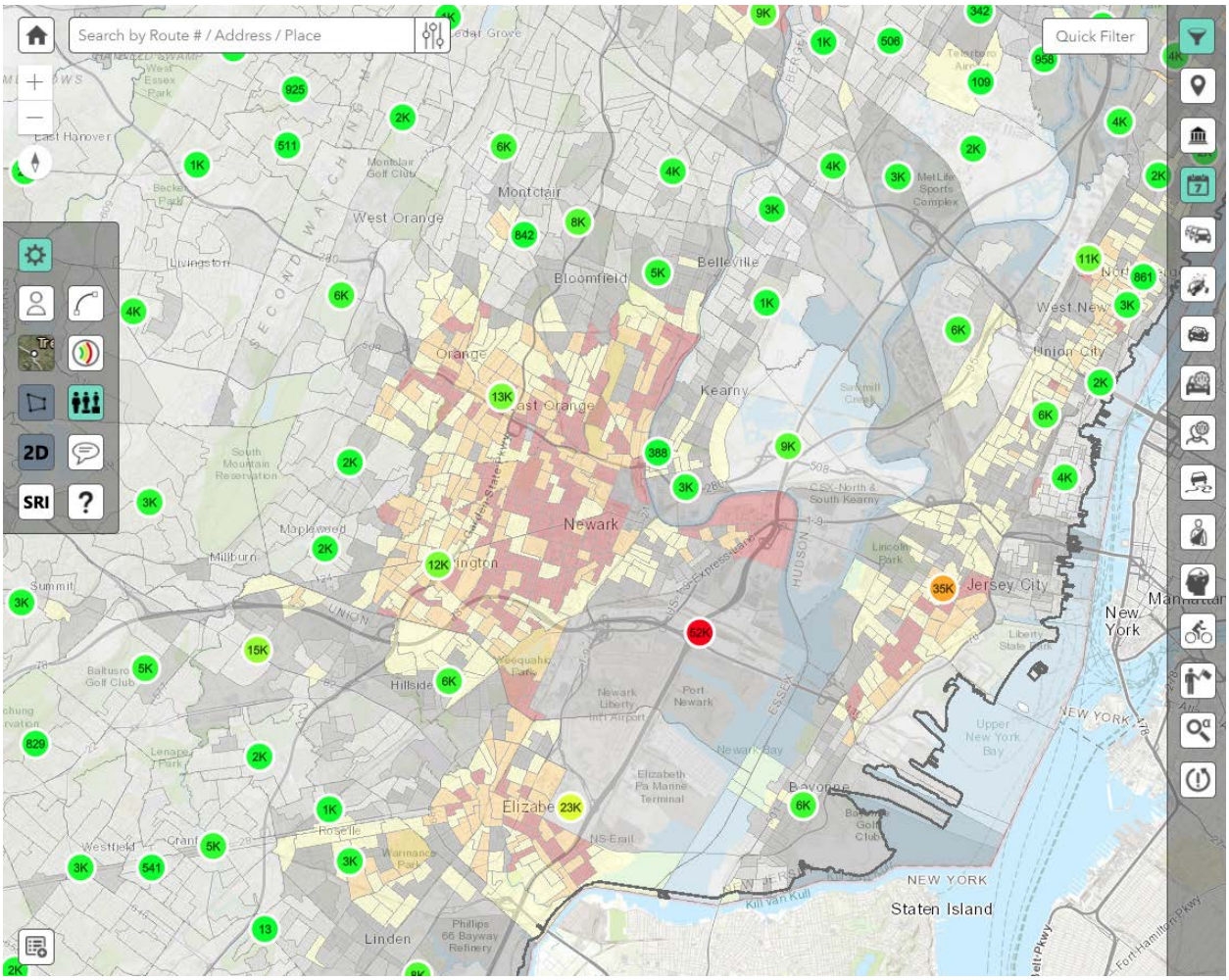


Figure 21. New Jersey Safety Voyager Online Tool

New Jersey Highway Safety Improvement Program Manual

In 2016, New Jersey created the New Jersey Highway Safety Improvement Program Manual, a guidance document to assist with the development of the HSIP Annual Report each year. Since the development of the first HSIP Manual, HSIP performance and authorizations for HSIP funded projects increased substantially. The manual also guides the HSIP to reflect a balanced, data-driven safety program using safety analysis

tools, like the American Association of State Highway and Transportation Officials' (AASHTO) Highway Safety Manual, and proven safety countermeasures.

NJDOT, along with its local partners, was nationally recognized for this manual and featured by FHWA in two videos (Data-Driven Safety Analysis and New Jersey Case Study) that highlight New Jersey's successes with respect to HSIP delivery.

Other Examples of Innovation

Additional examples of innovation in safety planning and engineering in New Jersey can be seen in the following:

- New Jersey's HSIP capital funding was previously programmed into four distinct line items in the STIP. The programmed funding for each line item did not provide for the flexibility of administration of the HSIP program. With the 2018 update to their STIP, NJDOT combined these into one program, the "Safety Programs" line item. The change provided for aggregation of programmed funding for higher cost projects, while also providing BSBPP the flexibility to administer the funds.

- BSBPP provides SMS information on all capital projects in the department. The team proactively reviews and provides input on all projects that rank high on the SMS Network Screening Lists.

