

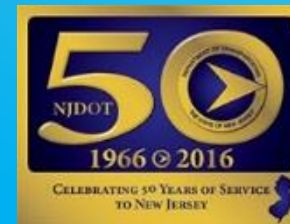
Capital Investment Planning & Grant Administration

Bureau of Transportation Data and Safety

SAFETY PROGRAMS



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Project Manager



Safety Programs

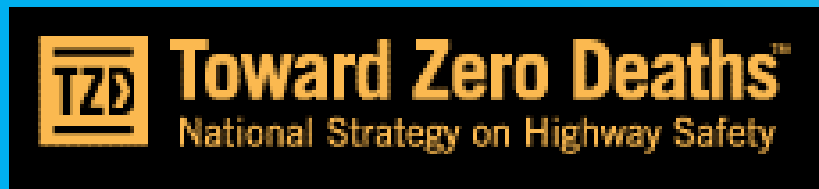
BACKGROUND

Safety Programs

Safety Mission: Drive down serious injuries and fatalities on NJ's roadways by addressing infrastructure factors contributing to crashes and utilizing and combining multiple strategies to achieve the greatest safety benefits.

Safety Programs

Safety Vision: Achieve zero deaths on all public roads.



Safety Programs

- Administer the Highway Safety Improvement Program (HSIP) for New Jersey.
 - Core Federal Aid Program, NJ receives ~\$57M
 - Data-driven, strategic approach to improving highway safety on all public roads that focuses on performance.
 - Reduces fatalities and serious injuries
 - Addresses NJ's Strategic Highway Safety Plan Priority
 - Targets identified safety issue with funding eligibility on all public roads
 - Preparation/submittal of the Annual Safety Report (ASR)

Safety Programs

NJDOT Sub-Programs under HSIP

- Highway Safety Improvement Program Planning
- Intersection Improvement Program
- Crash Reduction Program
- Utility Pole Mitigation
- Segment Program
- Pedestrian Safety Improvement Program
- Local Safety Program – High Risk Rural Road Program

Safety Programs

Safety Goal: New Jersey has established a 2.5% per year reduction in the 5-year rolling average of fatalities and serious injuries.

Safety Programs

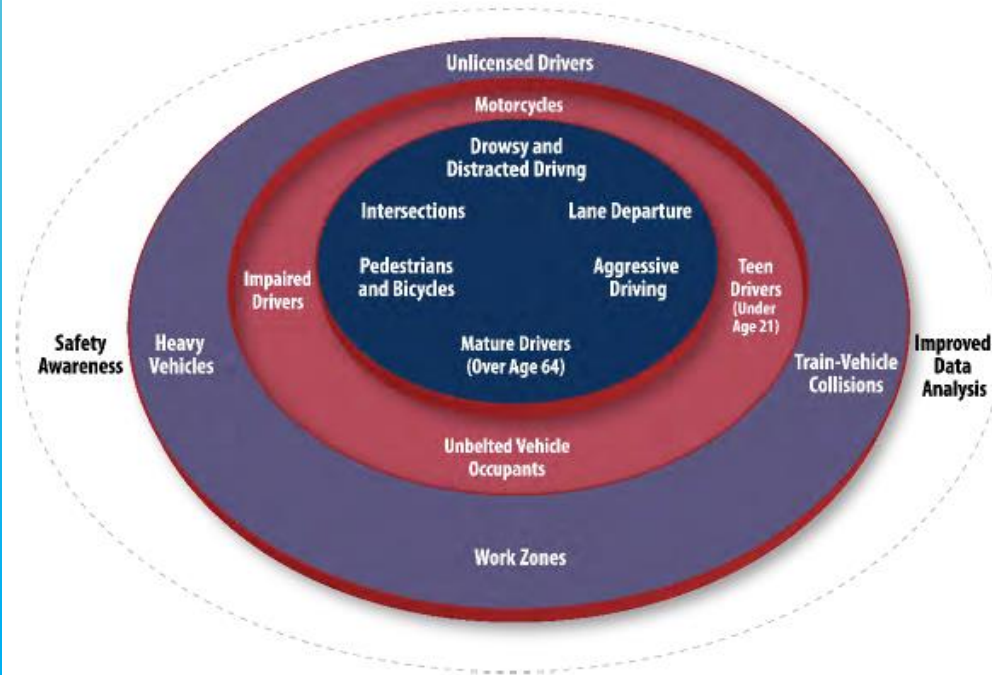
NJ is in the process of establishing statewide targets for each of the five safety performance measures required to carry out the HSIP:

