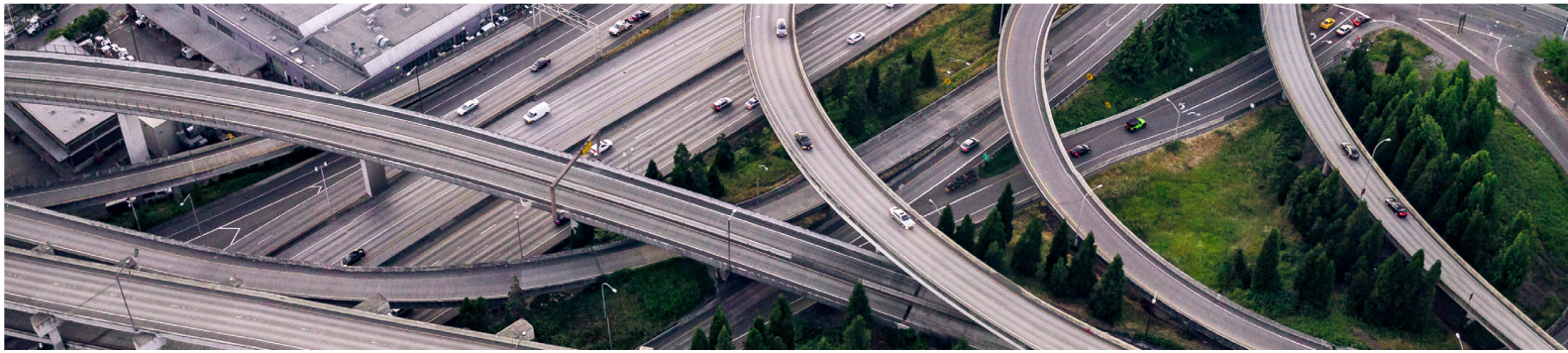
CHAPTER 4



Supporting Systems

CHAPTER 4

Supporting Systems

4.1 EMERGENCY MEDICAL RESPONSE

People who are injured in crashes rely on first responders to quickly locate and stabilize their injuries and transport them to medical facilities.

Post-Crash Care Challenges. A common challenge that affects all residents in Washington are limited Emergency Medical Services (EMS) and hospital resources. Delays in response across urban, suburban, and rural areas have been shown to result in increased mortality (Byrne, et al., 2019). Rural communities are particularly affected due to long transport distances, weather/geography, limited or non-existent EMS resources, the overall lack of availability and skill of trained prehospital providers, and delays in transfer to the appropriate level of care. These issues can result in poorer outcomes for people in rural communities, with rural residents 14% more likely to die from trauma than their urban counterparts (Jarman, et al., 2016).

Beyond the limitation of EMS resources, rural communities also lack the acute hospital resources to treat the most severely injured crash victims, which results in the transfer of these patients to a level I or II trauma center for care. These delays can often be exacerbated by geography, availability of transport services, and availability of hospital system resources. Much like delays in EMS response and transfer, delays in transfer from rural hospitals to definitive care can result in statistically significant increases in trauma patient mortality (Gough, et al., 2020).

Post-Crash Care Successes. Washington has developed a coordinated system that seeks to provide appropriate and adequate care, with the goal of reducing death and disability. Washington is fortunate to have an inclusive trauma system that aims to support optimal coordination of care. Inclusive trauma systems are associated with lower morality rates.[1] Over the past 25 years, improvements to this system have contributed to the lowest mortality rate of trauma patients involved in motor vehicle crashes in recent history: from 9.7 deaths per 100 patients in 1995, to only 2.6 per 100 patients in 2017.

1 Utter GH, Maier RV, Rivara FP, Mock CN, Jurkovich GJ, Nathens AB. Inclusive trauma systems: do they improve triage or outcomes of the severely injured?

Priority Strategies to Continue Improving Post-Crash Care. EMS, unlike law enforcement and fire departments, are not considered a foundational public health service by the State of Washington, and as such are not funded at the state level. Promoting EMS to this level could help provide more equitable, sustainable resources for services providers statewide. The following additional priority strategies can improve post-crash care.

