![Driving Toward ZERO Deaths]

New Jersey 2020
Strategic Highway Safety Plan

Emphasis Area

DATA

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Room 222 ●

Safety Summit #2

Data Emphasis Area Breakout Session (90 minutes)

Agenda

1. **Review Goals of the Session (5 minutes)**

2. **Review Data Systems and Identify and Identify Key Data Questions (20 minutes)**

3. **Review Current Proposed Projects (20 minutes)**

4. **Identify Additional Strategies (15 minutes)**

5. **Discussion Prioritization of Strategies (30 minutes)**

Data Fact Sheet

Summit #2   **January 21, 2020**

Summary

This fact sheet provides many details of Traffic Records Data Systems and the data. It also outlines suggestions on how NJ could improve their data systems and the data.
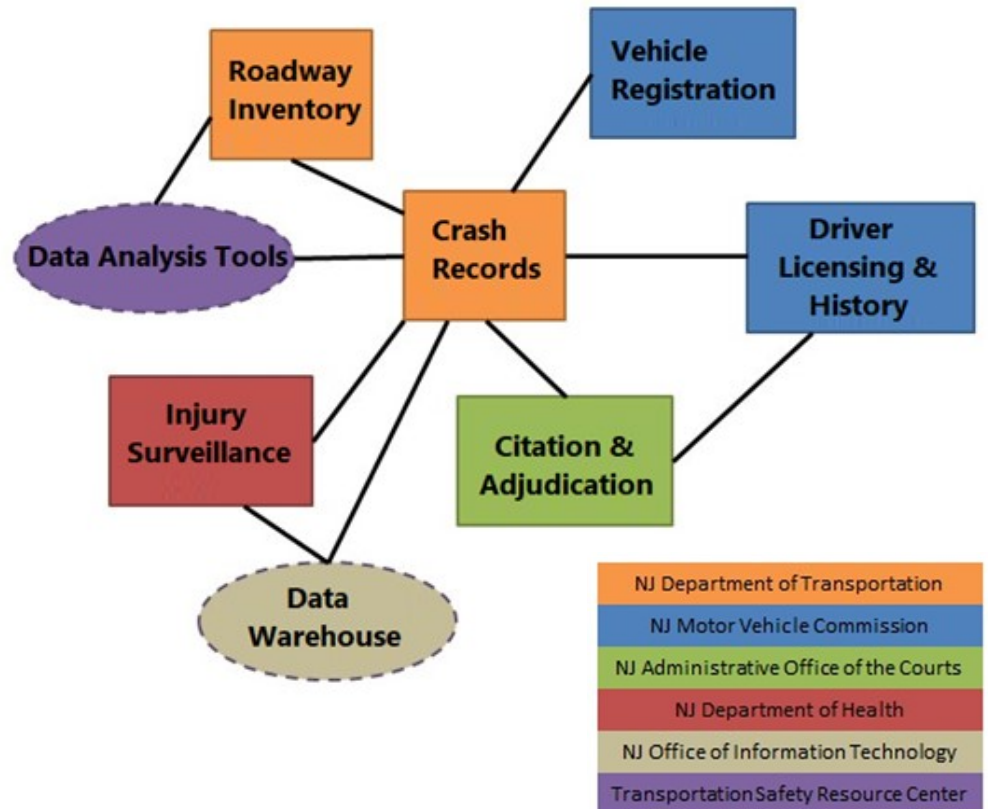
What is Data Mining?

- The process of extracting the hidden predictive information from an extensive database.

- It turns raw data into useful information:

1. Prediction—determine how certain attributes will behave in the future

2. Identification—identify data patterns

3. Classification—partition data into classes (e.g. supermarkets)

4. Optimization—Optimize limited resources like time, space, money or materials

Traffic Records System

Data systems are components of various agency-specific business processes. There exists a need to view the various Traffic Safety data subsystems as a whole. Traffic records are a broad term which includes records and data of multiple types from multiple agencies which are related to traffic that include information collected statewide related to traffic crashes, drivers, vehicles, roadway infrastructure and elements, traffic citations (tickets), and injury surveillance (EMS, trauma and hospital data) of persons involved in motor vehicle crashes.

What is the Purpose of the Data?

23 U.S.C. Section 148(c)(2) specifies the problem identification and data analysis requirements a State must include as part of its highway safety improvement program. These requirements relate to:

1) Having in place a safety data system with the ability to perform safety problem identification and countermeasures analysis necessary to accomplish the requirements specified in 23 U.S.C. 148(c)(2)(A).

