



# **Federal Fiscal Year 2024 Strategic Plan for Traffic Records Improvements**

*Prepared for:*

**National Highway Traffic Safety Administration,  
U.S. Department of Transportation**

*Submitted by:*

**Executive Office of Public Safety and Security's Office of Grants and Research in  
conjunction with the Massachusetts Traffic Records Coordinating Committees**

July 12, 2023

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# 1.0 BACKGROUND

## 1.1 Introduction

This FFY 2024 update to the Commonwealth of Massachusetts' Strategic Plan for Traffic Records Improvements was developed by the Massachusetts Executive Office of Public Safety and Security's (EOPSS) Office of Grants and Research (OGR), with support from the Commonwealth's Executive-level and Working-level Traffic Records Coordinating Committees (ETRCC and WTRCC).

The purpose of this document is to provide traffic records stakeholders in the Commonwealth with a strategic plan for improvements of core traffic records systems. The plan is based primarily on recommendations identified through the 2019 Commonwealth of Massachusetts Traffic Records Self-Assessment.

**The ETRCC voted to approve this FFY 2024 plan update on 6/6/23**, empowering OGR to make any remaining minor edits before the expected submission in mid-July 2023.

A TRCC is a statewide stakeholder forum to primarily facilitate the selection, implementation, and evaluation of projects to improve a state's core traffic records systems. The Massachusetts TRCCs have representatives from the highway safety, transportation, law enforcement, criminal justice, and public health professions. The WTRCC and the ETRCC, with this plan as a guide, strive to improve the accessibility, accuracy, completeness, integration, timeliness, and uniformity of the systems listed below. It is expected this will lead to better problem identification and countermeasure selection, program implementation, and program evaluation by the above-mentioned professions in Massachusetts.

The Secretary of Public Safety and Security oversees OGR, which is the lead entity in the Commonwealth for the application for and administration of federal highway safety funding from the National Highway Traffic Safety Administration (NHTSA), including those funds for traffic records improvement. In this role, the Secretary serves as the Governor's Representative for Highway Safety.

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The **ETRCC Chair** is Kerry Collins, the Undersecretary of Forensic Science and Technology for EOPSS.

The **WTRCC Chair** is John Fabiano, OGR's Highway Safety Division Manager, who also serves as vice chair of the ETRCC.

The **State Traffic Records Coordinator**, Brook Chipman, a Senior Program Manager within OGR, serves as vice chair of the WTRCC.

TRCC purposes and responsibilities, and charters are described in Section 1.2 and 1.3.

The Commonwealth's core traffic records systems are comprised of the following systems that are accessible to varying degrees to highway safety professionals, related disciplines, and the public:

*Crash Data System*

Mary-Jo Griffin  
Director of Crash Unit  
Massachusetts Registry of Motor Vehicles  
[maryjo.griffin@dot.state.ma.us](mailto:maryjo.griffin@dot.state.ma.us)

*Driver License/History Data System*

Ron Cogliano  
Assistant Registrar of Credentialing  
Massachusetts Registry of Motor Vehicles  
[ronald.n.cogliano@dot.state.ma.us](mailto:ronald.n.cogliano@dot.state.ma.us)

*Emergency Medical Services / Injury Surveillance Data System*

Susan Lewis  
Director of Office of Emergency Medical Services  
Massachusetts Department of Public Health  
[susan.k.lewis@mass.gov](mailto:susan.k.lewis@mass.gov)

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Kelley Cunningham  
Director of Division of Violence and Injury Prevention  
Massachusetts Department of Public Health  
[kelley.cunningham@mass.gov](mailto:kelley.cunningham@mass.gov)

*Roadway Data System*

Kevin Lopes  
Director of GIS Services  
Office of Transportation Planning  
Massachusetts Department of Transportation  
[kevin.lopes@dot.state.ma.us](mailto:kevin.lopes@dot.state.ma.us)

*Citation/Adjudication Data System*

Sonja Singleton  
Director of Merit Rating Board  
Merit Rating Board  
[sonja.singleton@dot.state.ma.us](mailto:sonja.singleton@dot.state.ma.us)

*Vehicle Registration Data System*

Felicia Okonkwo  
Assistant Registrar of Vehicle Services - Titles Administration  
Massachusetts Registry of Motor Vehicles  
[felicia.okonkwo@dot.state.ma.us](mailto:felicia.okonkwo@dot.state.ma.us)

## **1.2 Role of the Executive-Level TRCC**

The ETRCC provides a forum for senior decision-makers to ensure optimum communication and coordination occurs between collectors, custodians, and users of data involved with the Commonwealth's traffic records systems. The ETRCC receives technical assistance from the WTRCC.

The ETRCC's organization, mission, vision, purpose, governance, and membership are enumerated in the ETRCC Charter below. The full ETRCC membership list, provided to members prior to a spring ETRCC meeting, and any updates confirmed at that meeting, are incorporated by reference into this plan.

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**Commonwealth of Massachusetts**  
**Executive-Level Traffic Records Coordinating Committee**  
**FFY 2024 Charter**

**ORGANIZATION**

By recommendation of the National Highway Traffic Safety Administration (NHTSA) and the Commonwealth of Massachusetts' strategic planning activities, the Executive Office of Public Safety and Security (EOPSS) convened the first meeting of its Massachusetts Executive-Level Traffic Records Coordinating Committee (ETRCC) on January 22, 2010. A NHTSA Traffic Records Assessment for Massachusetts, which took place March 2009, recommended the Commonwealth "establish the Executive-Level of the Traffic Records Coordinating Committee (ETRCC) to ensure full support and authorization of the TRCC and its members by the executives of all agencies in whose area of responsibility the components of the traffic records system fall." To that end, EOPSS invited owners of the core traffic records systems and a small representative sample of data consumers and collectors (see below) to join the ETRCC. Broader stakeholder participation remains with the Working-level TRCC (WTRCC). In Massachusetts, the ETRCC and WTRCC share the same mission and vision.

**MISSION**

Through the coordinated efforts of its member organizations, provide a forum for the creation, implementation, management, and dissemination of accessible, accurate, complete, integrated, timely, and useful traffic records data to aid decision-makers working to reduce transportation-related fatalities, injuries, and economic losses in Massachusetts.

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## VISION

Save lives and reduce injuries on Massachusetts roadways by using efficient processes to collect, store, and analyze complete and accurate traffic safety information and make it freely available to all safety stakeholders.

## PURPOSE

Ensure that accurate, complete, and timely traffic safety data is collected, integrated, analyzed, and made available for decision making by ETRCC member organizations and other public and private professionals. In alignment with requirements of NHTSA grant funding (23 CFR 1300.22), key functions of the ETRCC will include, but not be limited to:

1. Maintain authority to review any of the Commonwealth's highway safety data and traffic records systems and any changes to such systems before the changes are implemented;
2. Provide a forum for the discussion of highway safety data and traffic records issues and report on any such issues to the agencies and the organizations in the Commonwealth that create, maintain, and use highway safety data and traffic records;
3. Consider and coordinate the views of organizations in the Commonwealth that are involved in the collection, administration, and use of highway safety data and traffic records systems, and represent those views to outside organizations;
4. Represent the interests of the ETRCC and the WTRCC to outside organizations;
5. Review and evaluate new technologies to keep the highway safety data and traffic records systems up to date;
6. Assist ETRCC and WTRCC members applying for public and private funds to support and improve traffic records;

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7. Assure the Commonwealth's Strategic Plan for Traffic Records Improvement incorporates IT strategies and business plans and documents all sources of funding for data improvement projects in the plan;
  8. Approve the Commonwealth's annual Section 405c application, including projects supported by this funding source, submitted by EOPSS's Office of Grants and Research (OGR) to NHTSA;
  9. Review and provide input on other federal traffic records funding received by EOPSS/OGR; and
  10. Approve annually the membership of the ETRCC and the WTRCC, the TRCC coordinator, updates based on Section 405 guidance to the Commonwealth's Strategic Plan for Traffic Records Improvement, and performance measures to be used to demonstrate quantitative progress in the accuracy, completeness, timeliness, uniformity, accessibility, or integration of at least one core highway safety database.

Notwithstanding the above, the ETRCC recognizes:

- The responsibility of its member agencies to work collaboratively to achieve the statewide vision for traffic safety information systems;
- The responsibility of its member agencies to manage their own safety information systems to accomplish their mission by improving internal business processes;
- The need to create a collective sense of responsibility among its member agencies for developing and sharing safety data in support of the Commonwealth's highway safety mission in a manner that minimizes cost, duplication of effort, and inefficiencies;
- The need to ensure regular communication with the Commonwealth's WTRCC regarding the issues they face;
- The importance of member agencies engaging in open communication to maximize the effectiveness, compatibility, and interoperability of any federally funded projects in conjunction with the Strategic Plan for Traffic Records Improvements and will facilitate compliance with all federal reporting requirements.



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## GOVERNANCE OF THE ETRCC

The Commonwealth's Traffic Records Coordinator will be appointed by the Highway Safety Division Director at OGR to support both the ETRCC and the WTRCC. The ETRCC will be chaired by the EOPSS Undersecretary for Forensic Science and Technology. The Highway Safety Division Director at OGR will serve as vice chair to serve in his/her absence.

Each ETRCC member organization shall designate its member of the ETRCC. ETRCC members will be renewed each year.

The ETRCC will meet a minimum of once per year and more as needed. Each ETRCC member organization will have one vote. The ETRCC may extend membership to additional organizations and representatives by majority vote. Votes requiring a 2/3 majority of the ETRCC include approvals of a Strategic Plan for Traffic Records Improvement, a Section 405c application, and projects for Section 405c funding. A majority vote will be sufficient for normal ETRCC business matters.

## ETRCC MEMBER ORGANIZATIONS

- Massachusetts Association of Regional Planning Agencies
- Massachusetts Department of Public Health – Injury Surveillance Program
- Massachusetts Department of Public Health – Bureau of Health Care Safety and Quality
- MassDOT/Office of Planning
- MassDOT/Registry of Motor Vehicles
- MassDOT/Merit Rating Board
- MassDOT/Highway Division
- Massachusetts Chiefs of Police Association
- Executive Office of Public Safety and Security/Undersecretary for Forensic Science and Technology
- Executive Office of Public Safety and Security/Department of Criminal Justice Information Services

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- Executive Office of Public Safety and Security/Municipal Police Training Committee
  - Executive Office of Public Safety and Security/Massachusetts State Police
  - Executive Office of Public Safety and Security/Office of Grants & Research
  - Executive Office of Technology Services and Security
  - Massachusetts Trial Court

Current advisory members, with no voting powers:

- National Highway Traffic Safety Administration (NHTSA)
- Federal Highway Administration (FHWA)
- Federal Motor Carrier Safety Administration (FMCSA)

## **1.3 Role of the Working-Level TRCC**

The WTRCC helps to ensure on-going communication and coordination between collectors, custodians, and users of data that make-up the Commonwealth's traffic records systems. It provides technical assistance to the ETRCC.

