NORTH CAROLINA
Traffic Safety Information Systems
STRATEGIC PLAN

2023

Developed by the
UNC Highway Safety Research Center
in collaboration with the
NC Traffic Records Coordinating Committee

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Commonly Used Abbreviations

AASHTO – American Association of State Highway and Transportation Officials

ACIS – Automated Criminal Infraction System

CSC – Clerk of Superior Court

EMSPIC – Emergency Medical Services Performance Improvement Center

FARS – Fatality Analysis Reporting System

FHWA – Federal Highway Administration

HSRC – Highway Safety Research Center

IPRC – Injury Prevention Research Center

ITRE – Institute for Transportation Research and Education

IVPB – Injury and Violence Prevention Branch

LEA – Law Enforcement Agencies

NC DHHS – North Carolina Department of Health and Human Services

NC DPS – North Carolina Department of Public Safety

NC ECHS – North Carolina Executive Committee for Highway Safety

NC GHSP – North Carolina Governor's Highway Safety Program

NC TRCC – North Carolina Traffic Records Coordinating Committee

NCAOC – North Carolina Administrative Office of the Courts

NCAWARE – North Carolina Warrant Repository

NCDIT-T – North Carolina Department of Information Technology – Transportation

NCDMV – North Carolina Department of Transportation Division of Motor Vehicles

NCDOT – North Carolina Department of Transportation

NCDPH – North Carolina Division of Public Health

NCOEMS – North Carolina Office of Emergency Medical Services

NCSHP – North Caroline State Highway Patrol

NHTSA – National Highway Traffic System Administration

PI – Principal Investigator

PreMIS – Prehospital Medical Information System

SADLS – State Automated Driver License System

SHSP – Strategic Highway Safety Plan

STARS – State Titling and Registration System

TEAAS – Traffic Engineering Accident Analysis System

TRCS – Traffic Records Communication System

TraCS – Traffic and Criminal Software

TR – Traffic Records

UNC – University of North Carolina

Introduction

Background

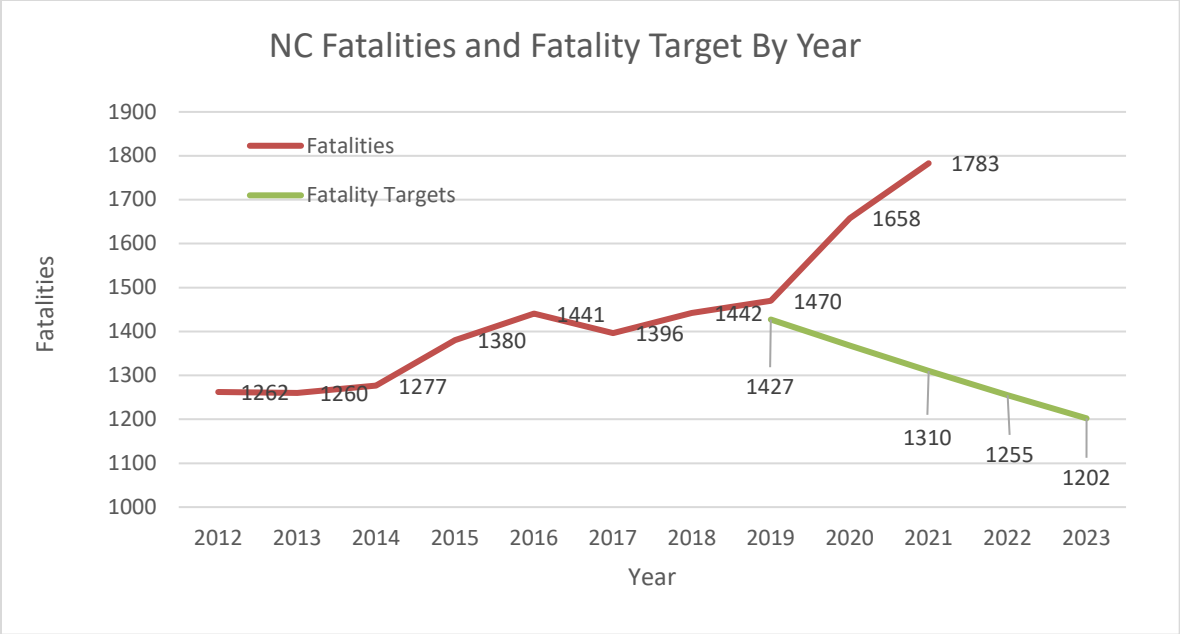
While North Carolina has made progress in reducing the toll that results from traffic crashes on our roadways, the number of people killed and injured remains unacceptably high. In 2021, there were 276,026 reported crashes on public roads, up almost 30,000 crashes from 2020. This resulted in 1,783 people killed, up 125 from 2020, and 114,722 injured, up nearly 9,000 from 2020. The economic impact of these crashes is costly, resulting in an estimated loss of over $34 billion to the economy of North Carolina annually (based on a three-year average as noted on page 38 of the 2021 NC Traffic Crash Facts Report).

In 2019, the North Carolina Department of Transportation (NCDOT) updated the state's Strategic Highway Safety Plan (SHSP). North Carolina is a Vision Zero State: even one fatality is too many on our roadways. The Plan's vision, mission, and goals guide the development and implementation of strategies and actions to achieve Vision Zero. It aims to cut the fatalities and serious injuries in North Carolina in half by 2035, moving towards zero by 2050. The SHSP is available here: https://spatial.vhb.com/ncdotshsp/. Progress toward meeting goals will be tracked on the Vision Zero online dashboard: https://ncvisionzero.org/data-analytics/visualizations/. Further, in 2022, North Carolina completed the National Highway Traffic Safety Administration (NHTSA) Traffic Records Assessment. The recommendations that resulted from that Assessment were used to guide the development of this Strategic Plan.

North Carolina established a goal in the 2014 SHSP of reducing fatalities and serious injuries by 50% by 2030. The 2019 SHSP updated this goal, which is to reduce fatalities and serious injuries by 50% by 2035. The below chart shows the annual fatalities versus target fatalities. Target fatalities are shown since 2019 when the overall goal and target setting process was updated. The goal and annual targets will be assessed again in 2024 when the SHSP is updated.

As fatalities continue to rise, the gulf between the State's fatalities and fatality targets widens. For North Carolina to make significant and sustained progress toward their goals of 50% reduction in crashes by 2035, we will need multi-disciplinary and multi-agency approach to the challenges we face, and improvements in the quality and utility of traffic safety information data and data systems must continue to evolve.

These data systems include 1) crash records, 2) vehicle and driver records, 3) roadway inventory and geographic information systems, 4) medical outcome systems, and 5) citation and adjudication systems. Ultimately, the hope is to increase the effectiveness and efficiency of linking crash data to the other systems for improved reporting and analysis, while protecting the privacy rights of our citizens' data and abiding by the appropriate laws and regulations.



Coordination, communication, and cooperation are the defining attributes for success of the North Carolina Traffic Records Coordinating Committee (NC TRCC). Each stakeholder will learn from various data collectors, data users, data managers, and traffic records systems owners. North Carolina's Traffic Safety Information Systems Strategic Plan documents progress toward the overall goal of providing high-quality data to users with timely and efficient processes. This document records the progress of the NC TRCC's efforts and will serve as the guide for planning and implementing change.

Organization of the Report

This report includes an overview of the organizational structure that is in place in the state to address traffic safety information needs, a plan that was developed with input from the NC TRCC membership, a summary of the data quality Performance Measures, and a description of safety information projects that have been conducted with specific objectives of improving traffic safety information systems.

State Traffic Records Organizational Structure

The multidisciplinary approach to traffic system information systems requires multiple agencies to be included in the planning and implementation of programs and processes designed to improve the components of the various systems and the linkages among the systems in the interest of reducing the level of harm on the roads of North Carolina. There are two committees that have been established in North Carolina to ensure that all information stewards and stakeholders are included in the decision-making process for improving our traffic safety information: the North Carolina Executive Committee for Highway Safety (NC ECHS) and the NC TRCC. The purpose and role of these groups are described below.

Executive Committee for Highway Safety

The NC ECHS, established in 2003, is empowered to address the motor vehicle crash epidemic and coordinate the many safety initiatives both within and outside of the NCDOT, with an emphasis on efficiency of resources and the prioritization of programs. The NC ECHS includes top management of selected disciplines involved in highway safety. The committee endorsed and adopted North Carolina's SHSP as its working plan with the understanding that this is a dynamic document subject to modifications as necessary to address North Carolina's needs. Implementation of the strategies and directives of the NC ECHS and the American Association of State Highway and Transportation Officials (AASHTO) SHSP are viewed as the key mechanism to reach the State's fatality goals and thereby significantly reduce the annual number of fatalities and deaths on our highways.

The energy generated and knowledge of the multi-disciplined NC ECHS team members has provided many opportunities for innovative strategies. Representatives from different agencies are teamed up to find solutions to a common goal. A key "facilitator" works closely with all the working groups through meetings and discussions with members. This structure helps eliminate roadblocks and ensures elimination of redundant strategies.

The NC ECHS endorses and supports NC TRCC. NC TRCC, as necessary and appropriate, will provide strategies for the Executive Committee to support and endorse. These strategies could include legislative initiatives, inter-agency projects requiring significant resources and other important strategies.

NC ECHS Membership

The membership is listed below and includes representatives for the NCDOT, municipal transportation departments, state and local law enforcement, universities, and other state and local agencies.

Members of the ECHS

- James Kevin Lacy, Director of Strategic Planning & Programming, NCDOT (Chair)
- Eric Boyette, Secretary of Transportation, NCDOT
- Isaac T. Avery, III, Attorney at Law, NC Conference of District Attorneys
- Wayne Goodwin, Commissioner, NC Division of Motor Vehicles

- Lydia McIntyre, Transportation Engineer, City of Greensboro
- Laura Sandt, Interim Co-Director, UNC Highway Safety Research Center
- Billy M. Williams, Director, NCSU Institute for Transportation Research and Education
- W. A. “Tony” Hayes, President and CEO, Transformative Ideas Calculated Success
- Chris Lukasina, NC Association of Metropolitan Planning Organizations
- Brian K. Mayhew, State Traffic Engineer, Transportation Mobility and Safety, NCDOT
- Shawn Troy, State Traffic Safety Engineer, Traffic Safety Unit, NCDOT
- Jon R. McCormick, Division Administrator, Federal Motor Carrier Safety Administration
- Freddy Johnson, Colonel, NC State Highway Patrol
- John Sullivan, III, Division Administrator, Federal Highway Administration
- Mark Ezzell, Director, NC Governors Highway Safety Program
- Scott Proescholdbell, NCDPH, Injury and Violence Prevention Branch
- Bradley Hibbs, Operations Engineer, Federal Highway Administration
- Brent Heath, Regional Director, NC Department of Insurance
- Nicole McGarity, AAA Carolinas
- Suzanne LaFollette-Black, Retired, AARP NC
- Jennifer Smith, retired, Eastern Carolina Injury Prevention Program, Vidant Medical Center

Traffic Records Coordinating Committee

The NC TRCC was established in 2006. The vision of the NC TRCC reads as follows:

> *To improve safety by significantly reducing the number of fatalities and injuries to the citizens and visitors of our state.*

In support of this vision, the mission of the NC TRCC is to:

> *Provide the leadership to establish and maintain a level of coordination, communication and cooperation between agencies and stakeholders to maximize utilization and improve functionality, data accuracy, timeliness and linkages, and to advance electronic data collection, protect privacy, minimize redundancies in traffic records systems and better accomplish individual agencies’ goals.*

The TRCC’s roles are to:

- Provide for coordination, cooperation, and collaboration of agency activities that could affect or improve the state traffic safety data or systems, while also ensuring the protection of confidential information.
- Prepare, update, and maintain the NC TRCC Traffic Safety Information Systems Strategic Plan and provide a guide for the implementation of traffic safety systems and data improvements.
- Recommend and provide strategies to NC ECHS for endorsement and action.

- Develop inter-agency project teams to create implementation plans for carrying out the objectives of the guide as necessary.
- Provide a forum for review and endorsement of programs, regulations, projects, and methodologies to implement the improvements identified in the implementation guide.
- Review programs, regulations, projects, and methodologies for alignment with the NC TRCC's mission, goals, and objectives.
- Provide coordination for programs, projects, and regulations as they become operational.
- Receive periodic updates from the project teams.
- Endorse and/or implement projects to achieve quality traffic safety data from state traffic records systems.
- Encourage and provide for the sharing of data among all members, owners, users and collectors, and collaborate on interagency projects.
- Provide for adequate communication and review between members of all changes or modifications to systems, regulations, collection procedures, or usage, and analysis needs.
- Support electronic data collection for all types of data including crash, roadway (including volume and asset management), vehicle, driver, medical, and citation or adjudication data.
- Simplify all data collection wherever possible for any record.
- Increase automation and only collect data necessary from field efforts.
- Encourage and provide for the marketing of traffic safety information to increase public and political awareness of its necessity for decision making, resource allocation and improving quality of life.

NC TRCC Membership

The NC TRCC consists of a diverse membership that includes representation from the data stewards for each primary data or information system: crash records; vehicle and driver records; roadway inventory and geographic information systems; court, citation and adjudication systems; and medical outcome systems. Several key stakeholder agencies also serve in a membership role on the committee, including law enforcement, the NCDOT Traffic Safety Unit, the North Carolina Governor's Highway Safety Program (NC GHSP) and university research centers. The current list of members is provided below.

