

Maryland Traffic Records Coordinating Committee

Traffic Records Strategic Plan 2021–2025

6/4/2021



*Maryland
Highway
Safety
Office*

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Traffic Records Coordinating Council Overview

Maryland has a clear mission to prevent deaths and injuries on our streets and highways. Many steps have been taken toward meeting this goal, but many challenges remain. Reaching our goal of zero deaths and injuries will require a diverse group of stakeholders—state and local agency partners, nongovernmental organizations, as well as the public—to work collaboratively on issues of common concern.

The Maryland Traffic Records Coordinating Committee (TRCC) is an interagency effort that is based on a model from the United States Department of Transportation (USDOT). The TRCC is a working group of data owners, managers, and users representing six traffic records system components (crash, roadway, citation/adjudication, driver, vehicle, and injury surveillance) and uses six data quality performance measures (timeliness, completeness, accuracy, accessibility, integration, uniformity) to evaluate progress. For nearly two decades, the Maryland TRCC has served as a central point of coordination for the traffic safety community in achieving the vision of zero traffic-related deaths. The TRCC Charter describes the Vision and Mission Statement, as well as the purpose and duties of the Committee.

VISION

Safe Maryland roads free of traffic fatalities and injuries.

MISSION

To use effective management principles and emerging technologies to improve the quality, timeliness, and availability of traffic records data and systems to enable the Maryland traffic safety community to identify and resolve traffic safety issues thereby achieving Maryland's goal of zero traffic-related deaths.

PURPOSE

The Maryland Traffic Records Coordinating Committee is responsible for reviewing and assessing the status of Maryland's Traffic Safety Information System Improvement Program and its components. The TRCC will:

- oversee the development and update of a strategic plan that serves the public and private sector needs for traffic safety information;
- learn about technologies and other advancements necessary to improve the traffic safety information system;
- promote, support, and assist in the coordination and implementation of needed or desired system improvements; and
- provide a forum for the exchange of information regarding safety data among the traffic safety community.

DUTIES

Maryland's TRCC shall:

- ideally have authority to review any of the State's highway safety data and traffic records system components and any changes to such systems before the changes are implemented;
- consider and coordinate the views of organizations in the State that are involved in the collection, administration, and use of highway safety data and traffic records system components, and represent those views to outside organizations;
- review and evaluate new technologies to keep the highway safety data and traffic records system current; and
- approve annually the membership of the TRCC, any change to the State's multi-year Strategic Plan, and performance measures to be used to demonstrate quantitative progress in the

accuracy, completeness, timeliness, uniformity, accessibility, or integration of a core highway safety database.

The TRCC's vision and strategies comprises the strategic plan. The outlined strategic plan determines the Maryland Traffic Records community's direction over the next five years—where it intends to go, how it is going to get there, and evaluative measures to determine its level of success.

TRCC Structure

The TRCC is an interagency, intergovernmental working group focused solely on Maryland's traffic records system. Maryland's TRCC includes an Executive Council, Technical Council, and special committees that serve on an as-needed basis.

The **Executive Council** is an assembly of agency leaders or senior officials designated by the agency leader from member organizations that are custodians of Maryland's traffic records system components, formally invited by the Governor's Highway Safety Representative. The Executive Council supports the Traffic Records vision, mission, and five-year Traffic Records Strategic Plan (TRSP), assisting in advisory, policy, and/or economic capacities. The identified members meet as designated in the charter twice-annually to direct Maryland's efforts.

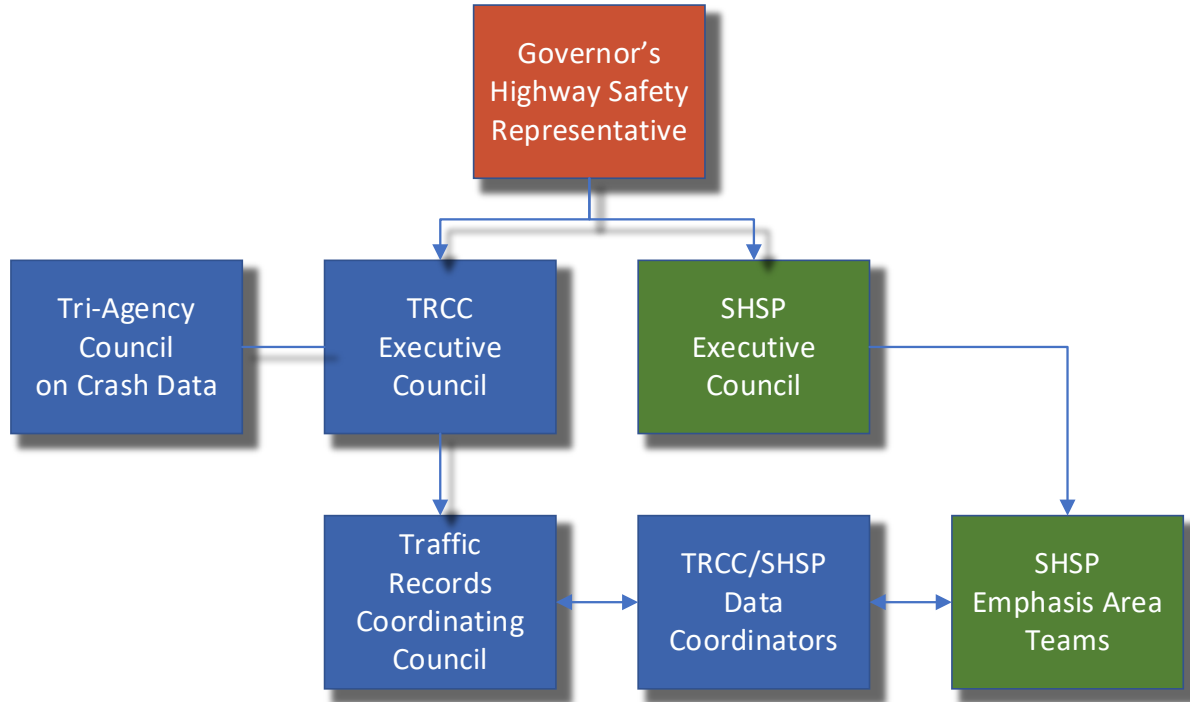
Currently, the Administrator of the Maryland Department of Transportation (MDOT) Motor Vehicle Administration (MVA) is designated as Maryland's Governor's Highway Safety Representative and, in that role, also serves as the chairperson of the TRCC. The MDOT MVA Highway Safety Office (MHSO) is responsible for the day-to-day leadership and coordination of the TRCC as designated through the TRCC Charter. MHSO is dedicated to saving lives and preventing injuries by reducing motor vehicle crashes through the implementation of the Strategic Highway Safety Plan (SHSP). Maryland's TRCC fills a critical role in the SHSP by providing the data necessary to create a comprehensive data-driven plan. Maryland is firmly committed to upholding the federal mandate outlined in the Comprehensive Statewide Safety Data Planning Process indicating that "all decisions will be based upon data."