- BSBPP generates problem statements, provides a priority ranking for all HSIP eligible problem statements and Concept Development studies in the Department. The problem statements developed and advanced by BSBPP are HSIP eligible.

- BSBPP, in collaboration with Enterprise Data Warehouse Information Technology team and Division of Project Management, automated the Quarterly HSIP Meeting Reports for Capital Projects. The automated report is in testing phase.

- BSBPP reviews all HSM Analyses submitted on HSIP Projects. Recently BSBPP, in collaboration with Bureau of Research, contracted with Rutgers University to develop New Jersey-specific SPFs. The study was accepted in December 2019. The internal and external stakeholders have been using New Jersey-specific SPFs for their HSM analyses since August 2020. Additionally, BSBPP is supporting the systemic and intersection improvement projects effort by completing the HSM Analyses in-house.

- BSBPP is actively engaging in collaboration with Local Aid on projects that are not part of the Local Safety Program to explore ways to maximize safety.

- BSBPP, in collaboration with DPM, Project Management Office and other internal stakeholders have presented six new activities be added to the Capital Project Delivery Process. The addition of these activities will provide guidance to the Project Managers while seeking proposals from their consultants on Safety projects, leading to a streamlined project delivery.

PROGRAM OPPORTUNITIES

Based on the review of State crash data, HSIP Funding data, consultation with relevant stakeholders, and best practices from other States, the following sections outline program opportunities which can be incorporated into the HSIP. Potential opportunities are given identifiers to easily reference between this section and the following section.

Alignment with the SHSP

In 2020, New Jersey updated the its Strategic Highway Safety Plan. To properly guide the plan development process, the following mission, vision, and goal seen in figure 22 were integrated into every step of the process to ensure that New Jersey meets the shared goal of all safety stakeholders.

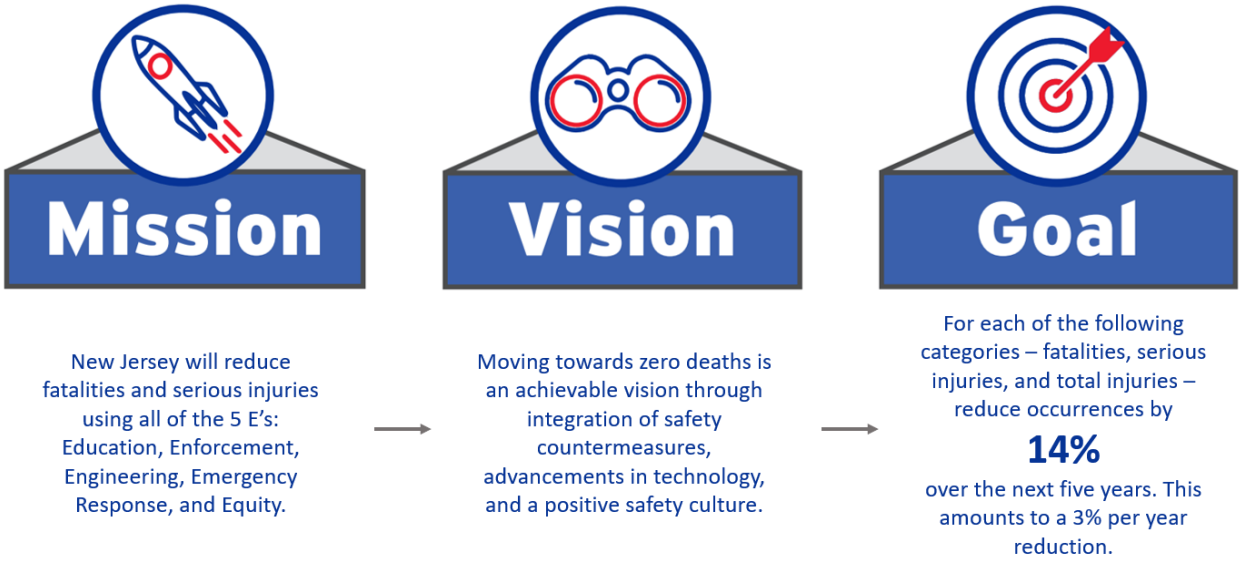


Figure 22. SHSP Mission, Vision, and Goal

Because the SHSP was so recently updated, New Jersey is able to align the HSIP to the new mission, visual, and goal in the NJ 2020 SHSP.

- **Opportunity (SHSP-1):** To ensure New Jersey meets the shared goal of all safety stakeholders, BSBPP can ensure that the future Annual Safety Reports align with the mission, vision, and goal of the new NJ 2020 SHSP. Further, the HSIP Portfolio will transition from tracking the 2015 emphasis areas to the 2020 emphasis areas where project development and safety investments will align with the NJ 2020 SHSP while including equity into the planning process and its outcomes.

- **Opportunity (SHSP-2):** Collaborate and educate internal and external partners on the Safe System Approach, as discussed in the "Safe System Approach" section, and principles with the anticipation of fully incorporating the Safe System Approach into the next cycle of the SHSP. BSBPP plans on continuing the collaboration and education efforts through the NJDOT Safety Resource Center.

