**2018 Update to the Texas Traffic Safety Information System Strategic Plan with MIRE Fundamental Data Element 9/30/2026 Implementation Plan**

**Prepared for**

National Highway Traffic Safety Administration

**Prepared By**

Texas Department of Transportation *with the* Texas Traffic Records Coordinating Committee

May 2017

**1.0 Texas Traffic Records Coordinating Committee Documentation**

* **Introduction**

This Update to the 2018 Texas Traffic Safety Information System (TSIS) Strategic Plan was developed by the Texas Traffic Records Coordinating Committee (TRCC) with support from the Texas Department of Transportation (TxDOT) to advance the performance and quality of the State’s traffic records data.

* **The Role of the TRCC**

The TRCC is a statewide stakeholder forum created to facilitate the planning, coordination and implementation of projects to improve the State’s traffic records system. The Texas TRCC is a partnership of representatives from the transportation, law enforcement, criminal justice, and health professions. As such, the TRCC is the body responsible for improving the performance and quality of the data used to support highway safety analyses and countermeasure selection in Texas.

The core membership of the Texas TRCC is described below. The State’s Executive Charter (provided below) and Designation of TRCC and Traffic Records Coordinator Designation have changed from last year’s plan.

**Representation**

Representing roadway and Governor’s Highway Safety Representative is Michael Chacon, Division Director of the Traffic Operations Division of TxDOT. The TRCC designated and appointed Mr. Chacon as the Traffic Records Coordinator.

* Michael Chacon, P.E., Director, Traffic Operations Division

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Texas Department of Transportation

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Representing Crash Records Information System (CRIS), crash data, and the Fatality Analysis Reporting System (FARS) is Kellie Pierce. Ms. Pierce is the Director of the Crash Data and Analysis Section within the Traffic Operations Division of TxDOT. She oversees the development, implementation, and maintenance of CRIS and the training and support of law enforcement using CRIS. She is responsible for the integrity, accuracy, analysis, and dissemination of crash data.

* Kellie Pierce, Crash Data and Analysis Section, Traffic Operations Division

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Representing Geographical Roadway Inventory Data (GRID) and associated roadway systems that capture the roadway assets for Texas, is David Freidenfeld. Mr. Freidenfeld is the Roadway Records Branch Supervisor within the Transportation Planning and Programming Division of TxDOT. He oversees the development, implementation and maintenance of the GRID and other associated roadway asset systems and is part of the TxDOT Safety Data Collections and Analysis group within TxDOT.

* David Freidenfeld, Roadway Records Branch Supervisor

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Representing driver licensing and driver history is Abed Nader. He works in the Enforcement and Compliance Service and is responsible for overseeing the Conviction Reporting office where all convictions and enforcement actions are applied to the driver record. These include accident data and crash suspension related enforcement actions.

* Abed Nader, Assistant Manager, Enforcement & Compliance Services,

Driver License Division

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Texas Department of Public Safety

5805 North Lamar Boulevard

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Representing the Department of State Health Services’ Injury Epidemiology & Surveillance Branch, which houses the EMS & Trauma Registries (MAVEN), is Dan Dao, MPH. Dan is the Branch Manager and works collaboratively with the registry’s project manager on forwarding the important efforts in the linking process of EMS and Hospital data with crash records. Dan is a subject matter expert on the EMS & Trauma Registries and has expertise with the epidemiology of injuries associated with and factors related to motor vehicle crashes.

* Dan Dao, MPH, Branch Manager

Dan.Dao@dshs.gov

Injury Epidemiology & Surveillance Branch

Texas Department of State Health Services

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Representing the Office of Court Administration is Thomas Sullivan. Thomas is the Project Manager responsible for managing the statewide eCitation Project.

* Thomas Sullivan, Project Manager

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Information Services

Office of Court Administration

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Representing State Law Enforcement is Capt. Kevin Wilkie. He is a captain with the Texas Highway Patrol Division of the Texas DPS. Captain Wilkie provides insight on enforcement citation issues, as well as the needs of the law enforcement officers who collect citation and crash data.

* Captain Kevin Wilkie, Texas Highway Patrol Division

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Representing the Department of Motor Vehicles, which oversees vehicle titling and registration, and motor carriers, is Deputy Director of the Vehicle Titles and Registration Division, Tim Thompson.

* Tim Thompson, Deputy Director

Tim.Thompson@txdmv.gov

Vehicle Titles and Registration Division

Texas Department of Motor Vehicles

4000 Jackson Ave.,

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This group of individuals serves as the executive-level committee, as many are the managers of the individual core systems with the authority to make decisions regarding the functionality and accessibility of the systems.

**TRCC Operation**

As stated in the February 2, 2006 Federal Register (Vol. 71, No. 22), the Texas TRCC:

1. Includes representatives from highway safety, highway infrastructure, law enforcement and adjudication, public health, injury control and motor carrier agencies and organizations;
2. Has authority to review any of the State’s highway safety data and traffic records systems and to review changes to such systems before the changes are implemented;
3. Provides 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 State that create, maintain and use highway safety data and traffic records;
4. Considers and coordinates the views of organizations in the State that are involved in the administration, collection and use of the highway safety data and traffic records system;
5. Represents the interests of the agencies and organizations within the traffic records system to outside organizations; and
6. Reviews and evaluates new technologies to keep the highway safety data and traffic records systems up-to-date.

***Executive Charter***

Whereas the State of Texas and local governmental agencies have concluded and recognized the need to create a committee to assist with the integration of Traffic Records information to enhance decision making in order to save lives and injuries on Texas highways;

And, whereas the State of Texas and local governmental agencies have agreed to collaborate in the development and implementation of a Traffic Safety Information Systems Improvement Program to provide more timely, accurate, complete, uniform, integrated and accessible data to the traffic safety community;

And, whereas the State of Texas and local governmental agencies have agreed to collaborate in the development and implementation of a Traffic Safety Information Systems Strategic Plan to assure that all components of the State Traffic Safety Information System Improvement Program are coordinated;

Therefore, the following Charter is hereby established to help in direction of a Traffic Records Coordinating Committee (TRCC) as agreed upon by the participating agencies.

* ***A. Objective***

To provide an interagency Traffic Records Coordinating Committee (TRCC) composed of voting members from the Texas Department of Public Safety (TxDPS), Texas Department of Transportation (TxDOT), Texas Department of State Health Services (DSHS), Texas Department of Motor Vehicles (TxDMV) and The Office of Court Administration (TxOCA) whose purpose is to provide executive direction on all matters related to the Texas Traffic Safety Information Systems (TSIS) and the Traffic Safety Information Systems Improvement Program within the State.

* ***B. TRCC Goals***

To improve the timeliness, accuracy, completeness, uniformity, and accessibility of the data of the state that is needed to identify priorities for national, state and local highways and traffic safety programs.

To provide for the comprehensive collection, maintenance and dissemination of Texas traffic safety related data in order to set the direction for traffic safety improvement measures.

To ensure that all Traffic Safety Information Systems improvement projects move forward on schedule and within budget.

* ***C. TRCC Authority***

The TRCC operates under the authority of TxDOT and shall consist of voting members from TxDPS, TxDOT, DSHS, TxDMV and the TxOCA.

Each member shall serve at the discretion of their Department Director and shall have

the authority to recommend projects for funding to support the Texas Traffic Safety

Information System Improvement Program. Final funding authority resides with the

Traffic Records Coordinator at the Texas Department of Transportation

* ***D. TRCC Purpose***

To evaluate the effectiveness of the committee’s efforts to make improvements as needed.

To provide oversight to link state data systems within the state, such as systems that contain medical, economic data and crash information.