Technical Council members are composed of subject matter experts from the data custodial agencies who are familiar with and have access to their agency's traffic records system database. Technical Council members are appointed by their respective Executive Council member and serve at the discretion of their agency. This group meets bi-monthly throughout the year. This Council also includes other traffic safety stakeholders, such as research organizations, academic institutions, and federal and local partners and data users.

TRCC special committees are identified and formed as necessary to carry out the work of the TRCC. Such committees have included a GIS Subcommittee, a crash data task force, and the Maryland Traffic Records Forum committee.

Additionally, Maryland's Technical Council includes SHSP Data Coordinators who serve as members of each of the SHSP Emphasis Area Teams to ensure that all data needs are appropriately met. They are invited to all Technical Council meetings and encouraged to provide SHSP updates and share information with the Emphasis Area Teams, serving as liaisons and a bridge across the two major traffic safety plans in Maryland, the SHSP and TRSP.




Figure 1: Maryland’s TRCC Structure



Members of Maryland’s TRCC represent the six data systems and subsystems critical to the collection, management, and analysis of traffic safety data. Outlined in Table 1 are the executive partners that oversee and represent Maryland’s traffic records system components.

Table 1: Maryland’s Traffic Records System and Executive Council Members

Data System	Icon	Agency(ies)
Crash		Maryland State Police MDOT State Highway Administration (SHA)
Citation/Adjudication		Maryland State Police (MSP) Maryland District Court
Driver		MDOT Motor Vehicle Administration (MVA)
Vehicle		MDOT Motor Vehicle Administration (MVA)
Roadway		MDOT State Highway Administration (SHA)
Injury Surveillance System <ul style="list-style-type: none"> pre-hospital emergency medical services (EMS) trauma registry emergency department 		Maryland Institute for Emergency Medical Services Systems (MIEMSS) Maryland Health Services Cost Review Commission (HSCRC) Maryland Department of Health (MDH)

<ul style="list-style-type: none"> • hospital discharge • mortality data 		
Technical Systems (Overall Support)		Maryland Department of Information Technology (DoIT)
Policy and Management (e.g., Data Governance)		Maryland Department of Transportation (MDOT) – The Secretary’s Office (TSO)
TRCC Management		MDOT MVA Highway Safety Office (MHSO)

Background

State highway safety programs rely on accurate, accessible, complete, integrated, uniform, and timely traffic records data to guide and support their efforts to reduce highway crashes, injuries, and fatalities. In the Safe, Accountable, Flexible and Efficient Transportation Equity Act (SAFETEA) of 2005, Congress recognized this need and provided grant funding to help states establish and maintain comprehensive safety data improvement programs.

This funding is continued under the Fixing America's Surface Transportation Act of 2015 (FAST Act) in the State Traffic Safety Information System Improvements Grant program (23 CFR § 1300.22). To qualify for funding for traffic records system improvements under the FAST Act, each State's designated highway safety office must submit a Traffic Records Strategic Plan (TRSP) to the United States Department of Transportation, National Highway Traffic Safety Administration (NHTSA).

The MDOT MVA Highway Safety Office manages the state's traffic records program and is coordinator for the statewide Traffic Records Coordinating Committee (TRCC), which oversees the development and implementation of the TRSP.

The 2021–2025 TRSP addresses each of the traffic records system components identified in NHTSA's *Traffic Records Program Assessment Advisory*, and identifies critical actions, performance measures, and resources needed (legislative, organizational, or budgetary) to efficiently and effectively reach the plan's goals. Recommendations for improvements identified in Maryland's 2019 NHTSA Traffic Records Program Assessment are incorporated so that Maryland's traffic records system will meet or exceed national ideals.