The WTRCC organization, mission, vision, purpose, governance, and membership are enumerated in a WTRCC Charter that is similar to the ETRCC Charter above. The full WTRCC membership list, provided to TRCCs members prior to a spring meeting of the ETRCC, and any changes confirmed at that meeting, are incorporated by reference into this plan.

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## 2.0 Traffic Records Systems

The Massachusetts core traffic records systems are managed by the following agencies:

- Registry of Motor Vehicles Division (RMV) of the Massachusetts Department of Transportation (MassDOT) manages the crash, driver license and history, and vehicle registration and title systems;
- Merit Rating Board (MRB) of MassDOT/RMV maintains operator driving history records consisting of at-fault crash claim records, comprehensive claim records, out-of-state incidents, and civil and criminal traffic citation information;
- Massachusetts Trial Court (MTC) manages adjudication information;
- MassDOT's Office of Transportation Planning (OTP) manages the road inventory file; and
- Massachusetts Department of Public Health (MDPH) and the Center for Health Information and Analysis (formerly known as the Division of Healthcare Finance and Policy) manage injury surveillance, EMS, and other healthcare/trauma/health insurance claims/death/behavioral risk factor information-related systems.

The following section provides a brief overview on each system. **Key changes to and accomplishments for these systems made since spring 2022 or expected through September 2023 are bolded and underlined below.**

### 2.1 Crash Data System

#### System Key Points

The RMV operates the Commonwealth's Crash Data System (CDS). Reports of more than 140,000 motor vehicle crashes are typically received annually by the RMV.

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Total Number of Crashes in IMPACT Portal	
Year	Crashes
<u>2019</u>	<u>140,939</u>
<u>2020</u>	<u>100,516</u>
<u>2021</u>	<u>124,805</u>
<u>2022</u>	<u>131,891</u>

**As of 2023 approximately 92% percent of crash reports are received electronically from state and local law enforcement agencies.**

The remainder are received on paper using either the Motor Vehicle Crash Police Report last revised in November 2019, or both methods. Police reports may be used to document the date, time, location, environment, and characteristics of a crash. The crash reporting criterion for both police and operators are: Any crash involving damage to any one vehicle or property exceeding \$1,000, or any injury or fatality.

The MassDOT Highway Division, Traffic Engineering and Safety Section, developed an automated process for attaching location coordinates to crash master records that has been in use since 2006. This process is based on standards for location data on crash reports coupled with an extensive set of location matching algorithms that can take the street names, route numbers, exit numbers, mile markers and other location data as supplied in crash reports.

The geocoding tool within MassDOT's crash data portal, IMPACT, was implemented in July 2019.

**2020 crash file is now finalized. 96.4% of crashes are geocoded (81.87% automatically and 14.35% manually)**

**While the 2021 file is not finalized/closed, as of March 22, 2023, 95.68% of crashes are geocoded (79.71% automatically and 15.77% manually)**

**While the 2022 file is not yet finalized/closed, as of March 22, 2023 94.38% of crashes are geocoded (81.20% automatically and 13.18% manually).**

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While the new system in IMPACT has put a lot in place to improve geocoding, it also includes features that will not automatically geocode crashes that had been geocoded in the past. An example is when local law enforcement agencies use an exit number of an interstate as the location point, the crash would have been assigned to that location, but now it also checks the posted speed and if the police input the posted speed as less than 40 mph, the system will not allow the crash to be automatically geocoded. The crash then must be manually reviewed. So while this may lower the automated geocoding rate, the locations are improved.

Continuing improvements have been made to these algorithms to try and improve geocoding and offset the data quality issues surrounding electronic submission. Extensive updates have been made to the MassDOT Planning Roadway Inventory road names (a project completed in 2014) to also improve the matching/geocoding rate. Crashes that are unable to be automatically geocoded are reviewed and located manually, depending on staffing availability. There were improvements implemented with IMPACT to accept the newer roadway information, however the CDS has not been updated to reflect some of the improvements in place from Planning's roadway file.

### **System Performance Measurement(s)**

No information provided.

### **System Accessibility**

Public access to data in the CDS is through MassDOT's crash data portal, IMPACT, at [apps.impact.dot.state.ma.us/cdp/home](https://apps.impact.dot.state.ma.us/cdp/home). Select data in this system – specifically regarding fatal crashes – is provided to NHTSA's Fatality Analysis Reporting System (FARS) at [www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars](https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars).

### **Training & Technical Assistance Opportunities**

RMV has a Crash System Law Enforcement Liaison (LEL) that provides training and technical assistance to state and local law enforcement agencies. The LEL has

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been successful in updating the crash module used for all new police officer trainings. She continues to work with the Massachusetts Police Training Committee (MPTC), who oversees the police academy curriculum and is the standard for all Massachusetts and state police academies, including the MBTA. The curriculum now has an updated Crash Module that reflects critical points and procedures when reporting a crash. In addition, the LEL attends many of the academy classes during the crash module portion of the training in order to answer questions and clarify information.

Launched in September 2018, the E-Crash Report Manual web portal developed by UMassSafe serves primarily as the data dictionary of the CDS. It is available at [masscrashreportmanual.com](http://masscrashreportmanual.com). RMV works closely with UMassSafe to keep the manual up to date. Through mid-2023, UMassSafe is working on its latest 405-c funded project to enhance and expand the manual. Portal enhancements will include new crash report interactive overlays for two more records management systems used by law enforcement agencies (LEAs), an auto updated spreadsheet of ratings/rankings of the crash report completeness of LEAs, and additions to the Traffic Records News page.

Since early 2020, UMassSafe's Tools Improving Crash Report Reviews Project has provided resources to assist law enforcement in better completing the narrative portion of the crash report. These and other resources to assist with crash reporting can be accessed at [masscrashreportmanual.com](http://masscrashreportmanual.com).

In October 2021, the Massachusetts State Police completed with UMassSafe assistance a 405-c funded project to improve its training curriculum for crash reporting for new and current troopers.

## Recent Developments & Challenges

MassDOT IT/RMV went live with phase 1 of a new CDS in early 2023.

As of mid-2023, a new crash data system was launched. The state of the art, cloud-based system will provide several improvements including, immediate response to LEAs upon receipt of their reports, follow-up reminders when a report has been rejected or accepted with warning in order to ensure resubmission of the reports, comprehensive reporting capability to drill down into data, and a new propriety section for recording data elements of fatal

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accidents that will be used to integrate with NHTSA in the coming year. The project's Phase I launched successfully in March of 2023 and Phase II will be launched in early summer, 2023.

Through mid-2023, the Department of Criminal Justice Information Services will be using 405-c funding to further roll-out its Massachusetts Automated Citation and Crash System (MACCS) to additional local police departments and undertake system enhancements. As of April 2023, the Massachusetts State Police and 258 local police departments were participating in MACCS.

The Boston Police Department launched a 405-c funded crash reporting application for mobile and desktop use in late December 2021. The RMV is testing the electronic crash report submissions and providing feedback to BPD. It is expected that virtually all BPD crash reports will come electronically to RMV by the latter half of 2023.

Using 405c funding, the Boston Police Department will install 510 printers in department cruisers and motorcycle to enable their officers to start using the MACCS in summer 2023.

Through mid-2023, the Department of Public Health's Injury Surveillance Program will be using 405-c funding to further assess the completeness, accuracy, and uniformity of the injury status code and alcohol and drug-related variables in crash data using linked MA Crash-Related Injury Surveillance System (MA CRISS) data. The Injury Surveillance Program will present the results of their assessments and recommendations for potential data quality improvement actions and related projects to the Traffic Records Coordinating Committees.

## 2.2 Roadway Data System

### System Key Points

The MassDOT Office of Transportation Planning (OTP) maintains the Road Inventory File (RIF) for Massachusetts. This file, which contains more than 36,000 centerline miles and more than 71,000 lane miles of roads, serves as the foundation for the State's Geographic Information System (GIS).

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This file is used for a variety of purposes, such as:

- Identifying functional classification, jurisdiction, and National Highway System (NHS) status of all roadways in the State;
- Helping to fulfill the Federal Highway Administration's Highway Performance Monitoring System (HPMS) reporting requirements;
- Determining centerline miles by city/town for allocating State Aid Funds to communities; and
- Supporting development of safety improvement projects.

The Traffic Engineering Section of the Highway Division of MassDOT works in concert with RMV to locate and geocode records in the CDS. The CDS uses roadway information as the basis for locating crashes. Approximately 90% of crash records are matched to a location automatically. However, the accuracy of crash location data depends on both the characteristics of the roadways (and the degree of difficulty in describing crash location due to the complexity of roadway geometry), and degree of precision by police in correctly providing and coding crash location information in their reports.

Traffic counts and pavement condition ratings are obtained on a three-year cycle, and this data is used to update the RIF on a continuous basis. While Massachusetts historically has used ortho-photography to verify the accuracy and completeness of road features and characteristics, the Commonwealth moved to use of a video log for ongoing verification activities of state-owned roadways.

**Updates to the database have included improved linework to the Linear Referencing System (LRS), number of travel lane data revisions, speed regulation data and bicycle facility data additions. Planned for this year are updates to the urban area boundaries based on the 2020 census data. Improvements to the local traffic data are being researched.**

#### **System Performance Measurement(s)**

The RIF is generated from an attribute event-based database utilizing Esri's Roads and Highways system. The attributes are registered to the Linear Referencing System (LRS). The database is updated through various stakeholders within MassDOT and other agencies through Event Editors or Web



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Services. MassDOT's Office of Transportation Planning GIS Services team regularly provides updates to the database.

**Over the past year, the database was migrated to ArcGIS Pro, Esri's current GIS application.**

OTP continues to improve the completeness of the Route Feature Class of the Massachusetts Roadway Inventory System (RIS). Route Feature Class is the network feature layer for the RIF that serves as the backbone for the data organization of all of the Road Inventory event layers. **Between 4/1/22 and 3/31/23 an improvement in completeness of the system was achieved in Route Feature Class entries with an increase of 724 routes, from 211,287 to 212,011.**

### **System Accessibility**

GIS data is provided to the public through GeoDOT, a web-based GIS Platform at [massdot.maps.arcgis.com](https://massdot.maps.arcgis.com). GeoDOT contains GIS layers to download, including the RIF file, as well as interactive maps and applications. Requests for services including GeoDOT accounts, software and training are available [here](#). Municipalities provide updates to the local road network using the Road Inventory Submission Application (RISA).