2) Based on that analysis, identifying hazardous locations that constitute a danger to motorists (including motorcyclists), bicyclists, pedestrians, and other highway users; establishing the relative severity of those locations; identifying the number of fatalities and serious injuries by location in the State; identifying HSIP projects on the basis of crash data or other data-supported means; and considering which projects maximize opportunities to advance safety. [23 U.S.C. 148(c)(2)(B)].

3) Adopting strategic and performance-based goals considering the impacts to all road users that: address traffic safety that include behavioral and infrastructure problems; focus resources on areas of greatest need; and are coordinated with other State highway safety programs. [23 U.S.C. 148(c)(2)(C)].

4) Advancing the State's capabilities for safety data collection, analysis, and integration as required under section 148(c)(2)(D).

5) Determining priorities for the correction of hazardous locations, including railway-highway crossings; identifying opportunities for preventing the development of hazardous conditions; and establishing and implementing a schedule for HSIP projects for hazard correction and prevention. [23 U.S.C. 148(c)(2)(E)].

6) Establishing an evaluation process to analyze and assess results achieved by implemented HSIP projects and use that information in setting priorities for future HSIP projects. [23 U.S.C. 148(c)(2)(F)].

Who are the Owners?

The following table shows the relationship among the various agencies involved in NJ's traffic records efforts and each component of the overall system.

Legend:
- ■ Data Owner (green square)
- ◆ Data User (red diamond)
- ▲ Data Provider (orange triangle)
- ● System Administrator (blue circle)

Traffic Records Component	NJ Department of Transportation	Motor Vehicle Commission	NJ State Police	Administrative Office of the Courts	NJ Division of Highway Traffic Safety	NJ Department of Health	NJ Police Traffic Officers Association	FHWA, NHTSA, FMCSA	Office of Information Technology	Rutgers University	MPOs (DVRPC, NJTPA, SJTPO)	Hospitals, EMS Agencies, Emergency Depts.
Crash Records Database (a.k.a. ARD)	■	◆	◆▲		◆	◆	◆▲	◆	●	◆	◆	
Roadway Inventory System/ Traffic Monitoring System	■							◆		◆	◆	
Traffic Citation & Adjudication			◆▲	■			◆▲					
Injury Survelliance System/ Electronic Patient Care Reporting (ePCR)						■		◆	●			■
Driver Licensing & Driver History System		■	◆▲	▲			◆▲	◆	●			
Vehicle Registration System		■	◆▲	▲			◆▲	◆	●			
Data Warehouse	▲	▲			◆▲				●		◆	

What are the Issues?

Collection and integration of data systems by the State as well as from local sources such as county and municipal public works agencies and metropolitan planning organizations.

There currently are no requirements for the collection of roadway inventory information for safety purposes. Roadway elements (Radii, Curvature etc..) are critical in establishing crash data as it relates to roadway elements.

Data Quality – Timeliness; Uniformity; Completeness; Accessibility; Accuracy and Integration.

Integration with other databases?

One key element that is often missing in crash reports is an accurate location—approximately 15% of records (all severities) do not contain this information; fatal and serious injury crashes typically have more detail. The below table is a summary of the percent of crashes with unknown information by Emphasis Area (excluding Data).

Emphasis Area	Speed Limit Unknown	Jurisdiction Unknown	Location Unknown
Lane Departure	~3%	~24%	~3%
Intersections	~4%	~23%	~2%
Pedestrians and Bicyclists	~4%	~27%	~3%
Driver Behavior	~4%	~25%	~2%
Other Vulnerable Road Users	~2%	~22%	~3%

Jurisdiction is the roadway owner, which can be municipal, county, or state level, and includes all public roads and entities other than NJDOT, such as NJ Turnpike Authority.

Location is whether a crash could be located with an XY coordinate, obtained from either the route SRI and milepost or a latitude/longitude entered into the crash report.

> *"High-quality State traffic records data is critical to effective safety programming, operational management, and strategic planning. Every State—in cooperation with its local, regional, and Federal partners—should maintain a traffic records system that supports the data-driven, science-based decision-making necessary to identify problems; develop, deploy, and evaluate countermeasures; and efficiently allocate resources." -- NHTSA Traffic Records Advisory*

Can you guess the data system from the icon?

2018 STRCC Strategic Plan

Vision:

It is the vision of the NJ Statewide Traffic Records Coordinating Committee (STRCC) to support the goal of zero fatalities on our roadways through a seamless traffic records data system delivering complete, timely, accurate and integrated traffic safety information accessible to all data users involved in making traffic safety decisions.

Mission:

In support of New Jersey's Highway Safety Plan and the Strategic Highway Safety Plan, coordinate through its member agencies a forum for the creation, implementation, management and dissemination of useful traffic records information to aid decision-makers working to reduce and eliminate transportation-related fatalities and injuries on New Jersey's roadways.