- **Opportunity (SHSP-3):** Continue the development and increase the implementation of pedestrian and bicycle infrastructure projects with a focus on underserved communities to properly align safety investments with crash history. The 2018 reorganization of BSBPP provides greater opportunities of development of HSIP funded pedestrian and bicycle project development. BSBPP is also planning on updating the 2016 HSIP Manual to provide better guidance on challenges with the benefit analysis of pedestrian focus projects. BSBPP is conducting Pedestrian Road Safety Audits (PRSA) during the development of the Problem Statements to ensure that the project team can consider the recommendations of the PRSA team while developing and analyzing alternatives.

- **Opportunity (SHSP-4):** Streamline BSBPP proactive assistance to DPM and MPOs with the consultant selection process on HSIP-funded projects to increase the efficiency and programming of projects, both in time and cost. Some of the efforts for streamlining the project delivery process are highlighted in the “Innovation and Advanced Technologies” section. Additional assistance efforts include participating in Technical Evaluation Committees for capital projects and Technical Review Committees for Local projects. Finally, BSBPP is guiding project managers (PM) on scope development and alignment on safety projects.

- **Opportunity (SHSP-5):** Procure and manage consultant services for the Safety Resource Center to continue to implement and evaluate the NJ 2020 SHSP.

- **Opportunity (SHSP-6):** Conduct Annual Summits to update stakeholders on the status and progress of the SHSP actions and goals while maintaining partnerships for future plans and initiatives.

- **Opportunity (SHSP-7):** Diversify the HSIP portfolio with systemic and hot-spot projects, providing for construction-ready projects that can be procured using innovative methods.

- **Opportunity (SHSP-8):** Incorporate older drivers into the current SHSP emphasis areas instead of waiting until the next SHSP cycle, which is 2025.

Stakeholder Opportunities

The stakeholder involvement during the development of the NJ 2020 SHSP was extensive and beneficial for a State plan Towards Zero Deaths.

- **Opportunity (STAKE-1):** BSBPP, through its Safety Resource Center, will be reviving the Safety Forum, a day-long conference which will include competitively selecting a project for the Safety Award, honoring project teams and other stakeholders for significant efforts in improving safety in infrastructure and enforcement, providing a platform for technical innovations presentation for universities and panel discussions on various safety related topics, and networking opportunities for safety stakeholders in New Jersey.

- **Opportunity (STAKE-2):** Manage the HSIP Program to utilize all available HSIP allocations of funding with full priority on advancing the delivery of HSIP Portfolio projects in collaboration and coordination with internal and external stakeholders.

- **Opportunity (STAKE-3):** Use multimedia, including virtual public involvement, to engage with stakeholders in an interactive manner to move towards an educational platform that extends to the public. This includes coordinating with safety partners in Local Aid and FHWA to provide training for local safety project application submissions.

- **Opportunity (STAKE-4):** Participate in Peer Exchanges and other national forums (such as AASHTO) to share, learn, and apply best practices on safety performance management.

- **Opportunity (STAKE-5):** Participate in professional organization events, to engage with engineers, planners, vehicle manufacturers, original equipment manufacturers, and/or educators on the Safe System Approach and maximizing safety inclusion on all projects.

- **Opportunity (STAKE-6):** Partner with MPOs in completing Local Strategic Highway Safety Plans for local public agencies.

- **Opportunity (STAKE-7):** Engage with MPOs and Local Public Agencies to explore expansion of systemic solutions to safety issues. This would allow for more consistent methodology and communication between these parties and lessen the reliance on ad-hoc planning. BSBPP is collaborating with BTDS through the NJ 2020 SHSP implementation to present Safety Voyager as a comprehensive tool, including as many data layers as possible. NJ 2020 SHSP has also expanded the opportunities of data collaboration with education institutions and research universities, hospitals and health institutions, advocates and advocacy groups, non-profit agencies, private and quasi-governmental agencies.

- **Opportunity (STAKE-8):** Use the State Transportation Innovation Council (STIC) to promote Proven Safety Countermeasures and Innovations.

Funding

As the HSIP is maturing, New Jersey faces the challenge, like any other asset management system, where the safety needs far exceed available HSIP funds. New Jersey has an opportunity to obligate its HSIP funds more efficiently. Some of these opportunities are listed below:

- **Opportunity (FUND-1):** Expand the use of HSIP funds to design projects and, in collaboration with MPOs, develop more systemic projects by capitalizing on innovative project procurement methods, such as Job Order Contracts (ID/IQ). Potential trials of this new contracting process could include recently advanced systemic projects such as midblock crossings, and backplates with retro-reflective

borders with snow scoops, in addition to the forthcoming Regional Horizontal Curve Sign program. These actions will help BSBPP build a "shelf" of projects that can be substituted for projects experiencing delays and/or to be authorized under the August Redistribution.

- **Opportunity (FUND-2):** Promote inclusion of proven safety countermeasures into all projects, as applicable, to achieve safety benefits in non-HSIP projects to further fatality and serious injury reductions beyond safety dedicated funds within Department-led projects and projects funded through the NJDOT Local Aid Office.

- **Opportunity (FUND-3):** Create a prioritization method per fiscal year to ensure the most efficient projects in terms of safety benefits and/or safety investment are being programmed and authorized. Continue to advance all projects within the portfolio that could be funded while taking advantage of August Redistribution, or programmed for future years.