New applications RoadIE and BikeUR allow DOT employees, municipal employees, and the public to submit requests for updates to the RIF and Bike Facility Inventory, respectively. These applications enable the GIS editors to rapidly respond to data update requests to improve the completeness and accuracy of the data within the RIF.

### **Training & Technical Assistance Opportunities**

MassDOT's Office of Transportation Planning has deployed an improved RIF data dictionary that incorporates changes. Training is available for the GeoDOT GIS platform for MassDOT Employees to better leverage GIS systems.

### **Recent Developments & Challenges**

MassDOT's Office of Transportation Planning has a GIS team member serving as GIS QC Coordinator. This position is now documenting our data management

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processes as well as developing metadata standards. The GIS QC Coordinator meets regularly with Road Inventory editors to understand their workflows and install best practices throughout the process.

As of March 2022, 117 RoadIE requests have been completed, and 68 Bicycle Inventory Requests have been completed. These applications have allowed the GIS data team to keep a record of data requests and monitor response times. This will allow us to measure accuracy improvement and how rapidly the GIS data team can respond to requests for updates moving forward.

In the last year, major improvements to many intersections in the RIF were completed to improve crash geocoding and to update these intersections to be compliant with MIRE 2.0 data standardization. Over 1,000 intersections in the RIF were rebuilt.

## 2.3 Driver Data System

### System Key Points

Driver records are created by the RMV and kept in ATLAS, but the MRB maintains operator driving history records consisting of at-fault crash claim records, comprehensive claim records, out-of-state incidents, and civil and criminal traffic citation information. ATLAS includes records for approximately five million commercial and non-commercial drivers.

The RMV has implemented nine (9) service packs and has completed a version upgrade since Atlas “go live” in 2018. These Service/Sync Packs are vital in maintaining system health, providing access to new functionality, and implementing security updates to ensure the system is up to date with the core product.

RMV migrated Atlas to the FAST Hosting Service (FHS) in November 2020. FHS is the preferred managed infrastructure service provider for the FAST application and results in a turnkey solution that is highly performant, secure,

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and reliable.

The Massachusetts State Police (MSP) Office of Alcohol Testing manages testing for blood alcohol concentration (BAC). The results from breathalyzer tests conducted in the field are broadcast to the MSP every 90 minutes. The MSP relays the information to the RMV nightly, which enables the RMV to have current information on file and to take immediate actions on cases pending receipt of BAC test results.

In 2008, the RMV, the MRB, and the Massachusetts Trial Court (MTC), including the District Court Department and the Boston Municipal Court Department, worked together to develop an electronic interface between the MTC and the MRB. Virtually all adjudication decisions are transferred electronically each night by MTC to the MRB. This information is used to suspend or revoke licenses and to make adjustments in the insured's automobile insurance premium when applicable. This change closed a significant gap in communications and has substantially improved the process of using conviction data to suspend or revoke licenses and to adjust the insured's automobile insurance premium.

#### **System Performance Measurement(s)**

The RMV legacy database, ALARS, was replaced by a web-based database titled ATLAS, which was developed in cooperation with FAST Enterprises. There is a team of RMV managers and staff who meet regularly with FAST developers to monitor and improve this new system and its functionality as business operations prove the need.

#### **System Accessibility**

The 1994 Federal statute "Driver's Privacy Protection Act of 1994" dictates what motor vehicle departments must adhere to with regard to driver data and impacts the RMV's system accessibility. The RMV negotiates with agencies requesting access to data to create legally binding Memorandums of Understanding.

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### Training & Technical Assistance Opportunities

The RMV Training Department provides training to end users of the new system as requested and needed. FAST developers provide technical assistance as requested and needed.

### Recent Developments & Challenges

The RMV implemented the first phase of its upgraded, web-based license and registration system known as ATLAS in March 2018. The Issuance License/Driver portion was successfully implemented. Release two of ATLAS to enhance the Vehicle and Registration portion was done in November 2019. The previous database, Automated License and Registration System (ALARS), contains historical data of both vehicle and operator data and can be queried, if needed. Since the ATLAS rollout, a team of system creators and RMV managers and staff meet to provide critical feedback to developers of the system to ensure data quality and control issues are addressed. The Director of Driver Licensing is integral to, and involved in, these meetings.

## 2.4. Vehicle Data System

### System Key Points

The RMV manages vehicle title and registration information using the ATLAS system, which contains approximately seven million commercial and non-commercial registrations.

Below is registration and title issuance activity for 2021-2023.

2021	Registrations	687,685
	Titles	1,285,371
2022	Registrations	603,724
	Titles	1,157,452
2023	Registrations	125,931
	Titles	244,020

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A registrant is identified with a Massachusetts driver license number or an assigned non-driver identification number if the registrant is not a driver.

Registration and title applications must include proof of insurance. A Manufacturer's Certificate of Origin or a previous title also must be presented along with an odometer reading as part of the title application. After receiving the registration document, plates and expiration decals, a vehicle safety inspection is required within seven days. Thereafter, annual safety inspections are required. Odometer readings are recorded in connection with safety inspections and any required emissions inspections.

Application for title must be done within 10 days of acquiring a vehicle or trailer unless the type of vehicle is exempt from titling. Information on previous title data, including brand information, is acquired through the National Motor Vehicle Title Information System (NMVTIS) of the American Association of Motor Vehicle Administrators (AAMVA). Massachusetts is a full participant in NMVTIS enabling immediate electronic inquiries with other NMVTIS Jurisdictions. Massachusetts also uses the Electronic Lien and Title (ELT) system. ELT enables direct interactions with lien holder institutions.

Title and registration transactions are also completed by dealers, insurance companies/agents and fleet companies through the RMV's Electronic Vehicle Registration (EVR) Program using a Service Provider application that interfaces with ATLAS. Approximately 50% of the total new title and registration transactions are processed through the EVR Program.

### **System Performance Measurement(s)**

No information provided.

### **System Accessibility**

No information provided.

### **Training & Technical Assistance Opportunities**

No information provided.

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## **Recent Developments & Challenges**

The new Vehicle Services portion of the ATLAS system went live in November 2019. The new system introduced point of sale scanning, an automated plate inventory system, integrated case management functionality, and the expansion of service channels and business partnerships.

The rollout of Phase 3 of the Electronic Vehicle Registration (EVR) Program began in 2021. The EVR Lite Program allows the car dealers and insurance agencies to complete casual/ non-dealers sale transactions. There are 69 locations on EVR Lite as of spring 2022. Six of those are car dealers, the rest insurance agencies. Two Service Providers currently offer the Lite Program with a third Service Provider getting ready to release it in their software in the April/May 2022 timeframe.

## **2.5 Citation/Adjudication Data System**

### **System Key Points**

The MRB is the sole repository for all Motor Traffic Citations issued in the Commonwealth. The MRB receives copies of citations from Massachusetts police departments and courts and hearing requests and payments from violators and applies these records to an individual's driving history record.

Civil Motor Vehicle Infractions (CMVI) citations are sent directly to the MRB from the issuing police department. The MRB applies the citation to the violator's driving history record. The violator has 20 days from the date of violation to either pay the total amount due or to request a clerk-magistrate hearing. The payment or hearing request (accompanied by a \$25.00 Court Filing Fee payment) is submitted to the MRB by the violator. Failure to do either action results in late and release fees being added to the citation, as well as future suspension of their driver's license or registration. If a payment is made, it is adjudicated as an admission of responsibility. If no response is provided within 20 days, the violator is found responsible and can be charged late fees and may face additional penalties, including suspension of license.

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Requests for clerk-magistrate hearings along with a filing fee are processed and a file of hearing request records is sent via batch FTP transfer to the Massachusetts Trial Court (MTC). Upon disposition, MTC transmits a file of hearing results records via batch FTP transfer to MRB. These results are uploaded to the RMV and processed, updating the operator driving history records with the submitted results. Payments from violators are processed and the citation is adjudicated as responsible.

Multiple copies of a criminal citation are delivered to the court by the issuing police department. The court forwards a copy of the criminal citation to the MRB. The MRB applies the citation to the violator's driving history record. The court is responsible for conducting a hearing and rendering a disposition in a criminal matter. Upon issuance of a disposition, the court electronically submits the findings to the MRB. Upon receipt of the disposition, the MRB updates the citation record.

While the exchange of criminal citation adjudication results and clerk-magistrate hearing requests and results between MTC and MRB is now almost exclusively electronic, much of citation processing remains a paper-based process. This includes audit sheets, which are completed by officers to account for every citation, specifically citations that are destroyed or voided.

An eCitation process, known as the Motor Vehicle Citation and Crash System (MACCS), transmits demographic and offense-specific information captured on the Massachusetts Uniform Citation electronically and this information is then validated against the ATLAS database. The data validations built into the eCitation system, in conjunction with quality controls at the MRB, have shown promising results in improving data quality.

Operators who are issued MACCS citations receive an eCitation Receipt on an 8.5x11 inch sheet of paper. The eCitation should be available for inspection in ATLAS within 72 hours, with 80.1% currently available for inspection within 24 hours.

The MRB in collaboration with the MTC continued its efforts to streamline and improve the efficiency in the processing of criminal motor vehicle violation

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citations by working to add Juvenile Courts and Superior Courts to the electronic file transfer process to submit criminal traffic citation judgment records to the MRB. Testing was completed and all changes to MRB applications were migrated into the ATLAS production environment. All Juvenile Courts and 10 Superior Courts are now submitting electronic records to the MRB.

The RMV/MRB is able to promptly suspend/revoke the driver license of individuals found guilty of criminal charges by these courts. These efforts rectify any lapses in updating driving history records and ensure future records are current and sanctions promptly applied.

The registrant is identified with a Massachusetts driver license number or an assigned non-driver identification number if the registrant is not a driver.

#### **System Performance Measurement(s)**

The RMV legacy database, ALARS, was replaced by a web-based database titled ATLAS, which was developed in cooperation with FAST Enterprises. There is a team of RMV managers and staff who meet regularly with FAST developers to monitor and improve this new system and its functionality as business operations prove the need.

MRB and its partners have many ongoing efforts to increase the timeliness of processing citation submissions received from state and local police, in particular the MACCS project. **Between 5/1/22 and 4/30/23 an improvement in timeliness was achieved by reducing the average number of days to post to the system the paper and electronic citations from Massachusetts state and local police by five days, from 13 to 8 days.**

#### **System Accessibility**

Statutes require the MRB collect, gather, and compile citation data for drivers.