Goals:

Goals are the purpose of the identified projects in this plan and are which the initiatives and resources are directed. Based upon input gathered in the survey process, the following goals were identified:

Traffic Safety Goals

1) Automate Data Capture – Develop a means by which to more effectively capture traffic safety data.

2) Increase Data Completeness – Ensure that the data captured is as complete as possible even when the data may come from disparate sources or at different points in time.

3) Increase Data Accuracy – Allow for information to be exchanged between stakeholders in an automated fashion and associated between disparate data sources accurately.

Information Sharing Goals

1) Improve Timeliness – Furnish critical traffic safety information to stakeholders with enough time for them to properly use it.

2) Increase Consistency – Ensure that the information being provided to stakeholders remains consistent regardless of when the information is requested.

3) Improve Operational Integration – Bring together disparate traffic safety data sources to provide complete and accurate information to operational stakeholders.

4) Increased Availability – Ensure that the stakeholders who need the information always have access to it when needed.

Analysis Goals

1) Improve Analytical Integration – Bring together disparate traffic safety data sources in a statistical fashion to provide complete and accurate information to analytical decision makers.

2) Improved Analysis Capabilities – Implement processes, tools and technologies which improve the organization's ability to aggregate and statistically report on the data collected. Adopting strategic and performance-based goals considering the impacts to all road users that: address traffic safety that include behavioral and infrastructure problems; focus resources on areas of greatest need; and are coordinated with other State highway safety programs. [23 U.S.C. 148(c)(2)(C)].

3) Advancing the State's capabilities for safety data collection, analysis, and integration as required under section 148(c)(2)(D).

4) Determining priorities for the correction of hazardous locations, including railway-highway crossings; identifying opportunities for preventing the development of hazardous conditions; and establishing and implementing a schedule for HSIP projects for hazard correction and prevention. [23 U.S.C. 148(c)(2)(E)].

2018 Strategic Plan Projects

Project Title	Agency	Cost in Millions (* Estimated)	NHTSA 4905c	New / Continuation	Benefit Attribute					
					Timeliness	Accuracy	Completeness	Uniformity	Accessibility	Integration
Electronic Data Transfer	NJDOT	$5.000*		N	✓	✓	✓	✓		
Crash Records Verification	NJDOT	$0.750	✓	C		✓	✓	✓		
Crash Geocoding	Rutgers	$0.044	✓	C		✓	✓	✓		
Crash Analysis Tool	DHTS	$0.131	✓	C					✓	
Fatal Accident Reporting Automation Feasibility	FARS	$0.025*	✓	N	✓	✓	✓			
NJTR-1 Training	Rutgers	$0.063	✓	C				✓		
Traffic Monitoring Systems	NJDOT	$17.80		C	✓		✓			✓
Electronic Patient Care Reporting	DOH OEMS	$0.350	✓	C	✓		✓			
Automated Location Services for Emergency Response Vehicles	DOH OEMS	$0.075*	✓	N		✓	✓	✓		
Event Data Recorders Feasibility	DOH OEMS	$0.035*	✓	N		✓	✓			
Municipal Automated Complaint System	SOC	TBD		C	✓				✓	
Real ID State to State Integration	MVC	$0.596	✓	C	✓	✓	✓			✓
CDL Drug and Alcohol Clearinghouse	MVC	TBD	✓	C						✓
Comprehensive Vehicle System	MVC	TBD		C	✓	✓	✓			
Data Warehouse	OIT	$0.367	✓	C					✓	✓

Can you match the Icon with the Attribute above?

2017 TRA Recommendations

Crash

- Improve the data dictionary for the Crash data system to reflect best practices identified in the Traffic Records Program Advisory.

- Improve the interfaces with the Crash data system to reflect best practices identified in the Advisory.

- Improve the data quality control program for the Crash data system to reflect best practices identified in the Advisory.

Driver

- Improve the description and contents of the Driver data system to reflect best practices identified in the Traffic Records Program Advisory.

- Improve the procedures/ process flows for the Driver data system to reflect best practices identified in the Advisory.

- Improve the data quality control program for the Driver data system to reflect best practices identified in the Advisory.

2017 TRA Recommendations (Con't)

Vehicle

- Improve the data dictionary for the Vehicle data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.

- Improve the interfaces with the Vehicle data system to reflect best practices identified in the Advisory.

- Improve the data quality control program for the Vehicle data system to reflect best practices identified in the Advisory.

Roadway

- Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.

Citation/Adjudication

- Improve the applicable guidelines for the Citation and Adjudication systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.

EMS/Injury Surveillance

- Improve the interfaces with the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.

- Improve the data quality control program for the Injury Surveillance systems to best

reflect practices identified in the Traffic Records Program Assessment Advisory.