This plan builds on the *2011–2015 Traffic Records Strategic Plan* and the *2016–2020 Traffic Records Strategic Plan*.

2011–2015 TRSP

To develop 2011–2015 plan, the State conducted reviews of existing systems and programs. The results of these reviews helped to identify strengths of Maryland's traffic records system as well as to develop priorities for improvements.

In 2010, Maryland completed a Traffic Records Program Assessment in partnership with NHTSA. The Traffic Records Program Assessment is a technical assistance tool offered by NHTSA to state highway safety offices that uses nationally recognized experts to compare the state's traffic records program with a set of performance standards established by NHTSA and the Governors Highway Safety Association (GHSA).

Also in 2010, Maryland completed a Federal Highway Administration (FHWA) Crash Data Improvement Program (CDIP), an intensive evaluation of the crash data system that evaluates methods and technologies for collection, management, sharing, and analysis of crash data. The recommendations from both the Traffic Records Program Assessment and CDIP Reports were used to develop the objectives for the 2011–2015 TRSP.

2016–2020 TRSP

To assess progress toward the State's goals and to prepare for the 2016–2020 TRSP, a follow-up Traffic Records Program Assessment was completed in December 2014. Under federal regulations for traffic records funding (§405(c)), states must include all recommendations from the most recent Traffic Records Program Assessment in the TRSP. The Assessment-generated recommendations are broad and allow states to further refine goals. All recommendations from the 2014 Assessment are included and highlighted in each section below and used as examples in the Appendix.

The 2016–2020 TRSP was developed to align with the new Maryland SHSP (2016–2020). The alignment of the two major traffic safety plans further strengthened the collaboration and coordination between Maryland's traffic records data and traffic safety program communities. The process of developing strategies in both the TRSP and the SHSP were similar, and each SHSP Emphasis Area Team developed strategies with a vision and understanding of the need for data to carry out action steps and evaluate strategies. In parallel, the TRSP strategies were written in consideration of the end users, such as the Emphasis Area Team members, who need traffic safety data to implement and evaluate the success of the implemented strategies.

2021–2025 TRSP

With the adoption of the new plan, the 2016–2020 Plan is concluded. To continue to assess progress toward the State's goals and determine the priorities for the 2021–2025 TRSP, a Traffic Records Program Assessment was completed in September 2019.

Congress has recognized the benefit of independent peer reviews for State traffic records data systems. These assessments help States identify areas of high performance and areas in need of improvement in addition to fostering greater collaboration among data systems. To encourage States to undertake such reviews regularly, the Fixing America's Surface Transportation Act (FAST ACT) legislation requires States to conduct or update an assessment of its highway safety data and traffic records system every five years to qualify for §405(c) grant funding. The State's Governor's Representative for Highway Safety must certify that an appropriate assessment has been completed within five years of the application deadline.

2019 Traffic Records Assessment Results Summary

The Traffic Records Program Assessment is built upon the assessment completed five years ago. Since the 2014 assessment, Maryland has worked diligently in all areas of the traffic records system and was commended by NHTSA for the strides made toward improving traffic data systems and the plans for continued future improvements. Maryland was specifically commended regarding our efforts in data integration. Maryland's Traffic Records Program *meets the Advisory ideal* in this regard and should serve as a model for other States seeking to meet the Advisory ideal in this module.

Out of 328 assessment questions, Maryland met the Advisory ideal for 190 questions (58%), partially met the Advisory ideal for 67 questions (20%) and did not meet the Advisory ideal for 71 questions (22%).

Within each assessment module, Maryland met the ideal outlined in the Traffic Records Program Assessment Advisory 88% of the time for Traffic Records Coordinating Committee Management, 27% of the time for Strategic Planning, 60% of the time for Crash, 56% of the time for Vehicle, 71% of the time for Driver, 50% of the time for Roadway, 34% of the time for Citation and Adjudication, 61% of the time for EMS/Injury Surveillance, and 100% of the time for Data Use and Integration.

TRCC Strategic Planning Process

A Traffic Records Strategic Plan Steering Committee was formed in November 2019 to guide the development of the 2021–2025 TRSP. Members were strategically identified to ensure all components of the Maryland Traffic Safety Information System Improvement Program and data owners were represented in the planning process.

Maryland’s plan:

- (i) specifies how existing challenges in the State’s highway safety data and traffic records system were identified;
- (ii) prioritizes, based on the identified highway safety data and traffic records system deficiencies, the highway safety data and traffic records system needs and goals of the State;
- (iii) identifies performance-based measures to evaluate progress toward those goals;
- (iv) specifies how the §405(c) grant funds and any other funds of the State will be used to address needs and goals identified in the multiyear plan; and
- (v) includes a current report on the progress in implementing the multiyear plan that documents progress toward the specified goals.

The Traffic Records Strategic Plan Steering Committee used several different processes to develop the 2016–2020 TRSP to ensure the requirements defined by Congress and established by NHTSA were met. During the strategic development sessions, ground rules were established and an overarching review plan established. A formal consensus-building technique (Nominal Group Technique) was used by the steering committee to develop specific procedures for the review of each section of the system components. The technique included:

1. Generating ideas – Silent individual thought and notes.
2. Recording ideas – Round-robin sharing/brainstorming of ideas for recording without discussion or debate.
3. Discussing ideas – Open discussion to express understanding, logic, importance.
4. Voting on ideas – Individual voting of top five: most important ranking five, least important rank one.
5. Finalizing the list – Decide if additional rounds of voting were needed to expand or finalize the recommended list.