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## Training & Technical Assistance Opportunities

The RMV Training Department provides training to end users of the new system as requested and needed. FAST developers provide technical assistance as requested and needed.

## Recent Developments & Challenges

The Department of Criminal Justice Information Services continues to use 405-c funding to roll-out MACCS to additional local police departments and undertake system enhancements. As of April 2023 there are 258 local police department participating in MACCS. Approximately, 92% of the Massachusetts State Police participate in MACCS. Between the launch of MACCS in April 2017 and April 2023, the State Police issued through MACCS 1,225,761 citations and local police 669,235 citations. eCrash reporting through MACCS is limited at this point, as the State police and most local police use the eCrash reporting functions of their own records management systems to report to RMV's Crash Data System.

In spring 2022 the MRB started a multi-phase effort to enhance the ability of traffic records stakeholders and the public to view and analyze traffic citations data and trends. The greater accessibility to this data will assist planning efforts of these stakeholders to reduce traffic crashes and resulting fatalities, injuries, and economic loss in Massachusetts. The proposed public Internet portal would make available select citation data in both summary and detail format. This project is being conducted in two phases, with this task providing 405c funding for only the first phase.

In Phase 1 the MRB's project team used MassDOT IT contractors to identify data needs and system requirements from stakeholders to develop a detailed project scope, schedule, and budget for Phase 2. This first phase also saw the development of the necessary procurement documentation to hire a vendor to complete Phase 2. Additionally in Phase 1, improvements were made to the current data dictionary of the citation data system.

In Phase 2 of the project that started January 2023 the selected vendor is working with MassDOT IT and MRB staff to build and implement the portal. The portal will feature a data dictionary for the citation data system. It is anticipated the portal will be publicly available by September 2023.

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Opportunities exist for improving linkages among various system components – such as adjudications with both the vehicle and crash files, which could improve the efficiency of vehicle-based administrative suspensions and revocations, as well as to increase the ability of the data in the system to support research. These opportunities will continue to be investigated.

## 2.6 Injury Surveillance/EMS Data System

### System Key Points

**Massachusetts Ambulance Trip Record Information System (MATRIS)** – managed by MDPH collects Emergency Medical Services (EMS) trip information that complies with the National EMS Information System (NEMSIS) dataset. The department is currently collecting both NEMSIS V2 data and NEMSIS V3, as the V3 system launched 2/28/19. As of 3/31/22, all 311 licensed ambulance services had migrated and were submitting data to MATRIS NEMSIS V3. The NEMSIS V3 data is superior to the V2 data because DPH developed comprehensive Schematron validation rules that are enforced as criteria for acceptance to MATRIS. DPH will review the data quality and determine updates needed to the Schematron validation rules to continue to improve quality. In FY 2020, DPH developed an RFR to contract with a vendor for hosting of the MATRIS infrastructure to address gaps in functionality and improve efficiency. Responses were reviewed and a contract fully executed with the selected vendor in spring 2021. Migration to the vendor hosted infrastructure was completed in May 2022. DPH began submitting the NEMSIS V3 data to the NEMSIS national repository in July 2021. **MATRIS will be upgraded to NEMSIS V3.5 in Q3 2023.**

MATRIS sends monthly data quality reports to all ambulance services and regularly works with ambulance services to improve their quality. MATRIS data quality control has further improved with the migration to NEMSIS V3 that allows for rejection of records that do not meet quality standards. MDPH reviewed the over 200 validation rules and implemented revisions in November 2022.

**Massachusetts Hospital Case-Mix Data** – Hospital discharge data (HD), emergency department (ED) discharge, and outpatient observation stay (OOS)

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data, collectively referred to as “Case-mix Data”, are submitted by all Massachusetts acute care hospitals to the Center for Health Information and Analysis (CHIA). DPH receives the data from CHIA and conducts its own data quality checks and coding for DPH programs. Relevant data include ICD-10-CM diagnosis **codes, which indicate the type of injury and body location affected,** and external cause codes, **which indicate the mechanism and injury intent (unintentional, assault, self-inflicted, etc.), type of place the injury occurred, and activity the person was involved in when the injury occurred,** patient demographics, **including race and ethnicity,** a unique patient identifier, **medical record number,** hospital facility, dates of medical care, length of stay, discharge disposition, services and procedures performed, hospital charges, and whether the visit is for active treatment, routine treatment, or treatment of sequelae. Diagnosis codes in **case-mix** data **can** also be used to identify hospitalized drivers and non-motorists who were under the influence of alcohol and/or drugs at the time of the crash, **acute medical events that may have precipitated a crash, and serious health impacts, such as traumatic brain and spinal cord injuries.** **MDPH prioritizes racial equity in all its work and therefore analyzes data by race/ethnicity whenever possible and strives to identify underlying structural, environmental, and social factors contributing to racial inequities in MV crash injuries.**

**Massachusetts All Payer Claims Database (MA APCD)** - includes health insurance claims data collected from commercial payers, third party administrators and public programs (Medicare and MassHealth (the Massachusetts’ Medicaid program) by the CHIA. Due to state health care reform law which had the aim of providing health insurance to all residents, Massachusetts leads states with the most complete population insurance coverage, 97% of its residents have health insurance. Therefore, the MA APCD is one of the most comprehensive sources of state health claims data from public and private payers in Massachusetts. These data sets come both from medical insurers and from specialty insurers and administrators of “carved-out” services including pharmacy, mental health/chemical dependency, dental, and vision. While several states have All Payer Claims Databases, the MA APCD has a unique focus on the efficiencies to be achieved by having a single independent agency (the Center for Health Information and Analysis)– as opposed to multiple state agencies. While the case mix data collects data only from Massachusetts acute care hospitals, the MA APCD includes health care data from all health care providers regardless of care settings regardless of geographic location. The ambulance, ED, hospitalization, rehab, and pharmaceutical claims for Massachusetts motor vehicle

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crash victims receiving care in state and out of state are all in the Massachusetts APCD. CHIA has also enhanced the MA APCD by creating a member link entity identifier which enables cross carrier analysis. This type of enhancement facilitates analysis of injured patients across the entire continuum of care from prehospital care to rehabilitation even if the patient changes insurance carriers.

**Trauma Registry** – collected by MDPH, all hospitals that treat trauma patients submit data on all trauma inpatient discharges, all trauma observation stays, and trauma ED visits for patients who die or are transferred from the ED. These data include patient blood pressure, respiratory rate, pulse, protective devices, airbag deployment, child specific restraints, cause of injury and location of injury ecodes, hospital-based drug and alcohol test results, injury date, injury city, mode of transport to hospital, abbreviated injury scale (AIS), Glasgow coma scores, complications, and comorbidities. After submission by hospitals, MDPH may add other fields such as geocoded census data and several survival probability metrics including revised trauma score, shock index, injury severity score, new injury severity score, and AIS-based trauma mortality prediction model using up to five worst injuries, ICD-9-CM-based trauma mortality prediction model, and an indicator for multiple injuries to the same body region. The system was upgraded to include approximately 60 data elements with ICD-10-CM and AIS 2005/2008 in 2016. Enhancements were also made in 2017 to meet the NTDB 2016 and 2017 updates and ability to accept multiple submission years simultaneously.

Traumas reported to Massachusetts Trauma Registry by Federal Fiscal Year (FFY)*	
FFY2021	FFY2022
38,925	37,590

\*Massachusetts Trauma Registry, current as March 17, 2023.

During the FFY 2019, additional upgrades were made to conform to new National Trauma Databank (NTDB) data submission requirements. Comorbidity and complications fields were removed in accordance with NTDB requirements and replaced with yes/no indicator fields. The option to enter ‘not recorded’ or ‘unknown’ for some fields was added and new fields were included to allow entry of Initial Field GCS, if collected. The Drug Screen field was also updated to capture when a patient had more than five classes of drug detected on a toxicity screen. Finally, the edit check on a small number of fields were adjusted to require a high level of completion in each quarterly submission

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As of March 2023, data quality reports developed by MA DPH have been delivered to all hospital partners for review, comment, and to assist with any data corrections needed. Moving forward, data quality reports will be prepared and disseminated to data submitters at least annually. Once migration of historic data is complete and validated, the new Massachusetts Trauma Registry will include all hospital trauma data submitted since 2008.

**Death Certificates** – The Massachusetts Registry of Vital Records and Statistics collects certificates for all deaths that occur within Massachusetts as well as deaths of Massachusetts residents that occur outside of the Commonwealth. Vital Information Partnership (VIP) is the electronic death registration system. Relevant data include ICD-10 diagnostic codes for underlying and secondary causes of death (which describe injury cause, MV-person type, the nature and body location of injuries and other conditions present), patient demographics, including occupation and industry, and date of death.

**Behavioral Risk Factor Surveillance System (BRFSS), Youth Risk Behavior Survey (YRBS) and Youth Health Survey (YHS)** – These anonymous surveys collect statewide estimates on self-reported behaviors either annually (BRFSS) or bi-annually (YRBS and YHS). The BRFSS is a telephone survey administered to a sample of adult MA residents ages 18 and up. The YRBS and YHS are written surveys administered to a sample of MA public high school students, with the YHS also administered to public middle school students. Specific questions related to motor vehicle injuries include seat belt use (BRFSS, YRBS, YHS), riding in a car driven by someone who had been drinking alcohol (YRBS, YHS middle school), riding in a car driven by someone who had been smoking marijuana (YHS middle school), driving a car after drinking alcohol (BRFSS, YRBS, YHS), driving a car after smoking marijuana (YHS), talking on a cell phone while driving (YRBS), texting while driving (YHS), texting or emailing while driving (YRBS), and drowsy driving (YHS). Responses can be broken down by respondent demographics, other risk behaviors, and social determinants of health.

### **System Performance Measurement(s)**

MDPH has a benchmark/performance measure to evaluate the completeness of the MATRIS data by tracking the number of ambulance services submitting Version 3 reports to the system. For FFY 2021, the benchmark/performance measure was to improve completeness of MATRIS by increasing the number of ambulance services

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submitting NEMESIS Version 3 reports to the system from 304 between 4/1/20 to 3/31/21 to 309 between 4/1/21 to 3/31/22. As of 3/31/22, all 311 licensed Ambulance services had migrated and were submitting data to MATRIS NEMESIS V3.