The "Funding and Crashes by Primary Infrastructure Emphasis Area" section indicated a disparity between fatal and serious injuries to pedestrians and bicyclists compared to the amount of funds authorized to address pedestrian and bicycle safety issues. Given that New Jersey is a Pedestrian Focused State, more should be done to increase the programming and authorization of funding for pedestrian and bicycle safety, without impacting other emphasis areas.

- **Opportunity (FUND-4):** BSBPP can engage consultants to provide PRSA reports as part of the Problem Statement Phase at the earliest and early in concept development at the latest, which would help identify the existing pedestrian hazards and provide more justification for spending on pedestrian safety projects.

- **Opportunity (FUND-5):** New Jersey will explore requirements beyond a benefit-cost ratio analysis for pedestrian safety projects and update the 2016 New Jersey Highway Safety Improvement Program Manual. Updates could include stakeholder support, the inclusion of local safety program delivery elements, and special exceptions for bicycle and pedestrian infrastructure improvements, as many pedestrian-safety projects hover around the threshold in terms of benefit-cost ratio requirements. Lessening the reliance on benefit-cost ratios to select safety projects would also allow the State to become more flexible on funding distribution throughout all the various emphasis areas.

Crash Data

As mentioned in "Changes Affecting Target Setting Progress", the New Jersey Crash Record form underwent changes in 2019 to the manner of recording serious injuries for compliance with the MMUCC, 4th edition; this change led to significantly increasing the number of serious injuries beginning in 2019. To ensure that all 550+ statewide crash reporting law enforcement agencies are interpreting this new form correctly and submitting it properly, BTDS, in partnership with DHTS utilizing the Statewide Traffic Records Coordinating Committee (STRCC) and Rutgers training class will provide

further guidance as part of the current NJ 2020 SHSP action plan. This dramatic increase also negatively impacted the target setting process, as targets developed in previous years did not account for this NJTR-1 change.

- **Opportunity (DATA-1):** BTDS and DHTS can assist with providing guidance to jurisdictional crash reporting agencies and provide consistent instruction to correctly complete the updated NJTR-1 crash reports to ensure accurate and complete data.

- **Opportunity (DATA-2):** Incorporate best practices in dealing with data limitations in projecting safety performance targets.

- **Opportunity (DATA-3):** Promote Safety Voyager through the Safety Resource Center.

Project Delivery Process

One of the challenges with the project delivery process is that HSIP-funded projects have requirements that project managers may not be familiar with. BSBPP provides guidance. However, activities are missed, such as HSM Analysis, while developing the scope of work because they do not exist in the work breakdown structure (WBS) or project delivery network diagram. Updating the capital project delivery process and the HSIP Manual might resolve some of this. However, other opportunities for addressing this challenge are noted below:

- **Opportunity (DELIV-1):** BSBPP can utilize an HSIP Project Development & Support Contract and a Safety Resource Center Contract to help with its efforts in generating, developing, designing, and reviewing projects. The HSIP On-Call Contract can also help with post-deployment evaluations, recognizing project teams for good safety projects, providing opportunities to highlight and showcase safety countermeasure deployments, engagement with safety partners and stakeholders, and the use of multimedia. All of this moves New Jersey towards a Safe System Approach.

- **Opportunity (DELIV-2):** Streamline the project delivery process by revising both the Full Scope and Limited Scope Capital Project Delivery processes. So far, New Jersey has included six additional activities in the Capital Project Delivery diagrams and process to guide Project Managers on what activities to include in HSIP funded projects, so the project eligibility for HSIP funding can be ascertained.

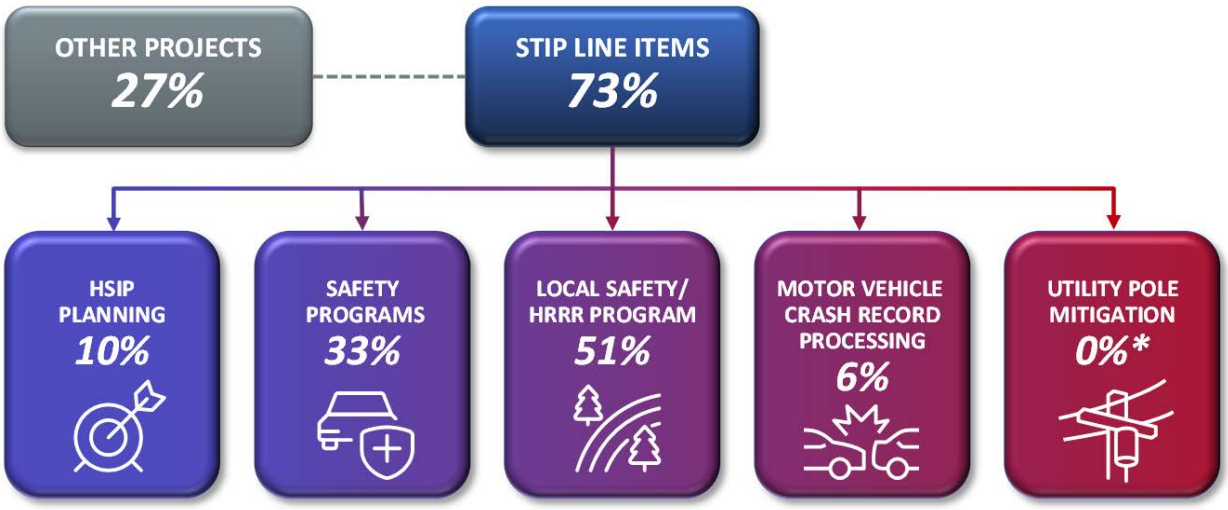
- **Opportunity (DELIV-3):** BSBPP will collaborate with internal stakeholders and seek approval from FHWA on updating the Limited Scope Capital Project Delivery Process to include developing a concept development checklist for specific safety projects, such as Horizontal Curve Sign Programs/Projects, which will enable the PMs to gather necessary information for concept development using a simple checklist and move more quickly into final design and construction ready within a year.