A set of constructs for each section of the plan were shared for discussion and consideration, including: idealistic objectives, recommendations and considerations from Maryland’s 2014 Traffic Records Program Assessment, and a set of objectives that had been included and were part of the most recent strategic plan.

The Steering Committee then shared a set of proposed strategies with the full Traffic Records Coordinating Committee membership. These members then reached consensus using the Delphi Technique where each member prioritized Maryland’s strategies and submitted votes for tally. A final prioritized list was generated and the resulting sections were presented to both the Technical and Executive Councils for formal acceptance. The resulting work and formal components of the Traffic Safety Information System are outlined in the included sections: TRCC Management, Data Use and Integration, Crash, Vehicle, Driver, Roadway, Citation and Adjudication, and Injury Surveillance Systems.

TRSP Organization

Each section of the TRSP includes a description of the area, target audience, and a list of strategies prioritized by the members of Maryland’s Traffic Records community.

The TRCC is responsible for implementing the plan and tracking progress toward these goals. The TRCC will:

- Prioritize traffic records improvement projects with TRCC members annually.
- Identify and leverage an annual minimum of one federal fund/assistance program.
- Identify and incorporate two strategies annually that address the timeliness, accuracy, completeness, uniformity, integration, or accessibility of the six core data systems.
- Prioritize the use of all funds to address efforts identified in the strategic plan to enhance state traffic records data improvement systems.
- Ensure federally allocated funds are spent in an efficient and effective manner.
- Develop a process to examine data and data systems to identify and document challenges.
- Identify, prioritize, and implement at least one annual training effort to improve the State traffic records data system and provide technical assistance as needed to partners.
- Identify and prioritize performance-based measures and corresponding metrics for the six core data systems annually.
- Identify and integrate state and local needs and assets through an annual survey.
- Identify and prioritize technological advancements to improve the State traffic records data systems.

Traffic Records Program Assessment—NHTSA Recommendations

To continue to assess progress toward the State’s goals and determine the priorities for the 2021–2025 TRSP, a follow-up Traffic Records Program Assessment was completed in September 2019. Under federal regulations for traffic records funding (405(c)), states must include all recommendations from the most recent Traffic Records Program Assessment in the TRSP.

The Maryland 2021–2025 TRSP incorporates recommendations and considerations from the 2019 NHTSA Assessment, from FHWA’s Maryland State Roadway Safety Data Capability Assessment Action Plan (January 2019), and from the TRCC Technical and Executive Councils, and the 2021-2025 TRSP must be ratified for submission to NHTSA by July 1, 2020.

TRCC Recommendation

- None.

Strategic Planning Recommendation

- None.

Crash Recommendations

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

Vehicle Recommendations

- Improve the data quality control program 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 Traffic Records Program Assessment Advisory.

Driver Recommendations

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

Roadway Recommendations

- Improve the applicable guidelines for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.
- 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 Recommendations

- Improve the data quality control program for the Citation and Adjudication systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.
- Improve the interfaces with the Citation and Adjudication systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.

EMS/Injury Surveillance Recommendations

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

Federal Inclusion Criteria

Throughout the five-year plan, the TRCC Program Manager is expected to provide NHTSA with regular updates on the progress of the State’s plan. NHTSA Regional Program Managers are to be included during the planning and implementation processes to satisfy their interest in assuring that States are collecting the best data possible that in turn allows them to make appropriately informed decisions at the federal level.

Additionally, paramount to Maryland’s Traffic Records Strategic Plan during the five-year cycle is the consideration, support, and guidance from other federal partners (e.g., legislative, organizational, budgetary, or other) in improving the state safety data initiatives. The Appendix has additional detail on ways the State has and may continue to pursue the possibility of receiving federal safety program funds.

Monitoring and Updating the Strategic Plan

The Traffic Records Strategic Plan is developed with a five-year vision and goal-setting process. The plan will remain in place for five years before undergoing a complete re-evaluation and revision. However, progress for each strategy and Assessment recommendation will be monitored by the TRCC Technical Committee on a quarterly basis and evaluated on an annual basis to identify issues or note success. Once a strategy is complete, it will remain in the plan but effort and resources will be focused to another project in the plan as determined by the TRCC.

Traffic Records System Components and Strategies

The Advisory identifies three major sections of a state traffic records system:

- 1) Traffic Records System Management
 - a) Traffic Records Coordinating Committee (TRCC)
 - b) Strategic Planning
- 2) Data Use and Integration
- 3) Traffic Records System Components
 - a) Crash Data
 - b) Vehicle Data
 - c) Driver Data
 - d) Roadway Data
 - e) Citation and Adjudication
 - f) Injury Surveillance
 - i) Pre-hospital (EMS)
 - ii) Trauma Registry
 - iii) Emergency Department
 - iv) Hospital Inpatient
 - v) Vital Records

Traffic Records System Management (TRCC and Strategic Planning)

Description

The Traffic Records Coordinating Committee coordinates all traffic records system components (crash, roadway, citation/adjudication, driver, vehicle, injury surveillance) using data quality performance measures (timeliness, completeness, accuracy, accessibility, integration, uniformity) to advance the Maryland traffic safety community in achieving the vision of no traffic-related deaths.