- Brian Murphy (Co-Chair), NC DOT Traffic Safety Systems Engineer
- Nancy Lefler (Co-Chair), TR Strategic Plan Project PI), UNC HSRC
- Courtney Blake (TR Strategic Plan Project Team Member), UNC HSRC
- Katie Harmon, UNC HSRC
- Greg Ferrara, NCSU ITRE
- Carlton Williams, NC AOC
- Kim Rutledge, NC AOC
- Emily Mehta, NC AOC
- Clyde Noble, NC DMV (Crash)

- David VanVleet, NC DMV (Crash)
- Warren Smith, NC GHSP
- Mark Ezzell, NC GHSP
- Shawn Troy, NCDOT, State Traffic Safety Engineer
- Daniel Carter, NCDOT Traffic Safety Unit
- Faith Johnson, NC DOT Operations Program Management Unit
- Erin Lesh, NCDIT-T GIS Unit
- Ryan Koschatzky, NCDIT-T GIS Unit
- Brian Crissman, NCSHP
- Alan Stokes, Raleigh PD
- Vish Tharuvesanchi, NCDIT-T Traffic Records Systems
- Michael Thomas, NCDIT-T Traffic Records Systems
- Leena Samson, NCDIT-T State Automated Drivers License System (SADLS)
- Sriram Venkataraman, NCDIT-T State Automated Drivers License System (SADLS)
- Srinivasarao Kandimalla, State Titling and Registration System (STARS)
- Cynthia Winningham, State Titling and Registration System (STARS)
- Anna Waller, UNC Department of Emergency Medicine, Carolina Center for Health Informatics; IPRC
- Sharon Schiro, NC Trauma Registry
- Scott Proescholdbell, NCDPH, Injury and Violence Prevention Branch
- Tom Mitchell, NCDPH, Office of Emergency Medical Services
- Dale Privette, Division Safety/Transportation Engineer, FHWA
- Bill Naff, NHTSA (regional representative for NC)

In addition to the official membership, several other stakeholders, including representatives from the Federal Highway Administration (FHWA) and NHTSA, routinely participate in NC TRCC meetings. A complete list of active participants is included in Appendix C**.**

NC State Traffic Safety Data Coordinator

One of the members of the NC TRCC is the state traffic safety data coordinator. This individual serves as the primary point of contact for information about traffic safety systems for NHTSA, the state of North Carolina, and the NC TRCC. This person is aware of all the primary traffic records systems in North Carolina and maintains communications with the NC TRCC. This person can report on, or obtain status information on, all projects within the state. The Traffic Safety Data Coordinator is generally held by the NC Governor's Highway Safety Program's Traffic Records Specialist. However, because that position is currently vacant, GHSP Programs and Evaluation Manager Warren Smith is temporarily serving in this role.

Warren Smith, Interim NC Traffic Records Coordinator
NC GHSP, 750 N. Greenfield Parkway, Garner, NC 27529
Phone: (919) 814-3655, Email: wgsmith@ncdot.gov

Traffic Safety Information System Summaries

This section includes descriptive summaries of the traffic safety information systems that are available in North Carolina. The following agencies are included:

- North Carolina Administrative Office of the Courts (NCAOC)
- North Carolina Department of Health and Human Services (NC DHHS)
- North Carolina Department of Public Safety (NC DPS)
- North Carolina Department of Transportation (NCDOT)
- North Carolina Department of Information Technology - Transportation (NCDIT-T)
- North Carolina Department of Transportation Division of Motor Vehicles (NCDMV)
- North Carolina Office of Emergency Medical Services (NCOEMS)

NC Administrative Office of the Courts

The Administrative Office of the Courts (AOC) signed a contract with Tyler Technologies in 2019 for a new Integrated Case Management System (ICMS). Tyler Technologies' Odyssey suite will replace older legacy systems and integrate all these products into one case management solution including eFiling, financial management, and document management for all case types. This new system brings higher efficiencies to the justice system, provides electronic access to court information, reduces manual processes and reliance on paper, and increases collaboration among court officials, lawyers, and law enforcement officers. The Odyssey Navigator specific products include the following:

Odyssey Case Manger™

- Tracks all aspects of court administration, from eFiling through disposition, and manages highly sensitive data about court cases.
- Uses streamlined electronic processes and to eliminate paper handling.

Odyssey Attorney Manager™

- Manages caseloads and track critical data.
- Aids both prosecuting attorney and public defender offices by organizing and maintaining case data for hearing and trial preparation.
- Reviews, gathers, and tracks essential information for both criminal and non-criminal case types by using case statuses, witnesses, victims, evidence, statistics, and related case information.

Odyssey Financial Manager

- Manages the entire transaction audit trail — from account management to financial transactions and check processing — without having to rely on a third-party financial application.
- Users can verify payment forms, produce a summary of financial activity. Odyssey also has in-courtroom processing, known as Odyssey Judge Edition and Odyssey Clerk Edition. These components provide in-courtroom processing to support electronic court

record management workflow and high-speed data entry. The judicial workbench for access to electronic court records by justices and judges.

Odyssey eSolutions include the following:

Odyssey File & Serve™ (eFiling)

- Enables a user to file documents electronically through a single, secure, centralized online location.

Guide & File

- Launched statewide August 2020, provides a free online service available to help self-represented litigants and attorneys to prepare court documents online to file for select case types.

Portal

- Allows the public and registered users to access court information including case information, records, and documents.
- Make instant online credit card transactions to pay fines and fees.

In February 2023 the four (4) pilot counties of Wake, Johnston, Harnett, and Lee counties went live on eCourts. Mecklenburg county is next as an early adopter. The 12-track implementation is expected to span over the next several years. Odyssey and all other eCourts components will eventually replace AOC's legacy criminal/infraction applications including Automated Criminal/Infractions System (ACIS), Criminal Court Information System-Clerks Component (CCIS-CC) and Criminal Court Information System-District Attorney (CCIS-DA).

Odyssey interfaces with many government agencies as well, including the NC Department of Adult Corrections (NCDAC), State Bureau of Investigation (SBI), and the NC Department of Motor Vehicles (NCDMV). These integrations include sending NC reportable traffic offenses nightly to the NCDMV. In addition, charges and convictions for all serious misdemeanor and felony offenses (including death by motor vehicle) are reported nightly to the SBI which, in turn, updates Odyssey with state fingerprint identification numbers. Odyssey is also a major data feed to the Criminal Justice Law Enforcement Automated Data Service (CJLEADS). All North Carolina State Highway Patrol (NCSHP) citation data is transferred to CJLEADS nightly.

Enforcement Mobile powered by Brazos

The eCitation system was phased out of use as the Administrative Office of the Courts replaced it with Enforcement Mobile powered by Brazos, a ticket-writer system from Tyler Technologies, Inc. The full statewide rollout was completed in Spring 2021. The Enforcement Mobile was modified to meet specific North Carolina needs, including interfaces with ACIS and the eWarrants.

Another key modification is the ability for an officer to charge up to ten offenses on a single citation, rather than the current limit of two in eCitation. This expansion of offenses is in response to the North Carolina Court of Appeals case of the State vs Rieger.

Enforcement Mobile includes the following components:

- Officers' component: This component is loaded on the computer in the patrol car for entering and printing eCitations. It can operate with or without communication coverage.
- Records management systems component: This component provides law enforcement agencies with the capability to electronically download eCitation data for use by the local law enforcement agency without requiring dual data entry. It also provides a citation printing function.
- Clerks' component: This is a browser-based component used by county clerk staff to monitor and print judgment copies of the transmitted citations. It also allows the clerk to set court schedules and court room limits which the officer can then use to assign a court date to the defendant.
- Interface to NCAOC ACIS: This interface receives and stores citation data in ACIS and CCIS-CC, making the information available statewide.
- Interface to NCDMV: This interface automatically prefills demographic and vehicle data using the driver's license or vehicle plate number.

North Carolina eWarrants

In addition to the contract awarded to Tyler Technologies for an eCitation replacement and a new Integrated Case Management System (ICMS), a contract for an NCAWARE replacement, eWarrants, was signed in March 2020. eWarrants was implemented statewide in July 2022**.**

eWarrants is a Tyler Technologies custom-developed system that maintains detailed information about criminal processes such as warrants, magistrate orders, citations that lead to an arrest, criminal summons, orders for arrest and release orders. It also tracks information and details for all people and businesses involved in such processes. With the implementation eWarrants, law enforcement can view and serve any electronic unserved process in the state without having paper in hand. Officers are also able to pre-fill arrest and warrant information prior to appearing before the magistrate, thus decreasing processing time.

All judicial and law enforcement users also have access to the unserved warrants in eWarrants. eWarrants is the first point of entry for all arrests, including DWI cases, into the courts. Court case information in eWarrants automatically populates to Odyssey for pilot counties and to ACIS for non-Odyssey counties through real-time XML and MQ interfaces. Mobile Enforcement and eWarrants interface for the automatic creation of a process where a traffic citation leads to an arrest – such as DWI, driving while license revoked and driving with no operator's license.

Automated Criminal Infraction System - legacy

ACIS is a mainframe application that was created by the NCAOC to provide the North Carolina Superior and District Courts with accurate and timely criminal and infraction case information. AOC has maintained and supported ACIS for over 30 years. The system is still available for all non-Odyssey counties.

Criminal Court Information System – Clerks Component - Legacy
CCIS-CC is a robust web-based application developed to record court information for all criminal cases in an efficient and accurate manner. CCIS-CC incrementally replaced existing.
ACIS screens and functions accessed primarily by clerks of court. The system is still available for all non-Odyssey counties.

Criminal Court Information System – District Attorneys Component - Legacy
CCIS-DA is a web-based criminal case management system developed specifically for district attorneys to manage the caseload within their offices. CCIS-DA captures individualized case notes and tracks and schedules action-oriented events and decision points relevant to the prosecution of each case, including DWI case management. This system is still available for all non-Odyssey counties.

Electronic Compliance and Dismissal - Legacy
Electronic Compliance and Dismissal (ECAD0 is a web-based system designed to save NC citizens a trip to court by providing them a quick, convenient means of requesting dismissal online for certain traffic offenses if they have complied with the NCDMV. ECAD also provides an efficient, simple interface to CCIS-DA allowing the district attorney the ability to view and approve or deny requests, as well as a reporting interface to CCIS-CC to assist clerks with the management of case records. This system is still available for all non-Odyssey counties.

payNCticket - Legacy
payNCticket is a web-based system which allows persons who have received citations for offenses not requiring a court appearance (primarily traffic tickets) to query and pay their tickets online. This system is still available for all non-Odyssey counties.

Online Request for Reduction of Speeding - Legacy
Online request for reduction of speeding is the latest addition to the suite of online services offered by the NCAOC as part of eCourts, the larger initiative to modernize the North Carolina court system. The service provides a fast, convenient means of requesting reduction for speeding offenses online and potentially avoiding a trip to court. This system is still available for all non-Odyssey counties.

NC Department of Health and Human Services

NC Disease Event Tracking and Epidemiologic Collection Tool
NC Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) is North Carolina's statewide syndromic surveillance system. NC DETECT was created by the North Carolina Division of Public Health in 2004 in collaboration with the Carolina Center for Health Informatics (CCHI) in the University of North Carolina (UNC) Department of Emergency Medicine to address the need for early event detection and timely public health surveillance using a variety of secondary data sources. Authorized users are currently able to view data from emergency departments, the North Carolina Poison Center, and EMS response data from ESO, as well as data from select urgent care centers. NC DETECT is designed, developed and maintained by

CCHI staff with funding by the North Carolina Division of Public Health (NCDPH). New functionality is added regularly based on end user feedback.

NC Hospital Patient Discharge System

Prior to 1995, the Medical Database Commission (MDC) collected hospital discharge data in NC. On September 30, 1995, the North Carolina General Assembly eliminated the MDC and set up an alternate system for the reporting of hospital discharge data. Since 1996, hospitals have reported data, as set forth by the Medical Care Data Act of 1995 (Article 11a of Chapter 131E of the North Carolina General Statutes).

Since 1996, the Cecil G. Sheps Center for Health Services Research has worked under contract with the North Carolina Division of Health Service Regulation to store, maintain, and analyze the North Carolina Hospital Discharge Databases. The data contained in the discharge databases are secondary claims data used by facilities to bill payers.

NC Medical Examiner System

The North Carolina Medical Examiner System is a network of over 600 medical doctors throughout North Carolina who voluntarily devote their time, energy, and medical expertise to investigate deaths of a suspicious, unusual, or unnatural nature are adequately investigated. This resource is maintained by the Office of the Chief Medical Examiner of the state of North Carolina (OCME), a division of the North Carolina Department of Health and Human Services. OCME also functions as the Division of Forensic Pathology at the UNC School of Medicine Department of Pathology.

The Medical Examiner's office has detailed data on each death in North Carolina. For the cases that are associated with motor vehicle crashes, these death reports are used to determine the presence of alcohol for the North Carolina crash data driver fatalities and the Fatality Analysis Reporting System (FARS).

NC State Center for Health Statistics

The NC State Center for Health Statistics (SCHS) is the North Carolina agency responsible for data collection, health-related research, production of reports, and maintenance of a comprehensive collection of health statistics. SCHS provides high quality health information for better informed decisions and effective health policies. The goal is to improve the health of all North Carolinians and their communities. These data include statewide records on all births, fetal deaths, deaths, pregnancies, marriages, and divorces as part of their Vital Statistics Program. These records have data on age, race, sex, county, name, and key dates, as required by the state. SCHS also maintains a registry of all cancer cases as part of the North Carolina Central Cancer Registry and a registry of all birth defects as part of the North Carolina Birth Defects Monitoring Program. In addition to these two registries and the Vital Statistics Program, SCHS performs the following three surveys, the Behavioral Risk Factor Surveillance System and the intermittent Pregnancy Risk Assessment Monitoring Program. More information about SCHS's role in statewide data collection and research can be found here: https://schs.dph.ncdhhs.gov/aboutus.htm.