- Number of Fatalities
- Rate of Fatalities per 100 million VMT
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million VMT
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries

Safety Programs

- New Jersey's Strategic Highway Safety Plan (SHSP)
 - Guides the allocation of safety funding and resources
 - Data driven, sets long-term goals, and is a coordinated statewide plan that identifies the most significant infrastructure and behavioral safety issues on New Jersey's public roads.
 - Identifies emphasis areas and considers strategies

New Jersey Prioritization of Safety Emphasis Areas



Legend

1st Priority
(>2,000 fatality and serious injury crashes)

2nd Priority
(1,000 to 2,000 fatality and serious injury crashes)

3rd Priority
(<1,000 fatality and serious injury crashes)

Note: Fatality and serious injury crashes are those crashes that result in one or more fatalities or serious injuries, or both. The exception to this categorization is for Mature Drivers, which are considered a first priority emphasis area due to the increasingly older population in New Jersey.

Safety Programs

- SHSP provides infrastructure direction:
 - Better alignment of investments with crash data targeting the most pressing safety issues.
 - Focus approximately 40 percent of the annual HSIP funding on state highways and evaluation and 60 percent on county and municipal network in line with the current distribution of serious injuries and fatalities.
 - Focus on lane departure, intersections, and pedestrians as a top priority.