In 2019 and 2020, the MDPH Office of Data Management and Outcomes Assessment (ODMOA) developed a new process to assess the quality of Hospital Case-mix data received from the Center for Health Information and Analysis (CHIA). The results of these assessments are summarized in standard reports available to MDPH epidemiologists. ODMOA communicates any serious data quality problems to CHIA and requests a new file. ODMOA also standardizes variable names and formats across the three data types (hospital discharge, emergency department discharge, and observation stay data) in the datasets analyzed by the Injury Surveillance and other programs. The MDPH Injury Surveillance Program reported a problem in the uniformity of naming diagnosis codes in Outpatient Observation Stay (OOS) and ODMOA corrected this problem in Spring 2022.

### **System Accessibility**

MATRIS data is summarized and reported for quarterly opioid surveillance statistics. These reports are posted to the Mass.gov website and available to the public at [www.mass.gov/lists/current-opioid-statistics](https://www.mass.gov/lists/current-opioid-statistics). The MATRIS NEMESIS V3 data are being incorporated into the DPH Public Health Information Tool which will allow the public to extract aggregate de-identified data from the website [www.mass.gov/orgs/population-health-information-tool](https://www.mass.gov/orgs/population-health-information-tool). Data use agreements have been completed and data sets are being prepared to contribute. In SFY 2021 the data was submitted to the NEMESIS national repository making it accessible for the national dashboards and available for national IRB use. MATRIS data has been shared in 2023 with the Injury Surveillance Program for linkage with Crash, Hospital and Trauma Registry data and incorporated in the MA Crash Related Injury Surveillance System (MA CRISS). MATRIS data has been shared in previous years via the IRB process with other TRCC members and integrated with Crash data for analysis; provided to the Motorcycle Safety program for inclusion in training materials and conference presentation.

**The Massachusetts Trauma Registry (TR) was launched 12/1/21 is more user friendly and allows for easier data submissions from our hospital partners. By**

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selecting a national trauma vendor who adheres to the IDTX trauma submission format, the new TR will streamline submissions for trauma centers using hospital-based trauma vendor software. Community hospitals with no trauma registry continue to receive DPH and vendor-based support to assist with data submissions.

Trauma Centers will be able to extract pre-validated data from their hospital-based registries and upload directly to the new web-based Massachusetts Trauma Registry, provided by ESO. The universal IDTX format supports high-quality, uniform data meeting the national data standards. Community hospitals will have DPH and vendor support to create files, under the same standards, from their medical records systems. These data can either be direct data entered into the trauma registry web-portal or uploaded using the same process as trauma centers.

The MDPH Injury Surveillance Program (ISP) analyzes MA Hospital Case-mix, Death, BRFSS, YRBS, and YHS data to track fatal and nonfatal MV-traffic injuries, and identify disproportionately impacted populations, health outcomes, and risk factors, including being under the influence of alcohol or drugs at the time of the crash. ISP works with the MDPH Injury Prevention and Control Program to develop and disseminate data briefs and fact sheets based on findings from these analyses. Announcements about the release of data products and key data findings are disseminated to a broad range of traffic safety stakeholders electronically. In 2022, ISP created a specific webpage for public access to transportation injury data, including data from the MA Crash-Related Injury Surveillance System (MA CRISS): [www.mass.gov/info-details/transportation-injury-data](http://www.mass.gov/info-details/transportation-injury-data). ISP data products that include transportation and other types of injuries are available at: [www.mass.gov/injury-surveillance-program](http://www.mass.gov/injury-surveillance-program). BRFSS reports are available at: [www.mass.gov/behavioral-risk-factor-surveillance](http://www.mass.gov/behavioral-risk-factor-surveillance). YRBS reports are available at: [www.doe.mass.edu/sfs/yrbs](http://www.doe.mass.edu/sfs/yrbs) and YHS reports are available at: [www.mass.gov/lists/massachusetts-youth-health-survey-myhs](http://www.mass.gov/lists/massachusetts-youth-health-survey-myhs).

Traffic safety stakeholders and others can also make specific data requests to ISP. ISP also frequently presents MA MV injury data at MA Traffic Safety Coalition meetings. MDPH staff, including ISP, IPCP, and BHCSQ staff, also participated in and provided relevant injury surveillance/EMS data to Emphasis Area workgroups that helped develop the [2023 MA Strategic Highway Safety Plan](#), released in early 2023.

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## Recent Developments & Challenges

A Trauma Registry Legacy dataset, combining all registry data through federal fiscal year (FFY) 2020, was shared with the Injury Surveillance Program (ISP) for linkage to the MA Crash-Related Injury Surveillance System (MA CRISS) in Fall 2021. ISP is assessing the quality and completeness of records involving MV crash injuries and will provide BHCSQ with a summary of findings and recommendations for improvement. BHCSQ developed a comprehensive data dictionary for the legacy dataset that includes variable names, descriptions, values, years collected, and whether variables are required of all acute care hospitals or just trauma centers. BHCSQ also releases data specification guides annually to inform facility data submission.

The NEMSIS V3 data is imported in a timelier manner, often within a day, due to the added requirement in the standard for ePCR software to automate importing to the state system, MATRIS. The data quality has improved as a result of a superior validation rule execution process implemented in V3 where the state rules are packaged into a file and integrated on the ePCR software used by the ambulance services. This process is managed with a technology called Schematron.

In 2022, the MDPH Injury Surveillance Program created a specific webpage for public access to transportation injury data, including data from the MA Crash-Related Injury Surveillance System (MA CRISS): [www.mass.gov/info-details/transportation-injury-data](http://www.mass.gov/info-details/transportation-injury-data).

## 2.7 Data Use and Integration

- UMassSafe's Data Linkage Project linked EMS and Crash Data was concluded in December 2018. A final project report from March 2019 is available at [www.mass.gov/service-details/traffic-records](http://www.mass.gov/service-details/traffic-records).
- The MA Crash-Related Injury Surveillance System (MA CRISS) was developed by the MDPH Injury Surveillance Program (ISP) in 2016 with funding from the MassDOT Highway Division. MA CRISS currently includes linked crash, injury surveillance, and driver data from 2012 to 2020. Each data source provides critical information that



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can be analyzed to inform and evaluate traffic safety strategies, particularly those aimed at reducing racial/ethnic inequities in MV crash injuries. Reports based on the analysis of MA CRISS data are available at: <https://www.mass.gov/info-details/transportation-injury-data>

With FFY 21 405c-funding, ISP obtained driver license/history data for drivers involved in crashes in linked FY 2016-2018 MA CRISS data, assessed driver data quality and created a limited data dictionary, and integrated MA and out-of-state driver records with linked crash-hospital case-mix data. This project met the benchmark/performance measure to improve the accessibility and integration of the crash, driver, and injury surveillance/EMS systems, by increasing the number of MA driver records integrated with MA crash and injury surveillance (hospital case-mix) data from 38,000 as of 7/1/21 to 153,024 by 9/30/22. ISP is currently conducting an analysis of linked driver-crash-hospital case mix data based on input from the MA Traffic Safety Coalition and other stakeholders. This analysis will compare prior crashes and OUI convictions among drivers identified as intoxicated in hospital discharge data and hospitalized drivers not identified as intoxicated. Findings will be shared with OGR and, following MDPH approval, with other traffic safety stakeholders.

FFY 22 405c-funding supported traffic safety decision-makers' and public access to findings from the analysis of integrated MA CRISS data by supporting skilled personnel capable of conducting analysis of this complex data system. Specifically, ISP analyzed MA CRISS data to assess the accuracy, completeness, and uniformity of key variables in crash data, **including the injury status code and fields related to alcohol and drug testing and impaired driving, and will be presenting their findings and recommendations for potential data quality improvements to the Traffic Records Coordinating Committees. With support from the Injury Prevention and Control Program (IPCP), ISP also solicited input from key traffic safety stakeholders on an additional analysis of integrated driver-crash-hospital case mix data in MA CRISS to inform traffic safety measures. Stakeholders prioritized doing an analysis of drivers involved in crashes who were identified as speeding. ISP will use MA CRISS data to look at 1) driver and crash characteristics associated with speeding, 2) whether speeding violations are equitably adjudicated, and 3) the impact of being convicted of or admitting to speeding on**

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**future at-fault crashes. ISP was also able to link additional years of each data source to MA CRISS with 405c-funding support.**

- In 2019 the MA Department of Public Health released the Population Health Information Tool (PHIT) at [www.mass.gov/guides/phit-data-injuries-in-massachusetts](http://www.mass.gov/guides/phit-data-injuries-in-massachusetts). This tool allows the public to query MA health data. The PHIT includes data on unintentional MV-traffic hospitalizations, ED visits and deaths for MV-occupants, motorcyclists, cyclists, and pedestrians. The website can provide maps and graphs of selected data. Data can be broken down by sex and geographic region. Currently 2007-2014 MA data are available. Work is underway to integrate MATRIS data into PHIT. This will allow more detailed data exploration of MATRIS data by the public. Data can be displayed and aggregated by geographic regions, or by demographic characteristics.
- Public access to data in the CDS is through the IMPACT Crash Data Portal at [apps.impact.dot.state.ma.us/cdp/home](http://apps.impact.dot.state.ma.us/cdp/home).

## 2.8 Related Planning Documents/Resources

- MassDOT's Strategic Highway Safety Plan at [www.mass.gov/service-details/strategic-highway-safety-plan](http://www.mass.gov/service-details/strategic-highway-safety-plan)
- MassDOT's State Transportation Improvement Program at [www.mass.gov/service-details/state-transportation-improvement-program-stip](http://www.mass.gov/service-details/state-transportation-improvement-program-stip)
- MassDOT's Highway Safety Improvement Plan at [www.mass.gov/service-details/highway-safety-improvement-program](http://www.mass.gov/service-details/highway-safety-improvement-program)
- MassDOT's Highway Safety Improvement Plan (2020) at [safety.fhwa.dot.gov/hsip/reports/pdf/2020/ma.pdf](http://safety.fhwa.dot.gov/hsip/reports/pdf/2020/ma.pdf)
- MA State Police's Commercial Motor Vehicle Plan at [www.mass.gov/orgs/massachusetts-state-police](http://www.mass.gov/orgs/massachusetts-state-police)
- OGR's Highway Safety Plan, Safety Belt Survey and Cell Phone Survey at [www.mass.gov/orgs/office-of-grants-and-research](http://www.mass.gov/orgs/office-of-grants-and-research)

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## 3.0 Traffic Records Assessment

In January 2019, OGR with TRCC assistance finished a NHTSA-approved Traffic Records Self-Assessment for Massachusetts, guided by NHTSA's *Traffic Records Program Assessment Advisory, 2018 Edition*. Previously NHTSA required states to conduct or update an assessment of their highway safety data and traffic records systems every five years in order to qualify for federal Section 405(c) grant funding from NHTSA, but this requirement for 405c funding has been dropped. OGR is planning soon to propose to the ETRCC that Massachusetts should continue to use this self-assessment tool, updating it every three years.