To provide oversight and investigate linking crash data to other crash data systems within the state with information relevant to crashes.

To ensure that all Traffic Safety Information System improvement projects meet and/or exceed the expectations of the above stated purposes.

To provide oversight to the development of the State’s Traffic Safety Information System Strategic Plan.

* ***E. TRCC Duties and Responsibilities***

The duties of the TRCC include but are not limited to:

The TRCC will provide executive direction and oversight for the current Traffic Safety Information Systems.

The TRCC will provide executive direction and oversight for the Traffic Safety Information System Improvement Program.

The TRCC will provide executive direction, oversight and formal approval of the Traffic Safety Information System Strategic Plan.

The TRCC will have the authority to review any of the State’s highway safety data and traffic records systems and to review changes to the systems before the changes are implemented.

The TRCC will provide a forum for discussion and reporting of highway safety data and traffic records issues back to the agencies and organizations that created maintain and use highway safety data and traffic records.

The TRCC will consider and coordinate the views of organizations in the State that are involved in the administration, collection and use of the highway safety data and traffic records systems.

The TRCC will represent the interests of the agencies and organizations within the traffic records system to outside organizations.

The TRCC will review and evaluate new technologies to keep the highway safety data and traffic records systems up to date.

I, Michael Chacon, as TRCC Coordinator, hereby certify that this charter legally mandates the TRCC with specified functions as contained within

Signed

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Michael Chacon, P.E., Date

Texas Department of Transportation

Traffic Operations Division Director

TRCC Coordinator and Chair

**2.0 Assessment and Benchmarking**

* **2.1 Status of the 2013 Traffic Record Assessment Recommendations**

In October 2007, TxDOT hosted a NHTSA Technical Assessment Team to conduct the State of Texas TRA. The final TRA report made numerous recommendations. The State then identified a general timeline for initiation or completion of those recommendations. The State’s most recent assessment or update of its highway safety data and traffic records system was completed on 3/25/2013 which updated Texas' highway safety data and Traffic Records system to address each recommendation from the Assessment conducted on 10/26/2007. All updates contained within have been approved by the Traffic Records Coordinating Committee as of 5/10/2016.

**Table 2.1 Status of Traffic Records Assessment Recommendations**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **1-A** | **Crash Information** |  |  |  |
| 1-A.2 | Complete the data entry of backlogged reports by February 2008 as planned. | TxDOT | **Near-term** | Complete  |
| 1-A.7 | Develop a process to add the CRB-3C (commercial motor vehicle (CMV) Report) information to the CRIS database. | TxDOT | **Near-term** | Complete |
| 1-A.8 | Maintain the liaison role that DPS has with the over 2,000 local law enforcement agencies as the CRIS responsibility is transitioned to TxDOT. | DPS/TxDOT | **Near-term** | Complete |
| 1-A.9 | Consider integrating CMV processing into the routine crash processing effort. | TxDOT | **Near-term** | Complete |

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| --- | --- | --- | --- | --- |
| **TRA****Reference****Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 1-A.1 | Develop a formal plan to support electronic reporting of crash data and assure that the plan will allow an interface with local RMSs. | TxDOT | Mid-term | Complete |
| 1-A.3 | Establish a new standard data entry process upon completion of the backlog elimination efforts. The new process should include electronically transmitted data, as well as paper reporting. | TxDOT/DPS | Mid-term | Complete |
| 1-A.6 | Pursue MMUCC compliance of the crash report form and the CRIS database. | TxDOT | Mid-term | On-going. NHTSA Go-Team MMUCC Assessment complete as of April 2016, Suspected Serious Injury (A) will be updated in accordance with FHWA directive by April 2019. |
| 1-A.4 | Include in the data entry process the ability to integrate with other databases, e.g., the driver and vehicle systems to auto-populate CRIS with driver vehicle information. | DPS/TxDOT | Research completed/Long-term | Complete |
| 1-A.5 | Develop a plan for improved accessibility to crash information where appropriate, i.e., web access for reporting and query capabilities. | TxDOT | Mid-term | Query was launched 12/2016 allowing the public to search for publicly available crash data. We provide public extract file for anyone wanting publicly available data and standard extract file for governmental agencies wanting crash data. |
| 1-A.11 | Develop a marketing plan to inform Texas safety partners about the availability of timely and quality crash data. | TxDOT | Long-term | Ongoing |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA****Reference****Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **1-B** | **Roadway Information** |  |  |  |
| 1-B.1 | Include local engineering and safety professionals in strategic planning for traffic records systems.  | TRCC | **Near-term** | No progress to report |
| 1-B.2 | Include representation on the Traffic Records Coordinating Committee of local engineering and safety professionals. | TRCC | **Near-term** | Ongoing: Added David Freidenfeld to the TRCC representatives |
| **1-C** | **Vehicle Information** |  |  |  |
| 1-C.1 | Participate actively in the new TRCC to assure that all opportunities to identify and incorporate into the Registration and Title System (RTS) Refactored system definition those features that would be useful to and from other components of the traffic records system are examined and adopted. This is particularly true for using a common identifier for persons who are drivers and vehicle owners and to facilitate the desirable links with the CRIS. | TxDOT/ TxDMV | Long-term | Complete CRIS is integrated with RTS. |
| **1-D** | **Driver Information** |  |  |  |
| 1-D.1 | Participate actively in the new TRCC to assure that all opportunities to identify and incorporate into the revised driver records system definition those features that would be useful to and useful from other components of the traffic records system are examined and adopted. This is particularly true for using a common identifier for persons who are drivers and vehicle owners and to facilitate the desirable links with the CRIS. | DPS | Long-term | Complete: CRIS is integrated with TLETS. |
| **1-E** | **Citation/Adjudication Information** |  |  |  |
| 1-E.1 | Oversee and facilitate communication related to electronic citation systems, between the judiciary and law enforcement agencies throughout the State, through the TRCC. | TRCC | Long-term | Ongoing. The Office of Court Administration is developing a Request for Offer, to be released Summer 2017, soliciting offers for a statewide citation database to which law enforcement agencies and courts can electronically submit citation data. The statewide database will be available to participating local law enforcement and courts, and to certain state agencies for data analytics once implemented in the Summer of 2019.  |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