North Carolina Office of Emergency Medical Services

The North Carolina Office of Emergency Medical Services (NCOEMS) is located within the Department of Health and Human Services, under the Division of Health Service Regulation. The NCOEMS is the regulatory agency responsible for statewide coordination of Emergency Medical Services through licensing, education, credentialing, and compliance. The Office of Emergency Medical Services is also responsible for Emergency Support Function 8 (Health and Medical) under the N.C. Emergency Management framework and accomplishes this mission in coordination with N.C. Division of Public Health through Healthcare Preparedness Coalitions at the eight Level I and II trauma centers across the state.

The NCOEMS contracts with a private vendor, ESO, based in Austin, Texas, to manage the NC EMS Data System. They currently maintain and support the state data repository, in addition to the regulatory database (Continuum), Credentialing Testbank Generator, and the NC Trauma Registry. This platform encompasses a multitude of linkages to external stakeholders that are both uni-directional and bi-directional. These linkages are currently with, but not limited to: AOC, NC DETECT, NC Stroke Registry, National EMS Information System (NEMSIS).

NC Trauma Registry

Since 1987, all North Carolina trauma centers, and several non-trauma center hospitals have submitted data to the North Carolina Trauma Registry. Seventeen of these facilities are designated by the state of North Carolina as level I, II, or III trauma centers. The NCOEMS maintains the North Carolina Trauma Registry through a contract with ESO and a contract with UNC-Chapel Hill. All state designated trauma centers are required to submit data for the purposes of performance improvement, outcomes measurement, resource utilization, injury prevention, and clinical research. A designated trauma center is a local hospital voluntarily meeting the state's guidelines for care of the injured patient. Each of the state's centers has the responsibility of providing care and of developing and/or supporting a regional trauma system. NC’s trauma system includes 6 Level I, 3 Level II and 8 Level III centers. Two of the Level III centers are military hospitals located on federal installations, but all accept civilian patients.

State EMS Data Repository

The State EMS Data Repository provides data entry and reporting capability for the evaluation of EMS patient care and system performance. The benefits of this repository include a standard method of documenting patient care to facilitate tracking of hospital diagnoses and patient outcome information; system comparison across agencies; involvement in public health and injury prevention initiatives and EMS research; EMS strategic planning on a statewide basis; fiscal accountability; leadership in developing EMS outcome measurements; links to other state and national data sets for researchers; quality management of patient care, services, and resource tracking; required billing information; offsite data warehousing; feedback on technician procedures for evaluation and certification; and storage of medical device data.

Continuum™
Continuum™ is the NC Office of EMS regulatory information system, compliant with the NEMSIS version 3 data specification, which collects data on each EMS call report made within the state. Continuum™ also allows for the regulatory oversight of 471 EMS agencies, 2,820 vehicles, 41,469 EMS personnel and all teaching institutions statewide. OEMS uses Continuum to track EMS credentials, agency licenses, vehicle permits, educational classes, disciplinary actions, and various other regulatory functions. However, this may be being phased out, and there was no clear information on what may be replacing it.

NC Department of Public Safety

Commercial Vehicle Enforcement Resource Lab
The Commercial Vehicle Enforcement Resource Lab (COVERLAB) is a university-based program for helping to reduce truck-involved crashes by improving commercial vehicle enforcement effectiveness. Located at North Carolina State University's Institute for Transportation Research and Education (ITRE), COVERLAB provides the Commercial Vehicle Enforcement (CVE) section of the NCSHP with online data-driven analytics, geospatial analysis, program development support, and research for improving commercial vehicle safety outcomes.

COVERLAB Analytics
COVERLAB Analytics is web-based data visualization decision support tool that helps the CVE section of the NCSHP improve its tactical enforcement planning for reducing truck-involved fatal crashes and protecting road/bridge infrastructure from heavy truck damage. COVERLAB Analytics provides CVE supervisors with online scorecards to track crash reduction performance goals, dashboards for in-depth trend and comparison analysis, and map analytics to prioritize times and locations for improving enforcement effectiveness.

NC Vision Zero
NC Vision Zero is a collaborative initiative to eliminate roadway deaths and injuries in North Carolina. The goal of the NC Vision Zero initiative is to unify all safety stakeholders to reduce traffic fatalities. The NC Vision Zero website provides centralized access to program content and crash data visualization tools, for both the public and traffic safety partners.

NC Vision Zero Analytics
NC Vision Zero Analytics is a suite of data visualization tools for helping traffic safety partners and the public measure and understand traffic fatality trends, locations, contributing circumstances, demographics, and more.

- ***NC Vision Zero Target Tracking Dashboard***
  A gated online data visualization system for safety stakeholders to track traffic safety goals and identify effective data-informed strategies for reducing traffic fatalities in North Carolina. The state's crash reduction goals are visually presented to (and co-tracked by) both the NCSHP and NC GHSP staff. Users can see how well they are performing with "views" specific for their geographic location. This provides a common

version of the truth and the capability to prioritize safety countermeasure activities more effectively for reducing traffic crashes and fatalities.

- ***NC Vision Zero Public Dashboards***
  A series of public-facing data visualization tools for helping the public answer questions about crash data, identify problem areas by geographic area, and understand crash data trends.

  - ***Safety Dashboard*** – Visualize and filter trends of fatalities and serious injury collisions over time.
  - ***Distracted Driving Dashboard***– View locations and trends of distracted driving crashes.
  - ***Commercial Vehicle Crashes*** - Explore commercial vehicle crashes and interactively filter for crash severity, date, time, and location.
  - ***Crash Query Tool*** - Find answers to questions about crash data and visualize the results.
  - ***Seat Belt Use Dashboard*** - Interactive map of statewide and county-level weighted seat belt use rates for North Carolina
  - ***Vision Zero Maps*** – Map-centric tool for visualizing overlapping contributing circumstances by geographic area.
  - ***Child Passenger Safety Dashboard*** - Interactive map of statewide and county-level Child Passenger Safety Technician and Car Seat Checking Station data.

NC Department of Transportation

North Carolina Geographic Information System

The NC Department of Information Technology-Transportation (NCDIT-T) Geographic Information System (GIS), Spatial Data Operations Group's roadway linear referencing system (LRS) represents all public roads in NC and serves as the spatial representation roads officially maintained by the state. The LRS is maintained in an enterprise environment using ESRI Roads & Highways software. Road features are edge-matched, split at county and state boundaries, and corrected to match the latest available orthophotography. System roads are updated based on actions approved by either the Board of Transportation or traffic ordinances issued by the State Traffic Engineer. Non-system roads are updated based on new road additions, deletions, and spatial or attribute changes identified by running a change detection process between old and new authoritative sources (i.e., county GIS centerline). Change detection is also used to update other state-maintained roads (i.e., Wildlife Resources Commission), federal roads (i.e. National Forest Service), and roads belonging to the Eastern Band Cherokee Nation. The NCDIT-T GIS Unit provides access to LRS data as web services, web maps and downloadable files through the team's website (https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx) and/or GO!NC (https://ncdot.maps.arcgis.com/home/index.html).

NCDOT has also made significant progress towards the collection of Model of Inventory Roadway Elements (MIRE) Fundamental Data Elements (MIRE FDE). They are on track to meeting the data collection requirements ahead of the 2026 deadline.

Traffic Engineering Accident Analysis System

Traffic Engineering Accident Analysis System (TEAAS) consists of an oracle database and custom client software developed for the purposes of performing engineering and location-based analysis of crash data. TEAAS went into production in 1999 and contains crash data for analysis purposes back to 1990. The TEAAS database is a replication of the crash database maintained by the NCDMV. Crash data is typically available in the analysis system within a few weeks of the date of the crash. This time is much shorter for crashes that are submitted electronically.

TEAAS software is available for download via the internet free of charge to state or local government personnel, law enforcement agencies, planning organizations, and research entities.

TEAAS also contains all traffic ordinance information for state-maintained roadways. Roadway information is also available in the system for the purposes of locating crashes and ordinance data.

NCDOT Division of Motor Vehicles

Fatality Analysis Reporting System

Fatality Analysis Reporting System (FARS) contains data for fatal traffic crashes that occur within the 50 states, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a public roadway and result in the death of a person (including occupant of a vehicle or a non-motorist) within 30 days of the crash.

FARS was developed by the National Center for Statistics and Analysis (NCSA) of the NHTSA in 1975. The FARS objectives include providing an overall measure of highway safety, identifying traffic safety problems and solutions, and providing an objective basis to evaluate the effectiveness of motor vehicle safety standards and highway safety initiatives.

NHTSA has a cooperative agreement with an agency in each state's government to provide information on all qualifying crashes in the state. In North Carolina, the NCDMV is the lead agency for FARS reporting. FARS data are obtained solely from the state's existing documents, including the following police crash reports, state vehicle registration files, state driver licensing files, state Highway Division data, vital statistics, death certificates, coroner/medical examiner reports, hospital medical reports, emergency medical service reports, and other state records.

More than 100 FARS data elements are coded from the documents above. The specific data elements may be modified slightly each year to conform to changing use needs, vehicle characteristics and highway safety emphasis areas. The data included in FARS do not include any personal identifying information such as names, addresses or social security numbers. Thus,

data kept in FARS files and made available to the public fully conform to the federal Driver Privacy Protection Act.

Fatal crash data for each state are entered into a local microcomputer data file and daily updates are sent to NHTSA's central computer database. Data are automatically checked when entered for acceptable range values and for consistency. This makes it possible for corrections to be made immediately.

Each year, FARS data are utilized by the NCSA to publish a Traffic Safety Facts report. The report compiles fatal crash data from FARS and non-fatal crash data from the General Estimates System. The purpose of the Traffic Safety Facts report is to present statistics about traffic crashes of all severities.

NC Crash Data

The NCDMV maintains a database that contains information on all reported crashes in the state. The database was assembled to serve as a single electronic repository for all crash data. One of the main objectives of the crash database is to make records and related data available to the law enforcement community. The current Crash Reporting System (CRS) was established in 1999, and the earliest record dates to 1991. Crash data may either be submitted electronically using either the NCDMV Traffic Records Communication System (TRCS) application or NCDMV Electronic Crash Reporting System (ECRS), and manually through a written crash report form. The TRCS application enables law enforcement to electronically complete and submit crash reports directly to the CRS from the field. The ECRS application allows the law enforcement to electronically send crash reports in an XML format from the law enforcement repository. Written crash reports are received by NCDMV and scanned. Data entry staff key information from the scanned images stored in the database. Crash report data that are electronically submitted through TRCS are typically available within two days after NCDMV receives the report. Crash data that must be manually entered from the DMV-349 form are usually available within 30 days after the NCDMV receives the report. Updates to the CRS database are made daily. The data are never purged. A CRS data dictionary is available upon request. It is updated periodically, as needed or as requested by the NCDMV Traffic Records Branch. Business rules are in place to ensure the completeness of the data. Only reportable crash data are typically entered into the CRS database; however, data are entered for all crashes that are reported, even those that may not fit the criteria of a reportable crash.

A reportable crash must meet at least one of the following criteria:

- The crash resulted in a fatality, or
- The crash resulted in a non-fatal personal injury, or
- The crash resulted in total property damage amounting to $1,000.00 or more, or
- The crash resulted in property damage of any amount to a vehicle seized, or
- The vehicle has been seized and is subject to forfeiture under G. S. 20-28.3.

All law enforcement agencies are required to report crashes that they respond to that meet one or more of the criteria.

North Carolina Crash Reporting Information System (NC CRIS)
NC CRIS is being developed as a modern data system for collecting, storing, managing, and analyzing high quality crash data, currently being developed at the NCDOT.

Traffic and Criminal Software (TraCS)
The North Carolina TraCS is the NCDMV's implementation of the national model of the TraCS package. TraCS enables law enforcement officers to record and retrieve incident information from the field wherever and whenever an incident occurs. The NCDMV TraCS is an enhancement of the current CRS that enables NCDMV to receive and process crash reports electronically.

NC TraCS and NCDMV TRCS are collectively referred to as TraCS and work together to allow officers to electronically collect and transmit crash information from the field to a central repository (i.e., CRS). TraCS allows an officer to collect and validate information in his or her vehicle using a notebook computer or at a local office using a workstation. TraCS can obtain driver and vehicle information corresponding to a driver license or a vehicle (plate or VIN) from the State Titling and Registration System (STARS) and State Automated Driver License System (SADLS) through the crash database.

The primary objective of TraCS is to maintain a paperless system where creation, validation, and transmission of crash data are performed electronically. In the process of accomplishing this objective, TraCS also helps to reduce the time needed to create a crash report in the field. This translates to faster submittal of crash reports to DMV, and in turn, expedited public availability of crash data.

NC Driver License Record System Data
The NCDMV maintains the State Automated Driver's License System (SADLS), which contains North Carolina driving records data. SADLS went into live production on November 24, 1994. The earliest driver license record stored in the system is from October 14, 1966.

Online data are processed in real time as received from various states/agencies via the American Association of Motor Vehicle Administrators Network (AAMVANet) interface. Some data files provided by outside agencies, such as the NCAOC, are not received through AAMVANet and are processed by batch each workday. Updates made to a driver record as the result of the driver turning in his or her North Carolina license and applying for a license in another state are made in real time. In addition, another example of real time updates includes any updates resulting from receipt of customer information from the Social Security Administration. Overnight data updating is primarily adjudicatory in nature and involves updating the driving record based on convictions received from the NCAOC. The updated record is then applied against the standards to determine whether a suspension should result.

It could also involve updating the driving record when a suspension ends or updating status information for the recently deceased.

Summary of the number of licensed drivers issued during the most recent NC Traffic Records Project year are noted in the table below. Thanks to NC DMV for providing this update to the NC TRCC.