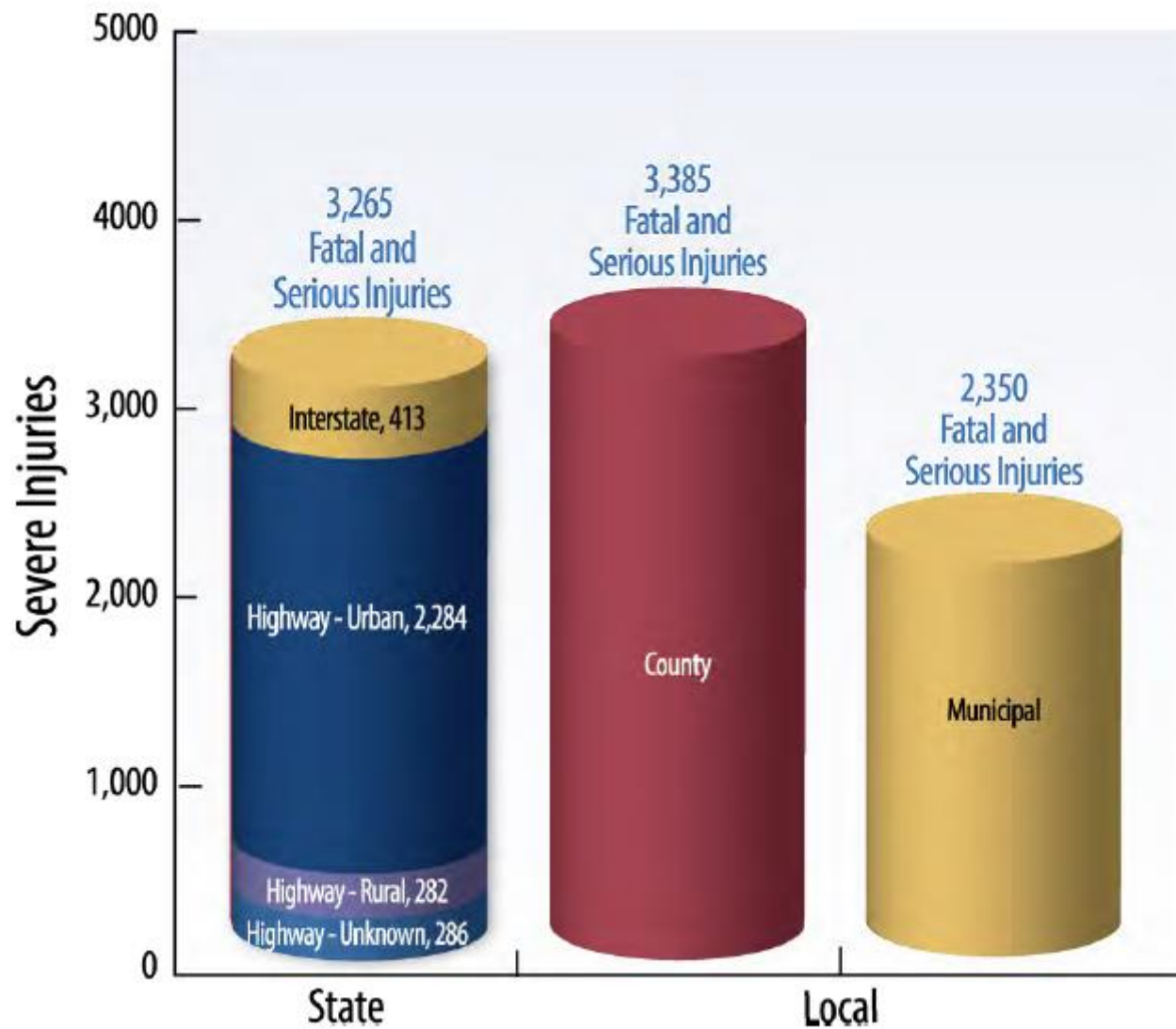
Safety Programs

Safety on the Local System

NJDOT supports safety on local systems through the dedication of HSIP funds and by providing technical assistance. New Jersey's Metropolitan Planning Organizations support the implementation of safety projects on local and county roads through the Local Road Safety, the High Risk Rural Roads and Preliminary Engineering and Design Assistance Program.



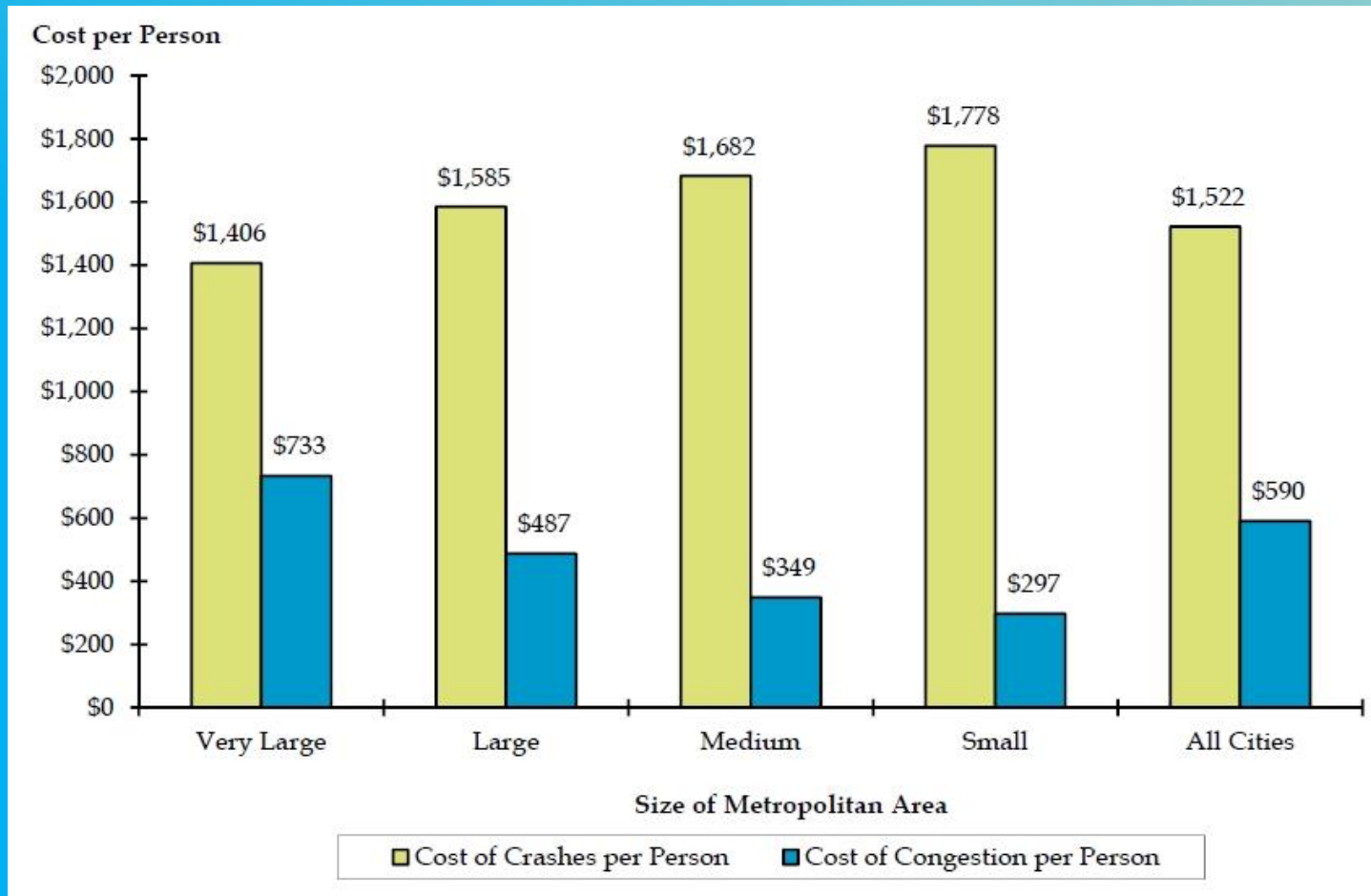
Fatal and Serious Injuries by Roadway System by Roadway System, 2008 to 2012