HSIP ACTION PLAN FFY 2022

Available Funding

Under the FAST Act, New Jersey is apportioned approximately $58 million annually for the HSIP Program. It is anticipated that FY 2022 funding will be similar to past funding, but as this plan describes: $57.3M will be obligated.

Funding Obligation Goals



*The State is working on agreements with the various utility companies.

Figure 23. Funding Obligation Goals

Methodology for Identifying Projects

The New Jersey HSIP project identification process includes a high level of coordination and active collaboration as described in the “Stakeholder Outreach” section.

New Jersey understands it is important to optimize the safety performance with respect to infrastructure investments by utilizing a project identification methodology that continues to include projects developed through a robust systemic risk analysis and hot-spot analysis, as described in the 2016 HSIP Manual. HSIP projects are identified based on crash experience, crash potential, and other data-supported criteria.

New Jersey, as guided by the NJ 2020 SHSP, is including Equity into its planning and Problem Statement development process. Capitalizing on the opportunities listed in the “Program Opportunities” section, BSBPP is moving forward in completing PRSAs for pedestrian focus projects during Problem Statement Development at the earliest, and at the beginning of Concept Development at the latest. This will allow for the PRSA recommendations to be considered in alternatives development.

BSBPP will also lead the effort to update the Network Screening Lists to align with the most recent crash data in FY 2022.

Projects in Local Safety / High Risk Rural Roads Program

The New Jersey HSIP understands that project identification on the State's local roads is equally important. New Jersey will continue to utilize the approved methodology for identifying a road segment as an HRRR. The rural road segment must demonstrate a higher average of fatal and incapacitating injury crashes per mile than the average for segments on rural roadways with similar geometric features to meet the criteria. Segments that exceed the average for the peer group are classified as having a significant safety risk and thus, a HRRR segment.

High risk locations may also be identified through means such as field reviews, safety assessments, Road Safety Audits, and local knowledge and experience. High risk rural roadway characteristics that are correlated with specific severe crash types such as cross-section width, lack of shoulders, substandard alignment, and hazardous roadside will also be considered for systemic improvements across multiple HRRR segments.

Project Selection Process

New Jersey maintains an over-subscribed HSIP Portfolio of projects with a demand greater than the available funding. Selection of these projects is data-driven and based on management system priorities resulting in Problem Statement Development. Projects are reviewed and approved for advancement by senior leadership to each subsequent phase of work. Projects that are eligible for HSIP funding, but are not individually programmed, will be evaluated for authorization through the programmatic line item based on management system priority and readiness for authorization. Sufficient flexibility exists to modify line item funding through the STIP process.

HSIP funds are allocated to the implementation of projects and activities that will contribute to the reduction of fatalities and serious injuries, as well as help the State make progress towards achieving the performance targets, by utilizing data-driven assessments of management system priorities and project readiness for authorization. Projects already require a Benefit/Cost ratio greater than 1.0 for consideration, but the project should also address the predominant crash types at a project location by applying the most effective infrastructure countermeasures.

Project and Program List

Table 7 provides a project list by STIP line item. It should be noted that the STIP line items could be individual projects or programs, for example Safety Programs. Many projects are planned to be funded through the program line item and are not listed in the New Jersey STIP. The HSIP Portfolio keeps track of the delivery of planned projects with each program line item. A Memorandum of Understanding (MOU) between the New Jersey FHWA and NJDOT establishes a set of procedures to be used for processing and implementing revisions to the Regional Transportation Improvement Program (TIP) for each of the three MPOs and the STIP, allowing flexibility in

authorizing above the STIP programmed amounts by an additional $5 million for each line item. In addition, a STIP modification can be done in FY 2022 if truly necessary.

Table 7 – Planned Project and Program List

PROJECT DESCRIPTION	STIP PROGRAMMED AMOUNT*	SAFETY PORTFOLIO PLANNED AUTHORIZATIONS**
STIP Line Items	**$41.817 M**	***$58.892 M**
Highway Safety Improvement Program Planning	$4.000 M	$9.000 M
Safety Programs	$14.000 M	$19.000 M
Utility Pole Mitigation	$0.175 M	$0.000 M
Local Safety / High Risk Rural Roads Program	$21.142 M	$26.142 M
Motor Vehicle Crash Record Processing	$2.500 M	$4.750 M
Other Projects	**$15.828 M**	**$6.130 M**
Mount Ephraim Avenue Safety Improvements, Ferry Avenue (CR 603) to Haddon Avenue (CR 561)	$0.408 M	$0.000 M
Parkway Avenue (CR 634), Scotch Road (CR 611) to Route 31 (Pennington Road)	$0.450 M	$0.000 M
Route 7, Mill Street (CR 672) to Park Avenue	$10.770 M	$0.000 M
Route 15 and Berkshire Valley Road (CR 699)	$4.200 M	$6.130 M
Total	**$57.645 M**	**$65.022 M**

*These numbers are current as of e-STIP from June 14, 2021.