Number of NC Licensed Drivers Issued Between 04/01/2020 & 03/31/2021 (from NC DMV)

License Group Code	Non-CDL/CDL Indicator	Category	Number of Drivers
	N	Non-CDL DL	1395848
	Y	CDL	92256
I	N	ID Cards	214093
M	N	Motorcycle Only	5
P	N	Non-CDL Permits	82603
P	Y	CDL Permits	15346
1	N	Limited Learner Permits	64457
2	N	Limited Provisional Licenses	76392
3	N	Full Provisional Licenses	32828
4	N	Motorcycle Permits	8210
		Total	**1982038**

NC Vehicle Registration Record Data

The STARS is a database maintained by the NCDMV that was created to provide automated vehicle titling and registration services. STARS represents a comprehensive automation of all vehicle titling and registration business functions and was implemented in 1996. It is one of North Carolina's largest systems and requires a high level of support and maintenance. STARS currently (as of 2020) stores information on 12,700,000 vehicles; 12,100,000 active titles; 6,860,000 active registrations; historical information on 2,900,000 cancelled titles; and 25,800,000 previous years' registrations. The major system components of STARS include titling, registration, fiscal, correspondence, inquiry, police network, imaging, inventory, printing, interface processing, headquarters, batch, and other services.

SAFETYNET – Commercial Motor Vehicle Crash Reporting

SAFETYNET is a computer system utilized by state law enforcement agencies and the Federal Motor Carrier Safety Administration (FMCSA) for the collection and management of commercial vehicle safety data. Data are collected from all safety inspections and compliance reviews performed in North Carolina and all qualifying crashes that occur on North Carolina highways. The NCDMV maintains commercial motor vehicle (CMV) crash data in the crash database. The division is responsible for forwarding CMV crash data to the NCSHP, who enter the data into SAFETYNET. SAFETYNET data are routinely transferred to the Motor Carrier Management Information System for analysis by FMCSA and are used to help determine a motor carriers'

safety fitness rating. The system also allows for the electronic collection of inspection data from roadside inspection software.

FMCSA's SAFETYNET Crash Module records qualifying vehicles involved in crashes that are motor vehicle traffic crashes as defined in the ANSI D-16 Manual on the Classification of Motor Vehicle Traffic Accidents. To satisfy the definition of a motor vehicle traffic crash, the crash must not be the result of a deliberate act (e.g., suicide, police intervention) or a cataclysm (e.g., hurricane, flood). The crash must result in at least one of the following: a fatality, an injury or involve a towed vehicle. In addition, a crash must also meet the following criteria to be sent to SAFETYNET:

1. Commercial vehicles must have a gross vehicle weight rating (GVWR) > 10,000 pounds or carry hazardous materials.
2. Non-commercial vehicles must have one of the following vehicle styles: commercial bus, school bus, activity bus, other bus, light truck (carrying nine or more occupants), sport utility vehicle (carrying nine or more occupants), or van (carrying nine or more occupants).

2023 Strategic Plan

Overview

In 2023, the NC TRCC began the process of updating the 2022 Strategic Plan. The UNC Highway Safety Research Center (HSRC) worked with NC GHSP and NCDOT to review relevant materials, gather input from key agencies, and develop a plan to guide improvements to be made in traffic safety information systems over the next five years. Agencies who participated in the development of this plan included:

- NCSU ITRE
- NC DHHS
- NC GHSP
- NCAOC
- NCDOT
- NCDIT-T
- NCDMV
- NCOEMS
- NCSHP
- UNC HSRC
- UNC IPRC
- UNC CCHI

Gathering input for the plan began with the initial task of reviewing the following documents:

- *North Carolina Traffic Safety Information Systems Strategic Plan, 2022.* This plan became the benchmark for progress with respect to improvements made over the past year.
- *State of North Carolina Traffic Records Assessment, 2022*. The State chose to complete the Assessment using the Self-Assessment tool. Led by HSRC, the Traffic Records Self-Assessment was completed in the Summer of 2022 and produced several recommendations related to traffic safety information systems.
- *North Carolina Governor's Highway Safety Program FY 2023 Highway Safety Plan*. This plan was reviewed for specific recommendations related to traffic safety information systems and for data-related recommendations related to targeted safety strategies.

The primary source of input to the plan was a strategic planning session with representatives from the agencies listed above. This session was used to review goals and objectives and monitor progress toward performance measures, which were set last year.

The plan was first developed in 2010 and was intended to address improvements in traffic safety information systems over five years. The formatting and content have been updated in this 2023 version to reflect changes in how information is communicated and to reflect the evolution in approaches to data quality management. The plan was and will continue to be reviewed on an annual cycle and modified as necessary to ensure that progress is being made in each of the areas and that new objectives are added to address changes in the state and take advantage of improvements that may lead to better systems. In other words, this is a dynamic plan.

Vision and Mission

Vision

To improve safety by significantly reducing the number of fatalities and injuries to the citizens and visitors of our state.

Mission

Provide the leadership to establish and maintain a level of coordination, communication and cooperation between agencies and stakeholders to maximize utilization and improve functionality, data accuracy, timeliness, and linkages, and to advance electronic data collection, protect privacy, minimize redundancies in traffic records systems and better accomplish individual agencies' goals.

Goals and Objectives

Goals are established for the NC TRCC as an entity and for each of the six primary data systems that are required for addressing traffic safety in the state. For each of these seven goals, specific objectives, and action items were developed that represent the priorities for each group/system.

Traffic Records Coordinating Committee

Goal – Provide direction and facilitate coordination among the safety data stewards and stakeholders to improve the transportation safety information systems in North Carolina.

**Note: The official annual performance period for measuring performance is April to March each year. However, some of the activities described in this section include items undertaken or completed in May or June, as the final plan is delivered at the end of June each year.*

Objective	***Action***	***4/1/21-3/31/22****	***4/1/22-3/31/23****
Ensure that the membership of the TRCC consists of all key stakeholders, including the owners, stewards**,** and users of the data in NC.	An annual review of stakeholders and expansion of the TRCC membership as necessary.	Ongoing. Annual review has been conducted. TRCC is still seeking additional members to fill the gaps identified.	Ongoing. TRCC is still seeking additional members to fill the gaps identified. Working to get Driver and Vehicle participation from Business Units, increased local, and LEA participation
Updating the State TR Assessment as required by NHTSA Every five years).	NC TR Self Assessment process was completed.	Ongoing. There is an active project to complete the NHTSA Self-Assessment Tool and develop a 2022 TRA Final Report.	Completed. The NC Traffic Records Assessment using the NHTSA Self-Assessment tool July 2022
Add a fourth TRCC meeting – to have formal quarterly meetings.	AS required by NHTSA to qualify for 405 (c) funding.	Adding another TRCC meeting to be held in August 2022.	Held Workshop on Performance Measures in August 2022; will continue holding the summer meeting as a Workshop/Tech transfer, brainstorming session.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
In collaboration with the NC GHSP, review and improve upon the protocol used in the identification and prioritization of projects.	Annual review and improvement upon the project identification and prioritization process.	Ongoing. Formal project identification form has been created. This process has been in place and utilized when there are project idea submittals.	Ongoing. Formal project identification form has been created. This process has been in place and utilized when there are project idea submittals.
	A set of guidelines created for use in identifying and prioritizing projects.	The initial TRCC project rating policy and procedure has been agreed on. See Appendix H for the policy description, project description form, and the rating sheet for the TRCC members.	The initial TRCC project rating policy and procedure has been agreed on. See Appendix H for the policy description, project description form, and the rating sheet for the TRCC members.
	A prioritized list of recommended projects provided to NC GHSP and other funding sources and agencies that align with the specific objectives of the Strategic Plan.	Ongoing. We did not receive any applications this year, but the process was in place if there were project ideas.	Ongoing. We did not receive any applications this year, but the process was in place if there were project ideas.
Monitor and measure progress on existing goals and objectives.	Annual update of TRCC Strategic Plan.	Completed.	Completed.
	Periodic review of ongoing projects, focusing on progress toward meeting performance measures outlined in the strategic plan.	Completed	Completed
	Review NHTSA recommendations for TRCC activities to align our goals with the assessment	Completed.	Completed.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
	document focus questions.		
Increase coordination between ECHS and TRCC	Have TRCC members attend ECHS meetings	TRCC updates provided at quarterly NC ECHS meetings as requested.	TRCC updates provided at quarterly NC ECHS meetings as requested.
Identify gaps in the current traffic records systems and explore new solutions.	Establishment and revision of goals and objectives as part of development of the next strategic plan. (*Note: Explore external funding opportunities. Examples include: 405C, NC ECHS, FHWA, NHTSA, CDC).*	Completed (June 2021).	Completed (June 2022).
Share NC achievements and best practices in traffic safety information systems with other states.	Participation in regional and national conferences and peer-to-peer exchanges.	Ongoing. Presentations were made in 2021 at the Traffic Records forum.	Ongoing. Presentations were made in 2022 at the Traffic Records forum. Several TRCC members have registered to attend the 2023 Traffic Records Forum in Nashville, TN. Ryan K from GIS-Unit will be presenting on Roadway data Performance Measures.
Monitor and evaluate the achievements and best practices in traffic safety information systems in other states for potential implementation in NC.	Review of promising strategies from other states, or items shared w/ other states, and sharing back with group.	Continued involvement and attendance at Virtual Traffic Records Forum in August 2021). Several members plan to attend the 2022 in-person meeting in Denver, CO August 2022.	Attended the 2022 Traffic Records Forum in Denver, CO, and reported back to the TRCC on what was learned at the Forum. Several members plan to attend the 2023 in-person meeting in Nashville, TN August 2023.
	Monitor USDOT/other state's TRCCs for ideas for consideration.	Continued. NC is a HSIS state and has an annual HSIS peer exchange on traffic record topics on-line.	Continued. NC is a HSIS state and has an annual HSIS peer exchange on traffic record topics on-line.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Ensure that state highway safety plans include traffic safety information systems as a major component.	Review of NC State Highway Safety Plan (SHSP).	The SHSP was updated in 2019, next update will be in 2024. Begin work Fall 2023.	The SHSP was updated in 2019, next update will be in 2024. Begin work Fall 2023.
	Review of Highway Safety Improvement Plan (HSIP).	HSIP 2021 plans were completed and submitted.	HSIP 2022 plans were completed and submitted. HSIP Implementation Plan June 30.
	Review of NC Highway Safety Plan (HSP).	Completed (HSP 2021).	Completed (HSP 2022).
Expand performance measures for remaining Core Data Systems.	Performance measures for vehicle, driver, roadway, and injury surveillance.	August 2022 Workshop is being planned. Plans for a project is still under consideration to assist TR agencies with this effort.	Ongoing. Held Workshop in August 2022. Added a separate section in this report to better document/ formalize Performance Measures.

Crash Information Systems

Goal – Maintain the crash data system and expand the capabilities of the system to allow the state to use this data to track crash injury/fatality experience for use in court cases, safety improvement studies, and evaluating State driving statutes.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Continue to communicate data collection and data submission protocols and business rules with third-party software vendors of electronic crash submission products to keep them apprised of changes in the North Carolina crash data systems that need to be accommodated in their software applications.	Periodic meetings with third-party vendors to share business rules and communicate changes.	Ongoing.	Ongoing.
	Periodic review and validation of third-party vendors' compliance capabilities.	When DMV makes changes, we check to see the vendor changes are accurate.	When DMV makes changes, we check to see the vendor changes are accurate.
	Initial review and validation for new third-party vendors.	Currently 3 vendors in place, Southern Software, Interplat, and Central Square.	Currently 3 vendors in place, Southern Software, Interplat, and Central Square. Shared updated DMV-349 form for NC CRIS with vendors to

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
			give them time to prepare for its rollout.
Continue to enhance the integration of crash data systems.	Continuing to correct CRS records based on analysis of TEAAS data.	Ongoing.	Ongoing.
	Periodic review of the integration process between the traffic safety unit and DMV.	Ongoing.	Ongoing.
Ensure that crash data continue to be accurately recorded and reported to the CRS.	Periodic summary of crash report rejection reasons.	Ongoing. Also identify any potential corrections	Ongoing
	Periodic review of business rules to target inaccurate fields.	Ongoing	Ongoing
Ensure that crash data continues to be recorded as completely as possible.	Identify and correct reports with missing critical data elements.	Ongoing.	Ongoing.
	Periodic review of business rules to address completeness.	Ongoing.	Ongoing.
	Feedback to LEAs with respect to their data quality.	Ongoing.	Ongoing.
	Year-to-year comparison of the number of reports received to review for possible missing data.	Ongoing.	Ongoing.
Ensure that crash data is recorded uniformly.	Request NHTSA conduct a MMUCC Mapping on the revised DMV-349 crash report form		Future effort

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Ensure that the crash data are accessible to key stakeholders.	Potential workshop with stakeholders including IT to discuss accessibility issues.	Stakeholder workshops held as part of NC CRIS effort.	Continue to review workshop feedback as part of NC CRIS development.
	Provide NC Crash Data to key Stakeholders – special version of the sanitized data.	Sanitized crash data has been completed.	Sanitized crash data has been completed.
Enhance law enforcement training that will result in more complete and accurate crash reporting.	Review of alternative training methods, including distance learning and blended training options, and methods used in other fields. *(Note: EMS as an example.)*	Brian Crissman provided these statistics on his training cadets in the SHP in person.	Basic School cadets trained. Section 150: 42 151: 23 152: 50 153: 65 154: 39 155: 16 156: 21 157: 36
	Number of law enforcement officers who receive training, including a breakdown of standard and more extensive training. Review of the current Basic Law Enforcement Training.	Basic School cadets trained. Section 150-42 151-23 152-50 153-65 154-39 155-16.	