Target Customers

TRCC Council Chairs and Facilitator

Prioritized Strategies

1. Conduct and publish a complete traffic records system inventory with data definitions, flow diagrams for each component system, a brief description of each data system and set, to include who owns the data and contact information, any limitation on the use of the data, and for what the data system is best used.
2. Prioritize strategic plan responsibilities using annual timelines.
3. Catalog and publish data release policies and/or data sharing agreements from all partners with traffic records data, specifically identifying rules that allow intra- and inter-agency access, and public access.
4. Review and prioritize federal data element requirements—Model Minimum Uniform Crash Criteria Guideline (MMUCC), National Emergency Medical Services (EMS) Information System (NEMSIS), and Model Inventory of Roadway Elements (MIRE)—to enhance State traffic records data improvement systems.
5. Institutionalize the evaluation of TRCC responsibilities:
 - a. Monitor annual progress of the TRCC strategic plan.

- b. Track agency policy decisions that impact the State’s traffic records system.
 - c. Document progress through Council Meeting agendas/minutes.
6. Improve performance measure monitoring and oversight at the TRCC. Assign responsibility to performance measure owners for reporting to the membership at each meeting.
7. Establish regular quality control reporting and enhance the review of technical and training needs of traffic records system end users, expanding to a wider range of stakeholders and end-user needs.
8. Ensure the annual addenda to the five-year plan are robust and detailed enough to meet the federal grant reporting requirements and provide the State with the necessary oversight and monitoring of its traffic records system progress.
9. Improve performance measures contained within the Strategic Plan by adding meaningful goals and baselines in addition to establishing quarterly monitoring at the TRCC.

Data Use and Integration

Description

Data integration refers to the establishment of connections between the six major traffic records system components (crash, vehicle, driver, roadway, citation and adjudication, and injury surveillance).

Integrated datasets enable users to:

- conduct analyses and generate insights impossible to achieve if based solely on the contents of any singular data system;
- add detail to the understanding of each crash event, the roadway environment, and the people and vehicles involved; and
- efficiently expand the information available to decision-makers while avoiding the expense, delay, and redundancy associated with collecting the same information separately.

Benefits of Integrated Data

1. Lower costs to achieve a desired level of data content and availability.
2. Support for multiple perspectives in data analysis and decision-making.
3. Expanded opportunities for data quality validation and error correction.
4. Additional options for exposure data to form rates and ratio-based comparisons.
5. Enhanced accuracy and completeness of data describing crash events, the roadway environment, and the involved people and vehicles.
6. Increased relevance of information available for legislative and policy analysis.
7. Increased support for advanced methods of problem identification, countermeasure selection, and evaluation of program effectiveness.

Target Customers

Data analysts (end users), policymakers, and general public

Prioritized Strategies

1. Implement data governance guidelines for data release and availability.
2. Provide ongoing access to traffic records data and analytic resources for problem identification, priority setting, and program evaluation with analytical partner support.
3. Integrate data from traffic records system components to satisfy specific analytical inquiries.
4. Provide timely access to data analyses and interpretation upon request.
5. Make outputs from state data linkage systems available to state and local decision-makers to influence data-driven policy and reform.
6. Make outputs from state data linkage systems available to the general public.

7. Make integrated data outputs from data linkage systems available for research abiding by data security agreements.
8. Provide training sessions, presentations, webinars, and technical support to partners on all products and services provided by analysis resources (e.g., grant-funded university- or college-based analysts) in addition to GIS techniques and processes for traffic safety related datasets.

Crash Data

Description

The crash data system is the keystone of a state's traffic records system. The crash data not only hold the basic information critical to developing and deploying effective traffic safety countermeasures, they serve as the hub through which other systems are connected.

The crash file documents the characteristics of a motor vehicle crash and provides the following details about each incident:

- **Who:** Information about the drivers, occupants, and non-motorists involved in a crash (e.g., license status, age, sex).
- **What:** Information about the type of vehicle involved in a crash (e.g., make, model, body type, vehicle registration).
- **When:** Information detailing the time a crash occurred (e.g., time of day, day of week).
- **Where:** Information about the crash location (e.g., location name, lat/long coordinates, type, attributes).
- **How:** Information describing the sequence of events and circumstances related to a crash from the first harmful event through the end of a crash and its consequences (e.g., damage, injury).
- **Why:** Information about the interaction of various systems that may have contributed to the crash occurrence (e.g., weather, light conditions, driver actions, non-motorist actions) and/or the crash severity.

Through data linkages, the crash data assist in the identification of types of roadways, vehicles, and individuals involved in a crash. Crash data are also used to guide engineering and constructions projects, prioritize law enforcement activity, select/evaluate safety countermeasures, and to analyze emergency response and how to maximize the level of care, survivability, and analysis of related injuries.

Target Customers

Data users, owners, executives in traffic records-related agencies

Prioritized Strategies

1. Provide a narrative description of the process by which the Model Minimum Uniform Crash Criteria Guideline (MMUCC) was used to identify what crash data elements and attributes are included in the crash database and police crash report.
2. Develop and release documentation on changes made to the Automated Crash Reporting System (ACRS) and related databases based on the latest MMUCC recommendations, and MSP and TRCC input.
3. Convert reporting systems and reports to account for changes in fields, codes, and definitions in ACRS.
4. Develop and maintain a data dictionary that includes American National Standards Institute (ANSI) D-16 and ANSI D-20 definitions, which include rules of use, rules exceptions, and identify those data elements that are populated through linkages to other traffic records system components.