Balancing Project Needs

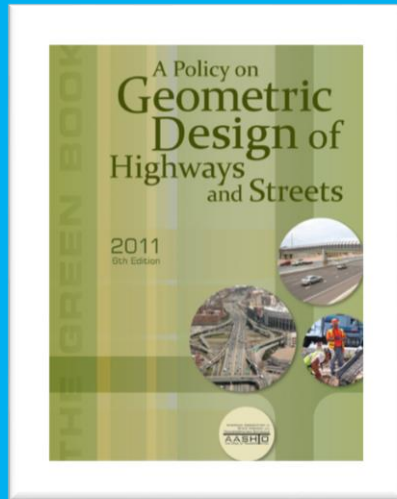


Annual Cost of Crashes and Congestion per Person (2009)



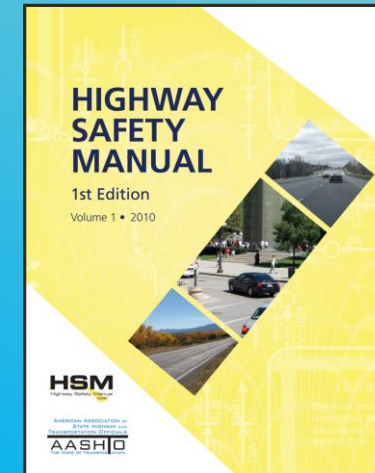
*Nominal
Safety*

*Substantive
Safety*



Compliance
with
standards,
warrants,
guidelines

Predicted
crashes
frequency &
severity



Safety Programs

RESPONSIBILITIES OF THE SECTION

Safety Programs

Responsibilities of the Section

- Administer the HSIP / Prepare and submit the ASR
- Develop and maintain Safety Programs and Network Screening Lists
 - Compile priority locations for safety projects
- Complete Safety Management System (SMS) and Crash Analysis/
Design Exception request for DPM, Front Office, etc.
- Develop/Implement/Evaluate Safety Projects
- Develop/Implement/Evaluate Systemic Safety Projects