**This section includes the resulting recommendations from the 2019 assessment. After each one there is information (bolded and underlined) about what Massachusetts is or is not planning to do in regard to the recommendation in FFY 2024.**

Where action is being taken, the entry will highlight if the effort involves a 405-c funded project included in OGR's proposed FFY 2024 Highway Safety Plan (HSP) and in Section 4 of this plan. Such an entry needs to address an unmet recommendation from the 2019 assessment, improve a minimum of one performance attribute (accessibility, accuracy, completeness, integration, timeliness, and uniformity) of a core system, and have at least one benchmark and performance measure. Ideally the project also provides a benchmark and performance measure that can demonstrate quantitative improvement in an attribute of a core system as described in the 405-c funding guidance.

**If the Commonwealth is unable to address a recommendation in FFY 2024, this will be explained (bolded and underlined) below in this section.**

With its FFY 2024 405-c application, Massachusetts is submitting the following two performance measures to show quantitative improvements in the performance attributes of core systems. These measures were developed using NHTSA's *Model Performance Measures for State Traffic Records Systems, 2011 edition* and the 405-c funding guidance. These measures were also provided to NHTSA separately in Interim Progress Reports as part of our 405-c application.

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**#1. Improve the timeliness attribute of the MA Citation Data System by reducing the average number of days from when paper and electronically submitted citations are issued by MA state and local police to when these citations are posted to the statewide citation data system operated by Merit Rating Board. The average number of days was 13 days for the baseline value period of 5/1/21 to 4/30/22. The average number of days was 8 for the current value period of 5/1/22 to 4/30/23 – an improvement in timeliness of 5 days.**

**#2. Improve the completeness attribute of the Route Feature Class of the Massachusetts Roadway Inventory System (RIS) by increasing the number of entries in the Road Feature Class. Route Feature Class is the network feature layer for RIS that serves as the backbone for the data organization of all of the Road Inventory event layers. The count of route records was increased from 211,287 in the baseline value period of 4/1/21 to 3/31/22 to 212,011 in the current value period of 4/1/22 to 3/31/23 – an improvement in completeness of 724 of records.**

Developing similar performance measures for other core systems and projects of the Commonwealth will be a focus for our TRCCs in FFY 2024.

OGR conducted in early 2023 an Availability of Grant Funds (AGF) process to identify new projects to use FFY 2023 and earlier Section 405-c funding. With TRCC input, three projects to help address recommendations from the 2019 Assessment were identified for 405-c funding in mid-April 2023. All of these projects were approved by NHTSA in mid-May 2023 for inclusion in the Massachusetts FFY 2023 Highway Safety Plan. As all three will need to continue into FFY 2024, NHTSA approval will also be sought for continued project work in our FFY 2024 Highway Safety Plan. The projects are referenced throughout the section below and in Section 4 of this plan.

## **3.1 Traffic Records Coordinating Committee Management**

The 2019 assessment did not have any related recommendations for TRCC management.

However, the TRCC still needs to continue to work on developing benchmarks and performance measures for all its six core traffic records systems. Also, to better highlight and address unmet technical assistance and training needs for all

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six systems.

For the FFY 2024 405-c application, the Massachusetts TRCCs had to meet the requirement for receipt of Section 405-c funding by meeting a minimum of three times before the application submission. Since the submission of the last Section 405c application in July 2022, the ETRCC met on 11/14/22, 4/12/23, and 6/6/23.

## 3.2 Strategic Planning

The 2019 assessment did not have any related recommendation for Strategic Planning.

## 3.3 Crash System

The 2019 assessment identified the following recommendations:

1. *Improve the applicable guidelines for the Crash Data System (CDS) that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**MassDOT IT/RMV went live with phase 1 of its new CDS in early 2023. This recommendation will be addressed in the new crash system.**

**Given sufficient state funding for the new CDS project, at this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

2. *Improve the interfaces with the CDS that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**The state funded new CDS will include the ability in Phase 2 to interface with FARS to provide more timely and complete fatality data entry to FARS.**

**Given sufficient state funding for the new CDS project, at this time no 405-c grant funded work on this recommendation is planned for FFY**

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**2024.**

*3. Improve the data quality control program for the CDS that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Additional quality control measures for attributes will be addressed with the new state-funded CDS.**

**Section 405-c funded projects to address in part this recommendation is described in the FFY 2024 Highway Safety Plan and Section 4 of this plan under TR 24-02, 03, and 04.**

## 3.4 Roadway

The 2019 assessment identified the following recommendations:

1. *Improve the data dictionary for the Roadway Data System (RDS) that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

As reported in Section 2.2, MassDOT's Office of Transportation Planning has recently updated its data dictionary and developed editing and data storage practices with a focus on security and data quality.

**Given sufficient state-funding for work on this recommendation, at this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

2. *Improve the data quality control program for the RDS that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

Several quality control programs have been implemented in the last year. Workflow assignment and recordkeeping with a baked-in quality control step using the Wrike software for all data updates has been implemented and is handled by the GIS data team lead in order to improve data accuracy and quality. Standard editing procedures and data practices have been developed and implemented, and the editing staff has been trained with recurring refreshers. Best editing practice discussion occurs

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with the editing staff biweekly.

**Given sufficient state-funding for work on this recommendation, at this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

## 3.5 Driver

The 2019 assessment identified the following recommendations:

1. *Improve the data dictionary for the Driver Data System (DDS) that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

With creation of the new RMV database, ATLAS, by FAST Enterprise, improvements were made to ensure the integrity of data fields for person, vehicle, violations, etc. by expanding field level validation. Use of third-party tools such as NADA were implemented to improve the accuracy and completeness of vehicle descriptions. For person identity, checks with NAPHSIS, DPH Vital Statistics, CIS (SAVE), SPEX (S2S), USPVS (Passport checks) were implemented. The data dictionary is proprietary and maintained by FAST Enterprises.

With FFY 2022 405-c funding, the MDPH Injury Surveillance Program (ISP) developed a limited Driver Data Dictionary describing the name, description, format, values, and value definitions for driver data it received from the RMV for integration into MA CRISS. ISP provided this limited data dictionary to the RMV in February 2022.

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

2. *Improve the data quality control program for the Driver data system that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

The MDPH ISP addressed this recommendation in part with FFY 2022 405-c funding by assessing the quality of the Driver data received from

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the RMV for integration into MA CRISS. These were records of drivers involved in 2015-2018 crashes in linked MA CRISS data. Data were assessed for completeness and uniformity.

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

## 3.6 Vehicle

The 2019 assessment identified the following recommendations:

1. *Improve the interfaces with the Vehicle Data System (VDS) that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

The RMV's new operating system, ATLAS, has been fully implemented.

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

2. *Improve the data quality control program for the VDS that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

The RMV's new operating system, ATLAS, has been fully implemented.

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

## 3.7 Citation / Adjudication

The 2019 assessment identified the following recommendations:

1. *Improve the description and contents of the Citation and Adjudication systems that reflect best practices identified in the Traffic Records Program Assessment Advisory.*



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**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

2. *Improve the data dictionary for the Citation and Adjudication systems that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

3. *Improve the data quality control program for the Citation and Adjudication systems that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**A Section 405-c funded MACCS project, managed by the Department of Criminal Justice Information Services, will improve the accuracy, completeness, timeliness, and uniformity of the Citation Data System by increasing the quantity and quality of eCitation submissions. This project is described in the FFY 2024 Massachusetts Highway Safety Plan and Section 4 of this plan under TR 24-03.**

## 3.8 Injury Surveillance/EMS

The 2019 assessment identified the following recommendations:

1. *Improve the interfaces with the Injury Surveillance systems that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

The RMV and DPH looked into creating an interface between EMS and RMV data for the Massachusetts Fatality Analysis Reporting System (FARS) project. A statute change is required to allow sharing of the EMS data. Other interfaces would require significant funding.

Section 2.7 describes the DPH ISP MA CRISS (Crash, Hospital Case-mix, Trauma Registry, MA Ambulance Trip Record Information System (MATRIS), Vital Statistics (deaths), Post-mortem Toxicology, Drivers License/History, and Citation/Adjudication data) in more

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detail. This currently non-405-c funded project is helping in part to meet this recommendation.

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

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

**The MDPH Office of Data Management and Outcomes Assessment (ODMOA) routinely assesses the quality of hospital case-mix data received from the Center for Health Information and Analysis (CHIA). ODMOA also creates several injury-related fields from ICD-10-CM diagnosis codes in case-mix data, including external cause of injury, place of injury, and activity being done when the injury occurred, for use by MDPH programs. The MDPH Injury Surveillance Program (ISP) also periodically assesses the quality of these injury-related fields. In 2022, ISP assessed the completeness and specificity of place of injury codes in hospital case-mix data and found a high percentage of missing values at many hospitals. In 2023, ISP is working with ODMOA to request that CHIA create designated fields for place of injury and injury activity to try to reduce the frequency of missing values. In 2022 MATRIS updated injury and MVC related validation rules to improve the quality and completeness of these incidents in the MATRIS repository.**

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

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## 3.9 Data Use and Integration

The 2019 assessment identified the following recommendation:

*Improve the traffic records systems capacity to integrate data that reflect best practices identified in the Traffic Records Program Assessment Advisory.*

The integration of traffic record systems in Massachusetts is primarily being addressed at the time of the submission of this report by the MDPH's MA Crash-Related Injury Surveillance System (MA CRISS), in particular through its Section 405-c funded MA Crash-Related Injury Surveillance System: Data Quality Assessment and Analysis Project (TR 23-04). MA CRISS is managed by the MDPH Injury Surveillance Program (ISP). MA CRISS currently integrates 2012-2018 crash and hospital case-mix data sets, and driver data associated with 2015-2018 crashes. CDC funding is supporting ISP's current integration of Trauma Registry with other MA CRISS data. ISP also has data use agreements in place to obtain and integrate MATRIS and Vital Statistics (death) data into MA CRISS.