- **EMS and Trauma Steering Committee.** The Department of Health Secretary-appointed, 30-member steering committee on EMS and trauma systems consists of representatives from surgeons and physicians, hospitals, prehospital providers, firefighters, local health departments, consumers, and other affected groups. Target Zero leaders should increase participation in its technical advisory committees to increase collaboration.
- **Increase Training.** Support rural EMS and trauma hospital training to improve clinical competency and reduce EMS response time and interfacility transfer times. The Washington Chapter of the American College of Surgeons Committee will be providing Rural Trauma Team Development Courses in counties with higher-than-average traffic fatality rates and who are in areas with 60+ minutes ground transport time to an existing level I or II trauma center.
- **Prehospital Trauma Triage Designation Procedure**[1] education and outreach. These newly updated field triage guidelines represent the current best practice for the triage of trauma patients and allow EMS providers to quickly and accurately determine if the casualty is a major or moderate trauma patient. It also aids in decision making to determine the most appropriate transfer facility location.
- **Share Trauma Resources.** Connect Target Zero Managers with regional trauma resources to engage in their coalitions. Washington has eight trauma care regions with a designated regional administrator that functions in a similar capacity, but with the state trauma system.[2] These regions have regional system plans, regional councils and regional QI committees that address system and provider care concerns. These regional committees and regional administrators could be valuable partners for Target Zero Managers when building their coalitions.

1 https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs/530143.pdf

2 EMS and Trauma Steering Committee, WA State Dept of Health.

4.2 TRAFFIC DATA SYSTEMS

Quality traffic records data is required for professionals to provide information that supports the Safe System Approach. With it, they:

- Diagnose the contributing factors to crashes.
- Analyze and evaluate the roadway system to identify locations or corridors with higher numbers of fatal and serious injury crashes compared to similar locations.
- Identify targeted strategies and countermeasures that will have the greatest effect on achieving the goal of zero fatalities and serious injuries.
- Assess the effectiveness of implemented countermeasures.
- Evaluate programs and projects to identify potential needs and updates to the system.

Traffic records systems include data from crashes, roadway infrastructure, driver licensing and vehicle registrations, citations and adjudications, and injury surveillance. Individually and combined, these data are essential for making informed traffic safety decisions.

Traffic Records Program Structure

The Traffic Records Program (TRP) is managed by the WTSC, Research and Data Division (RADD). The TRP consists of a grant program administered in accordance with 23 U.S.C. 405(c) through coordination with the Traffic Records Governance Council (TRGC) and Committees. Grants are awarded to agencies to implement projects that make traffic records systems improvements.

The TRGC also provides partner coordination and consensus oversight of traffic records systems improvements projects not funded through TRP grants.

The mission of the TRGC is to enhance transportation safety through coordinated projects to provide more timely, accurate, complete, uniform, integrated, and accessible traffic records data.

Many partner state agencies are represented on the TRGC and support the development, maintenance, and improvement to traffic records data systems including:

- Washington Traffic Safety Commission (WTSC)
- Washington State Department of Transportation (WSDOT)
- Washington State Patrol (WSP)
- Washington State Department of Health (DOH)
- Washington State Department of Licensing (DOL)
- Washington Association of Sheriffs and Police Chiefs (WASPC)
- Washington Technology Solutions (WaTech)
- Washington State County Road Administration Board (CRAB)
- Washington Administrative Office of the Courts (AOC)
- Washington State Office of Financial Management (OFM)

Several interrelated systems gather, maintain, store, and manage the data generated by agencies, associations, boards, and organizations.

The primary state traffic records data systems include:

CRASH

- WSDOT Collision Location and Analysis System (CLAS)
- WSP Requests for Electronic Collision Records (WRECR)
- WTSC Coded Fatal Crash Files (CFC)
- WSP Statewide Electronic Collision and Ticket Online Records (SECTOR)
- WaTech Justice Information Network Data Exchange (JINDEX)

DRIVERS AND VEHICLES

- DOL Driver and Vehicle System (DRIVES)

ROADWAY

- WSDOT Traffic Information and Planning Support (TRIPS)
- CRAB Geographic Information System – Mobility (GIS-Mo)
- WSDOT Highway Performance Monitoring System (HPMS)

CITATIONS & ADJUDICATIONS

- WSP Statewide Electronic Collision and Ticket Online Records (SECTOR)
- WaTech Justice Information Network Data Exchange (JINDEX)
- AOC Justice Information System (JIS)

INJURY SURVEILLANCE

- DOH Rapid Health Information Network (RHINO)
- DOH Washington Emergency Medical Services Information System (WEMSIS)
- DOH Comprehensive Hospital Abstract Reporting System (CHARS)
- DOH Trauma Registry
- DOH Death Vital Statistics
- Data Integration
- OFM Traffic Records Integration Program (TRIP)