Data Use & Integration

Goal - Provide direction and facilitate coordination among the safety data stewards to improve the integration of transportation safety information systems in North Carolina.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Conduct a feasibility assessment of the value of and most effective means of sharing data across multiple systems	Feasibility study report. *(Note: This is a project that will be addressed in the future, when all stewards are ready*	Possible future effort.	Possible future effort.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
within the data collection process, such as crash and citation, for consistency and accuracy of data.	*and funding is available to support the study.)*		
Conduct demonstration projects to illustrate the feasibility and value of data integration.	MVC Injury Data Linkage Project Repeat Offenders Project	Completed Sept 2021. Produced NC Transportation Safety & Public Health Data Dashboard. https://cchi.web.unc.edu/nc-transportation-safety-public-health-data-dashboard/	Continued to seek funding to maintain and expand the out of this project, North Carolina Crash Injury Surveillance System (NC-CISS). This includes a proposal to GHSP to fund a related project in FFY 2024.
Capture detailed latitude/long location information for citations, crashes and asset management, etc., to allow for integration (results have implications for multiple data systems).	Code lat/long location crashes	Coordinate data is being coded from crash reports in an ongoing way for fatal and serious injury crashes, as well as bicycle and pedestrian crashes. TEAAS has been recently updated to provide tools to allow for the import and organization of coordinate data.	Coordinate data is being coded from crash reports in an ongoing way for fatal and serious injury crashes, as well as bicycle and pedestrian crashes, and commercial motor vehicle crashes. TEAAS has been recently updated to provide tools to allow for the import and organization of coordinate data. NCDOT Traffic Safety is working with local LEAs to encourage the collection of coordinate information at the time of the crash.

Citation/Adjudication Systems

Goal – Maintain and update North Carolina AOC databases and oversee the proper movement of court information and data, while centralizing information and creating citation/sharing procedures for the citation and adjudication records.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Continue to improve electronic citation audit procedures and implement the	Implementation of a tracking system for issued citations.	Enforcement Mobile, powered by Brazos, the replacement eCitation system was implemented statewide in the Spring of 2021. This system has the capabilities to	Enforcement Mobile, powered by Brazos, the replacement eCitation system was implemented statewide in the Spring of 2021. This system has the capabilities to

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
most promising improvements to ensure citations are tracked from time of issuance to disposition.		quickly identify data transmission errors. This feature allows users to resolve data issues and transmit citations to the court in a timely manner.	quickly identify data transmission errors. This feature allows users to resolve data issues and transmit citations to the court in a timely manner.
Improve access to Justice by increasing access to services and court data while improving operating efficiencies.			eCourts was implemented in February 2023 in 4 pilot counties, Johnston, Harnett, Lee and Wake.

Injury Surveillance Systems

Goal – Multi-agency coordination to improve support/funding for Public Health research into traffic safety to better inform programs and policies.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Maintain and expand NC-CISS.	Identify long-term funding source to continue update/expand/utilize the NC-CISS	Continued to seek funding to maintain and expand NC-CISS.	Continued to seek funding to maintain and expand NC-CISS. This has been done through proposals submitted to GHSP, discussions with UNC - HSRC, DCRP, discussions with private Foundations, etc.
NC-CISS used by State and local Communities to inform and support traffic injury prevention	Provide NC Vision Zero Communities with NC-CISS data to help guide decisions on policies and programs		Future effort
Improve feedback loop from drug/alcohol tests into crash data	Conduct feasibility study to identify the bottlenecks, and identify potential opportunities for improvement for both fatal and non-fatal crashes		Future effort

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Capture non-motor vehicle crashes for ped, bike, micro mobility, etc.	Conduct exploratory survey to identify if anyone is going this, and how, what challenges, successes, etc.		Future effort

Roadway Information Systems

Goal – Continue to maintain and expand an up-to-date statewide inventory of all North Carolina roadways that allows the State to track roadway changes and improvements and permits enhanced safety analysis.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Improve the interoperability and linkage between the linear referencing system, road characteristics data, and the crash data system (TEAAS).	Successful implementation of a distributed ownership model for capturing and maintaining roadway data elements.	Completed migration to next version of software.	Planning for software migration to Pro in 2025.
	Ability to integrate crashes from non-system roadways into the statewide LRS.	Continuously updated as data come in.	Roadway: Continuously updated as data come in. TEAAS: Ongoing work to link non-system roads.
Be able to link intersections to crashes to enhance analysis	Develop Intersection Inventory for all public roads	Continue to develop intersection inventory	Completed intersection inventory April 2023
Improve data governance	Document LRS data governance	On Task 2 of AEGIST Pooled Fund Study.	Ongoing. AEGIST Pooled Fund Study Task 2 underway to document and develop LRS data governance.
Improve data quality control for roadway data elements.	Investigate what data quality control measures are in place currently.	Still ongoing. RDIP completed virtually. Quarterly data quality reports published internally, working on how best to utilize and distribute.	Ongoing. Begin development of formal performance measures to help improve data quality.
Non-motorized volume project	Investigate what non-motorist volume data is being collected	Initiated a research project to investigate what non-motorist data is being collected across	Continued a research project to investigate what non-motorist data is being

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
	across the state, and how it is collected.	the state, and how it is collected. The goal of this research is to inform future efforts to develop a comprehensive statewide spatial inventory of non-motorist count data.	collected across the state, and how it is collected. The goal of this research is to inform future efforts to develop a comprehensive statewide spatial inventory of non-motorist count data.

Driver Information Systems

Goal – Continue to maintain and update the North Carolina driver license record data to be used in road safety studies and statistical analysis and to track all North Carolina drivers and their driving records according to North Carolina law.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Provide online a basic summary of the number of licensed North Carolina drivers, which includes their age, race, sex and county of residence. *(Note: the publication should include motorcycle endorsements, commercial licenses and learner's permits.)*	Annual online publication as part of NC Crash Facts.	Ongoing	Not included as recent NC Crash Facts reports, DOT will work with DMV-Driver to get them a list of what summary statistics should be included in the report
Integration of SADLS interfaces with NC CRIS	Review current interfaces and identify areas for improvement	Ongoing as part of NC CRIS design/development effort	Ongoing as part of NC CRIS design/development effort
Integrations SADLS and AOC	Review current interfaces and identify areas for improvement	Ongoing	Ongoing

Vehicle Information Systems

Goal – Continue to maintain and update all North Carolina vehicle registration record data for the state to be used in road safety studies and statistical analysis and to ensure all vehicles are properly licensed according to the laws of NC.

Objective	*Action*	*4/1/21-3/31/22**	*4/1/22-3/31/23**
Publish a summary of the number of NC registered vehicles – by type of vehicle and county.	Annual publication as part of NC Crash Facts	Updated for 2021.	Updated for 2022
Interface STARS and NC CRIS	Improve interface to accurately identify vehicle ownership		Providing crash dates which better helps to identify vehicle owner

Performance Measures

During the 2022 Traffic Records Assessment, many agencies noted they were conducting data quality management, however, had not documented their processes into formal performance measures. The purpose of this section is to document the performance measures currently in place, help identify the gaps when no performance measures exist, and track progress when one does.

The table shows where a performance measure was able to be documented for each of the six data systems.

Performance Measures Gap Analysis Summary

Data System	Timeliness	Accuracy	Completeness	Uniformity	Integration	Accessibility
Crash	x	x	x	x	x	
Driver						
Vehicle		x				
Roadway	x	x	x		x	x
Citation and Adjudication	x		x	x	x	x
Injury and Surveillance						

Crash

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group
Average number of days between the time of the crash and the time of the submission.	## Days	22.81 days (print submissions) 4.39 days (electronic submissions)	DMV- Crash / DIT-T
Percentage of crash reports submitted within 10 days. (GS 20-166.1 indicates that a law enforcement agency who receives an accident report must forward it to the NCDMV within 10 days after receiving the report.)	% of reports received within 10 days	80.42%	DMV- Crash / DIT-T

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group
The percentage of rejected crash reports. (Note: no reports are accepted to the CRS until the errors in mandated data elements are corrected.)	% rejected report	3.87% (electronic submissions only)	DMV- Crash / DIT-T

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group
Percent of rejected reports revised and resubmitted.	100% revised and re-submitted	85-90% Send quarterly reports to LEAs with this and other data quality related metrics	DMV-Crash

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group
Percentage of data elements that are MMUCC compliant.	Goal: ##% Compliant	NHTSA performed a MMUCC mapping of the current report	
Crash		75.58%	
Vehicle		53.42%	
Person		57.13%	
Roadway		56.88%	
Fatal Section		0%	
Large Vehicles & Hazardous Materials Section		18.44%	
Non-Motorist Section		40.83%	
Dynamic Data Elements		0%	
Year-to-year comparison of reportable vs. non-reportable crashes by LEAs.	Goal: ##% reportable ##% non-reportable	76.23% reportable 23.77% non-reportable	

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group
Electronic Crash Reporting			
Number or percentage of law enforcement agencies submitting to the electronic crash reporting system	Minimum of 50% electronic submissions.	60%	DMV – Crash
Number or percentage of reported crashes submitted via the electronic crash reporting system.		82.45	DMV – Crash
Percent of crashes that			

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group

Driver

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group

Vehicle

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group
New VINs have correct year/make/model Use VIN decoder software to check new VINs	100% match for all new VINs	98%	DMV Vehicle Services
Validating out of state titles	Match 100% with national database (NMVTIS)	95%	DMV Vehicle Services

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group

Roadway

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group
Primary Route Timeliness	Update route network within 30 days of a HTO	ongoing	NCDIT-T GIS Unit
Secondary Route Timeliness	Update route network within calendar month of BOT action	ongoing	NCDIT-T GIS Unit

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group
Horizontal spatial accuracy of LRS	All 5 business units using Data Reviewer	4 of 5 Business units have data reviewer checks on data before posting	NCDIT-T GIS Unit and NCDOT

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group
Full coverage event completeness (6 events)	1A. 2 events at zero miles missing 1B. 3 events at under 10 miles missing 1C. 1 event at under 6,000 miles missing	1A. 90% 1B. 60% 1C. 80%	NCDIT-T GIS Unit and NCDOT
Partial coverage event completeness (66 events)	Tracking all partial coverage events	100%	NCDIT-T GIS Unit and NCDOT

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group
Under development			NCDIT-T GIS Unit

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group
Under development			NCDIT-T GIS Unit

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group
Dynamically segmented data accessible quarterly.	Publication of 4 products accessible for download and via AGOL.	100%	NCDIT-T GIS Unit
Snapshot of LRS data accessible daily.	Map services and web maps accessible via ArcGIS Server and AGOL.	100%	NCDIT-T GIS Unit

Citation and Adjudication

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group
Length of time for citations to be received at AOC.	100% in 3 days	87.97%	AOC
Length of time from case initiation to disposition	90% within 120 days	90% within 169 days	AOC

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group
Implement new Integrated Case Management System, Odyssey in all 100 counties in NC.	100% of counties in 3 years	Year 1 we are at 4% We are using Odyssey in 4 pilot counties with plans to complete by summer of 2025	AOC

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group
Implement new Integrated Case Management System, Odyssey in all 100 counties in NC.	100% of counties in 3 years	Year 1 we are at 4% We are using Odyssey in 4 pilot counties with plans to	AOC

		complete by summer of 2025	

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group
Implement new Integrated Case Management System, Odyssey in all 100 counties in NC.	100% of counties in 3 years	Year 1 we are at 4% We are using Odyssey in 4 pilot counties with plans to complete by summer of 2025	AOC

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group
Access to court data via the internet using NCAOC's eCourts Portal	100% of counties in 3 years	Year 1 we are at 4% We are using Odyssey in 4 pilot counties with plans to complete by summer of 2025	AOC

Injury and Surveillance

Timeliness

Performance Measure	Metric	Progress	Responsible Agency/Group

Accuracy

Performance Measure	Metric	Progress	Responsible Agency/Group

Completeness

Performance Measure	Metric	Progress	Responsible Agency/Group

Uniformity

Performance Measure	Metric	Progress	Responsible Agency/Group

Integration

Performance Measure	Metric	Progress	Responsible Agency/Group

Accessibility

Performance Measure	Metric	Progress	Responsible Agency/Group

Traffic Safety Information System Projects

Provided in this section of the report is a discussion of the process that is currently used by the NC TRCC to provide input to the NC GHSP on the selection of projects to be funded using Section 405(c) funds from NHTSA. At the end of this section is a table showing current traffic safety information system projects that are ongoing in the state.

Project Identification

The following section of this report will be dynamic and will reflect the ongoing efforts of the NC TRCC to effectively identify and prioritize initiatives to reflect its goals. The priorities and projects will change as available resources are identified. This section will also evolve as Traffic Records Assessments are completed and as information, data, and opportunities become clearer. In addition, the status of information technology directives or legislative actions can have significant effects on the items in this section.

Projects will primarily be identified by each agency effort to address a deficiency in a traffic records system, the data collection process (accuracy, completeness), achieving necessary compliance, customer service improvements (availability of data), or improving the timeliness of the data. Projects involving the linking of data for improved utilization and establishing partnerships will also be identified and receive full consideration by the NC TRCC. All projects must fully address all federal and state laws or policies concerning the privacy or protection of information. Formal and informal traffic records assessments will be a significant resource for projects and strategies.

Project Prioritization

All strategies or projects included in this report are considered important to both the short-term and long-term success of the NC TRCC, each agency and North Carolina. Each initiative will have measurable benefits. In addition to addressing data systems, data collection, the technical ability to link data or systems, or other technical components, some projects may focus on increasing the general knowledge, understanding, or marketability of the data. Projects demonstrating the results of a successful NC TRCC partnership should also be considered.

The NC TRCC also recognizes that many projects or strategies will be easier to implement and may yield high payoff and have few obstacles to archive relatively quick success. If resources become available to the NC TRCC, typically in the form of grants or possibly through the NC ECHS, a process should be in place to select these projects. As of this year, the NC TRCC has agreed on a project prioritization protocol and policy (see Appendix H for details).

Traffic Safety Information System Projects Listing

The table on the following page includes a list of current traffic safety information system projects, with the projects funded entirely or partially by Section 405(c) funds listed. Descriptions of these projects, as well as a list and description of past projects are available in Appendix A.