**These numbers are current as of HSIP Portfolio from June 14, 2021.

***In the safety portfolio, New Jersey planned funds in excess under the STIP Line Items given the history of delays in delivery with the expectation that some of the authorizations may be delayed to the following years.

Summary of Benefits

Figure 23 indicates the percentage of HSIP funds dedicated to non-infrastructure and infrastructure related projects. This section provides a qualitative and quantitative benefit analysis of the various programs. As referenced earlier in this plan, the 2016 HSIP Manual indicates that the projects funded by HSIP monies have a Benefit/Cost

Ratio greater than 1.0 and are evaluated and selected with the objective of maximizing substantive safety and utilizing FHWA certified countermeasures. However, the aggregation of project-level analysis to quantifiable State-level numbers is not available.

The benefit from each of the following programs, activities, and processes, in alignment with the SHSP (see figure 22), will propel New Jersey may help to meet or make significant progress toward meeting safety performance targets.

HSIP Planning

The programmed STIP funding in FY 2022 for the HSIP Planning program is $4.0 million. The planned funding is $9.0 Million (see “Project and Program List” section). This includes the Safety Resource Center and HSIP Project Development & Support contracts that are essential in the delivery of the NJ 2020 SHSP implementation, conducting systemic risk analysis, Road Safety Audits leading to develop and support capital and local projects and related support. Further, New Jersey plans to tap into HSIP Planning funds to support the Local Strategic Highway Safety Plan effort.

Safety Programs

The programmed STIP funding in FY 2022 for Safety Programs is $14.0 million. The planned funding is $19.0 Million. This program line item supports the capital projects that are not individually programmed in the STIP. All projects follow the HSM methodology, with a Benefit/Cost Ratio greater than 1.0, and the project selection methodology referenced in the “Project Selection Process” section. The projects being reviewed through this program are eligible candidates for HSIP funding. Once a determination is made, following Alternative Analysis and selection of a Preliminary Preferred Alternative, that the project is indeed eligible for HSIP monies, and pre-approved by FHWA, it is tracked through its development. An assessment is completed prior to approval of authorization for each phase to determine if the safety needs of the project continue to be met during design.

Local Safety Program

The programmed STIP funding in FY 2022 for the Local Safety Program is $21.142 million. The planned funding is $26.142 million. Like the capital projects, the local projects also follow HSM Analysis guidelines, with the Benefit/Cost Ratio greater than 1.0, which clearly indicates that the benefits of the projects outweigh the costs of design and construction.

Motor Vehicle Crash Record Processing

The programmed STIP funding in FY 2022 for Motor Vehicle Crash Record Processing is $2.500 million. The planned funding is $4.750 million. The benefit of this STIP line item is the data provided to help with planning, project development, design and evaluation.

Other Projects

Route 15 and Berkshire Valley Road (CR 699) is an intersection improvement project with a Benefit/Cost Ratio of 1.99. The safety benefit of this project is twice the cost of design and construction.

Summary of Actions

The “Program Opportunities” section identifies the opportunities. New Jersey is capitalizing on these opportunities to develop actions, presented in this section, that will lead to further improving the HSIP process, continuing to drive toward zero deaths and achieve the safety performance targets. It is not realistic that all of these actions can be implemented immediately. Therefore, it is necessary to split these into short and long-term actions. Short-term actions identified are either easy to implement, already in the process of being addressed or important to address promptly. Long-term actions provide a pathway for continuing future improvement and optimization of the HSIP Program and resources.

Table 8 provides a listing of the short-term actions, with a correlation to the relative opportunities. Similarly, table 9 lists the long-term actions. Implementation of these actions is expected to yield a positive impact towards meeting or making significant progress in meeting the safety performance targets.

Table 8 – Short-Term Actions

CATEGORY	ACTION
Alignment with SHSP	**SHSP-1:** NJDOT will align the 2021 HSIP Annual Safety Report including information on the 2020 Emphasis Areas. The Safety Targets effort will take guidance from the vision and goals of the NJ 2020 SHSP.
	SHSP-4: Continue to participate in the Technical Review Committees for Local Safety Projects and Technical Evaluation Committees for Capital Projects, as resources permit. Also continue to provide guidance, training and input to DPM and MPOs on streamlining the project delivery process.
	SHSP-5: BSBPP will lead the Safety Resource Center and implementation/evaluation of NJ 2020 SHSP. BSBPP will provide time for a seamless transfer of NJ 2020 SHSP implementation/evaluation.
	SHSP-6: As part of the Safety Resource Center, NJ 2020 SHSP implementation/evaluation task, BSBPP will schedule annual summits in an effort to provide feedback to safety stakeholders.
	SHSP-7: BSBPP will continue to create problem statements that provide an optimal distribution of HSIP funding between systemic and hot-spot projects, with the intent of creating a construction ready shelf. BSBPP is leading the effort of streamlining project delivery process that will lead to efficiency of production of construction ready projects that can use innovative procurement methods. BSBPP will continue to research various innovative procurement methods, and coordinate with CPM to review which methods can be used in New Jersey according to its policies, procedures and guidelines.