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| --- | --- | --- | --- | --- |
| **TRA****Reference****Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 1-E.2 | Design and develop a distribution system for a statewide uniform citation which can be sequentially numbered and tracked as the basis for a citation tracking system for the State, or minimally develop a “proof of concept” with DPS. | OCA | Long-term | Ongoing. OCA has gathered requirements from most of Texas’ 25 largest cities and 10 largest counties, and is drafting a Request for Offer to be published in Summer 2017. A vendor is expected to be on-board in October 2017. OCA is working closely with DPS on the project.  |
| 1-E.3 | Investigate the potential for a DWI tracking system using information from TCIC (Texas Crime Information Center) and the Administrative License Revocation paperwork that is sent to Driver License Division (DLD), with matches to the convictions sent from the Courts. | TRCC | Near-term | Pilot has been planned but no progress has been made over the last year. The Texas State Supreme Court implemented electronic records for civil cases in 2016. Electronic filing for criminal cases is mandated to begin in the largest counties starting 7/1/17 and gradually be implemented statewide, with an estimated completion date of January 2020. This will provide the start of electronic records for criminal cases. The criminal case initiation will include offense codes from DPS, to identify the offense type. |
| **1-F** | **Injury Surveillance System Information** |  |  |  |
| 1-F.1 | Continue to utilize the GETAC recommendation of acquiring one year of a full-time IT specialist to bring EMS/Trauma registry software and computers up-to-date. This will prevent intermittent crashes and downtime that may cause providers and hospitals to lose confidence in the system. | DSHS | **Near-term** | Ongoing – DSHS continues to utilize a full-time IT specialist to assist with troubleshooting data processing errors in the new system (MAVEN) and issues with customer access to the system.  |
| I‑F.6 | Continue the many uses of the EMS/Trauma Registry, including injury prevention programs and trauma designation processes, and publicize these through involvement with the TRCC and through injury prevention and EMS conferences. | DSHS | **Near-term** | OngoingDSHS registry staff holds stakeholder webinars presenting EMS and Hospital Summary Reports and made presentations at Texas Public Health Association, Texas Trauma Coordinator’s Forum; and GETAC’s Injury Prevention Committee, EMS Committee, and Trauma Systems Committee. |
| 1-F.3 | Promote the value of the data in the ISS components to traffic safety partners and stakeholders. | DSHS | Mid-term | DSHS has presented ISS data at 2015 National Association of State EMS Officials (NASEMSO) and 2016 Annual Texas Public Health Association Conferences. DSHS updates stakeholders through quarterly webinars in which progress on linking EMS and hospital data to CRIS is discussed. DSHS also provides EMS and Hospital statistics on motor vehicle related causes of injury to stakeholders and legislators as requested. |
| I‑F.4 | Assure that all managers of the Texas ISS components participate fully in the TRCC. | DSHS | Long-term | OngoingDSHS Program and Project managers and Section Director are briefed about the TRCC activities and DSHS’ involvement. |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **2-A** | **Crash Information Quality** |  |  |  |
| 2-A.3 | Establish an ongoing law enforcement training program specifically dedicated to improving crash data timeliness, completeness, accuracy, and consistency. | TxDOT  | **Near-term**  | On-going: TxDOT continues to provide CRASH training to CRASH agencies via webex and in person. An Automated Training Program is planned for CY 2017, which will assist in ongoing and updated training for CRASH users. |
| 2-A.1 | Establish a formalized Quality Control program for the measurement of timeliness, completeness, consistency, and accuracy of crash data. | TxDOT | Mid-term | Ongoing: TxDOT has a Quality Assurance team who review crash accuracy, an Operations team that reviews timeliness and addresses any production related programs and a Data Team who monitors and reports crash data. Correction efforts have been historically performed as needed. |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

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| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 2-A.2 | Use the results of the Quality Control program to develop baseline quality and performance measures for strategic planning purposes. | TxDOT | Mid-term | Ongoing Crash Data metrics are used at the Federal, State and internally to measure performance. |
| 2-A.4 | Promote broad acceptance of electronic data capture and reporting (to CRIS) by all law enforcement agencies in the State. | TxDOT | Long-term | Complete |
| 2-A.5 | Develop appropriate Internet accessibility to crash and traffic records systems. | TxDOT | Long-Term | Complete |
|  |  |  |  |  |
| **2-B** | **Roadway Information Quality** |  |  |  |
| 2-B.1 | Involve local road and safety engineers in planning for data needs. | TxDOT/TRCC | Long-term | Ongoing Through working group meetings. |
| 2-B.2 | Give serious consideration to provide local agencies access to road features and crash data on their roads for highway safety programming functions. | TxDOT | Long-term | Complete.TxDOT in 2014 deployed a web based query tool. This tool allows local agencies, MPOs and the public to build and submit data queries or choose from standard queries and receive the results immediately. TxDOT also works directly with local agencies through its district offices. |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **2-C** | **Vehicle Information Quality** |  |  |  |
|  | None. |  |  |  |
| **2-D** | **Driver Information Quality** |  |  |  |
|  | None. |  |  |  |
| **2-E** | **Enforcement/Adjudication Information Quality** |  |  |  |
| 2-E.1 | Develop an avenue for regular feedback from the courts to police agencies related to timely filing of citations and any common errors that might occur. | OCA | Long-term | Some Progress: The Dept. of Public Safety is building the Highway Safety Operations Center (HSOC) Citations Database which will feed data to OCA’s eCitation database. OCA will publish a Request for Offer in Summer 2017 for the development of a statewide eCitation database. The Department of Public Safety will be able to extract citation data from the statewide database. Ultimately, the continued implementation of electronic citations at the local level will go a long way towards improving the quality of citation data. Expanding electronic citations will likely require a separate initiative to provide local jurisdictions with the necessary infrastructure (eWriters, eCitation software) for moving to electronic citations. |
| 2-E.2 | Provide training for officers or a regularly scheduled newsletter that addresses issues with charging documents and charging language. This effort will promote both correct and uniform charging language, which will save time for officers, citizens, and court personnel. | TRCC | Long-term | No progress |
| 2-E.3 | Provide, pursuant to allowances by state statutes, court personnel with electronic access to driver history information. | TRCC | Long-term | OCA’s case registry system was implemented in September 2009 has been shut down due to lack of funding. |
| **2-F** | **Injury Surveillance Systems Information Quality** |  |  |  |
| 2-F.1 | Seek legislative funding to support the ongoing operation and needs of the EMS/Trauma Registry data collection system. | DSHS | Long-term | OngoingSecured DSHS matching funding for TxDOT e-Grant for FY2016 and FY2017. |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 2-F.2 | Continue to work with the GETAC Injury Prevention Committee to raise awareness of the needs of the EMS/Registry and identify a legislator to champion the cause of injury prevention. | DSHS | Long-term | OngoingIdentification of a legislator to champion the cause of injury prevention is ongoing. |
| 2-F.3 | Work with EMS providers and hospitals submitting data to the EMS/Trauma Registry to determine the data elements to submit to the new Trauma Registry. | DSHS | Long-Term | Ongoing. The Injury Epidemiology & Surveillance Branch’s EMS & Trauma Registries will be moving to the National EMS Information System (NEMSIS V3.4.0) and National Trauma Data Bank (NTDB 2017) data standards. These are the national standards. DSHS continues to work with stakeholders on the inclusion of Texas specific data elements that are not already collected following national standards |
| 2-F.4 | Use the hospital discharge dataset to calculate the number of major trauma cases in Texas in order to estimate the extent of underreporting to the EMS/Registry. | DSHS | Near-Term | OngoingProgrammatic procedures for data sharing within the agency have been identified. An Internal Review Board (IRB) application for hospital discharge data has been submitted. |
| 2-F.8 | Continue to promote the usefulness of the EMS/Registry data by working with injury prevention planners, producing data reports, and presenting at injury prevention conferences. | DSHS | Long-term | OngoingInjury Epidemiology & Surveillance Branch staff promotes the usefulness of the registry data by presenting data and statistics to various GETAC committees in addition to other external forums such as the Department of Transportation Regional Partners Meetings and Texas Public Health Association. Future venues for data presentations include Texas EMS Conference and The National Association of State EMS Officials’ (NASEMSO), Council of State and Territorial Epidemiologist. |
| 2-F.11 | Assure that all managers of the key components of a statewide Injury Surveillance System are aware of and participate fully in the TRCC. |  DSHS | Long-term | OngoingDSHS Injury and Project managers and Section Director are briefed about the TRCC activities and DSHS involvement. |
| 2-F.5 | Undertake a linkage project to match EMS runs to major trauma cases in the Registry for the dual benefit of improving EMS information on trauma cases and providing EMS agencies with outcome information. | DSHS | Long-Term | Ongoing. The Injury Epidemiology & Surveillance Branch has successfully linked EMS and hospital records with Crash data for 2010-2014.  |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 2-F.9  | Link the crash and EMS/Trauma Registry data, once crash data become available, so that the burden of motor vehicle crashes in Texas can be better understood. | DSHS and TxDOT | Near-Term | In progress. TxDOT provides a data extract file to DSHS to use in their EMS & Trauma Registries system to link crash data with EMS and Hospital records. The Injury Epidemiology & Surveillance Branch has successfully linked EMS and hospital records with Crash data for 2010-2014. |
| 2-F.10 | Collaborate with all data-sharing partners in the developing protocols, memoranda of understanding, and data sharing agreements and methodologies that will enable the injury prevention and traffic safety community to conduct analytical and research activities as authorized users. This should be done under the guidance of the TRCC. | DSHS | Mid-term | Ongoing. Collaborating with Texas A&M Transportation Institute and Dell Medical School to study older drivers’ crashes.  |
| 2-F.6 | Determine the feasibility of removing restrictions regarding linkage of the hospital discharge database to other systems in the Injury Surveillance System. | DSHS | In progress  | DSHS is currently working on the programmatic procedures for data sharing within the agency.SB156 amends the Texas Health and Safety Code, sec. 108.013 to authorize theDepartment of State Health Services (DSHS) to share data records with patientidentifiers collected from hospital discharge reports (not included in the publicUse data) with other programs in the agency, allowing for linkage between public health databases. An Internal Review Board (IRB) application for hospital discharge data has been submitted.Effective date: 9/1/12 |
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**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