Data Use & Integration

- Improve the traffic records system capacity to integrate data to reflect best practices identified in the Traffic Records Program Assessment Advisory.

DHTS 2020 Highway Safety Plan, Training and Data Improvements

Maintain a traffic records system that supports the data-driven, science-based decision making necessary to identify problems; develop, deploy, and evaluate countermeasure; and efficiently allocate resources. (Traffic Records Program Assessment Advisory, NHTSA, 2012.)

Analyze crash data to identify trends and problem causes for crashes and provide to managers in highway traffic safety program development and will be offered to other public and private agencies. Map data collected on the State Police Accident Reports (PARs) to the data elements and attributes in the Model Minimum Uniform Crash Criteria (MMUCC) Guidelines (5th Edition, 2017). Use NHTSA / Governor's Highway Safety Association methodology to standardize.

Linkage between Problem Identification and Performance Targets

- Timeliness: The transfer of crash data in an electronic

format enhances timeliness facilitating a quick turnaround time from crash occurrence to entry into the system.

- Accuracy: Despite there being geocoders responsible for identifying crash locations for unidentified crashes in the system, locating crashes remains problematic since not all police agencies use the same locating methodologies in reports.

- Completeness: The State crash report, the NJTR-1, collects a large volume of data on all reportable crashes. Training and education are provided to law enforcement agencies on the proper method of data collection to ensure the most accurate data is received.

- Integration: The STRCC aims to integrate statewide crash data to the Motor Vehicle Commission's licensing information as well as Emergency Medical Service information.

- Accessibility: The DHTS Crash Analysis Tool is a decision support tool developed for Utah Department of Transportation by Numetric, a business intelligence company. It is made available to all law enforcement personnel and stakeholders of DHTS.

2015 SHSP Strategies

Implement electronic data transfer (EDT) of crash reports statewide.

- NJ crash reports are currently processed by paper copy through the NJDOT. Developing a process to send those reports electronically from all police agencies would improve the timeliness and accessibility of the crash data to multiple users statewide. This would allow agencies to better identify at risk locations, behavioral issues, and other safety concerns. This strategy also will help stakeholders determine and react to changing trends and future highway safety issues as they arise. *Update: Paper, electronic PDF and e-transfer are permitted, the latter not for all police departments.*

Map Existing Records

- Geocode current and past records as they are introduced into the preferred crash analysis tool. Providing this information will ensure the accuracy (i.e., crash locations) and completeness of (i.e., filling in missing information such as roadway cross section and intersection traffic control) crash records. Approximately 25% of crash records in the crash database do not include geocoding information, resulting in an unacceptable number of records being excluded when users search for crash clusters. *Update: 85% of all crash records are geocoded.*

Implement electronic patient care reporting (ePCR).

- Continue to use funds to implement electronic patient care reporting in the state's Advanced Life Support programs. The ePCR Program uses real-time data management tools to provide stakeholders (Office of Emergency Medical Services [EMS], hospitals, and Advanced Life Support programs) the data needed to make decisions in the most efficient manner possible. With the electronic patient care program, first responders collect patient and circumstantial data at scenes using tablet devices. As the data fields are completed, this patient information is transferred in real-time to the closest hospital to help medical personnel improve patient care. Simultaneously, data is transmitted to the NJ Office of Information Technology data warehouse for access by EMS providers, the Division of State Police, the MVC, and other agencies and stakeholders.

Update the NJTR-1 Crash Form

- Incorporate new items and eliminate outdated elements to increase the type and accuracy of the information collected at a crash scene. This information will be used to understand the nature of crash problems and develop appropriate safety programs to address those problems. *Update: The form was revised in 2017.*

- Provide in-person and web-based training for those completing and reviewing the forms.

Overview of NJTR-1 Training

- Currently funded for 15 sessions in 2020.
- Sessions are spread around the state, north, central and south, running April-August.
- Tentative 2020 dates below.

April 15	CAIT	April 24	Atlantic
April 28	Passaic	May 8	AAA
May 12	Middlesex	May 15	Ocean
June 2	Gloucester	June 4	Monmouth
June 10	Morris	June 16	Stamler
June 19	AAA	TBD	Hudson

- Thumb drive to all NJTR-1 training participants to take back to/circulate their department.
- Provides a more detailed training on all 145 fields with tests for each section on the form

New Jersey 2020
Strategic Highway Safety Plan

Notes

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Name _____   Email _____   Zip Code _____

Please leave this form with project staff. To provide comments online, please email us at
info@SafeRoadsForAllNJ.com or visit the project website at **www.SafeRoadsForAllNJ.com**.
Please provide comments on SHSP Emphasis Areas by January 31, 2020.