Safety Programs

Responsibilities of the Section

- Evaluate DPM projects for substantive safety benefits
- Perform/review Highway Safety Manual analyses
- Review and assist MPO's with Local Safety Projects
- Roadway Safety Audits (RSAs)
- Participate in Safety Focused Conferences and Federal Peer Exchanges

Safety Programs

SAFETY PROGRAMS PROCESS

Safety Programs

Winning HSIP Funds

- Align project with NJ's Strategic Highway Safety Plan
- Data Driven
- Network Screening – Justify *why & how* project will address **identified safety concern** using the **HSM**

Safety Programs

Winning HSIP Funds

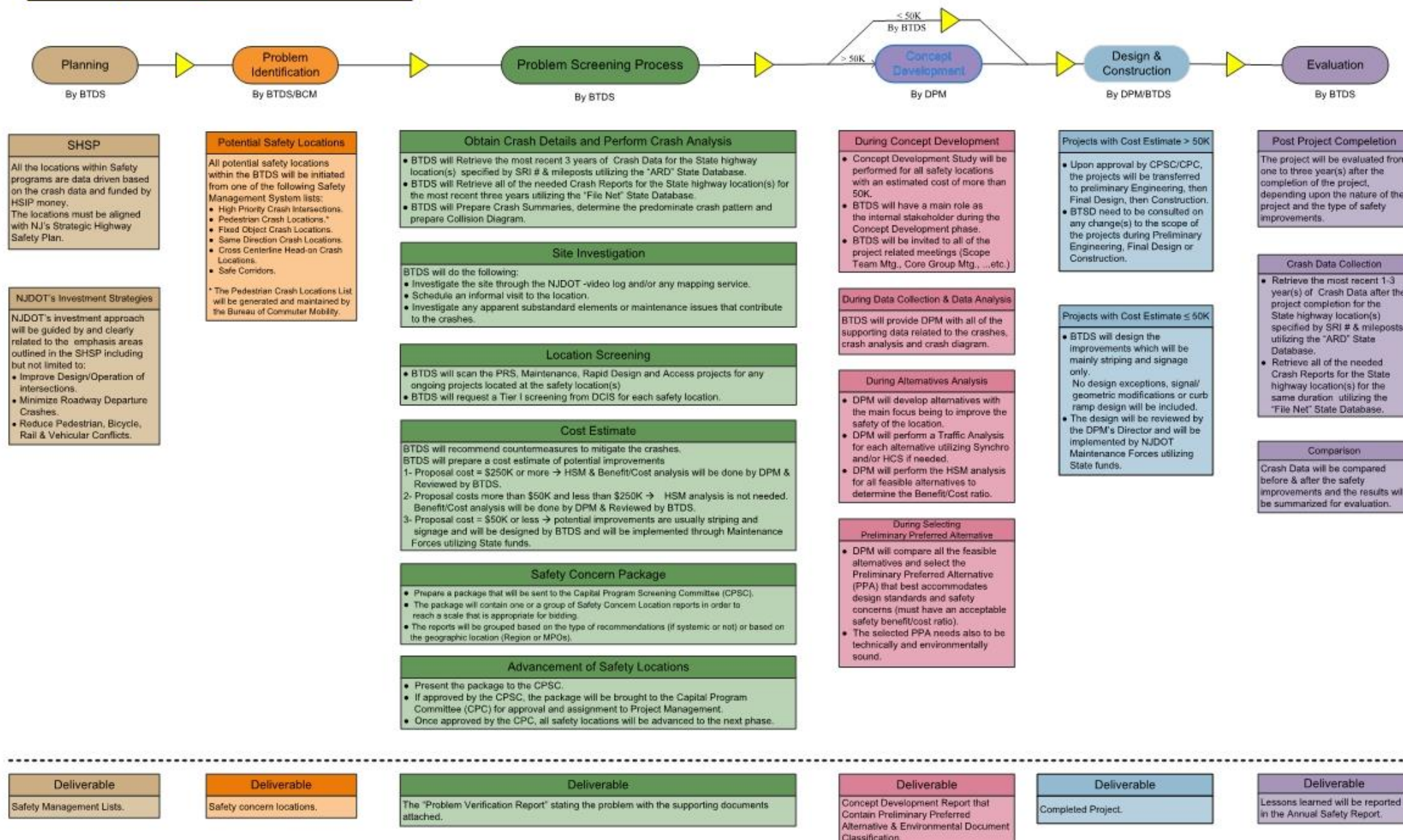
- Incorporate **9 FHWA Proven Safety Countermeasures** where possible
- Address Focus State Status: Pedestrian or Intersection
- Align projects with Road Safety Audits (RSA)