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| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **3-A** | **Program Management and Evaluation** |  |  |  |
|  | None |  |  |  |
| **3-B** | **Research and Program Development**  |  |  |  |
| 3-B.1 | Encourage and provide resources for the development of a citation tracking system, based on a review by the TRCC of the most viable place to develop and house such a system. | OCA | Long-term | Ongoing. OCA will publish a Request for offer in Summer 2017 for the development of a statewide citation database, to which local law enforcement agencies and courts can transmit citation data. The statewide citation database will be available to participating local and state agencies for data analytics. The statewide database is anticipated to go live in Summer 2019. |
| **3-C** | **Policy Development**  |  |  |  |
| 3-C.1 | Address in the Strategic Plan where the responsibility for highway safety policy development should reside. | TxDOT | **Short-term** | Complete. Traffic Operations Division manages highway safety policy  |
| **3-D** | **Private Sector and Public Requests** |  |  |  |
| 3-D.1 | Continue to produce and update the Motor Vehicle Crash report when more current data become available. | TxDOT | **Near-term** | Complete |
| 3-D.3 | Seek opportunities to provide crash data to the injury prevention and surveillance community once the new crash data become available. | TxDOT | Long-term | Ongoing |
| 3-D.2 | Begin strategizing for methods of dealing with public and private sector data requests in an easy and timely fashion; this could include web access to a compiled database where users can define and manipulate their own queries. | TxDOT | Mid-term | Complete. Crash data requests can now be made through the TxDOT website. |
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| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| **4-A** | **Coordination** |  |  |  |
| 4-A.1 | Add local law enforcement and local traffic engineers to the TRCC membership, and other appropriate stakeholders and transportation safety advocates. | TxDOT/ TRCC | **Near-term** | No progress |
| 4-A.2 | Provide an opportunity for members of the TRCC to present information regarding their individual data collection, use, or ownership. | TRCC | **Near-term** | In progress; TRCC members are communicating and sharing challenges/‌ successes at TRCC meetings |
| 4-A.3 | Form a TRCC subcommittee to develop an inventory of data elements and a data dictionary for all components of the diverse traffic records system. | TxDOT | Long-term | Not started, awaiting results from feasibility study planned for FY 2017 |
| 4-A.4 | Continue, through the TRCC, to plan for electronic data collection and transmission by law enforcement and courts, using electronic crash and citation systems.  | TxDOT/DPS/OCA | Long-term | In progress. Each agency working toward data consolidation, but no data housing repository has been identified. |
| 4-A.5 | Provide adequate administrative support to the TRCC chair. | TxDOT | **Near-term** | Ongoing |
| **4-B** | **Strategic Planning** |  |  |  |
| 4-B.1 | Task the TRCC with the responsibility to follow up on the NHTSA review of the 2007 Section 408 grant submission and consider the suggestions cited above. | TxDOT | Short-term | The State did not receive any questions from NHTSA; State is considering and acting on recommendations from the TRA. |
| 4-B.2 | Use the recommendations in this Assessment and begin the process for a Traffic Records Strategic Plan and any future Section 408 grant submissions. | TxDOT | **Near-term** | Completed |
| 4-B.6 | Develop benchmark and performance measures in future Plan updates collaboratively with the project manager, other traffic records partners that may be affected by the project results, and the Traffic Records Coordinator to assure consensus is reached on the appropriate measures to be monitored for progress. | TRCC with consultant support | Complete | Completed April 2008 |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 4-B.3 | Assign the TRCC (restructured as recommended in Section 4-A of this assessment) with the responsibility for the development and implementation of the Traffic Records Strategic Plan. | TRCC | Near-term | Ongoing |
| 4-B.4 | Establish project management procedures for each project proposed in the Plan. | TxDOT with TRCC (and project leaders) | Near-term | Complete. TxDOT manages projects funded with Section 405c funds through the eGrants system. |
| 4-B.5 | Establish a progress reporting and monitoring system to track all projects listed in the Plan regardless of funding sources. | TxDOT/Project Managers | Near-term | All 405c Projects will be managed in eGrants beginning in FY 2017. |
| **4-C** | **Training and Staff Capabilities** |  |  |  |
| 4-C.1 | Determine the training needs for users to better understand the value and application of safety data. | Each core system owner | Long-term | Ongoing  |
| 4-C.2 | Develop a clearinghouse to provide information about data service and resources that can assist in analyzing safety data. | N/A | Not at this time | No change in progress.  |

**Table 2.1 Status of Traffic Records Assessment Recommendations (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TRA Reference Number** | **Management and System Issues/Recommendations** | **Responsible Agency** | **Timeframe for Implementation** | **Status of Activity** |
| 4-C.3 | Develop an ongoing training program targeting law enforcement to assist with proper completion of crash reports, importance of the data they provide, and the ability to advance electronic crash data collection. | TxDOT  | Long-term | Completed in 2014. |
| 4-C.4 | Consider including safety stakeholders in training courses offered through the judicial associations to better understand the processing of traffic-related offenses and their impact on traffic safety programs. | N/A | Long-term | No change in progress. Current TRCC membership does not have control over this. |

**2.2 Core System Status**

This section provides an update on the status of core systems. More extensive documentation regarding the progress made on individual systems can be found in the minutes of the Texas TRCC meetings.

**Crash Record Information System (CRIS)**

The Crash Record Information System is a web based, online system that is designed to capture, process and analyze crash data for the State of Texas. Crash Reporting and Analysis for Safer Highways (CRASH) is one of the many components of the Crash Records Information System (CRIS) was deployed October 2011, and enables Law Enforcement Officers to submit a crash report directly into the state system. TxDOT also offers Law Enforcement Agencies the option submit electronic records using its internal Records Management Systems vendors. As of April 2017, 91.3% of crash reports are submitted electronically, with 8.7% submitted via paper records. The Crash Report Online Purchase System (CROPS) is another component of CRIS that enables the purchase of Texas crash reports using a credit card and is open and available to the public 24 hours, 7 days a week. The newest component is CRIS Query, which is an externally facing application, open to the public, that allows users to pull publically available crash data and summarize, export and map Texas crashes statewide and for specific areas. The CRIS program also provides a Help Desk to assist with all CRIS related questions. The Help Desk is available to law enforcement officers and the public 12-hour, 7-day a week, 365-days a year.