Traffic Records Governance Council (TRGC) Strategic Framework

The TRGC measures the effectiveness of TRP efforts by tracking the following attributes:

- **Timeliness.** The time between the event and entry of the event into a database.
- **Accuracy.** The degree to which data is error-free and not duplicated in a database.
- **Completeness.** The degree to which records and attributes are present or missing from a database.
- **Uniformity.** The consistency of data from various jurisdictions with the same data definitions and reporting procedures.
- **Integration.** The ability of records in one database to be linked to records in another database using common identifiers.
- **Accessibility.** The ability of legitimate users to successfully obtain data or information.
- **Modernization.** The stability, security, efficiency, and sustainability of systems infrastructure.

The TRGC 2024-2026 Strategic Framework identifies key objectives in each of six different core traffic records systems to achieve traffic data system improvements, as illustrated in **Table 26**.

TABLE 26. KEY OBJECTIVES FOR TRAFFIC DATA SYSTEMS IMPROVEMENT

COORDINATION & COLLABORATION	CRASH	ROADWAY	DRIVER/VEHICLE	CITATION & ADJUDICATION	INJURY SURVEILLANCE
• Develop and implement an Enterprise Performance Management System to track data quality across all core systems. • Implement the Traffic Records Integration Program (TRIP) governance plan. (integration, accessibility) • Upgrade JINDEX from on premise to Azure Logic Apps. (modernization)	• Replace the SECTOR application with TraCS and implement master index functionality. (modernization) • Establish a statewide electronic crash/ticketing training coordinator position. (accuracy, uniformity) • Improve reporting/analysis of vulnerable road users involved in transportation system conflicts. (completeness, accessibility) • Increase MMUCC compliance. (uniformity)	• Implement all MIRE FDE requirements by 2026. (completeness, uniformity) • Improve GIS-MO training for the county roadway network. (uniformity) • Modernize HPMS/LRS legacy traffic and roadway systems. (modernization) • Expand and improve collection of traffic volume and operating speeds.	• Develop and maintain a data catalogue in DRIVES. (accuracy, completeness, accessibility) • Design and implement a legal case management system for administrative hearings/appeals. (completeness, uniformity, accessibility) • Develop a linked analytical database for internal and external partner analyses. (integration, accessibility)	• Automate exchange of information between CLJs and DOL. (timeliness, accuracy, completeness) • Improve integration of localized electronic court record systems into statewide case management systems. (completeness, uniformity) • Improve integration of records across court systems using person identifiers for complete court history. (completeness)	• Develop interfaces between EMS, ED, and other hospital data for improving quality and analysis. (accuracy, completeness, integration) • Improve hospital data quality reporting, and engagement. (accuracy, completeness) • Develop hospital data performance measures, key performance indicators, and surveillance tools for traffic safety. (accessibility)

The TRGC provides policy oversight and governance for statewide traffic records strategies and activities and is responsible for implementing the key objectives in the strategic framework. This work is achieved through the TRGC's five committees:

- **Electronic Traffic Information Processing (eTRIP).** The eTRIP committee is a forum for coordinating the technical aspects of traffic records data systems that support the electronic collection, storage, quality control, and transmission/exchange of traffic records data.
- **Grant Management and Review (GMR).** The GMR committee facilitates accountability and shared expertise among TRP grantees to ensure efficient and well-coordinated use of TRP resources.
- **Traffic Records Integration Program (TRIP).** The TRIP committee advises OFM TRIP staff on data governance issues and solutions, provides oversight of data request applications, and contributes traffic record data expertise regarding data use cases.
- **Traffic Data Analysis and Evaluation (TDAE).** The TDAE committee provides consultation and review of traffic records data analyses, research, and traffic safety program evaluation.
- **SECTOR Replacement Governance (SRG).** The SRG committee provides executive level oversight of the SECTOR replacement project. This temporary committee will sunset once SECTOR is decommissioned.

Through the TRGC's highly coordinated efforts and committee partnerships, the TRP can accomplish multiple annual data quality improvements across many traffic records data systems.

Traffic Records Priority Projects

The TRGC will implement multiple projects to address the 2024-2026 Strategic Framework key objectives, and support projects and efforts that fall outside of the key objectives but still make measurable improvements to traffic records data systems. While achieving all the key objectives is the goal, the following projects are TRGC priorities that are already underway and provide significant improvements to the TRP ecosystem.