CATEGORY	ACTION
	SHSP-8: NJ 2020 SHSP, Other Vulnerable Road Users team has been informed of the Special Rule for Older Drivers and Pedestrians to consider in the development of their action plans.
Stakeholder Engagement	**STAKE-1:** BSBPP is establishing a Safety Resource Center. BSBPP will re-invigorate the Safety Forum in CY 2022 as a half-day conference. The goal is to have a full-day Forum.
	STAKE-2: BSBPP will continue to proactively manage the HSIP Portfolio and coordinate with internal stakeholders to take advantage of the funding allocations.
	STAKE-4: BSBPP senior staff will present at various national and State level conferences, webinars and forums to share, and present while learning from Peer States. Staff is already participating on various AASHTO Safety Subcommittees, Peer Exchanges and Roundtables. BSBPP plans on continuing engagement.
	STAKE-6: NJDOT will engage with MPO partners to initiate the development of Local Strategic Highway Safety Plans. Discussions have been initiated with partners. BSBPP will lead the discussion on planning and funding and providing training through BSBPP's Safety Resource Center.
	STAKE-8: BSBPP will continue to engage with the STIC stakeholders to promote safety innovation as part of multiple Every Day Counts initiatives.
Funding	**FUND-1:** Projects planned for authorization in FFY 2022 total $65.022 Million. NJDOT plans on having projects ready for taking advantage of August Redistribution, with some being "shelved" for FFY 2023 onwards.
	FUND-4: BSBPP is proactively engaging resources to conduct PRSAs on pedestrian & Bicycle focus projects during Problem Statement development or early in Concept Development. This provides the project management team to review the recommendations of the PRSA in the development of Preliminary Alternatives.
Crash Data	**DATA-1:** BTDS and DHTS are already providing training and guidance to Officers in completing NJTR-1 crash reports. The trainings are expected to provide consistency in reporting and interpreting the various fields in the report.
	DATA-3: The Safety Resource Center will highlight and promote Safety Voyager as a crash data tool through social media posts and the website.
Project Delivery	**DELIV-2:** BSBPP is leading the effort to streamline the Capital Project Delivery Process for HSIP projects. The proposed improvements include adding six activities to the Capital Project Work Breakdown Structure, including predecessor and successor activities for Full Scope and Limited Scope projects. New Jersey FHWA is reviewing the safety activities, in addition to other changes.
	DELIV-3: BSBPP is leading the coordination of the development of a CD Checklist for Systemic Regional Horizontal Curve Sign Program. The CD Checklist is in the final phase of review. Approval is anticipated in 2022.

CATEGORY	ACTION
Other	**OTH-1:** New Jersey is on track to deliver at least $57,333,425 for HSIP Projects in FFY 2022.

Table 9 – Long-Term Actions

CATEGORY	ACTION
Alignment with SHSP	**SHSP-2:** NJDOT staff has attended FWHA training on Safe Systems Approach. BSBPP will continue to coordinate with FHWA to learn more. BSBPP (through the Safety Resource Center) and the HSIP Project Development & Support contract share this information with local stakeholders with the vision to fully incorporate Safe Systems Approach in the NJ 2025 SHSP update.
Stakeholder Engagement	**STAKE-3:** BSBPP, through the Safety Resource Center is planning on engaging with citizens and safety partners through social media. Safety Resource Center will work with NJDOT Office of Communications to explore innovative means of engaging through multimedia channels.
	STAKE-5: Few of BSBPP staff members are active participants in professional organizations. The staff will continue to seek opportunities to engage with stakeholders from planning, engineering, Vehicle original equipment manufacturers (OEM), and educators to maximize safety benefits on all projects, with a vision of “Towards Zero Deaths” and a Safe Systems Approach.
	STAKE-7: BSBPP’s Local Safety partners have been proactive in seeking safety benefits through hot-spot and systemic projects. NJDOT BSBPP will continue to coordinate, guide, and offer training and resources to Local partners to develop more streamlined systemic safety projects through the Safety Resource Center and BSBPP’s HSIP Project Development & Support contract.
Funding	**FUND-2:** BSBPP, with the Safety Resource Center and HSIP Project Development & Support teams, plan on continuing with coordination and participation on all projects, HSIP and Non-HSIP, State and Local projects and through collaboration with internal and external stakeholder to further reduce fatalities and serious injuries.
	FUND-3: HSIP Portfolio is still maturing and has not had a need to develop a prioritization method per fiscal year. FY 2022 will, most likely, be the first year. BSBPP will evaluate the authorizations in FY 2022 and develop a means to prioritize and/or shelf projects for the following years or seek additional funding.
	FUND-5: One of the tasks in the HSIP Project Development & Support contract is to update the 2016 HSIP Manual. It is through this update that New Jersey anticipates exploring consistent means of advancing pedestrian and bicycle safety projects, beyond a benefit cost analysis.
Crash Data	**DATA-2:** NJDOT will explore the best practices in projecting volumetric and crash data in instances where available data is limited due to various

CATEGORY	ACTION
	reasons, for example the data limitations highlighted by the COVID-19 pandemic in 2020.
Project Delivery	**DELIV-1:** BSBPP will utilize the HSIP Project Development & Support Contract and Safety Resource Center to assist in its efforts in generating, developing, designing, and reviewing projects, among other tasks.

APPENDIX A – FY 2022 HSIP PROJECTS & PROGRAMS

PROJECT DESCRIPTION	SAFETY PORTFOLIO PLANNED AUTHORIZATIONS	SAFETY PORTFOLIO POTENTIAL AUTHORIZATIONS
STIP Line Items	**$58.892 M**	**$97.863 M**
Highway Safety Improvement Program Planning	$9.000 M	$13.962 M
Safety Programs	$19.000 M	$20.680 M
Local Safety / High Risk Rural Roads Program	$26.142 M	$58.471 M
Motor Vehicle Crash Record Processing	$4.750 M	$4.750 M
Other Projects	**$6.130 M**	**$6.130 M**
Route 15 and Berkshire Valley Road (CR 699)	$6.130 M	$6.130 M
Total	**$65.022 M**	**$103.993 M**

APPENDIX B – FHWA LETTER TO NEW JERSEY REGARDING CY 2019 SAFETY PERFORMANCE TARGET ASSESSMENT

U.S. Department
of Transportation
Federal Highway Administration

FHWA New Jersey
840 Bear Tavern Rd.,
Suite 202
West Trenton, NJ 08628

In Reply Refer To:
HDA-NJ

Diane Gutierrez-Scaccetti, Commissioner
New Jersey Department of Transportation
P.O Box 600
Trenton, NJ 08625-0600

Subject: New Jersey CY 2019 Safety Performance Target Assessment

Dear Commissioner:

The Federal Highway Administration (FHWA) has completed the assessment for the Calendar Year (CY) 2019 safety performance targets, based on the 5-year averages for CY 2015 to CY 2019. Pursuant to 23 CFR 490.211(c)(2), a State Department of Transportation (DOT) has met or made significant progress toward meeting its safety performance targets when at least 4 of the 5 safety performance targets established under 23 CFR 490.209(a) have been met or the actual outcome is better than the baseline performance for the year prior to the establishment of the target. For this year's CY 2019 assessment, the baseline performance is the 5-year average from CY 2013 to CY 2017.

Based on the review of your State's safety performance targets and data, New Jersey *has not* met or made significant progress toward achieving its safety performance targets. The attached table provides a summary of the safety performance target assessment.

If you believe this assessment was made in error, additional compelling information may be submitted by **Monday, April 12, 2021**, to the FHWA Division Office for reconsideration.

As a result of not meeting or making significant progress toward your State's safety performance targets, New Jersey must comply with the following actions as per 23 U.S.C. 148(i):

1. Develop and submit an HSIP Implementation Plan for FY 2022 to the FHWA Division Office by June 30, 2021, that meets the applicable statutory requirements as described in the HSIP Implementation Plan Guidance.

   The HSIP Implementation Plan must:
   - Identify roadway features that constitute a hazard to road users;
   - Identify highway safety improvement projects on the basis of crash experience, crash potential, or other data-supported means;
   - Describe how HSIP funds will be allocated, including projects, activities, and strategies to be implemented;

- Describe how the proposed projects, activities, and strategies funded under the State HSIP will allow the State to make progress toward achieving the safety performance targets; and
- Describe the actions the State will undertake to achieve the performance targets.

2. Use obligation authority equal to the State's FY 2018 HSIP apportionment in the amount of $57,333,425 only for HSIP projects in FY 2022, as per 23 U.S.C. 148(i)(1).

For more information on the calculations and data used for computing the target achievement assessment, please refer to the guidance: FHWA Procedure for Safety Performance Measure Computation and State Target Achievement Assessment. Technical assistance is also available should you require assistance in the development of your HSIP Implementation Plan.

Additionally, please note that the results from the State safety performance target achievement assessment will be available on the FHWA Transportation Performance Management website in the following weeks.

Thank you for your efforts in continuing to plan and program safety projects that aim to reduce fatalities and serious injuries on your State's roadways.

Sincerely,

Robert J Clark

Robert J Clark
Division Administrator
FHWA-NJ

Attachment

cc:
FHWA Office of Safety
Richard Simon, NHTSA Region 2 Administrator

ATTACHMENT

New Jersey CY 2019 Safety Performance Target Assessment

PERFORMANCE MEASURE	2015-2019 TARGET	2015-2019 ACTUAL	2013-2017 BASELINE	MET TARGET?	BETTER THAN BASELINE?	MET OR MADE SIGNIFICANT PROGRESS?
Number of Fatalities	605.0	581.8	577.0	Yes	N/A	No
Rate of Fatalities	0.780	0.754	0.760	Yes	N/A	
Number of Serious Injuries	1,101.4	1,469.2	1,083.6	No	No	
Rate of Serious Injuries	1.422	1.900	1.428	No	No	
Number of Non-Motorized Fatalities & Serious Injuries	393.9	465.0	379.8	No	No	