**Injury Surveillance Systems**

The Department of State Health Services (DSHS) houses the official state EMS & Trauma Registries (MAVEN) which was implemented in September 2012. Implementation of the new system included conducting system demonstrations in Austin, Dallas, and Houston as well as providing over 80 training webinars to EMS and hospital staff responsible for reporting to the EMS & Trauma Registries. DSHS Registry Program has hired four contractors - an IT Specialist, Test Lead, Data Analyst and a Project Manager. The responsibility of the IT Specialist includes maintaining the current registry, fixing minor defects, and making minor improvements. During the two years since there has been an IT Specialist on board, the Registry has been steadily working. The Test Lead and Data Analyst ensure new functionality is tested and meets project deliverable specifications. The EMS & Trauma Registries is a commercial off-the-shelf product built by Consilience that allows reporting entities to submit data to the state via file upload or web data entry. The EMS & Trauma Registries is transitioning to the National EMS Information System (NEMSIS) V3.4.0 and National Trauma Data Bank 2017 data standards.

**Roadway System**

The Transportation Planning and Programming (TPP) Division of TxDOT is the owner of the roadway inventory file. In the fall of 2015, a completely new Roadway Inventory database and maintenance application went into production. This new system, the Geospatial Roadway Inventory Database (GRID), transitioned the maintenance of the roadway inventory data from a variety of disparate systems to a single GIS-based system. Around that same time, a new Straight Line Diagram tool was developed to enhance access to the roadway inventory data.

While the GRID and SLD systems are operational, they both require additional enhancements to completely satisfy their design requirements. GRID was developed as a custom application by a local IT vendor, however, current development activities is being performed by TxDOT’s in-house IT vendor. The SLD tool is a customizable off-the-shelf software package developed by an out-of-state vendor, and that vendor is working with TxDOT’s in-house IT vendor to expand the SLD tool’s capabilities. It is expected that GRID will be able to satisfy our roadway inventory reporting requirements by the end of 2017.

For calendar year 2015 data, the extent of the roadway network remained unchanged from 2014. For calendar year 2016 data, an additional 63 mileage was added to the system. In the beginning of 2017 TPP, in cooperation with each of the 25 districts, began to address the large backlog of Roadway Inventory edits resulting from roadway construction projects and Highway Designation changes that have accumulated since the initial deployment of the GRID system. In addition, TPP began a comprehensive review of all roadway attributes on the state highway system, which represents approximately 25 percent of the mileage, but nearly 75% of the VMT.

As required by 23 CFR Part 924.11, this 2017 update to the Traffic Safety Information System Strategic Plan includes a plan to ensure that Model Inventory of Roadway Elements (MIRE) fundamental data elements are included in the Roadway Inventory component of a state’s Highway Safety Information system. This plan is included in Appendix A/Section 6/or here.

**Driver Licensing System**

The Driver License System (DLS) managed by the - Texas DPS contains over 18 million active records as of April 2016. The Texas DPS Driver License Division issues driver licenses and administers programs for enforcement and compliance of driver safety.

Vehicle Registration and Title System (RTS)

The TxDMV administers the refactored RTS database. The refactored RTS is an improved version of the legacy RTS. The objective was to improve the underlying technical implementation with modern, more agile and sustainable technology, while preserving the existing application functionality. The system allows for easier upgrades and enhancements to the application and a more efficient way to maintain and operate the code, while ensuring data integrity and security.

**Citation/Adjudication System**

OCA is managing the Statewide eCitation System project. The system will have a statewide database to which local courts and law enforcement agencies can submit citation data thru a standard API (Application Programming Interface). The database will be available to participating local agencies to perform data queries. DSHS, TxDPS, TxDOT and OCA will be able to extract data from the database.

OCA will publish a Request for Offer in Summer 2017, with the goal of having a vendor on board in October 2017 to begin the development and implementation of the Statewide eCitation System. The eCitation system will be piloted at several sites (projected to occur in Summer/Fall 2018) before being made available statewide for the submission of citations. The system is currently scheduled to go live in the summer of 2019.

1. **Traffic Records Strategic Action Plan**
* **3.1 Status of the Texas TSIS Strategic Action Plan**

Table 3.1 provides an update on the specific actions or projects that were recommended to advance the accessibility, accuracy, completeness, integration, timeliness, and uniformity of traffic records in Texas and to strengthen the TRCC program. Table 3.2 provides the status of recent traffic records projects.

**Table 3.1 Action Plan**

|  |  |  |
| --- | --- | --- |
| **Objective** | **Activity/Description** | **Status Update** |
| 1. Improve the Leadership and Coordination of the TRCC | ***1.1*** ***Formalize and Focus TRCC Meetings****Purpose:* To develop standing agenda items to be discussed every meeting.*Description:*System development updates by agencies.Status of other projects defined in this Action Plan, including contractor progress if they are used.Status of grant applications and requests.Presentation of recent data analyses and data use by members.*Measurement of Progress:* Regular meetings of the TRCC. | *Measurement of Progress*: TRCC meetings were held.The dates for the TRCC meetings were: September 20, 2016January 24, 2017March 21, 2017May 16, 2017 |
|  | ***1.2 TRCC Working Groups****Purpose:* To develop smaller working groups for vetting specific issues.*Description:* Form at least three separate committees which will be subgroups below the TRCC, but not part of the TRCC:Citation and Adjudication Information Outreach;Web-Based Data Entry; andData User Needs (outreach to MPOs, etc.).*Measurement of Progress:* Number of meetings and annual reports to the TRCC by subgroups. | *Measurement of Progress*: No recent meetings of sub-groups, but formation of those groups and other groups that may become necessary was discussed at the November 2015 meeting. The decision to form those groups was postponed until the results of an FY 2017 feasibility study were revealed. |

**Table 3.1 Action Plan (continued)**

|  |  |  |
| --- | --- | --- |
| **Objective** | **Activity/Description** | **Status Update** |
| 1. Improve the Leadership and Coordination of the TRCC (continued) | ***1.3 TRCC Stakeholder Outreach****Purpose:* To collect and share information regarding core system development by participating in other committee and meetings.*Description:* A representative of the TRCC or TxDOT will attend and report back to the TRCC on other information system projects and initiatives, such as:GETAC meetings; andOCA and JCIT meetings*Measurement of Progress:* Number of meetings attended by TRCC representative. | *Measurement of Progress*: Four GETAC meetings (including several different committee meetings), 4 Trauma Coordinator meetings, and one EMS Conference, were attended by TRCC representatives. |
|  | 1.4 Apply for first and successive year grants under Section 405c of MAP-21 (*State Traffic Safety Information System Improvements*). | The Texas TRCC has been funded again for FY 2018. |
|  | ***1.5 Retain consultant support to TRCC****Purpose:* To provide consultant support to TxDOT and TRCC to further the leadership and coordination of the newly reconvened Texas TRCC; gain lessons learned from other states.*Description: Retain a consultant to support TxDOT and the TRCC* to:Support the momentum achieved by the TRCC in the past fiscal year;Conduct outreach to potential working group members and stakeholders;Conduct annual update to the strategic plan;Assist with pursuing commission approval of additional TRCC membership; andAssist with preparation of future 408 grant applications.*Measurement of Progress:* Number of meetings prepared, facilitated, and documented; completed grant applications; additional as tasks are defined by TxDOT. | Consultant contract expired and was not renewed. TxDOT staff supports the TRCC by :Facilitating meetingsConducting annual update to the strategic plan;Preparing 405c grant applications and interim progress reports.*Measurement of Progress*: three TRCC meetings were facilitated in FY 2017; an update to the Strategic Plan was prepared; and preparation of the Section 405c grant application. |

|  |  |  |
| --- | --- | --- |
|  Improve the Individual Core Data Systems  | ***2.1 Crash Record Information System (CRIS) Enhancements****Purpose:* To expand the functionality of CRIS and improve accessibility, accuracy, completeness, timeliness, and consistency of the system.*Description (Tasks):*1. Web Data Entry Public Internet;
2. Web Services for CRIS Data Requests;
3. Regular XML;
4. Texas On‑line Component;
5. Data Entry of the Commercial Vehicle Crash Report into CRIS;
6. Extended Data Entry Modification; and
7. Data Entry of Public Crash Report into CRIS.
8. CRIS Help Desk
9. CRIS Agency Support

*Measurement of Progress:* Individual to each  | A. Completed: Web Data Entry Public Internet: The Crash Reporting and Analysis for Safer Highways (CRASH) application offers law enforcement officers the option of submitting crash data via their desktops computers, laptops or in-car computers via the internet. This application was developed with assistance from law enforcement officers. *Measurement of Progress*: Deployment of CRASH.2. Completed: The component was deployed in October 2011.B. Completed: Web Services for CRIS Data Requests: Aggregate crash data is available to stakeholders and the general public via the TxDOT website. The CRIS Query system is currently being tested and is planned to go into production July 2017. *Measurement of Progress:* Development and testing of the Query module.C. Completed: Regular XML*Measurement of Progress*: Crash reports are sent and received in XLM format. D. Completed: Texas On Line Component*Measurement of Progress*: Crash reports are available online for purchase through CROPS.E. Completed: Data Entry of Commercial Vehicle Crash Report into CRIS. *Measurement of Progress*: Complete. CMV Data is currently being entered into CRIS. F. Completed: Extended Data Entry Modification *Measurement of Progress*: Complete. Currently all data from the Texas crash report (CR-3) is being captured in CRIS.G. In Progress: Data Entry of Public Crash Report into CRIS. *Measurement of Progress*: Complete. Driver Crash Report entered into an automated system such as CRIS. H. CRIS Help Desk*Measurement of Progress*: Completed: A call center/help desk is available to support law enforcement officers using CRASH.I. CRIS Agency Support*Measurement of Progress*: Ongoing, with technical support to assist law enforcement agencies get set up for CRASH. |

|  |  |  |
| --- | --- | --- |
| **Objective** | **Activity/Description** | **Status Update** |
| 2. Improve the Individual Core Data Systems (continued) | ***2.2 Texas*** EMS & Trauma Registries ***Linking Data for Health Information Quality Project****Purpose:* The Linking Data for Health Information Quality (LDHIQ) project increases health information interoperability and improves injury data quality and assessment for the Trauma Registry. New data linking of health information data and analysis requirements have been identified to provide Texas with the ability to better assess patient EMS/Trauma events to assist in the assessment and development of protocols to improve patient care.The ability to link data from multiple health information sources will improve data quality and provide the following benefits to the state.*Description (Tasks):** Linking multiple health information sources to better assess the continuum of patient care.
* Improving data quality by collecting Injury and Trauma information based on NTDB and NEMSIS national data standards.
* Developing reportable injury model and data submission capabilities for Justices of the Peace (JPs) and Medical Examiners (MEs) for Submersion, TBI, and SCI data collected.
* Improving the ability to identify patient injuries and their health outcome due to motor vehicle crashes to identify modifiable risk factors to prevent future motor vehicle injuries.
* Linking submersion data to NEMSIS and NTDB data within the Trauma Registry to improve the collection of risk factor information for prevention planning to reduce submersion injuries.
* Using Pediatric and Adolescent injury reporting to improve the outcomes of children who experience an injury.
 | Progress made on this task includes the following:Project is currently under development. These tasks include:* Linking multiple health information sources to better assess the continuum of patient care.
* Improving data quality by collecting Injury and Trauma information based on NTDB and NEMSIS national data standards.
* Developing reportable injury model and data submission capabilities for Justices of the Peace (JPs) and Medical Examiners (MEs) for Submersion, TBI, and SCI data collected.

*Measurement of Progress*: Project objectives and activities are currently under development with the first phase deliverables due by September 30th, 2017. |
| 3. Broaden availability and distribution of traffic safety data to all safety practitioners.  | *3.1 Continue to produce and update the Motor Vehicle Crash report when more current data become available.**Purpose:* To provide most recent years of data in standard, easy-to-understand format for planning by TxDOT and other safety stakeholders.*Description (Tasks):*1. Complete cleansing of CRIS data;
2. Conduct detailed analysis of 2008 - 2013 crash data;
3. Produce updated version of Motor Vehicle Crash Report; and
4. Distribute report to TRCC, public health community, advocacy groups, universities, etc.

*Measurement of Progress:* Production of Report. | Progress made on this task includes the following:*Measurement of Progress:* Production of Report.Completed:1. Complete: Data entry and reconciliation (cleansing of CRIS data) has been completed.
2. Complete: TxDOT has produced annual summary reports for years 2003-2015 and posted the reports to their website. Years within retention period are updated annually and the previous year’s reports are added. Crash data requests can now be made through the TxDOT.gov website.
3. Complete: Extract crash data files are available to DSHS, universities, MPO’s/COG’s, advocacy groups, law enforcement, general public, etc. upon request.
4. Complete: Annual reports are published annually and published on TxDOT’s website for public to view.

*Measurement of Progress*: Deployment of CRASH.Completed: The CRASH application was deployed in October 2011.  |
|  |  |  |

**Table 3.1 Action Plan (continued)**

|  |  |  |
| --- | --- | --- |
| **Objective** | **Activity/Description** | **Status Update** |
| 3. Broaden availability and distribution of traffic safety data to all safety practitioners.  | *3.2 Develop an ongoing training program targeting law enforcement to assist with proper completion of crash reports, importance of the data they provide, and the ability to advance electronic crash data collection.**Purpose:* train law enforcement on new CRIS and additional functionalities as they come on-line (i.e., Web Data Entry).*Description (Tasks):*Develop training program for law enforcement to improve data quality on crash report; execute training with state and local police departments.*Measurement of Progress:* Number of training sessions conducted by TxDOT. | 3.2 On Going: TxDOT has a CRASH training program. In CY17, training will be automated.*Measurement of Progress*: On Going |

4.0 Performance Measures

* **Performance Measure #1:**
* **Timeliness of Crash Reporting**
1. **Performance Measure Used to Track Improvements**

Crash/Timeliness 2 - Availability of reports to the public.

1. **Narrative Description of Calculation / Estimation Method**

C-T-2: The percentage of crash reports entered into the

database within 30 days after the crash

1. Date: April 1, 2013 – March 31, 2014 Baseline Value for Measure: 80.1%
2. Date: April 1, 2014 - March 31, 2015 Current Value for Measure: 88.4%
3. **Title, number and strategic Plan page reference for each Traffic Records System improvement project to which this performance measure relates**

Traffic Records Assessment Reference Number 1-A.1 and 1-A.3 (Management and System Issues/Recommendations) document TxDOT’s efforts to implement an electronic reporting system. Additionally, Traffic Records Assessment Reference Number 4-A.4 documents TxDOT’s’ efforts to capture crash data electronically.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Required Data | April 1, 2013 – March 31, 2014 | April 1, 2014 – March 31, 2015 | April 1, 2015 – March 31,2016 | April 1, 2015 – March 31,2016 |
| Number of crash reports submitted  | 528,147 | 567,210 | 610,029 | 620,399 |
| Average number of days between date of crash and availability in warehouse | 19.54 | 14.79 | 20.06 | 10.18 |
| Number of crash records available for reporting within 30 days of the date of crash | 463,144 | 525,230 | 557,725 | 591,638 |
| Percentage of all crash reports entered into the database (available for reporting) within 30 days after the crash | 87.69% | 92.60% | 91.43% | 95.36% |

* **Performance Measure #2**
* **COMPLETENESS of the EMS/Trauma Registry**
1. **Performance Measure Used to Track Improvements**

Completeness of the registry data – Percentage of patient care records with no missing critical data elements.

1. **Narrative Description of Performance Measure Calculation**

Previous Period (date):

The number of Hospital (Trauma Registry) records submitted was 135,317. The percentage of patient care reports with no missing *critical* data elements was 22.8%.

Current Period (date):

The number of Hospital (Trauma Registry) records submitted was 141,546. The percentage of patient care reports with no missing *critical* data elements was 46.1%.

|  |  |
| --- | --- |
| **Previous Period** | **Current Period** |
| April 1, 2014 – March 31, 2015 | April 1, 2015 – March 31, 2016 |
| The percentage of Hospital (Trauma Registry) patient care reports with no missing critical data elements.Discharge Date and Time: 22.8% | The percentage of Hospital (Trauma Registry) patient care reports with no missing critical data elements.Discharge Date and Time: 46.1% |
| **Improvement**Critical Date Element Percent ChangeDischarge Date and Time: 202.19**%** |

1. **Title, number and strategic Plan page reference for each Traffic Records System improvement project to which this performance measure relates**

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5.0 FY2018 Proposed Projects



6.0 MIRE Fundamental Data Element 9/30/2026 Implementation Plan

6.1 Executive Summary

One of the major challenges facing transportation agencies, is collecting, storing and maintaining road data in a manner that is consistent, accurate and timely. This plan has been developed, so that the Texas Department of Transportation (TxDOT) can incorporate the fundamental roadway elements outlined in the Model Inventory Roadway Elements (MIRE) guideline, into the Texas state data systems. The overall goal is to capture timely accurate and complete data that can be lined with crash data and other relevant data sources, for safety analysis. Improvements in the Texas state data systems will further our goals in reducing the number of fatalities and increase the safety for the traveling public within Texas. TxDOT currently coordinates with local entities and will continue to do, in order to successfully implement this plan. TxDOT anticipates that the roadway elements currently not collected by TxDOT will take between one to nine years to enable technology and perform the collection efforts. TxDOT anticipates that this will cost the department no more than $4,000,000.

6.2 Background

The Federal Highway Administration (FHWA) recently issued guidance related to State safety data systems under the Highway Safety Improvement Program (HSIP). The purpose of the HSIP program is to achieve a significant reduction in fatalities and serious injuries on all public roads by focusing on a data-driven, strategic approach to improving highway safety [23 U.S.C. 148 (b) (2)]. To support the intended safety analyses within a state’s HSIP program, each DOT’s safety data system should include a subset of “Model Inventory of Roadway Elements (MIRE)”. While the full set of MIRE elements is discussed within FHWA’s MIRE document, 1 only a specific subset of “Fundamental Data Elements (FDEs)” are required to be incorporated within a state DOT’s safety data system and primarily reflect roadway inventory and traffic volume related data. Moreover, these data elements have been identified and are intended to represent a minimum data set that is needed to run a Highway Safety Manual safety prediction functions. Federal guidance state that states “shall have access to the FDEs on all public roads by September 30, 2026.

66.3 MIRE FDEs

Per the Model Inventory of Roadway Elements, version 1.0, 2 MIRE FDEs are “critical to making sound decisions about the design and operation of roadways.” Accurate and detailed roadway data will enable tools to enable analysis of safety data which will enable states to make sound decisions for design and operation on Texas roadways. MIRE FEDs specific to the following three hierarchical roadway categories, with each category requiring fewer FDE than the previous one listed:

* Paved roads, functionally classified above local,
* Paved roads, functionally classified as local, and
* Unpaved roads (regardless of functional classification

In addition, MIRE FDEs have also been defined for ramps, interchanges, and intersections. For the purposes of this plan, ramps are considered to be a type of roadway.

**6.4 Status of Required MIRE FDEs within TxDOT**

The Data Management Section within the Transportation Planning and Programming division is the Office of Primary Responsibility (OPR) for the Texas Roadway Inventory data. In August of 2015, TxDOT’s Roadway Inventory data was migrated into a single, spatially-based system called the Geospatial Roadway Inventory Database (GRID). This GRID system currently contains 314,000 centerline miles of certified public roadway and approximately 3,100 miles of ramps for both state and local roadways. However, due to the fact that most limited access freeways are paralleled frontage roads, TxDOT has two special categories of ramps, “simple” ramps and “grade separated connectors”. There are approximately 2,170 miles of ramps and approximately 930 miles of grade-separated connectors (GSCs).

Currently, members of TPP’s Data Management staff, in cooperation with TxDOT’s 25 districts, are the primary maintainers of this roadway inventory data. In the fall of 2016, the Traffic Operation division has been also added to the group of data maintainers, primarily to maintain speed limit data, not currently a required MIRE FDE. TxDOT project planners can also access the roadway data in ‘read-only’ mode to identify and obtain locational referencing information for programming projects. Historically, the Data Management has made this data available to both internal and external entities through a number of means, including an ArcGIS online portal and year-end downloadable data.

The roadway data is also shared with other systems used in safety analysis, such as the Crash Records Information System (CRIS). CRIS updates the roadway data on an annual basis, so that crashes can be located using TxDOT’s roadway data and analyzed. Crash location data is analyzed and reviewed by TxDOT staff as well as shared with locals, such as metropolitan planning organizations and city engineering groups. TxDOT provides several methods for local governments and the public to access crash data.

There are two extract files currently offered, one is specifically for the public, and excludes all personally identifiable information. The second is a standard extract, intended for governmental entities and includes all crash data. Many local agencies use this extract file to populate ARCGIS, to enable a visualization of problematic areas involving crashes with fatalities and serious injuries. TxDOT also allows local governmental entities direct access to CRIS Microstrategy, which is TxDOT’s Business Intelligence Tool used to report crash data, so that they can customize the data retrieved from the system to perform specific analysis. Within TxDOT CRIS Microstrategy is used to identify and prioritize Highway Safety Improvement Plan (HSIP) projects. The specific HSIP codes are updated within CRIS for each program call and used as part of the project score, to assess which projects provide the highest cost benefit.

TxDOT’s Roadway Inventory data is continuously updated based upon a variety of different sources of information. For on-system (i.e., those roads under the control and jurisdiction of TxDOT), Data Management staff review all roadway projects that are let to construction to determine if the activities within the project would cause an update to any of the attributes in the Roadway Inventory file. Examples of types of projects that would change the inventory include new construction, widening, and bridge replacements. For off-system roadways (example city streets and county roads), TxDOT has regularly canvassed all cities and counties throughout the state on a two-year cycle.

To ensure quality control, the new GRID system contains two important features. First, all updates are performed within the context of a “job”, and each job can be assigned to one user and reviewed by another. Secondly, GRID contains over 100 data validation business rules to ensure that consistent and congruous data is entered for all roadway attributes.

The table 1 below summarizes the status of all MIRE FDEs within TxDOT’s Roadway Inventory system. The checkmark ![C:\Users\KPIERCE\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\C9ITQ07I\Check_mark_23x20_02.svg[1].png]() representing a data element currently tracked by TxDOT and the **X**, represents that this element is currently missing from TxDOT’s data element inventory.

In a large part, TxDOT has many of the FHWA required MIRE FDEs in its Highway Performance Monitoring System (HPMS). However, any element not already required and included in HPMS does not exist within TxDOT’s Roadway Inventory system. Data Management staff is responsible for maintaining ‘non-field’ data, such as functional classification, which is not ‘collected’ per se, while ‘field’ data, such as Surface Type, is typically ‘collected’ by TxDOT’s district staff. In addition to actual collection by the TxDOT districts or derived data, TxDOT is also obtaining an increased amount of this field data using aerial imagery.



All traffic data is collected, through a variety of technologies, by TxDOT’s Transportation Planning and Programming Division, Traffic Analysis section. Depending upon the category of roadway to which a roadway segment belongs, traffic counts are taken either annually or every five years.

**6.5 TxDOT’s Plan to Collect Missing MIRE FDEs**

For all MIRE FDEs that are currently part of TxDOT’s Roadway Inventory system, TxDOT’s Data Management section, in partnership with the Traffic Analysis section, within its Transportation Planning and Programming (TPP) division will continue its current data ‘collection’ practices. For TxDOT owned roadways, TxDOT has maintained an inventory of its state network for nearly a century.

On a continual basis, TPP reviews all let projects and updates the Roadway Inventory based upon how each roadway construction project affects the items in the Roadway Inventory. In the early 2000s, TxDOT conducted a GPS-based roadway inventory data collection, and since that time TxDOT has canvassed each county every other year to identify new or improved county roads. With the advent of FHWA’s All-road (ARNOLD) initiative, TxDOT developed its first ever spatially based inventory of all city streets, regardless of functional classification. TxDOT gathered data from cities, Councils of Governments, E-911 districts, and Metropolitan Planning Organization. However, due the novelty of this inventory, local city street data has yet to be subject to a formal, regular update process. TxDOT envisions having its city street update program mirror its county road inventory program (with half the state being updated each year). In fact, TPP has developed an online ‘crowd sourcing’ application to assist with this effort. TxDOT will also explore other options such as Open Street Map to assist in its roadway inventory program.

As you will see in table 2 below, interchange and intersection related MIRE FDEs need to be defined and collected. We anticipate that we can utilize existing roadway elements to programmatically identify an intersection. Once identified, we can programmatically connect the spatial layers, which can be validated by District personnel. The model used for this approach is a recent study performed to identify signalized intersections in one district. Crash data was used to first identify intersection related crashes. From there, the geospatial data was programmatically used to connect nodes in order to identify intersections. Once located, the team validated the type of traffic control at the intersection with the assistance of District personnel. A similar approach could be utilized in collecting intersection and interchange related data; specifically first using the attributes and/or crash data that is currently available, perform analysis to identify intersections, programmatically derive intersection layers and lastly, visually verifying the data’s accuracy with visual inspection.

TxDOT anticipates the development of internal data for ramps will be prioritized first (1-3 years), while the generation of the various descriptor and other ‘derivable’ MIRE FDEs will be prioritized second (4-6 or 7-9 years). Both of these data types will require Data Management to work closely with TxDOT’s Information Management Division (IMD) to make the necessary revisions to the GRID system in a timely manner. In the case of the AADT for ramps, TxDOT Administration approval is needed for Texas to complete this effort. In summary, all of the MIRE FDEs currently not captured by TxDOT can be collected and/or programmatically derived.

The table 2 on the next page provides an overview of how TxDOT plans to handle any MIRE FDEs not in today’s current inventory. Please note that the MIRE FDEs that currently do not exist, the vast majority of which are not in need of data collection but data generation. TxDOT’s current plan for generating these data items are as follows:



6.6 Coordination with other Agencies

Currently TxDOT coordinates with a variety of local entities including counties, cities, and Metropolitan Planning Organizations (MPOs) for its Roadway Inventory program. As mentioned earlier, counties and cities have been regularly contacted for information about new roadways. In addition, TxDOT has begun to explore the possibility of gathering traffic count data from other data sources. TxDOT has also coordinated with various federal agencies to generate its own detailed ‘official’ mileage of federal roads in Texas. We will continue to build upon this coordination with local and other governmental agencies.

6.7 Prioritization Criteria for MIRE FDE Data Collection

For roadways and ramps, the priority will be to round out the data for ramps, to develop the procedures by which segment/ramp descriptors and location identifiers are derived, and to continue our efforts in ensuring that the road network contained within our Roadway Inventory system is as complete and up-to-date as possible.

An important task in these efforts will be to successfully integrate an intersection/interchange inventory within our new GRID system. Currently, TxDOT’s roadway network is not topologically connected.

6.8 Schedule for Data Collection

The general schedule for the completion of the important “gaps” in our system includes the following:

* Short-Term (1-3 years): Develop ramp data and edit GIS line work to ensure the roadway network is topologically correct.
* Medium-Term (4-6 years): Conduct GRID software enhancement project to incorporate intersection/interchange inventory.
* Long-Term (7-9 years): Develop algorithms to generate intersections and derive descriptors and location identifiers such that all MIRE FDEs are fully incorporated into our Roadway Inventory system.

For all of these activities, the priority will be to develop data for on-system routes first, working down the functional classification hierarchy from Interstates to locals. The rationale for this approach is that while on-system roadways constitute only a quarter of the state’s roadway miles, they carry nearly three quarters of the state’s vehicle miles of travel. Similarly, all intersection and interchange data development will be firsts focused on the connections between on-system roadways, followed by connections between on-system and off-system roadways, and then by off-system to off-system connections.

Estimated Cost for Data Collection

6.9 Estimated Cost for Data Collection

TxDOT estimates that enabling the core data systems (GRID and CRIS) with the missing MIRE FDEs to cost between $3,000,000 and $4,000,000 to implement. TxDOT’s GRID system, the primary data element collection system, will require planning which includes establishing field definitions and functional requirement documentation. Once the fields are planned, the database will be structured to house the new data elements.

Once the database is structured and tested, collection efforts can begin. If fields need to be programmatically derived and technical specifications have been confirmed, development can begin.

Once the database is enabled, field data is collected, the system will need to be maintained and updated, as part of on-going maintenance. We anticipate this to be the largest effort and to cost between $2,000,000 and $2,500,000.

CRIS will also have to plan for incorporating the additional MIRE FDEs, so that safety analysis can be performed on crash data. For this effort, much like with GRID, the database must be configured to accommodate the new data fields, along with the various applications that utilize TxDOT’s roadway data must be enhanced to display this information for safety analysis. Currently, CRIS updates its roadway data on an annual basis. CRIS has several applications which utilize the roadway data, such as CRIS MAP, Query and Microstrategy. Each application must be enhanced to display and/or utilize the new roadway data elements and requires unit, user acceptance and regression testing. CRIS is dependent upon GRID for its roadway data. As such, GRID and CRIS would coordinate updates to ensure that the fields added to GRID would be able to be added to CRIS. Once implemented, CRIS will also need ongoing maintenance and support for these additional fields. We anticipate the cost to update CRIS to be between $1,000,000 to $1,500,000.

6.10 Assumptions

Several assumptions have been made as part of this planning process and are as follows:

* Most if not all of the field data can be collected and/or programmatically derived in a parallel effort.
* State resources (subject matter experts, technical resources and executive support ) and funding will be prioritized and made available for this effort.
* TxDOT District personnel will be able to assist in the manual collection efforts.
* Local governmental entities will be able and willing to assist in this process.
* GRID technical resources will be able to perform needed system enhancements.
* CRIS technical resources will be able to perform needed system enhancements.

6.11 References:

1 <http://safety.fhwa.dot.gov/tools/data_tools/mirereport/mirereport.pdf>

2 Model Inventory of Roadway Elements, Version 1.0, Published October 2010, FHWA-SA-10-018