Traffic Records Integration Program (TRIP). The purpose of TRIP is to develop, maintain, and integrate traffic records datasets across the six core traffic data systems: crash, driver, vehicle, roadway, citation, adjudication, and injury surveillance. TRIP links existing administrative datasets from multiple partner agencies to create a comprehensive crash-outcome dataset. This dataset enhances the capacity to assess collision contributing factors and the human and financial toll from crashes; expands the potential to assess behavioral factors; and adds capacity to assess the burden on the state's legal and administrative systems. TRIP accomplishes this by using crash records as the foundational integration point for linking pre- and post-crash data. TRIP staff and partners perform analysis of TRIP data to generate new information that can only be derived from integrated records to address long-standing traffic safety issues, as well as identify new crash contributors or protective factors for all road users in Washington.

- **Outcome:** By linking traffic records data, the state will have a comprehensive crash-outcome dataset to support traffic safety research and evaluation.
- **More information:** Traffic Records Integration Program

Statewide Electronic Collision and Ticketing Online Record (SECTOR) Replacement. Law enforcement partners in Washington use the SECTOR system for citation and crash reporting. First implemented in 2007, the SECTOR system is aging and in need of replacement. In June 2022, the SECTOR Replacement Governance (SRG) committee—comprised of those with appropriate knowledge and decision-making authority concerning traffic records systems—was formed to provide multi-agency collaboration on the strategy and policy operations of the SECTOR replacement efforts led by the Washington State Patrol (WSP). Efforts to identify a worthy replacement system led Washington to the Traffic and Criminal Software (TraCS) offered by the Iowa Department of Transportation. The SRG Committee is working with partner agencies, project management professionals, the legislature, and other partners to facilitate this large-scale transition from one system to another, with the goal of implementing TraCS in 2025 and decommissioning SECTOR in 2027.

- **Outcome.** TraCS is a sustainable crash/citation electronic data submission system that will provide flexibility for further enhancements and growth and improve the submission of electronic records.
- **More Information:** SRG Committee Charter

Model Inventory of Roadway Elements: Fundamental Data Elements (MIRE FDE). The MIRE is a set of core data elements developed by FHWA for the purpose of identifying critical roadway characteristics. The FDE are a subset of MIRE elements which must be collected and accessible for all public roads by mid-2026, per MAP-21. The FDEs are categorized by roadway functional classification and surface type. They include three categories for roadway segments: non-local paved roads, local paved roads, and unpaved roads. With the MIRE-FDE data elements and other available safety data, jurisdictions can analyze safety data and evaluate the safety performance of the system given the roadway and traffic characteristics at each location.

These elements are also informed by the requirements of the Highway Performance Monitoring System (HPMS), which is a national level highway information system which includes extent, condition, performance, use and operating characteristic data for public roadways nationwide.

To better be able to locate crash data on WSDOT's road system, upcoming projects include: Enterprise Intersection Data System to develop a comprehensive intersection database and Linear Referencing System Modernization to improve referencing for state and non-state routes.

- **Outcome.** The elements illustrated in MIRE FDE are critical to road and safety management in Washington. MIRE FDE helps the Washington State Department of Transportation (WSDOT) improve their roadway data inventory, traffic data inventory, and safety analyses of all roads in all jurisdictions.

More Information. FHWA - MIRE

Washington Emergency Medical Services Information System (WEMSIS) and the Rapid Health Information Network (RHINO). The Department of Health WEMSIS and RHINO systems comprise traffic records injury surveillance records from EMS response and emergency department/urgent care/outpatient facility visits. In addition to traffic injury, these systems support and inform all areas of public health. The TRGC has historically and continues to invest heavily in these systems to improve the data quality and completeness. Both systems are finally at a stage of maturity to perform meaningful traffic safety analyses. In addition, both datasets are integrated through the Traffic Records Integration Program with crash data. The TRGC will continue to invest in these systems to maintain and improve data quality while increasing the accessibility of the information for broader incorporation into traffic safety programming and evaluation.

- **Outcome.** The data quality of traffic records injury surveillance systems is continuously improved, and the information can be made accessible in a format that is easy to understand and informs traffic safety project planning and evaluation.
- **More Information.** DOH WEMSIS and DOH RHINO