5. Develop and maintain a comprehensive data quality management protocol to monitor collection, submission, processing, posting, and maintenance of crash data.
6. Define and provide a list of data elements for property-damage-only (PDO) crash submission criteria for the statewide crash system and implement a short-form crash report for minor PDO crashes
7. Define and provide a list of data elements that are populated in the crash system through linkages to other traffic records system components (e.g., the driver file, the vehicle file, the roadway inventory, or Statewide mapping system). (MMUCC mapping).
8. Develop crash data system performance measures and monitor at least annually.
9. Provide feedback to law enforcement agencies regarding incomplete and inaccurate data submitted through ACRS.
10. Develop a comprehensive crash data reporting training program with an emphasis on crash data completeness and accuracy.
11. Improve the interface between the crash and roadway data systems, ensuring MSP and law enforcement agencies have the most up-to-date roadway files from MDOT SHA.
12. Establish policy and procedures for the timely submission of crash reports from local law enforcement agencies to MSP through the ACRS system.
13. Incorporate federal agency crash reports into the state system (e.g., National Park Police).
14. Link crash data with EMS records to help integrate crash with Trauma Registry, Hospital, and Vital Records.
15. Develop improved data visualization tools used to access the crash data.

Driver and Vehicle Data

Description

Driver: The driver data system ensures that each person licensed to drive has one identity, one license to drive, and one record. The driver file maintains information on all out-of-state or unlicensed drivers convicted of traffic violations within state boundaries.

Vehicle: The vehicle data system is an inventory of titling and registration data for each vehicle under the State's jurisdiction. The inventory ensures that a descriptive record is maintained and made accessible for each vehicle and vehicle owner operating on public roadways.

Target Customers

Law enforcement, driver and vehicle data managers/collectors, driver safety program managers and researchers, Commercial Driver License (CDL) employers, federal agencies, judicial system

Prioritized Strategies

1. Implement MDOT MVA Customer Connect system modernization to unify core MDOT MVA business systems to enable premier customer service, enhanced safety and security and improve driver and vehicle data quality.
 - Implement real-time National Motor Vehicle Title Information System (NMVTIS) checks for all vehicle titling transactions.
 - Capture novice drivers' training histories, drivers' traffic violations, driver improvement training histories, and original dates of issuance for all permits, licenses, and endorsements in the driver system.
2. Continue participation in the Performance and Registration Information Systems Management (PRISM) program.

3. Continue participation in the State-to-State verification service in all driver license transactions and develop performance measures to monitor system performance and compliance with program standards.
4. Evaluate the feasibility of including Blood Alcohol Concentration (BAC) information on the driving record either by interface with external data systems or by manual process, including resources required to implement this action in a reasonable timeframe.
5. Develop quality management systems that list performance measures for timeliness, accuracy, completeness, uniformity, accessibility, and integration.
6. Maintain an updated data dictionary for the driver and vehicle systems and provide updates to Maryland's traffic records inventory.
7. Develop performance measures to ensure that critical and essential administrative actions are being added to driving records accurately and within expected timeframes.
8. Maintain updated data processing flow diagrams for critical driver and vehicle transactions that detail data inputs, validation steps, interfaces with external data systems, and time necessary to complete each element of the transaction.
9. Enhance interfaces between the driver and vehicle systems with other components of the traffic records system.
10. Develop performance measures for vehicle systems and report regularly to the TRCC.
11. Develop and adopt a comprehensive data management program for the driver system that includes the development of performance standards for data accuracy, completeness, uniformity, accessibility, and integration.
12. Increase capability to monitor impaired driving offenders through driver system interfaces and integration with other data systems to ensure that offenders are properly identified and that subsequent license sanctions, conviction information, and follow-up activities are completed and recorded on the driver history.
13. Develop and provide driver and vehicle system data quality management reports to the TRCC for regular review and ensure driver and vehicle system managers participate in TRCC meetings.

Roadway Data

Description

The State's roadway data system comprises data collected by the State, such as State-maintained roadways and some local roadways, as well as data from local sources, such as county and municipal public works agencies and Metropolitan Planning Organizations (MPOs).

Target Customers

Traffic engineers, MDOT SHA – OHD (Office of Highway Design) (Highway Safety Manual - HSM) and DSED (Data Services Engineering Division), data users (reporting systems needing GPS info – MSP crash)

Prioritized Strategies

1. Maintain process flow diagrams and written narrative details that outline data submission, returning and resubmission requirements and local agency procedures, in the traffic records inventory.
2. Improve the data quality control program for the roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory and the Roadway Safety Data Capability Assessment (RSDC).