**Integrated data in MA CRISS are not directly accessible to the public due to confidentiality requirements and the complex nature of the data. ISP strives to disseminate the results from analysis of MA CRISS data broadly to traffic safety stakeholders and the public. In January 2023, MDPH approved the release of findings and recommendations from a FFY 22 405c-funded analysis of MA CRISS data focusing on hospitalized drivers identified as intoxicated. This report found that twice as many drivers were identified as intoxicated in hospital discharge data than in crash data and that of drivers identified as intoxicated in hospital discharge data, only one in ten admitted to or was convicted of operating under the influence of alcohol or drugs. The full report was shared with TRCC members and selected findings were shared in the 2023 MA Strategic Highway Safety Plan and at a statewide traffic safety conference (Moving Together) in fall 2022.**

In FFY 2024 the MATRIS system will be migrated to the NEMSIS V3.5 standard. A new feature to this release is the Universally Unique ID (UUID) that will identify an EMS run with a unique ID. This value is also included in the new

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ACS National Trauma Data Bank requirements and will facilitate linkage

The UUID has already been incorporated in the FFY 2021 Massachusetts Trauma Registry and the system is ready to accept this linkage data element as soon as it is available to hospital partners.

**Data integration will also be addressed in FFY 2024 through further planning/discussion by the TRCC.**

**At this time no 405-c grant funded work on this recommendation is planned for FFY 2024.**

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## 4.0 Traffic Records Projects

This section lists projects planned for FFY 2024 as well as recently completed projects. This section details whether projects are funded through 405-c funding or other sources of funding.

For FFY 2023 and 2024 405-c funded projects, this section provides (**bolded and underlined**) key project updates/deliverables as available, anticipated performance attribute impacts (i.e., improvements in accessibility, accuracy, completeness, integration, timeliness, and uniformity), and how projects address, ideally with quantitative improvement, recommendations from the 2019 Traffic Records Assessment.

In early 2023, OGR conducted an Availability of Grant Funds (AGF) process to identify new projects to use FFY 2023 and earlier 405-c funding. With TRCC input, this AGF process identified three projects to use 405c funding to help address recommendations from the 2019 Assessment. These projects were then approved by NHTSA for inclusion in the Massachusetts FFY 2023 Highway Safety Plan. All three projects will start in FFY 2023 and continue into FFY 2024 and are described in Section 4.1.

Below is a list of associated performance targets for these projects for FFY 2024:

**Traffic Record Performance Target #1** – Between 6/1/23 and 12/31/23, update the Massachusetts Crash Reporting Form and Crash Data System to collect, process, and share via MassDOT’s IMPACT portal the necessary vulnerable road user data confirmed through the phase one focus groups/outreach.

**Traffic Record Performance Target #2** – DCJIS will install approximately 500 mobile printers in police vehicles and provide associated training for 53 local police departments new to MACCS between 7/1/23 and 6/30/24.

**Traffic Record Performance Target #3** – To date in State FY 2023 (July 1, 2022 to May 2, 2023, 2023), MSP-CARS responded to 232 serious/fatal injury crashes. Of

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these, 58 crashes (25%) involved a pedestrian or bicyclist. Investigating Troopers measured the frictional value of the roadway in approximately 22% of these crashes involving non-motorists. MSP aims to increase the percentage of crashes involving non-motorists where frictional value of the roadway data is collected to 75% between October 1 to December 31, 2023.

## **4.1 FFY 2024 405-c Funded Projects**

### **Availability of Grant Funds for Traffic Safety Information Systems Improvement Grant Program, Section 405-c funded Projects**

Highway Safety Plan Task: TR-24-01

Office of Grants and Research

Budget: est. \$1,827,000 (NHTSA, Section 405-c)

One or more Availability of Grant Funding (AGF) processes will be conducted to provide Section 405(c) funding on a competitive basis to measurable projects to improve the accessibility, accuracy, completeness, integration, timeliness, and/or uniformity (a performance attribute) of one or more of the following six core traffic records systems: crash data system, roadway inventory file, vehicle registration, driver history, citation/adjudication, and injury surveillance system. Improving these systems will enhance the ability to identify priorities for a diverse range of local, state, and federal traffic safety programs impacting multiple areas of Massachusetts. Permissible projects could also evaluate the effectiveness of efforts to improve these six systems; link these systems with other state or federal data systems; and enhance the ability of stakeholders to observe and analyze local, state, and national trends in crash occurrences, rates, outcomes, and circumstances. Only units of state and local government or not-for-profit organizations with a public purpose would be eligible to apply for funding. Project must have a minimum of one measurable benchmark and one performance measure related to a performance attribute of one of the state's six systems. AGF responses will be reviewed and recommended by an OGR-selected AGF review committee and the Executive-level Traffic Records Coordinating Committee. Those projects approved for funding would then be submitted to NHTSA and then EOPSS for review and approval.

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Each resulting project will support one or more of the FFY 2024 performance targets listed above and/or a new one if necessary.

### **Inclusion of Vulnerable Road Users in Crash Reporting to RMV Project**

Highway Safety Plan Task: TR-24-02

Registry of Motor Vehicles

Budget: \$637,000, with \$177,400 in FFY 23 and \$459,600 in FFY 24  
(NHTSA, Section 405-c)

The MassDOT/Registry of Motor Vehicles (RMV) will update the Massachusetts crash reporting form (CR65) and its Crash Data System (CDS) to enable the greater collection, processing, and sharing of vulnerable road users (VRU) data. State and local law enforcement records management systems will require related updating. Ultimately this additional VRU data will be available in MassDOT's crash data portal (IMPACT). With this additional VRU data publicly available in IMPACT, a wide range of traffic records stakeholders will be able to access it for traffic safety planning, implementation, and evaluation purposes. Another portion of the project will work to find ways for the Massachusetts Department of Public Health to contribute existing and new VRU data it collects through the Massachusetts Ambulance Trip Run Information System (MATRIS) to further expand and improve the quality of the VRU data in the CDS and ultimately in IMPACT. Using state capital funds, the first phase of this project will involve outreach to project stakeholders and holding focus groups to decide the new VRU data fields to add to the crash reporting form. It will also determine necessary CDS and state/local RMS data system enhancements as well as training and public outreach.

This project will enhance the accessibility, completeness, and integration of the crash data system in Massachusetts. The project will help in part to address the unmet recommendations to improve the interfaces of the CDS (specifically with the injury surveillance/EMS data sets) and its data quality control program from the 2019 Massachusetts Traffic Records Self-Assessment.

This task will support performance target #1 listed above.

### **Motor Vehicle Automated Citation & Crash System (MACCS) Project**

Highway Safety Plan Task: TR-24-03

Registry of Motor Vehicles

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Budget: \$500,000, with \$245,500 in FFY 23 and \$254,500 in FFY 24  
(NHTSA, Section 405-c)

This project continues efforts since 2017 to achieve statewide use of MACCS and builds off prior 405c funded projects towards that end by the Department of Criminal Justice Information Services (DCJIS). MACCS improves officer and motoring public safety on the roadways across the Commonwealth; streamlines data collection; enhances data quality; and increases reporting timeliness to local, state, and federal entities. DCJIS will acquire and install approximately 500 mobile printers for police vehicles and provide associated training to assist an estimated 53 departments new to MACCS. Printers not necessary for this effort will be allocated to existing departments using MACCS with interest in expanding their use of MACCS to more vehicles/officers. With input from law enforcement users, DCJIS will make software improvements to MACCS in the FFY 24 phase of the project. All efforts will be coordinated on a day-to-day basis by DCJIS's state-funded MACCS Program Coordinator, assisted by other state-funded DCJIS staff.

This project will enhance the accuracy, completeness, integration, timeliness, and uniformity of the citation/adjudication and crash data system in Massachusetts. This project will help in part to address the unmet data quality control program for the citation/adjudication and crash data systems from the 2019 Massachusetts Traffic Records Self-Assessment.

This task will support performance target #2 listed above.

## **Improving Data Accuracy from the Scene of Motor Vehicle Crashes Project**

Highway Safety Plan Task: TR-24-04

Registry of Motor Vehicles

Budget: \$81,341, with \$59,341 in FFY 23 and \$22,000 in FFY 24  
(NHTSA, Section 405-c)

The Massachusetts State Police (MSP) will improve the accuracy, completeness, and uniformity of fatality and serious injury data collected at motor vehicle crash scenes. These improvements will result in a timelier share of this data with local, state, and federal partners working on traffic safety/enforcement countermeasures and roadway improvements. To accomplish this, members of the MSP Collision Analysis and Reconstruction Section (CARS) will be provided a specialized training (*Pedestrian/Bicycle Crash Investigations*) and improved field equipment (accelerometers, drag sleds, and straight scales). The training will



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enhance the ability of investigators to establish cause in fatal and serious injury crashes, in particular involving pedestrian and bicyclists. The equipment will be used to better measure tire/roadway friction and analyze roadway materials to determine involvement in the crashes.

This project will enhance the accuracy, completeness, timeliness, and uniformity of the crash data system in Massachusetts. This project will help in part to address the system's unmet data quality control program recommendation from the 2019 Massachusetts Traffic Records Self-Assessment.

This task will support performance target #3 listed above.

## 4.2 Non-405-c Funded Projects

### Fatality Analysis Reporting System (FARS)

Registry of Motor Vehicles

Budget: \$120,000

(NHTSA Cooperative Agreement)

NHTSA will continue to be provided by the Registry of Motor Vehicles (RMV) with motor vehicle-related fatality data from Massachusetts for the national FARS and FastFARS through a dedicated RMV position. This FARS Analyst position will be supported with NHTSA as well as state funding. The Massachusetts FARS Manual will continue to be enhanced.