Safety Programs

Safety Projects Process

- Involved in or Lead in 6-Step Process
 - Planning
 - Problem Identification
 - Problem Screening
 - Concept Development (CD)
 - Design & Construction
 - Evaluation

Safety Programs Process



Safety Programs

Authorization Process for Local Safety Program

- Solicitation of Projects through the sub regions
- MPO screening of all the submitted applications
- Advancement of application to the Technical Advisory Committee (TAC) members along with score sheets and scoring criteria for the review

Safety Programs

Authorization Process for Local Safety Program

- TAC meeting
- Final Scores
- Application recommended to proceed or recede
- FHWA final authorization

Focus approximately 60 percent of the annual HSIP funding on county and municipal network in line with the current distribution of serious injuries and fatalities.

Safety Programs

CRASH ANALYSIS AND DESIGN EXCEPTIONS

Safety Programs

Crash Analysis

Using the Accident Records Database (ARD) program, a crash summary and the appropriate crash detail printouts are generated for the location needed. These are analyzed to determine crash overrepresentations which can then be used to identify problem areas. This procedure is usually done in conjunction with the development of a crash rate and safety score to complete the analysis.

Safety Programs

Crash Analysis

- Review crash details for requested years (typically 3 years)
- Verify crashes using NJTR-1 reports
- Calculate crash rate and/or safety score
 - Number of crashes
 - Segment length
 - AADT

Safety Programs

Design Exceptions

Using the crash detail printouts and police crash reports, roadway sections with substandard features are analyzed to determine if a safety problem exists. This analysis uses various indicator crash types for each individual substandard feature listed. A crash analysis report is then submitted to the requestor for inclusion in the Design Exception report.

Safety Programs

Design Exception Crash Indicators (Substandard Items)

- Superelevation, Curve Radius, Tangent Length
- Outside Shoulder Width
- Inside Shoulder Width
- Grade (above maximum)
- Cross Slope or Grade (below maximum)
- Cross Slope (above maximum)
- Minimum Vertical or Horizontal Clearances
- Utility Poles in Clear Zone
- Sight Distance
- Crest Vertical Curve
- Sag Vertical Curve
- Lane Widths
- Accel or Decel Lane Length
- Bridge Width (loss or reduction of shoulder)
- Bridge Width (change in lane widths)

**BUREAU OF TRANSPORTATION DATA AND SAFETY
CRASH DATA/ANALYSIS REQUEST FORM**

To: Sophia Azam, Section Chief

From:

Office:

E-Mail:

NJDOT Contact:

Title:

Office:

E-Mail:

Phone:

NJDOT Contact:

Contact's Unit:

Request Date:

*Due Date: *Please specify reason(s) for due dates within **four weeks** standard processing time:

LOCATION DESIRED

Project Name: NJDOT Job No.

County:

Municipality:

*Route/Road Name:

*Provide SRI for non-numbered local roads: _____

Analysis Limits:

*Please provide County Route designation attached to any local road names where applicable.

CRASH DATA/ANALYSIS TYPE DESIRED (SEE ATTACHED SHEET)

***Data Time Frame**

☒ Most Recent Three Years ☐ Most Recent Year ☐ From ____/____/____ to ____/____/____

To speed processing of this request, you may attach a reduced size Plan or Sketch, and/or highlighted Straight Line Diagram for locating intersection or roadway section desired for analysis.

*Note: The most recent year's data is not available until July 1st of the current year.