FY2023 Traffic Records Projects

Cross Ref. #	Project	Project Number	Coordinating Agency	Budget	Budget Source
402 Funded Projects					
1	2023 NC Traffic Safety Information Systems Strategic Plan Update	TR-23-07-03	UNC/HSRC	$85,964	GHSP
405(c) Funded Projects					
2	Haw River Traffic Safety Initiative – MDTs	M3DA-23-14-01	Haw River	$4,000	GHSP
3	NC Vision Zero Technical & Program Support 2021-2022	M3DA-23-14-02/TR-23-07-01	NC State University/ITRE	$455,600	GHSP
4	Hope Mills MDTs	M3DA-23-14-03	Hope Mills Police Department	$8,000	GHSP
5	North Carolina Crash Reporting Information System (CRIS) Replacement Program	M3DA-23-14-06	NCDMV – Traffic Records	$508,000	GHSP
6	eCitation Printer Distribution	M3DA-23-14-04	NC Judicial Department	$300,000	GHSP
7	Automated Document Capture of Updates to Driving Records	M3DA-23-14-05	NCDMV	$644,800	GHSP
Total Traffic Records Projects Funded:				**$2,006,364**	

Appendix A: FY2023 Project Descriptions

FY2023 Traffic Records Current Project Reports

See below for project descriptions for current traffic safety information system projects.

Agency:	University of North Carolina at Chapel Hill Highway Safety Research Center
Project Number:	TR-23-07-02
Project Title:	2023 NC Traffic Safety Information Systems Strategic Plan Update
Project Description:	This continuation project provides technical and logistical support to the Traffic Records Coordinating Committee (TRCC) and to update the NC Strategic Plan for Traffic Safety Information System.
Budget:	$85,964

Agency:	Haw River Police Department
Project Number:	M3DA-23-14-01
Project Title:	Haw River Traffic Safety Initiative - MDT's
Project Description:	This is a one-year project to purchase MDT's to enable the police department to further implement electronic crash reporting , which will increase the percentage of crash reports received electronically in support of the Traffic Safety Information Systems Strategic Plan goals.
Budget:	$4,000

Agency:	North Carolina State University - Institute of Transportation Research and Education
Project Number:	M3DA-23-14-02, TR-23-07-01
Project Title:	NC Vision Zero Technical & Program Support 2021-2022
Project Description:	This ongoing project promotes North Carolina's Vision Zero efforts by providing stakeholders and the public with online analytical crash statistical information presented in usable databases and formats suitable for long and short range planning. This website is maintained and updated monthly.
Budget:	$455,600

Agency:	Hope Mills Police Department
Project Number:	M3DA-23-14-03
Project Title:	Hope Mills MDT's
Project Description:	This is a one year project to purchase MDT's to enable the police department to further implement electronic crash reporting , which will increase the percentage of crash reports received electronically in support of the Traffic Safety Information Systems Strategic Plan goals.

Budget:	$8,000

Agency:	North Carolina Department of Transportation (NC Division of Motor Vehicles)
Project Number:	M3DA-23-14-06
Project Title:	North Carolina Crash Reporting Information System (CRIS) Replacement Program
Project Description:	This continuation project funds enhancements to the North Carolina electronic crash reporting system managed by the North Carolina Division of Motor Vehicles.
Budget:	$508,000

Agency:	North Carolina Judicial Department-Printer Distribution for eCitation
Project Number:	M3DA-23-14-04
Project Title:	eCitation Printer Distribution
Project Description:	This ongoing project funds eCitation expansion in local law enforcement agencies to increase the percentage of eCitations versus paper citations, fulfilling a major goal of the Traffic Safety Information System Strategic Plan.
Budget:	$300,000

Agency:	North Carolina Department of Transportation (NC Division of Motor Vehicles)
Project Number:	M3DA-23-14-05
Project Title:	Automated Document Capture of Updates to Driving Records
Project Description:	This project funds continued efforts to automate the State Automated Driver License System (SADLS) to more easily upload out-of-state citations.
Budget:	$644,800

Appendix B: NC TRCC Member Conference Participation, Presentations, and Publications

Conference Participation

1. Association pf Transportation Safety Information, 2022 Traffic Records Forum, Denver, CO, Nancy Lefler, UNC HSRC

Presentations and Reports

1. North Carolina Motor Vehicle Crash Data Linkage Project. Anna Waller, Katie Harmon, Erika Redding. Presented to the North Carolina Vision Zero Meeting – Third Quarter, May 2021.
2. Linking Motor Vehicle Crash data to 3 injury datasets: Methods, Opportunities, & Limitations. Mike Dolan Fliss, Katherine J. Harmon, Anna E. Waller, Katherine A. Peticolas, Erika Redding, Sharon Schiro. Presented by Mike Fliss to the Annual Conference of the Council of State and Territorial Epidemiologists, June 2021.
3. North Carolina Motor Vehicle Crash Injury Data Linkage Project. Anna Waller, Katie Harmon, Erika Redding, Jonathan Fix. Presented by Anna Waller and Katie Harmon to the Charlotte Vision Zero meeting, July 2021.
4. The North Carolina Crash Injury Surveillance System: Data Linkage Challenges. Mike Dolan Fliss, Katherine J. Harmon, Katherine Peticolas, Erika Redding, Anna E. Waller. Presented by Mike Fliss to the 2021 ATSIP Traffic Records Forum, August 2021.
5. The North Carolina Crash Injury Surveillance System: Data Dashboard Development. Mike Dolan Fliss, Katherine J. Harmon, Erika Redding, Anna E. Waller. Presented by Mike Fliss to the 2021 ATSIP Traffic Records Forum, August 2021.
6. Data don't drive: the limitations of crash data for understanding community pedestrian and bicycle safety. Tab Combs, Dan Gelinne, and Katherine J. Harmon. Presented by Katherine Harmon to the Association of Pedestrian and Bicycle Professionals Annual Conference, August 2021.
7. Data Linkage/Integration. Katie Harmon. Presented as an HSRC Webinar. September 2021.
8. The North Carolina Crash Injury Surveillance System: Creating a motor vehicle crash injury dashboard for evidence-based decision-making. Katherine J. Harmon, Mike Dolan Fliss, Katherine A. Peticolas, Erika Redding, Anna E. Waller. Presented by Katie Harmon to the Safe States Alliance Annual Conference, September 2021.
9. NC Transportation Safety & Public Health Data Dashboard. Webinar presented by Amy Ising for the Carolina Center for Health Informatics and NC-CISS, September 2021.

10. An Innovative Approach for Characterizing Child Pedestrian Injury: An Underestimated and Understudied Problem in North Carolina. Katherine J. Harmon, Luke Morin, and Nancy Pullen-Seufert. Presented by Katherine Harmon to the NC DOT Research & Innovation Summit, October 2021.
11. Restraint Use and Severe Injury Patterns Among Pediatric Passengers in Motor Vehicle Crashes: Exploring the Utility of Linked Health Data and Implications of Database Selection. Jonathan Fix, Erika M. Redding, Mike Dolan Fliss, Katherine J. Harmon, Sharon E. Schiro, Kathy Peticolas, Anna E. Waller. Presented by Jonathan Fix to the annual AAAM Conference, October 2021.
12. Building a MVC injury system of linked data: Lessons learned & questions answered about pedestrian injuries. Anna E. Waller and Katherine J. Harmon. Presented as a CSCRS Webinar. January 2022.
13. Data Linkage in North Carolina. Jonthan Fix, Mike Fliss, Katherine J. Harmon, Scott Proescholdbell, and Anna E. Waller. Presented as a CDC Webinar. February 2022.
14. Racial/Ethnicity Differences in Crash and Hospital Outcomes using linked NC Motor Vehicle Crash and Trauma Registry Data. Nandi Taylor. Presented by Nandi Taylor to the annual SAVIR Conference, March 2022.

Publications

1. Harmon KJ, Peticolas K, Redding EM, Ising A, Waller AE. Examining the effect of pedestrian crashes on vulnerable populations in North Carolina. *North Carolina Medical Journal*. 2021 Jul; 82 (4) 237-243. DOI:10.18043/ncm.82.4.237
2. Fix J, Redding EM, Fliss MD, Harmon KJ, Schiro SE, Peticolas K, Waller AE. Restraint use and severe injury patterns among pediatric passengers in motor vehicle crashes: Exploring the utility of linked health data and implications of database selection. *Traffic Injury Prevention*. 2021;22(sup1): S193-S194. doi: 10.1080/15389588.2021.1983393. Epub 2021 Nov 30. PMID: 34846956.
3. Taylor N, Harmon K. Racial/ethnicity differences in crash and hospital outcomes using linked North Carolina motor vehicle crash and trauma registry data. *Injury Prevention* 2022;28: A57.

Appendix C: NC TRCC Active Participants

Provided below is a list of the active participants in the NC TRCC meetings.

Name	Agency	Email Address
Brian Mayhew (Co-chair)	NCDOT	bmayhew@ncdot.gov
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Cameron Taylor	NCSHP	cameron.taylor@ncshp.org

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Mike Fliss	UNC IPRC	mike.dolan.fliss@unc.edu
Sharon Schiro	UNC School of Medicine	sharon_schiro@med.unc.edu
Anna Waller	UNC School of Medicine	anna_waller@med.unc.edu

Appendix D: Completed (Historical) Projects

Included in the table below are the historical (completed) traffic safety information system projects.

Project	Project Number	Coordinating Agency	Budget	Budget Source
408/405(c)-funded Projects				
Air Cards Technology to Reduce Speed Related Crashes and Increase Seat Belt Use	K9-13-11-02	NCSHP	$608,160	GHSP
ASU In-car Computer Grant	K9-14-11-06	Appalachian State University	$30,000	GHSP
Division of Motor Vehicles (DMV) Gap Analysis	K9-09-11-05	NCDMV	$56,109	GHSP
eCitation Printers	K9-13-11-03	NCAOC	$214,500	GHSP
eCitation Printers	M3DA-15-16-05	NCAOC	$303,050	GHSP
eCitation Printers	M3DA-17-14-01	NCAOC	$303,421	GHSP
eCitation/Electronic Crash Reporting	K9-13-11-05	Enfield PD	$8,000	GHSP
eCitation/Electronic Crash Reporting	K9-12-11-15	NCSHP	$46,000	GHSP
eCitation to NCAWARE interface update	M3DA-17-14-02	NCAOC	$711,660	GHSP
eCitation/NCAWARE Arrestables Interface	K9-13-11-06	NCAOC	$133,572	GHSP
eCitation Upgrade	M3DA-16-14-01	NCAOC	$288,104	GHSP
Electronic Submission of Crash Reports (DMV-349) from NCSHP	K9-08-11-04	NCSHP	$331,240	GHSP
Geocode Pedestrian Crashes Statewide and Traffic Records Strategic Plan	K9-12-11-04	HSRC	$51,421	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
eCitation Upgrade	M3DA-15-16-03	NCAOC	$282,804	GHSP
GIS location of Crashes	K9-11-11-03	ITRE	$15,898	GHSP
Linking Crash Reports to Medical Data in North Carolina	M3DA-17-14-04	IPRC	$215,526	GHSP
Linking EMS, Trauma, Healthcare and Crash Data Systems	K9-10-11-03	EMSPIC	Unknown	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash - GPD (Garner)	K9-10-11-11	Garner Police Department	$10,000	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash - GPD (Gastonia)	K9-10-11-08	Gastonia Police Department	$3,340	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash – LPD	K9-10-11-04	Lenoir Police Department	$44,000	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash – MCSO	K9-10-11-05	Macon County Sheriff's Office	$16,000	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash - NC Highway Patrol	K9-10-11-07	NCSHP	$331,240	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash – NPD	K9-10-11-12	Norwood Police Department	$4,850	GHSP
MDTs to Enable More Officers to Perform eCitation and Electronic Crash – TPD	K9-10-11-06	Taylorsville Police Department	$11,372	GHSP
NC Crash Data Website	M3DA-16-14-04	HSRC	$61,222	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
NC DOT Traffic Engineering TR Guidebook	K9-09-11-06	NCDOT	$6,342	GHSP
NC DOT Traffic Engineering TRCC Support	K9-09-11-07	NCDOT	$33,000	GHSP
NC Traffic Safety Information Systems Strategic Plan Update	M3DA-16-16-03	HSRC	$90,843	GHSP
NC Traffic Safety Information Systems Strategic Plan Update	M3DA-15-16-04	HSRC	$39,263	GHSP
NCAOC-Batmobile for purchase of MDTs to Place Aboard Each BAT Units	K9-10-11-09	NCAOC	$10,992	GHSP
NCSHPGIS Decision Support from Motor Carrier Enforcement to Traditional Enforcement	K9-12-11-02	ITRE	$28,049	GHSP
Performance-based Web Analytic Solution for NCSHP	M3DA-15-16-06	ITRE	$135,648	GHSP
Purchase of MDTs for Electronic Crash Reporting – MDPS	K9-11-11-06	Morganton Department of Public Safety	$8,000	GHSP
Purchase of MDTs for Electronic Crash Reporting – RMPD	K9-11-11-11	Rocky Mount Police Department	$4,000	GHSP
Purchase of MDTs for Electronic Crash Reporting – SPD	K9-11-11-07	Sylva Police Department	$4,132	GHSP
Purchase of MDTs for Electronic Crash Reporting – WPD	K9-11-11-12	Warrenton Police Department	$5,425	GHSP
Purchase of Printers	K9-10-11-02	NCAOC	$325,000	GHSP
Purchase/Distribution of Printers to Expand the eCitation Program	K9-11-11-02	NCAOC	$325,000	GHSP
Records Management Grant FY2017-2018	M3DA-18-14-04	Unknown	Unknown	Unknown