### Citation Data System

MassDOT/Registry of Motor Vehicles/Merit Rating Board

Budget: \$11,575,658

(state funding)

The Merit Rating Board operates a statewide citation data system. See Sections 2.5 and 3.7 for more information. MRB and its partners have many ongoing efforts to increase the timeliness of processing citation submissions received from state and local police, in particular the MACCS project. **Between 5/1/22 and 4/30/23 an improvement in timeliness was achieved by reducing the average number of days to post to the system the paper and electronic citations from Massachusetts state and local police by five days, from 13 to 8 days.**

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## Roadway Inventory System Data Completeness and Quality including Route Development Project

MassDOT/Office of Transportation Planning

Budget: \$230,638

(state funding)

The MassDOT Office of Transportation Planning (OTP) continues to improve the completeness of the Route Feature Class of the Massachusetts Roadway Inventory System (RIS). Route Feature Class is the network feature layer for the Roadway Inventory File that serves as the backbone for the data organization of all of the Road Inventory event layers. More information on MassDOT's roadway data system is in Sections 2.2 and 3.4 as well as at [massdot.maps.arcgis.com/home/index.html](https://massdot.maps.arcgis.com/home/index.html). **Between 4/1/22 and 3/31/23 an improvement in completeness of the system was achieved in Route Feature Class entries with an increase of 724 routes, from 211,287 to 212,011.**

## 4.3 Projects Completed in FFY 2023

### Accessible Citation Data – Phase II

Highway Safety Plan Task: TR-23-06

Budget: \$550,000

(NHTSA, Section 405-c)

Scheduled for Completion by September 30, 2023

**By its completion, this project will enable the Merit Rating Board (MRB) to build off a FFY 22 405c funded phase one of the project and have a vendor help them in phase two build a publicly accessible citation data web-based tool that is part of the IMPACT Crash Data Portal at [apps.impact.dot.state.ma.us/cdp/home](https://apps.impact.dot.state.ma.us/cdp/home).** During the phase one project, MRB conducted extensive outreach to citation data stakeholders in Massachusetts to determine their current uses and needs for citation data as well as what content and features they want in such a portal. **This new tool provides users with dashboards, pre-defined reports, raw data downloads, and query visualization to quickly access the citation data they need to develop, implement, and evaluate traffic safety programs or conduct related analysis.**

**This project enhanced the accessibility of the citation data system in Massachusetts. The project helped meet the unmet data dictionary**

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**recommendation for the Massachusetts citation data system from the 2019 Massachusetts Traffic Records Self-Assessment.**

**eCitation Transition**

Highway Safety Plan Task: TR-23-07

Budget: \$567,000

(NHTSA, Section 405-c)

Scheduled for Completion by September 30, 2023

Historically citation data to the state flowed from the Boston Police Department (BPD) primarily through a paper method. **By the completion of this project BPD will outfit approximately 510 police vehicles with printers and related hardware necessary to participate in the eCitation portion of the Massachusetts Motor Vehicle Automated Citation and Crash System (MACCS). After this initiative, all patrol BPD vehicles are equipped for MACCS participation. The data downloads from MACCs now enable BPD through its records management system to conduct better analysis of citation data for traffic safety and enforcement purposes.**

**This project enhanced the accuracy, completeness, integration, timeliness, and uniformity of the crash data system in Massachusetts. This project helped address the unmet data quality control program recommendation from the 2019 Massachusetts Traffic Records Self-Assessment.**

**Crash Report E-Manual: Law Enforcement Agency Targeted Resources to Improve Crash Data Quality**

Highway Safety Plan Task: TR-23-02

Budget: \$198,556, with \$149,362 in FFY 23 and \$49,194 in FFY 22

(NHTSA, Section 405-c)

Completed June 30, 2023

**This project by the University of Massachusetts-Amherst's UMassSafe further enhanced the Massachusetts Law Enforcement Crash Report E-Manual at [masscrashreportmanual.com](http://masscrashreportmanual.com). Building on previous 405-c funded projects that built and then expanded this tool, this new project provided greater content, features, functionality, and further promote the use of the tool. Major enhancements included: additional interactive overlays for use by law enforcement agencies (LEA); ratings/rankings of LEA crash reporting completeness; expansion/updates to Traffic Records News Page.**

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This project enhanced the accessibility, accuracy, completeness, timeliness, and uniformity of the crash data system of Massachusetts. This project helped to address in part the data quality control program recommendation for the crash data system from the 2019 Massachusetts Traffic Records Self-Assessment.

## **Motor Vehicle Automated Citation and Crash System (MACCS)**

Highway Safety Plan Task: TR-23-03

Budget: \$486,254, with \$166,254 in FFY 23 and \$320,000 in FFY 22

(NHTSA, Section 405-c)

Completed June 30, 2023

To continue efforts since 2017 to achieve statewide use of MACCS, the Department of Criminal Justice Services (DCJIS) met its project goal to acquire and install approximately 400 mobile printers for police vehicles and provided associated training to assist an additional estimated 36 local police departments waiting to join MACCS in Massachusetts. Any printers not necessary for this effort were allocated to existing departments using MACCS with an interest in expanding their use of MACCS to more vehicles/officers. All efforts were coordinated on a day-to-day basis by DCJIS's state funded MACCS Program Coordinator, assisted by other state funded DCJIS staff.

This project enhanced the accuracy, completeness, integration, timeliness, and uniformity of the citation/adjudication and crash data system of Massachusetts. This project helped in part to meet the data quality control program recommendation for the citation/adjudication and crash data systems from the 2019 Massachusetts Traffic Records Self-Assessment.

## **MA Crash-Related Injury Surveillance System: Data Quality Assessment and Analysis**

Highway Safety Plan Task: TR-23-04

Budget: \$129,398, with \$149,362 in FFY 23 and \$32,350 in FFY 22

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(NHTSA, Section 405-c)  
Completed June 30, 2023

The Massachusetts Crash-Related Injury Surveillance System (MA CRISS) currently includes integrated crash, acute hospital case mix, and driver license/history data for multiple years. Building on a prior 405c funded project, the MA Department of Public Health (MDPH) Injury Surveillance Program (ISP) assessed the completeness, accuracy, and uniformity of key variables in crash data (injury status code and alcohol and drug-related fields) using integrated MA CRISS data and presented recommendations for potential data quality improvement actions and related projects to the Traffic Records Coordinating Committees. With the input of key traffic safety stakeholders, ISP also conducted analysis of injured drivers identified as speeding using integrated MA CRISS data to provide stakeholders with relevant findings that can guide traffic safety measures. ISP also linked additional years of each data source to MA CRISS as they became available. Funding also allowed ISP to continue its work analyzing the ever-expanding MA CRISS data and providing related analytical support to traffic records stakeholders. Grant funding partially supported two positions to accomplish the projects: current MA CRISS epidemiologist, Jeanne Hathaway; and a contract epidemiologist with advanced analytic, data linkage, and SAS programming skills.

**The project also used integrated crash and injury surveillance data in MA CRISS to further assess the completeness, accuracy, and uniformity of the injury status code and alcohol and drug testing and impaired driving-related fields in crash data. It presented these findings and related recommendations for potential data quality improvement actions and related projects to the Traffic Records Coordinating Committees in 2023. These data quality assessment projects fulfilled two benchmark/performance measures:**

**1. To improve the accuracy, completeness, and uniformity of crash data, we increased the number of linked crash-hospital case-mix records in which the injury severity field ("injury status code") was assessed for accuracy from 0 as of 8/1/22 to 77,498 as of 9/30/22, and increased the number of crash records in which the injury severity field was assessed for completeness and uniformity from 0 as of 8/1/22 to 878,381 as of 9/30/22.**

**2. To improve the accuracy, completeness, and uniformity of crash data, we increased the number of linked crash-hospital discharge records for drivers and non-motorists in which the alcohol and drug fields were assessed for accuracy and uniformity from 0 as of 7/1/22 to 3,373 as of 11/30/22, and the**

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number of unlinked crash records for drivers and non-motorists in which the alcohol and drug fields were assessed for completeness and internal consistency from 0 as of 7/1/22 to 334,661 as of 11/30/22.

This project enhanced the accuracy, accessibility, completeness, integration, and uniformity of the crash, driver, and injury surveillance/EMS data systems of Massachusetts. This project helped to address in part the data quality control program recommendation for the crash data system from the 2019 Massachusetts Traffic Records Self-Assessment.

## 4.4 Update on FFY 2023 Performance Targets

Below is an update on the work done to meet the performance targets in the FFY 2023 Massachusetts Highway Safety Plan and its Strategic Plan for Traffic Records Improvement:

**Traffic Record Performance Target #1** - Decrease the rate in which occupant coded fields (protective system, sex, transported by, injury severity, ejected) are left empty in police crash reports queried within MassDOT's crash data portal, IMPACT, by 20% (2.23 relative percentage points) from 11.15% (62369/621595) in January-June 2021 to 8.92% in April-June 2023.

**Progress** – As of spring 2023, UMassSafe's *Crash Report E-Manual: Law Enforcement Agency Targeted Resources to Improve Crash Data Quality Project* (TR 23-02) was still working towards its performance measure goal. A final measure will be taken in mid-July 2023. A progress check in spring 2023 revealed the benchmark for January-June 2021 was updated from 11.15% (62369/621595) to 15.0% (179,127/1,196,935), reflecting a more finalized crash dataset in IMPACT. Reporting on a comparable 6 months of data for the most recent time period, October 2022 - March 2023, the replicable performance measure stands at 14.7% (215,397/1,464,640), representing a 1.7% improvement/decrease (0.3 relative percentage points) in invalid/incomplete data of occupant coded fields (protective system, sex, transported by, injury severity, ejected). The deployment of the new changes/additions to the Crash E-Manual will be fully implemented by June 2023, therefore initial final results for the performance measure will be known in mid-summer 2023.

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**Traffic Record Performance Target #2** – Between 7/1/22 and 6/30/23, DCJIS will install approximately 400 mobile printers for police vehicles and provide associated training for an estimated 36 departments new to MACCS.

**Progress** – Through April 2023, DCJIS has installed 301 printers for police vehicles at and provided associated training for 30 departments new to MACCS. This project is expected to meet its performance measure goal by the time the project ends in June 2023.

**Traffic Record Performance Target #3** – Increase the number of linked crash-acute hospital case mix records held by the MA Crash-related Injury Surveillance System (MA CRISS). The injury severity field is assessed for accuracy, completeness, and uniformity from 0 as of 8/1/22 to 40,000 by 6/30/23.

**Progress** - The project had to modify its performance target after the above one was set. The new performance measure sought to increase the accuracy, completeness, and uniformity of crash data by increasing the number of linked crash-hospital discharge records for drivers and non-motorists in which the alcohol and drug fields were assessed for accuracy and uniformity from 0 as of 7/1/22 to 3,373 as of 11/30/22, and the number of unlinked crash records for drivers and non-motorists in which the alcohol and drug fields were assessed for completeness and internal consistency from 0 as of 7/1/22 to 334,661 as of 11/30/22.

**Traffic Records Performance Target #4** - Within two weeks following the anticipated 9/1/23 launch of MRB's citation data portal, survey principal users identified in the needs assessment done during the project's phase one to determine the level of satisfaction of these users with access through the new portal to needed citation data they previously identified.

**Progress** – This project is on track to meet its performance measure goal by its conclusion at the end of FFY 2023.

**Traffic Records Performance Target #5** – To reduce the average number of days from when citations are issued by Boston Police Department personnel to when these citations are posted to the statewide citation data system, from 21 for the baseline period of 8/15/21 to 8/14/22 to 19 days during the performance period of 8/15/22 to 8/14/23.

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**Progress -** This project is on track to meet its performance measure goal by its conclusion at the end of FFY 2023.