Please note that this form must be covered by a letter or e-mail from requestor indicating intended use for information. Only Departmental Agent requests will be responded to. This includes data or analyses requests for State Highway system roadways or requests for analysis of the local system that are DOT lead projects or have DOT oversight or funding. A DOT lead engineer or contact must be provided on this form and copied on the request when it is being sent directly to BSP by the requestor.

FOR BUREAU OF TRANSPORTATION DATA AND SAFETY USE ONLY

Date Received: _____ Date Processed: _____

Special Notes:

CRASH DATA/ANALYSIS TYPE DESIRED



SAFETY SCORE

Uses - Determines the relative Safety Management System ranking of a section of roadway or intersection in comparison with Statewide Average Crash Rates, Frequencies or Severities, or existing SMS lists used for the Highway Safety Improvement Program. Useful for determining a 0-10 scale ranking of a proposed Capital Project for Capital Investment Planning/Project Justification purposes.



CRASH RATE (EXPRESSED IN CRASHES/MILLION VEHICLES MILES)

Uses - Determines how an overall section of roadway compares with the Statewide Average Rate. Useful for assessing overall safety within a roadway length and identifying high crash rate continuous cross-section segments. Not useful for intersections or short (less than .20 mile) sections.



CRASH SUMMARY WITH OVERREPRESENTATIONS

Uses - Provides a summary of crashes listed by crash type, severity, between and/or at signalized or unsignalized intersections, surface condition and light condition. Percentages of each type of crash are compared to the statewide averages to establish over-representations. Useful for isolating individual crash categories that may need further study or analysis.



CRASH DETAIL PRINTOUTS

Uses - Provides locations accurate to the 1/100th milepost of all of the crashes considered in any of the analyses above. Useful in locating crash clusters or concentrations of over-represented crashes.



POLICE CRASH REPORTS

Uses - Provides the most complete amount of information surrounding the individual crashes. Useful in determining contributing circumstances and precise locations on the roadway that a crash occurred that may not be available from the crash detail printouts.

(Note: Providing these reports is very time consuming, so you may be asked to provide a person to retrieve the reports electronically from one of our terminals if requested amount is found to be significantly greater than 50).

DESIGN EXCEPTION CRASH ANALYSIS

ROUTE	CSDE (CONTROLLING SUBSTANDARD DESIGNING ELEMENT)	MILE POST LIMITS	DIRECTION

Notes: - CSDE - Group by Type: No stations or kilometer posts. Provide direction if only on one side.
- For substandard vertical curves, be sure to list whether it is a sag or crest curve.
- For substandard bridge widths, designer must indicate what change in cross-sectional element(s) at bridge produces the substandard condition (i.e. change in lane widths and/or reduction or loss of inside or outside shoulder). Exact MP limits of bridge must also be specified.

- Crash Data Analysis Request Form 1/24/12

Safety Programs

SAMPLE SAFETY FUNDED PROJECTS

Safety Programs

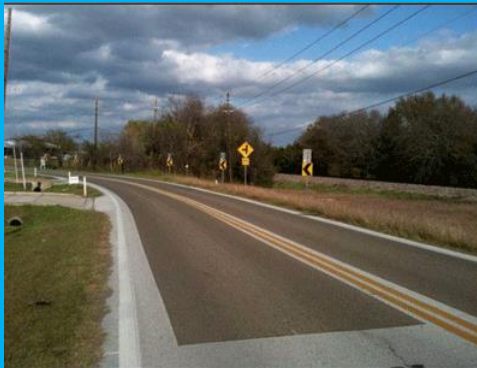
Sample Safety Funded Projects

➤ Systemic and Pilot Projects

➤ CLRS



➤ HFST



Safety Programs

Sample Safety Funded Projects

➤ Local Safety Projects

➤ Roundabout – Chesterfield Township, Burlington County



Safety Programs

Actions to Strengthen Safety Programs

- Increase emphasis on balancing investment
- Place a greater emphasis on implementing new and proven strategies
- Work to implement systemic improvements
- Promote a higher level of coordination and cooperation from all stakeholders to enhance substantive safety on all projects

Thank You!!

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