Project	Project Number	Coordinating Agency	Budget	Budget Source
Salary and Benefits for a State Traffic Records Coordinator	K9-10-11-01	GHSP-Traffic Records	$67,000	GHSP
State Highway Patrol (SHP) Mobile Data Computers	K9-09-11-03	SHP	$445,639	GHSP
Systems Gap Analysis	K9-10-11-10	NCDMV	$117,420	GHSP
Quick Response System	M3DA-16-14-02	HSRC	$43,841	GHSP
TRACS Upgrade	K9-14-11-03	NCDMV	$43,300	GHSP
Vision Zero- North Carolinas Fatality Reduction Program	M3DA-17-14-03	ITRE	$422,231	GHSP
eCitation to NCAWARE interface update	M3DA-17-14-02	NCAOC	$711,660	GHSP
eCitation Printers	M3DA-17-14-01	NCAOC	$303,421	GHSP
Non-408/405(c)-funded Projects				
2013 North Carolina Traffic Safety Information Systems Strategic Plan Update	TR-13-10-03	HSRC	$22,807	GHSP
A Performance-Based Web Analytic Solution for NCSHP Operational Planning Decision Support - PHASE II	Unknown	ITRE	$142,909	GHSP
ACIS/Eastern Band of Cherokee Indians (ECBI)	Unknown	NCAOC	$67,990	EBCI/NCAOC
Administrative Office of the Courts (NCAOC) e-Citation Printers	K9-09-11-04	NCAOC	$328,157	GHSP
Alcohol Facts Website 2016	TR-16-07-03	HSRC	$40,030	GHSP
Alcohol Facts Web Site 2014	TR-14-10-03	HSRC	$40,066	GHSP
Automated Criminal Infraction System (ACIS)	Unknown	NCAOC	Unknown	NCAOC

Project	Project Number	Coordinating Agency	Budget	Budget Source
eCitation	Unknown	NCAOC	$2,001,616	GHSP/Governor's Crime Commission
Criminal Court Information System – Clerk Component (CCIS-CC)	Unknown	NCAOC	$6,301,022	NCAOC
Criminal Court Information System – District Attorney Component (CCIS-DA)	Unknown	NCAOC	$3,333,348	NCAOC
E-citation/Electronic Crash Reporting	TR-12-10-06	Roxboro PD	$40,000	GHSP
E-citation/Electronic Crash Reporting	TR-12-10-04	Enfield PD	$16,000	Enfield PD/GHSP
ECRS Program Manager Position Continuation	K9-11-11-13	NCDMV-TR	$27,400	NCDMV-TR
EMS PIC Linkage Project	Unknown	EMSPIC		GHSP, NCDOT, AOC, NCSHP, etc.
Electronic Compliance and Dismissal (ECAD)	Unknown	NCAOC	$338,000	NCAOC
Ignition Interlock Management System	Unknown	NCDOT	$1,308,089	NTSA, NCDOT
Local Law Enforcement MDT Projects	Unknown	Local PD	$19,682	GHSP
Linkage Project	Unknown	EMSPIC	Unknown	EMSPIC
Motor Vehicle Crash Injuries in Wake County, NC: Exploring available data sources and potential data linkages	TR-16-07-02	IPRC	$136,474	GHSP
Motor Vehicle Crash Injuries in Wake County, NC: Exploring available data sources and potential data linkages	TR-15-14-02	Carolina Center for Health Informatics and IPRC	$135,430	GHSP
NC Crash Data website	TR-12-10-02	HSRC	$51,782	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
NC Crash Data Web Site	K9-15-15-03	HSRC	$59,656	GHSP
payNCticket	Unknown	NCAOC	$185,459	NCAOC
North Carolina Traffic Safety Information Systems Strategic Plan Update	TR-17-07-03	HSRC	$72,573	GHSP
North Carolina Warrant Repository/NCAWARE	Unknown	NCAOC	$13,000,000	NCAOC
PreMIS migration to NEMSIS v3 Standard	Unknown	EMSPIC	Unknown	OEMS
Quantifying and Describing EMS Patient Transports following Motor Vehicle Crashes in North Carolina	Unknown	EMSPIC	Unknown	EMSPIC
Quick Response System	TR-18-07-02	HSRC	$24,975	GHSP
Quick Response System	TR-17-07-02	HSRC	$24,687	GHSP
Quick Response System	K9-15-15-02	HSRC	$44,640	GHSP
Quick Response System	TR-12-10-01	HSRC	$45,537	GHSP
Quick Response System for GHSP Inquiries: A Continuation	TR-13-10-01	HSRC	$44,146	GHSP
SADIP 2009	SD-09-37-G-00000	NCDMV-TR, NCSHP	$562,651	NCDMV- TR, NCSHP
SADIP 2010	SD-10-37-01-000000	NCDMV-TR	$90,218	NCDMV-TR
SADIP 2011	FM-SAD-003-11-01-00	NCDMV-TR	$872,400	NCDMV- TR, NCSHP
SADIP 2012	FM-SAD-0022-12-01-00	NCDMV-TR	$946,400	NCDMV-TR
Traffic Records	TR-18-07-01	NC GHSP	$111,800	GHSP
Traffic Records	TR-17-07-01	GHSP	$119,800	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
Traffic Records Support Position	M3DA-14-20-02	NCDMV	$176,800	GHSP
Truck Crash Geocoding	Unknown	ITRE	$69,000	NCSHP
Vision Zero- North Carolinas Fatality Reduction Program	M3DA-16-14-03	ITRE	$299,863	GHSP
UNC HSRC Crash Web Site Update	Unknown	HSRC	$48,483	GHSP
Weldon Electronics Enhancement	TR-15-14-03	Weldon PD	$18,000	GHSP
Web Site Using NC Crash Data	TR-13-10-02	HSRC	$55,421	GHSP

Appendix E: Traffic Records Coordinating Committee Certification

The following NC TRCC members have electronically certified this document:

Name	Agency	Email Address
Nancy Lefler	UNC HSRC	lefler@hsrc.unc.edu
Katie Harmon	UNC HSRC	harmon@hsrc.unc.edu
Anna Waller	UNC Dept of Emergency Med., CCHI	anna_waller@med.unc.edu
Faith Johnson	NCDOT	fsjohnson@ncdot.gov
Kim Rutledge	NCAOC	kimberly.d.rutledge@nccourts.org
Mark Ezzell	NCGHSP	mezzell@ncdot.gov

Appendix F: MMUCC, NEMSIS, MIRE FDE

Model Minimum Uniform Crash Criteria

The TRCC recognizes the Model Minimum Uniform Crash Criteria (MMUCC) and recommends continuing adherence and implementation of standardized data elements to promote comparability of data within the highway safety community. The use of standardized data elements provides the necessary foundation for North Carolina's crash data system.

The crash report form (DMV-349) was last revised in the year 2000 and has been in use since January 1, 2000. The form was revised in a collaborative effort involving numerous agencies, law enforcement, research interests, medical outcome interests, as well as outside input from MMUCC expert panel members, and others. In 2010, the form was reviewed, and decisions were made regarding updating form elements and attributes. However, due to the State fiscal crisis, the effort to implement these changes was postponed.

The DMV-349 report was updated as part of Phase II of the NC CRIS project; however it will not be released until the NC CRIS system is live. The goal of the update was to adopt the MMUCC elements and attribute recommendations as much as possible and document the reasoning for any deviations from MMUCC.

A recent summary of NC's MMUCC compliance from NHTSA is displayed in the table below. Contact UNC HSRC for a complete copy of the noted summary document.

NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual Structure and Mappings
Generated on 12-FEB-20

Mapping Info

State Structure Name	Guideline Name	Guideline Version	Version Comment
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	MMUCC GUIDELINES VERSION - 5	5	2019 MMUCC 5 Mapping

Total Percent Mappable for All Elements

Data Structure Name	System	Percent (%)
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Crash	75.58 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Vehicle	53.42 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Person	57.13 %

Data Structure Name	System	Percent (%)
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Roadway	56.88 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Fatal Section	0 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Large Vehicles & Hazardous Materials Section	18.44 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Non-Motorist Section	40.83 %
NC Crash Database - DMV 349 Data Element Dictionary - 9.2015 & 2018 Crash Manual	Dynamic Data Elements	0 %

National EMS Information System NEMSIS

North Carolina's emergency medical data system is the PreHospital Medical Information System (PreMIS). PreMIS is technically located within the North Carolina Office of EMS, but it is administered through the University of North Carolina, Department of Emergency Medicine, EMS Performance Improvement Center in Chapel Hill. North Carolina has been one of the founding states involved with the NEMSIS and Greg Mears, MD was the principal investigator for NEMSIS for NHTSA's Office of Emergency Medical Services.

NC is one of the initial five states to begin submitting data into the National EMS Database. North Carolina collects all the NEMSIS "national elements" expect two outcome data elements, Emergency Department Disposition and Hospital Disposition. The information required for these two data elements is not known at the time of an EMS event and therefore is not currently collected by EMS Systems across the state. Linkage has been done with hospital, trauma registry, and there are plans for linking the medical examiner data sources to obtain the required information for these two elements. These two data elements would also be extremely valuable to highway safety as well as traffic records, which could be linked to EMS records containing this outcome information. It is a goal of the TRCC to obtain funding to work on this linkage.

A summary of NC's NEMSIS compliance can be found in the table below.

NC's NEMSIS Compliance can be summarized as follows:

- The State of North Carolina ***does*** maintain a state EMS pre-hospital database.
- The database currently collects all the national data elements except for the outcome data elements, E22_01 (Emergency Department Disposition) and E22_02 (Hospital Disposition) currently defined in NEMSIS.
- The system currently collects data per the NEMSIS standard from all 100 EMS Systems within NC.
- The state of North Carolina certifies that it currently ***is*** capable of exporting data to the NHTSA EMS data repository.
- The State of North Carolina certifies that it will undertake project as part of the State Traffic Safety Information System Improvement Program which will establish a NEMSIS compliant, state EMS pre-hospital database to collect the missing national data elements and attributes; and to be able to export data to the NHTSA EMS data repository as soon as practical.

Model Inventory of Roadway Elements Fundamental Data Elements (MIRE FDE) Data Collection Plan

This section provides an overview of North Carolina's strategy for meeting the Model Inventory of Roadway Elements Fundamental Data Elements (MIRE FDE) data requirements in accordance with 23 CFR, Part 924.11.

Current Status of the MIRE FDE Collection

There are approximately 107,000 miles of public roads in the State of North Carolina. Of those, the NCDOT maintains approximately 80,000, which equates to approximately 75% of all public roadways in the State. It is important to note that for the purposes of this plan, when referencing State and Non-State in terms of what the State collects it refers to ownership/maintenance; when referencing Non-Local and Local in terms of the MIRE FDE, it refers to functional class.

The Operations Program Management Unit is responsible for collecting and maintaining the roadway inventory, and the GIS unit is responsible for the line work. ESRI Roads and Highways is used to maintain the LRS and many roadway inventory elements. A roadway characteristics file is published every quarter. Anyone can access the roadway inventory GIS files; they are available on the Connect NCDOT website, (https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx).

The Division of Highways has the authority/responsibility for determining the improvements needed to achieve compliance with the MIRE FDE requirements. These decisions are made jointly between Safety, GIS, and the Operations Program Management Unit, with safety driving the need for new elements.

NCDOT regularly assesses their roadway inventory to determine their status of compliance with the FDE requirements. The current FDE compliance and gaps are summarized in this section.

Non-Local Paved Roads

Segments
NCDOT collects and maintains all the FDE segment elements on all State-owned Non-Local Paved roads. For some elements, a small percentage of mileage (around 1%) is not yet coded, likely due to data lag in entering new roadways into the system.

Intersections
With the completion of their first traffic safety intersection inventory in 2023, NCDOT has collected all the FDE intersection elements on all State-owned Non-Local Paved roads.

Interchange/Ramp
With the completion of their first traffic safety interchange inventory in 2021, NCDOT has collected all the FDE interchange elements on all State-owned Non-Local Paved roads. For a minor portion of interchange ramps, the AADT is unknown. NCDOT is continuing to work on identifying and completing ramp AADT values.

Local Paved Roads
Of the nine (9) FDEs on Local Paved Roads, all elements have been collected on all State-owned (system) and Non-State-owned (non system) roads. Approximately 6% of the mileage (3,200 miles) do not have a value for 31 – Number of Through Lanes. These roads lacking full coverage of number of through lanes are all Non-State roads. NCDOT is pursuing funding for additional work to infill the gaps in this element.
There are 15,000 miles of local roads for which surface type is unknown and 6,500 miles for which ownership (public vs. private) is unknown. NCDOT is pursuing funding for additional work to determine surface type and ownership, and therefore level of MIRE FDE compliance needs, for these roads.

Unpaved Roads
NCDOT intends to opt out of collecting FDEs on unpaved roads. NCDOT understands: no HSIP funds can be spent on these roadways; they must consult with affected Indian tribes; and they must notify their FHWA Division Office via letter to the Division Administrator.

Appropriate Data Collection Methodology

For the MIRE FDE currently collected, the elements are updated as new roads are added. The GIS group updates the line work annually based on snapshots provided by the Counties. There are business edits and data checks built into the system to help ensure the quality of the data, however there are no additional formal QA/QC processes. NCDOT is looking into developing performance measures to help formalize their quality practices.

In the past couple years, NCDOT has made great strides in collecting and assembling data to fill the FDE requirement needs. These efforts are described in the following sections.