- Assist the roadway system custodian with developing quality management systems that list performance measures for timeliness, accuracy, completeness, uniformity, accessibility, and integration.
 - Reduce the frequency of missing or blank data fields on State-maintained roadways in the inventory to less than 5%.
 - Pursue high level of detail on all segments as well as either intersections or curves on State-maintained roadways.
3. Maintain a data dictionary for the roadway system, incorporating the Model Inventory of Roadway Elements (MIRE) elements and include this detail as part of the traffic records inventory.
 4. Improve the State roadway system to meet federal guidelines itemized in All Roads Network of Linear-Referenced Data (ARNOLD).
 - Capture all public roadways using a compatible uniform location referencing system in the roadway system by collaborating with county partners) to eliminate redundancy.
 - Maintain an enterprise roadway information system.
 - Maintain interfaces between roadway information systems.
 - Expand the Model Inventory of Roadway Elements (MIRE) data elements collected to improve analyses to develop and track potential countermeasures and identification of safety problems.
 5. Develop and maintain interfaces between the roadway information systems and the other components of the traffic records system.
 6. Incorporate specific, quantifiable, and measurable improvements for the collection of MIRE fundamental data elements (FDE) to ensure access to a complete collection of the MIRE FDEs of all public roads by September 30, 2026.
 - Evaluate the status of MIRE FDE collection efforts, including fundamental data elements currently maintained or not maintained in the roadway inventory as well as the public roads for which the FDEs are collected.
 - Document the appropriate data collection methodology.
 - Coordinate with other Maryland agencies at the state and local level.
 - Develop prioritization criteria for collecting MIRE FDEs on all public roads.

Additional Strategies Based on Recommendations from FHWA’s RSDC Assessment:

1. Continue with the One Maryland One Centerline (OMOC) project that facilitates the complete inventory for all roadway elements.
2. Continue with the ESRI Roads and Highways implementation.
3. Continue data collection efforts for the safety data items—Bicycle/Pedestrian, Lighting, Work Zone, Structural Maintenance Zone Classification, and Guard Rails.
4. Develop a standardized set of performance measures that are reported more frequently for data managers, collectors, and data users.
5. Reduce the amount of time required for submission of as-built plans and/or for updating the database to achieve a goal of 1-3 months from completion of the roadway change. Roadway segment, traffic volume, intersection, interchange, ramp data are all on annual cycles with a typical time lapse of one year.
6. Continue the development of the change management model to help with tracking changes to the State roadway file.
7. Continue the OMOC project to move closer to 100% accuracy in the inventory. The State currently maintains a high level of accuracy (upwards 90%).

8. Provide feedback to law enforcement agencies on crash reporting to allow the State to identify fields that require better validation edits which will help collect better data on input.
9. Adopt more reliable methods for network screening. Traditional methods are prone to error and require similar levels of data as the more reliable methods. The level of analytic capabilities required to adopt more reliable methods is higher than for traditional methods, but the payoff in improved validity leads to the identification of sites with more potential for safety improvement.
10. Attempt to obtain crash data from federal parks and military installations.
11. Continue to develop asset inventories of interest.
12. Ensure the data are accessible to all potential users (not siloed), from an asset management perspective.
13. Develop and implement Agile Assets or another similar inventory tool would be useful to support this need for all public roads.
14. Develop a complete inventory and safety-project tracking mechanism for all public roads.
15. Ensure that the needs of new/infrequent users are addressed by agency policies and procedures. The State iMap address most needs for data accessibility. However, there is an opportunity to allow for electronic exchanges to provide data to users on a regular interval.
16. Continue the development of data documentation with the OMOC project. The State does have data dictionaries available. This could be expanded to guidance on data quality (where applicable).
17. Incorporate user satisfaction surveys as a potential measure of accessibility.
18. Draft policies that address the challenges in the data management policy.
19. Empanel a data governance group (e.g., asset management committee) charged with developing data governance processes.
20. Develop a Data Business Plan for managing core data programs in each agency/division.
21. Publish a Data Governance manual/handbook.
22. Establish formal policies for approval of all new data management initiatives.
23. Review policies, standards, goals, and targets periodically to ensure that user' needs are addressed sufficiently and that the state's standards evolve in response to changing needs.
24. Identify new opportunities to integrate datasets, e.g., obtain the bicycle and scooter crash data from local agencies and continue to encourage use of integrated data in safety analysis.
25. Continue with the development of the OMOC project to move towards a fully integrated statewide enterprise system for safety analysis of all public roads.
26. Continue improvements to the automated assignment of crash data locations, e.g., consider making manual adjustments to crashes beyond fatal crash reports.
27. Continue to develop and complete initiatives to identify and address essential safety data gaps and periodically assess and refine data quality improvement processes.
28. Enhance coordination efforts for safety performance with MPOs and other stakeholders within the State by:
 - Apply the evidence-based approach across multiple planning cycles. Conduct periodic reviews and refine the process and targets as needed.
 - Develop practices to strengthen performance-based planning and programming decisions.
29. Continue to expand capabilities to predict the impact of planned and programmed Highway Safety Improvement (HSIP) projects on future safety performance.
30. Develop scenario analysis capability that supports testing of various project mixes and assumptions.

31. Expand the capability to access and review pertinent data on external factors likely to impact future safety performance, including but not limited to socioeconomic data (population, demographics, jobs, etc.), vehicle miles traveled (VMT), revenues.
32. Refine the capability to predict the impact of planned and all programmed TIP and/or TIP projects (other than those in the HSIP) on future safety performance.
33. Develop the advanced scenario analysis capability with the ability to estimate future safety performance for different sets of projects, program elements, and varying assumptions about external factors.

Citation and Adjudication Data

Description

For traffic records purposes, the goal of the citation and adjudication data systems is to collect all information relevant to traffic-related citations in a central, statewide repository (and linked to appropriate federal data systems) so the information can be analyzed by authorized users to improve and promote traffic safety.

Target Customers

Law enforcement, driver licensing system, Court system to include Drug and DUI Courts, MDOT SHA

Prioritized Strategies

1. Implement a citation tracking system (from issuance to disposition).
 - Include violations issued to commercial drivers/vehicles in the tracking system and make that information available to administrative stakeholders.
 - Support Federal Motor Carrier Safety Administration (FMCSA) requirements for recording, reporting and adjudicating of CDL violations and licensing status, to include medical certification and appropriate endorsements
 - Support the interfaces to connect needed data from the court system, driver licensing, crash, and large trucks/commercial vehicles with the other components of the traffic records system.
 - Include BAC results on the driver history.
2. Maintain and improve the data dictionaries for the Citation and Adjudication systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.
3. Maintain the abilities to track DUI citations, administrative driver penalties and sanctions, juvenile offenders, court payments and appearances, deferral and dismissal of citations, record purging, and data governance.
4. Develop quality management systems that list performance measures for timeliness, accuracy, completeness, uniformity, accessibility, and integration.
5. Establish an effective process to ensure paper citations are submitted to the District Court accurately and within expected timeframes by law enforcement.
6. Expand the use of the State's e-citation system to all eligible state law enforcement agencies and officers and to federal partners.
7. Maintain process flow diagrams and written narrative details that outline data submission, returning and resubmission requirements for the citation/adjudication system, including all levels of courts, and include in traffic records inventory.
8. Expand the deployment and functionality of electronic citation capabilities as the standard for the State.

9. Improve the accuracy and collection of vehicle make, model, and violation location on traffic citations.
10. Expand the functionality of Delta Plus through the development of additional modules for collection and analysis of the data by members of the traffic records community.
11. Increase automation of updates to driver records from court adjudication data.
12. Enhance interfaces between Court, Citation, Crash, Vehicle and Driver data systems.

Injury Surveillance Data

Description

The injury surveillance data system tracks the frequency, severity, and nature of injuries sustained in motor vehicle crashes; enables the integration of injury data with the crash data; and makes this information available for analysis that supports research, prevention, problem identification, policy-level decision-making, efficient resource allocation, and program evaluation.

This section incorporates:

- pre-hospital emergency medical services (EMS);
- trauma registry;
- emergency department;
- hospital discharge; and
- mortality data (e.g., death certificates, medical examiner reports).

Target Customers

Traffic records community, Injury Surveillance System managers, Emergency Medical Services community

Prioritized Strategies

1. Maintain process flow diagrams, written narrative details that outline data submission, returning and resubmission requirements for each of the core injury surveillance systems (EMS, Emergency Department, Hospital Discharge, Trauma Registry, Vital Records), and data dictionaries, and include these items in the traffic records inventory.
2. Ensure injury surveillance system data are available for analytical purposes.
3. Assist each of the injury surveillance system components with developing quality management systems that list performance measures for timeliness, accuracy, completeness, uniformity, accessibility, and integration.
4. Develop training, data collection manuals, and validation rules addressing high frequency errors in each injury surveillance data system component.
5. Document and ensure quality control processes are in place to assess completeness, accuracy, timeliness, integration, accessibility, and uniformity for each of the core injury surveillance systems (EMS, Emergency Department, Hospital Discharge, Trauma Registry, and Vital Records). Update records at least once every three years.
6. Track documented findings from quality control methods and lists regarding completeness, accuracy, timeliness, integration, accessibility, and uniformity.
7. Develop corresponding training, data collection manuals, and validation rules addressing high frequency errors for each performance area.
8. Assist partnering agencies with implementation of quality assurance and improvement procedures for collecting, editing, error checking, and submitting reports.

Benchmarking and Goal Setting

To follow Maryland’s Traffic Records logic model, outputs (short-term and intermediate outcomes) for the six traffic records attributes (accessibility, accuracy, completeness, integration, uniformity, timeliness) will be established and tracked annually. These measures serve as benchmarks against which Maryland can track performance and current status of each system component.

Maryland strives to identify performance measures and performance attributes for each traffic records system component. Included measures will be assessed on a yearly basis using accepted best practice standards. A yearly summary of progress will be included as an addendum to this plan.

Prioritization Process

Projects overseen by the TRCC, especially those receiving federal grant funding, will be prioritized using a points system and Four Box Analysis process.

Points for each project are to be assigned using the following questions:

1. How difficult is the project in terms of infrastructure, territorial, and policy issues?
2. How significant will the project impact the traffic record system if successful?
3. How expensive will the project be? (a weighted cost x reliability of estimate maybe appropriate)
4. Are improvements to one system necessary in order to better another?

Table 2: Four Box Analysis

High Payoff – Low Risk or Cost Good Opportunity High Priority	High Payoff – High Risk or Cost Moderate Opportunity Middle Priority
Low Payoff – Low Risk or Cost Moderate Opportunity Middle Priority	Low Payoff – High Risk or Cost Poor Opportunity Low Priority

Projects will be monitored throughout the year and tracked accordingly.

Implementation Process

Strategies in the TRSP will be monitored during TRCC Technical Council meetings, TRCC Executive Committee Meetings, and annually in a progress performance report. Appropriate action steps and related projects will be tracked annually and reported in the Highway Safety Plan. Performance measures will be developed and tracked annually by the TRCC and included in the Highway Safety Plan.