- *Completion of a statewide intersection inventory*
    - NCDOT contracted VHB to develop a GIS-based inventory of all public road intersections in the state. This effort concluded in 2023 and produced an inventory of intersection features, represented as both points and polygons, and intersection approach legs, represented as line features. Basic attributes were attached to intersections and approach legs, such as traffic control and traffic volume. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.
- *Completion of a statewide interchange inventory*
    - NCDOT Traffic Safety Unit collaborated with the NCDOT GIS Unit to develop an inventory of all interchanges in the state. This effort concluded in 2021 and produced an

inventory of interchange features, represented as geospatial polygon feature encompassing the entire interchange area. Each interchange was categorized by type, such as diamond, partial cloverleaf, or trumpet. The inventory was developed to expand the capabilities of traffic safety analysis and to fulfill the requirements of FDE elements.

- *Completion of statewide traffic volume assembly*
    - Through a subscription contract with StreetLight, NCDOT acquired data on AADT for all public roads in the state for the year 2021. This served to fill many gaps in traffic volume and complete the requirements of MIRE FDE.

NCDOT continued to participate in the Applications of Enterprise GIS for Transportation, Guidance for a National Transportation Framework (AEGIST) pooled fund study. This pooled fund study will develop standards for a national transportation dataset as well as document best practices for linear referencing systems to maximize data quality and interoperability. NCDOT has worked with AEGIST to establish best practices for data governance.

Coordination with Other Agencies

Some data gaps exist on Non-State roads, particularly those where surface type or ownership is unknown. NCDOT plans to analyze the mileage and ownership for these roadways and determine what outreach mechanism might be most effective to working with local agencies to obtain data. This will help NCDOT determine if they can utilize information already being collected by local agencies, or if further State sponsored data collection efforts are needed to obtain the data on these roadways.

Prioritization Criteria for Collection MIRE FDE on All Public Roads

The FDE collection priorities are:

- Short-term: Determine extent of data gaps for roads where surface type or ownership is unknown.
- Mid-term: Any remaining Local paved road elements.
- Long-term: Remaining needed Local Paved Roads elements.

The data will be collected using a variety of tools including deriving elements from existing data, collecting from video logs, utilizing current pavement collection efforts to determine what else might be able to be collected at the same time, and utilizing data already being collected from local agencies. This includes exploring what additional information might be collected when the annual linework is collected from the Counties and what additional mechanisms might need to be put in place to be able to obtain these data. NCDOT is also exploring if the E911 effort might be able to be utilized to obtain additional data. NCDOT will also explore utilizing the available FHWA technical assistance programs, primarily the Roadway Data Extraction Technical Assistance Program (RDETAP), to help fill in data gaps.

The Safety Group will be responsible for the data collection effort, with support from the Operations Program Management Unit. The data will be integrated into the existing GIS system

and be made available through the same portal as other roadway inventory data. The update cycle will vary based on element.

Costs and Resources for Data Collection

NCDOT has submitted a grant funding request to the Traffic Records Coordinating Committee to fund work in establishing the surface type and ownership for non-system roads where those gaps remain. NCDOT has not yet developed cost estimates for any work beyond that, including filling gaps in FDE coverage where required. NCDOT will review the FHWA *MIRE Fundamental Data Elements Cost-Benefit Estimation* report as a starting point, https://safety.fhwa.dot.gov/rsdp/downloads/fhwasa16035_051916v10.pdf.

As mentioned above, NCDOT will also explore utilizing the available FHWA technical assistance programs, namely the RDETAP, to help fill in data gaps, as well as utilizing available TRCC funds for data collection efforts.

Appendix G: 2022 Traffic Records Assessment Recommendations

In 2022, North Carolina completed the Traffic Records Assessment using the NHTSA Self-Assessment tool. The 2022 North Carolina Traffic Records Assessment provided valuable information to inform and update North Carolina Traffic Records Strategic Plans. Below is a list of Assessment recommendations and the efforts being made on each of the recommendations:

TRCC Management Recommendations

There were no recommendations that resulted from the Self-Assessment tool for TRCC Management.

Strategic Planning Recommendations

There were no recommendations that resulted from the Self-Assessment tool for Strategic Planning.

Crash Recommendations

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

The NCDOT is currently working to develop a modern crash data system, the North Carolina Crash Reporting Information System (NC CRIS), that when complete, will help to address these recommendations.

Additionally, the TRCC held a Workshop in August 2002 to assist agencies in developing, documenting, and tracking data quality performance measures. A section in the annual Traffic Records Strategi Plan was added in 2023 to better document existing performance measures and identify gaps for each data system. The TRCC will continue to work with each agency to help fill those gaps.

Vehicle Recommendations

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

The TRCC held a Workshop in August 2002 to assist agencies in developing, documenting, and tracking data quality performance measures. A section in the annual Traffic Records Strategic Plan was added in 2023 to better document existing performance measures and identify gaps for each data system. The TRCC will continue to work with each agency to help fill those gaps.

There has been significant turnover in the NCDMV the last several years. While the DMV-Crash staff have consistently participated in the TRCC, the Driver and Vehicles services staff participation has been more sporadic. The TRCC is actively working to increase their participation and cooperation in TRCC activities despite the change in staff.

Driver Recommendations

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

The TRCC held a Workshop in August 2002 to assist agencies in developing, documenting, and tracking data quality performance measures. A section in the annual Traffic Records Strategic Plan was added in 2023 to better document existing performance measures and identify gaps for each data system. The TRCC will continue to work with each agency to help fill those gaps.

There has been significant turnover in the NCDMV the last several years. While the DMV-Crash staff have consistently participated in the TRCC, the Driver and Vehicles services staff participation has been more sporadic. The TRCC is actively working to increase their participation and cooperation in TRCC activities despite the change in staff.

Roadway Recommendations

- Improve the applicable guidelines for the Roadway data system that reflect best practices identified in the Traffic Records Program Assessment Advisory.
- The NC TRCC membership includes NCDOT roadway area staff, and they are providing feedback on current roadway data quality control procedures and processes.

NCDOT is working on meeting the MIRE FDE requirements, including completing a statewide intersection inventory, and is on track to meet the 2026 deadline.

NCDOT in conjunction with the NCDIT-T have been actively developing data quality performance measures for roadway data. NCDOT/NCDIT-T participated in the August 2022 TRCC Workshop to demonstrate the process they used to develop the performance measures, and provided an overview of how the performance measures can be used to benefit the agency. These roadway performance measures are in the 2023 Traffic Records Strategic Plan and will be presented at the 2023 ATSIP Traffic Records Forum.

Citation/Adjudication Recommendations

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

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

The major deficiency in interfaces is with the crash data. The NC CRIS effort, which seeks to develop a modern crash data system, should help to address this deficiency.
The TRCC held a Workshop in August 2002 to assist agencies in developing, documenting, and tracking data quality performance measures. A section in the annual Traffic Records Strategic Plan was added in 2023 to better document existing performance measures and identify gaps for each data system. The TRCC will continue to work with each agency to help fill those gaps.

EMS / Injury Surveillance Recommendations

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

The major deficiency in interfaces is with the crash data. The NC CRIS effort, which seeks to develop a modern crash data system, should help to address this deficiency.
The TRCC held a Workshop in August 2002 to assist agencies in developing, documenting, and tracking data quality performance measures. A section in the annual Traffic Records Strategic Plan was added in 2023 to better document existing performance measures and identify gaps for each data system. The TRCC will continue to work with each agency to help fill those gaps.

Appendix H: NC TRCC Project Rating Policy and Procedure Description

North Carolina TRCC Project Prioritization Process

The North Carolina TRCC has developed a process to discuss, refine, and prioritize data improvement projects. That process is listed below:

- May: Discuss potential projects for the next fiscal year to help meet the goals of the Plan and address recommendations from the Traffic Records Assessment.
- July: TRCC Members use the "TRCC Project Selection Template" to submit a project application by July 30 and submit to the GHSP TRCC representative).
- August: GHSP compiles and provides all applications to TRCC co-chair, who shares the projects with the TRCC Members.
- September: Members use the scoring sheet to develop a score for each project. Using the score and their professional judgment, members prioritize the projects numbering them from 1-#, with 1 being the highest priority. Members send their list prioritized 1-# to TRCC chair by the end of September.
- October: TRCC chair compiles the list with priority scores. During the October meeting, the TRCC will review the scores and discuss each project. Based on the scores and additional discussion the TRCC will decide what the prioritized projects should be.

January: The TRCC members will use the input from the prioritization meeting to revise their project applications if needed and submit the applications to GHSP.

North Carolina Traffic Records Coordinating Committee
Fiscal Year Project Proposal Form

This form will be used by the TRCC to evaluate proposed projects for the current fiscal year. Additional information may be requested. Please fill out this form completely and submit to TRCC Chair and GHSP State Traffic Safety Data Coordinator.

APPLICANT INFORMATION

Name:	
Agency:	
Address:	
City:	**County:**
Phone:	
E-mail:	

PROJECT OVERVIEW

Title: *Please include a short description for the title of the project***.**

Objective: *Please include a brief 1-2 sentence statement of the purpose of the project.*

Overview/Scope: *Please include 1-2 paragraph description of the proposed effort.*

Is this project a continuation of an existing project? ☐ Yes / ☐ No **If yes, which one:**

Safety Impact/Benefits: *Please provide a brief description of the safety impact/benefits of this project. If possible, provide an estimate of the anticipated lives saved or percentage reduction in crashes that would be expected from this project.*

Covered/Impacted: Please s*elect one category **and** insert specific location name.*

☐ **City**	
☐ **County**	
☐ **Region**	
☐ **Statewide**	*(Additional information N/A if project covers/impacts entire state of North Carolina.)*
☐ **Other**	

Approximate Budget: *Please include an approximate budget, this can be a range, as well as any cost considerations that may be helpful for the reviewers to know. If it is anticipated that this is a multi-year project, include the budget estimate for each year.*

Budget: $
Other Cost Considerations:

SELECTION CRITERIA

1. **This project meets the following goal(s) of North Carolina Traffic Safety Information Systems:** (*Check all that apply*)

☐ **Crash Information Systems** - Maintain the crash data system and expand the capabilities of the system to allow the state to use this data to track crash injury/fatality experience for use in court cases, safety improvement studies and evaluating State driving statutes.
☐ **Citation/Adjudication Systems** - Maintain and update North Carolina AOC databases and oversee the proper movement of court information and data, while centralizing information and creating citation/sharing procedures for the citation and adjudication records.
☐ **Injury Surveillance Systems** - Evaluate the need for and feasibility of a Statewide Surveillance Injury System.
☐ **Roadway Information Systems** - Continue to maintain and expand an up-to-date statewide inventory of all North Carolina roadways that allows the State to track roadway changes and improvements and permits enhanced safety analysis.

☐ **Driver Information Systems** - Continue to maintain and update the North Carolina driver license record data to be used in road safety studies and statistical analysis and to track all North Carolina drivers and their driving records according to North Carolina law. ☐ **Vehicle Information Systems** - Continue to maintain and update all North Carolina vehicle registration record data for the state to be used in road safety studies and statistical analysis and to ensure all vehicles are properly licensed according to the laws of NC. ☐ **Data Use & Integration** - Provide direction and facilitate coordination among the safety data stewards to improve the integration of transportation safety information systems in North Carolina. ☐ **Traffic Records Coordinating Committee** - Provide direction and facilitate coordination among the safety data stewards and stakeholders to improve the transportation safety information systems in North Carolina.

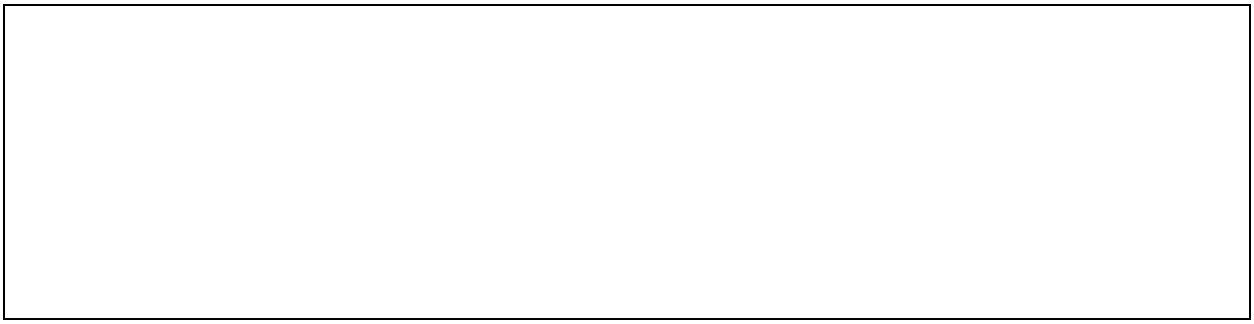
Addresses NHTSA data quality "6-pack" through numeric and measurable improvements *(Select all that apply, and provide description of the measures for each applicable metric)*

☐ Timeliness	
☐ Completeness	
☐ Accuracy	
☐ Uniformity	
☐ Integration	
☐ Accessibility	

2. Address Recommendations/Considerations of Federal Assessments/Reviews *(Select one)*

☐ NHTSA Traffic Records Assessment ☐ FHWA Crash Data Improvement Program ☐ FHWA Roadway Data Improvement Program ☐ FHWA Roadway Safety Data Capabilities Assessment ☐ Other:_____

3. Fills Agency Need: *Please describe how this project fulfills an agency need.*



NC TRCC Project Scoring Sheet

Project Title:

The purpose of this sheet is to provide parameters to help you prioritize projects; it is for your internal use. Assign a score from 1-10, with 10 being the highest, based on how well the project meets the stated criteria. If you think some criteria are more important than others, you can use weights in calculating the total score.

Criteria	**Score** (1-10, 10 being highest)	**Weight**	**Comments**
Demonstrates positive impact on safety			
Meets the goal of the relevant North Carolina Traffic Safety Information System(s)			
Addresses NHTSA data quality “6-pack” through numeric and measurable improvements			
Addresses Recommendation(s) in NHTSA Traffic Records Assessment			
Addresses Recommendations/ Considerations from other Federal Assessments/Reviews			
Fills Agency Need(s)			

Total Score: