

North Carolina Traffic Safety Information Systems Strategic Plan



2015

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

North Carolina Traffic Safety Information Systems

Strategic Plan 2015

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Table of Contents

Commonly Used Abbreviations	1
Introduction	3
Background	3
Organization of Report	4
Organizational Structure	5
Executive Committee for Highway Safety	5
NC ECHS Membership	6
Traffic Records Coordinating Committee	6
NC TRCC Membership	8
North Carolina State Traffic Data Coordinator	8
Traffic Safety Information System Summaries	9
NC Administrative Office of the Courts	9
NC Department of Health and Human Services	12
NC Department of Public Safety	13
NC Department of Transportation	14
NC Division of Motor Vehicles	15
NC Office of North Carolina Office of Emergency Medical Services	19
2015 NC TRCC Strategic Plan	21
Overview	21
Vision and Mission	22
Goals and Objectives	22
Traffic Safety Information System Projects Listing	33
Project Identification	33
Project Prioritization	33
Traffic Safety Information System Projects Listing	34
Appendix A – NC TRCC Conference Participation	37
Appendix B – NC TRCC Participants	39
Appendix C – Historical Projects and Current Project Descriptions	41
Appendix D – Certifications and Support	59
Appendix E – North Carolina Traffic Records Assessment	61
Appendix F – MMUCC, NEMESIS, MIRE	71
Appendix G – NC TRCC Charter	75

Commonly Used Abbreviations

AASHTO – American Association of State Highway and Transportation Officials

ACIS – Automated Criminal Infraction System

EMSPIC – Emergency Medical Services Performance Improvement Center

FARS – Fatality Analysis Reporting System

FHWA – Federal Highway Administration

HSRC – Highway Safety Research Center

ITRE – Institute for Transportation Research and Education

IVPB – Injury and Violence Prevention Branch

NC DHHS – North Carolina Department of Health and Human Services

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

NCDMV – North Carolina 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 Carolina State Highway Patrol

NHTSA – National Highway Traffic System Administration

PreMIS – Prehospital Medical Information System

SADLS – State Automated Driver License System

STARS – State Titling and Registration System

TEAAS – Traffic Engineering Accident Analysis System

TraCS – Traffic and Criminal Software

UNC – University of North Carolina

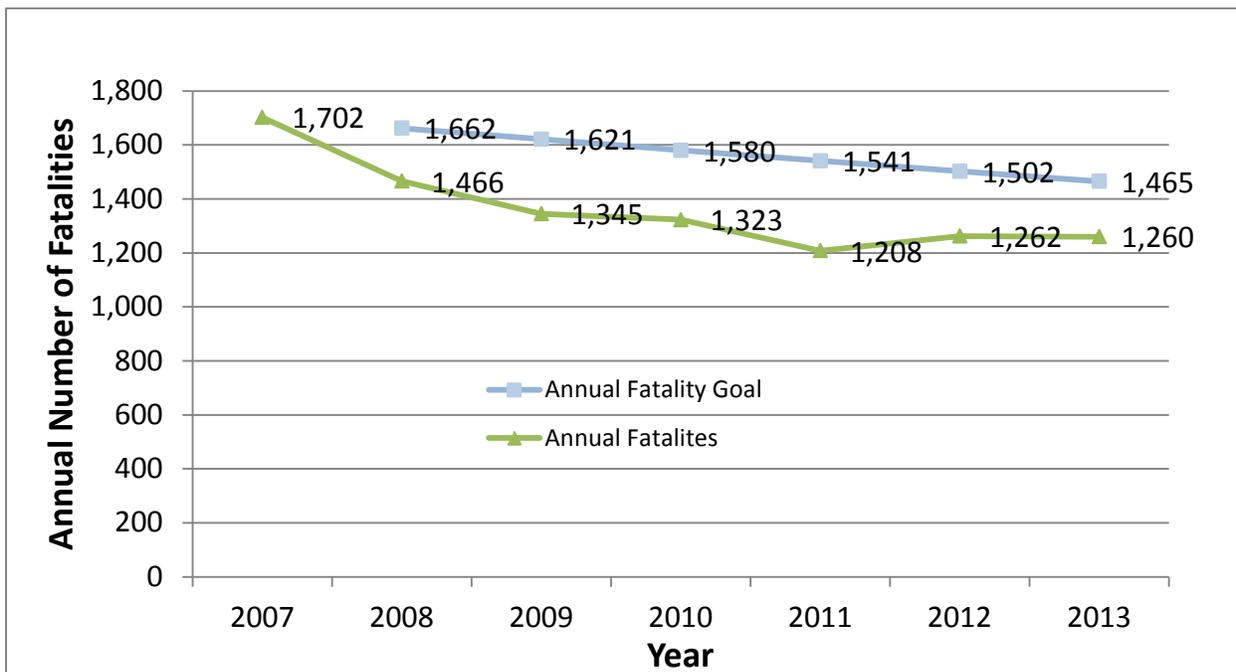
Introduction

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 2013, there were 220,309 reported traffic crashes on state-maintained roads that resulted in 1,260 people killed and 108,436 injured. The economic impact of these crashes is costly, resulting in an estimated annual loss of \$10.7 billion to the economy of North Carolina annually (estimate as of 2011 in 2011 dollars).

In 2014, the North Carolina Department of Transportation updated the state's Strategic Highway Safety Plan and officially declared North Carolina 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 based on the 2013 figures, reducing the total annual fatalities by 630 fatalities and the total serious injuries by 1,055 serious injuries before 2030. Progress toward this goal will be tracked on the North Carolina Strategic Highway Safety Plan online dashboard, <http://ncshsp.org/progress/>.

Previous efforts by the North Carolina Department of Transportation (NCDOT) to reduce fatalities by 2.5 percent per year from 2007 onward have been successful. As shown in the chart below, the state was ahead of this pace at the end of 2013.



Annual number of fatalities on North Carolina's roads versus the annual fatality goal of the NCDOT

For North Carolina to continue to make progress toward these goals and reach the vision of multi-disciplinary and multi-agency approaches to the challenges we face, improvements in the quality and utility of traffic safety information data and systems must continue to evolve.

Improvements are needed in each of our primary traffic safety information systems, which 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. The even greater achievement will be to increase the effectiveness and efficiency of linking crash data to the other systems for improved reporting and analysis. These important linkages must be achieved 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 be able to develop awareness of the needs of the 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. This resource will be continually updated and available online in an electronic format at <http://www.hsrb.unc.edu/nctrcc/guide.cfm>.

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 strategic plan that was developed with input from the NC TRCC membership and a description of safety information projects that have been conducted with specific objectives of improving traffic safety information systems since 2009.

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, linkages among the systems and ultimately affect the outcome 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 (ECHS) and the NC TRCC. The purpose and role of each of these groups are described below.

Executive Committee for Highway Safety

The state's ECHS was established in 2003; it 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 is comprised of representatives from top management of selected disciplines involved in highway safety who control the current and potentially available resources for use in safety efforts. The committee endorsed and adopted the American Association of State Highway and Transportation Officials (AASHTO) Strategic Highway Safety Plan (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.

The committee has also adopted the goal of reducing fatalities on North Carolina's roads by 2.5 percent per year for the next 20 years. Implementation of the strategies and directives of the NC ECHS and the AASHTO SHSP are viewed as the key mechanism to reach this goal 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 of the working groups through meetings and discussions with members. This central point of reference provides assistance in eliminating road blocks suggests champions for strategy involvement 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 NC ECHS is chaired by Secretary of Transportation Anthony J. Tata. 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.

- Anthony J. Tata, Secretary of Transportation, NCDOT (Committee Chair)
- William J. Grey, Colonel, NCSHP (Committee Vice Chair)
- Isaac T. Avery, III, Attorney at Law, NC Conference of District Attorneys
- Paul Black, Director, The French Broad River MPO
- Wayne Goodwin, Commissioner, NC Department of Insurance
- David Harkey, Director, UNC HSRC
- W. A. “Tony” Hayes, Chief Executive Officer, NC Indian Economic Development Initiative
- Michael L. Holder, Chief Engineer, NCDOT
- Terry Hopkins, State Traffic Safety Engineer, NCDOT
- James K. Lacy, State Traffic Engineer, NCDOT
- Jon R. McCormick, Division Administrator, Federal Motor Carrier Safety Administration
- Don Nail, Director, NC GHSP
- Drexdal R. Pratt, Director, Division of Health Service Regulation, NC DHHS
- LaRonda S. Scott, State Executive Director, Mothers Against Drunk Driving
- Harriett Southerland, State Coordinator, Students Against Destructive Decisions
- John Sullivan, III, Division Administrator, FHWA
- Nicholas J. Tennyson, Chief Deputy Secretary, NCDOT
- Kelly J. Thomas, Commissioner, NCDMV
- Jim Westmoreland, City Manager, City of Greensboro

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 specific roles and functions of this group were collectively established by the participating members and consist of the following:

- 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 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 a university research center. The current list of members is provided below.

- Brian Mayhew (NC TRCC Co-chairperson), NCDOT, Traffic Safety Unit
- Eric Rodgman (NC TRCC Co-chairperson), UNC HSRC
- Derek Traughber, EMSPIC
- Jonathon Arnold, NCDOT, Management Systems and Assessments
- Julian Council, NCDOT-DMV
- Alan Dellapenna, NCDPH, Injury and Violence Prevention Branch
- Janet Greene, NCAOC, Technology Services Division
- Frank Hackney (State Traffic Records Coordinator), NC GHSP
- Eric Schaberg, NCSHP

In addition to the official membership, there are a number of additional stakeholders, including representatives from the Federal Highway Administration (FHWA) and National Highway Traffic Safety Administration (NHTSA), who routinely participate in NC TRCC meetings. A complete list of active participants is included in Appendix B.

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 TRCC. This person can report on, or obtain status information on, all projects within the state. Frank Hackney of the NC GHSP serves in this role. His contact information is provided below.

Frank Hackney, Traffic Records Coordinator
NC GHSP
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Raleigh, N.C. 27601
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Email: fhackney@ncdot.gov

Traffic Safety Information System Summaries

Provided in this section of the report are descriptive summaries of the traffic safety information systems that are available in North Carolina. Summaries are included for systems within the following agencies:

- North Carolina Administrative Office of the Courts (NCAOC)
- North Carolina Department of Health and Human Services (NC DHHS)
- North Carolina Department of Public Safety (NCDPS)
- North Carolina Department of Transportation (NCDOT)
- North Carolina Office of Emergency Medical Services (NCOEMS)

NC Administrative Office of the Courts

NCAWARE (North Carolina Warrant Repository)

NCAWARE is a custom-developed, web-based system that was designed, developed and implemented by the NCAOC. The system maintains detailed information about criminal processes such as warrants, magistrate orders, citations that lead to an arrest, criminal summons, orders for arrest, release orders and appearance bonds. It also tracks information and details for all people and businesses involved in such processes. With the implementation of NCAWARE and accompanying legislation that provided for a statewide electronic repository, 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 NCAWARE judicial and law enforcement users also have access to the unserved warrants in both the NCAWARE system and the Automated Criminal Infraction System (ACIS) through the Statewide Warrant Search, which combines information from both systems. Prior to implementation in each county, the NCAOC worked with local criminal justice and public safety entities to certify the validity of all outstanding processes for the year 2000 and forward. Additionally, the NCAOC staff continues to work with counties to convert paper-based orders for arrest to NCAWARE so that older processes are also available electronically.

NCAWARE is the first point of entry for all arrests, including DWI cases, into the courts databases. Court case information in NCAWARE automatically populates ACIS through real-time XML and MQ interfaces. Demographic driver and vehicle data is automatically pre-populated in NCAWARE through a host-to-host DB2 connection with NCDOT-DMV. The NCAOC is planning a real-time interface between eCitation and NCAWARE to provide 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.

eCitation

eCitation automates the issuing of cite-and-release citations in North Carolina. Six hundred law enforcement agencies issue more than one million traffic and infraction citations annually. Prior to the implementation of the eCitation system, North Carolina law enforcement officers wrote all citations by hand. Copies of the handwritten citation were given to the recipient, delivered to the local clerk of superior court (CSC) office, and kept on file by both the LEA and CSC involved. This process could be rather cumbersome and lengthy, as it involved entering the same information multiple times in different systems. Additionally, there was a high probability of mistakes being introduced due to illegible handwriting.

eCitation, the first such system in the nation, was conceived and developed as a solution to this manual process. eCitation fully automates the citation process, producing the North Carolina Uniform Citation in an electronic format and reducing data entry to a single iteration. Using existing wireless connections, eCitation allows officers to create citations and schedule court dates electronically from the patrol car. A portable printer produces the copy of the citation for the cited person. After issuance of the eCitation, the officer transmits the data directly to NCAOC where it can be accessed immediately statewide in both the Automated Criminal Infraction System (ACIS) and the Criminal Court Information System – Clerks Component (CCIS-CC).

eCitation was developed as a joint venture between the NCAOC and the NCSHP. Significant funding was also provided by NC GHSP and the Governor's Crime Commission. During October 1999 through September 2001, a pilot project was conducted in Cumberland County, and after a successful pilot, eCitation was implemented in all 100 counties at no cost to law enforcement agencies.

eCitation includes the following components:

- **Officers component:** This component is loaded on the computer in the patrol car for entering and printing eCitations. It is capable of operating 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 in local law enforcement, thus eliminating 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.
- **Interface to NCAOC ACIS:** This interface receives and stores eCitation data in ACIS and CCIS-CC, making the information available statewide.
- **Interface to NCDOT-DMV:** This interface automatically prefills demographic and vehicle data using the driver's license or vehicle plate number.

Automated Criminal Infraction System (ACIS)

All criminal and infraction court cases in North Carolina are tracked from initiation through disposition in the statewide ACIS. Case initiation processes (warrants, criminal summons, orders

for arrest, magistrate orders) are transferred electronically from NCAWARE to ACIS. Infraction (non-arrestable) cases are electronically transferred to ACIS from eCitation. ACIS is the primary point of interface to other agencies. All reportable traffic offenses are transmitted nightly to NCDOT-DMV. Charges and convictions for all serious misdemeanor and felony offenses (including death by motor vehicle) are reported nightly to the State Bureau of Investigation, which, in turn, updates ACIS, CCIS-CC and NCAWARE cases with the state fingerprint identification number. ACIS data is a major data feed to the Criminal Justice Law Enforcement Automated Data Service (CJLEADS). All citation data for the NCSHP is transferred to them nightly.

In March 2012, the NCAOC added the Eastern Band of Cherokee Indians to ACIS, allowing them to process their court cases in the system and providing them with an automated means to report their traffic cases to NCDOT-DMV.

ACIS was implemented statewide in 1987 and contains some cases as far back as 1978. Criminal cases are maintained and accessible online since inception. Infraction cases are purged five years after disposition in accordance with NCDOT-DMV rules of recordkeeping.

Criminal Court Information System – Clerks Component

The CCIS-CC is a web-based criminal case management system which extends and will ultimately replace ACIS. As replacement components with enhanced capability are built in CCIS-CC, those components are disabled in ACIS.

The system currently provides multiple entry functions for court continuances and results, speeding dispositions and monies paid. Case disposition is now provided in CCIS-CC with extended DWI data capture and courtroom generation and electronic storage of judgment forms. CCIS-CC includes an interface to NCDOT-DMV for electronic reporting of corrections to cases previously reported. Court staff are also able to process both criminal and infraction cases on the same screen which allows much faster and efficient entry of case data. CCIS-CC is available statewide.

payNcticket

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. Prior to payNcticket, citizens had to pay fines and related court costs by going to the courthouse to pay in cash or by mailing a money order or cashier's check. In addition to providing a more convenient payment method for the public, the system also allows for quicker disposition of cases because as payment is received, the citation is also disposed in ACIS and CCIS-CC. In conjunction with eCitation, which allows citations to be transmitted to ACIS and CCIS-CC immediately, payNcticket can potentially allow for a ticket to be paid and disposed within minutes after it was issued.

Payments made through payNcticket are processed by NIC, an independent payment processing vendor.

payNcticket was piloted in March 2010 and released statewide in June 2010.

Criminal Court Information System – District Attorneys Component (CCIS-DA)

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.

CCIS-DA interfaces with ACIS to download case data real-time. The system also interfaces with the Discovery Automation System, which allows uploads of law enforcement discovery documents.

As of October 2011, CCIS-DA was implemented in all 100 counties.

NC Department of Health and Human Services

NC Hospital Patient Discharge System

Prior to 1995, the Medical Database Commission (MDC) collected hospital discharge data. On September 31, 1995, the North Carolina General Assembly eliminated the MDC and set up an alternate system for the reporting of discharge data. Since 1996, hospitals have reported data to Thomson Reuters (formerly Solucient and Thomson Healthcare) 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 Discharge Databases. The data contained in the discharge databases are retrieved claim forms 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 see that 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 Resources. OCME also functions as the Division of Forensic Pathology of 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 FARS North Carolina driver fatalities.

NC State Center for Health Statistics

The State Center for Health Statistics (SCHS) is the North Carolina agency responsible for the 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, deaths, marriages and divorces. These records have data on age, race, sex, county, name and key dates, as required by the state.

NC Department of Public Safety

COVERLAB

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 Motor Carrier Enforcement (MCE) section of the North Carolina State Highway Patrol with online data-driven analytics, geospatial analysis and web-based decision management tools for improving commercial vehicle safety outcomes.

COVERLAB Analytics

COVERLAB Analytics is a web-based data visualization and mapping tool for helping to reduce *truck-involved* fatalities and protect federally funded road and bridge infrastructure. COVERLAB Analytics provides MCE 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.

Geospatial analytics allows users to filter and map Commercial Motor Vehicle crashes, inspections and citations by location, time, contributing circumstance and many other points of information. Patrol supervisors can "see" where crash patterns are located relative to enforcement activities, allowing them to visualize relationship between existing enforcement activities and areas/times where safety concerns are greatest.

Vision Zero

The purpose of North Carolina's Vision Zero program is to create a unified vision for reducing highway fatalities. North Carolina has aligned the Highway Safety Plan crash reduction goals with NCSHP performance measures.

Vision Zero Analytics

Vision Zero Analytics is a web-based data visualization and mapping tool for helping to reduce *traffic fatalities* in North Carolina. The State's crash reduction goals are visually presented to (and co-tracked by) both patrol supervisors 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 by using a data-driven approach.

GIS Crash Mapping

North Carolina's online crash map provides patrol-reported crashes for five HSP performance measures: speeding, unbelted, motorcycle, alcohol/drug, teen. The purpose of the map is to help prioritize crash reduction countermeasures where they are most needed. Individual crashes are shown, as well as cluster "bubbles." The map is available at <http://coverlab.org/shp>.

NC Department of Transportation

Traffic Engineering Accident Analysis System

The Traffic Engineering Accident Analysis System (TEAAS) is the main tool used by the Traffic Engineering and Safety Systems Branch (TESSB) of NCDOT to analyze and report on crashes that occur in the state. TEAAS is often used to help support policies and decisions at the state and federal levels. The TEAAS database is a nightly replication of the crash database maintained by the NCDMV. TEAAS was established in 1999 as a product of Y2K preparations, and went online on January 1, 2000. The earliest data on record is from 1990.

Since the TEAAS database is a replication of the NCDMV crash database, TEAAS data are only as timely as the data within the crash database. Crash data that are submitted to the NCDMV on the DMV-349 form are typically available within three months of the date of the crash.

Electronic crash data submissions made through the Traffic Records Communications System (TRCS) must be made within 48 hours of the crash, so these data are typically available within ten days of the date of the crash. TEAAS data are updated nightly with any new or changed data. The data are not purged.

In addition, TEAAS is a roadway crash analysis software system downloadable from the Internet and available free of charge to state government personnel, municipalities, law enforcement agencies, planning organizations and research entities. In addition to crash data, TEAAS also contains ordinance information for all state maintained roads and highways.

The crashes are located on the North Carolina crash report form using the street names noted to milepost each crash on the North Carolina Roadway System. Mileposting is the process of determining the location of features on a road, in miles, from the beginning of the road, and is a fundamental requirement of TEAAS necessary for crash studies and analyses, crash rates and ordinance overlap checks. Mileposts are based on information in NCDOT's Linear Referencing System maintained by the Geographic Information Systems Unit, and are used to determine where crashes occurred, or where ordinances are located, in relation to roadway features. Features requiring mileposts are intersections and interchanges, at-grade railroad crossings, mile markers, structures (that carry the road) and political boundaries (municipal, county and state lines). This allows the North Carolina traffic engineers to analyze crashes at each roadway

section or intersection in more detail. The results of these analyses help North Carolina make corrections and improvements to the sites involved.

North Carolina Geographic Information System

The main objectives of the Information and Mapping Unit (IMG) are to provide quality mapping of the existing state-maintained system of highways as well as to produce computer-generated images of proposed NCDOT projects. This information is used in the planning, funding, construction and maintenance of transportation facilities throughout the state, helping to provide an efficient and cost effective state transportation system.

The IMG Unit is divided into three major sections:

- Road Inventory Information Section: generates and maintains database of highway data using various sources of information such as highway construction plans and reports from NCDOT division and district staff.
- Product Development Section: produces cartographic products such as the State Transportation Map, the Coastal Boating Guide, county maintenance maps and more than 20 other custom map products that are built to customer requirements.
- Product Distribution Section: provides customer support and ensures distribution and delivery of products created by the IMG.

The IMG Unit is a relatively new unit within the NCDOT. Its products are spatially-oriented. Many of those products rely on the geographical framework and analyses provided by the NCDOT GIS Unit. One of the core functions of the GIS Unit is to maintain the linear referencing system for the North Carolina transportation network.

The data and products maintained and distributed by the IMG are updated regularly to provide current and useful information to customers. Some products are updated daily, like the online county maps (in TIF format), while others, such as the State Transportation Map, are updated annually. In addition, a large portion of data is updated at varying intervals as needed to provide reliable information. Most of the products distributed by the IMG indicate the date(s) for which the data are current.

NCDOT Division of Motor Vehicles

North Carolina 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 back to 1990.

Crash data may either be submitted electronically using either the NCDMV 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 on a daily basis. The data are never purged.

A CRS data dictionary is available upon request. It is updated periodically, as needed or as request 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.

Traffic and Criminal Software

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

NCTraCS 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.

Fatality Analysis Reporting System

The 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 of the National Highway Transportation Safety Administration in 1975. The main objectives of FARS 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, which include 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.

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). A crash must also meet the following criteria to be sent to SAFETYNET:

The crash must result in at least one of the following: fatality, injury or towed vehicle.

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).

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.

NC Vehicle Registration Record Data

The State Training Accountability and Reporting System (STARS) is a database maintained by the NCDMV that was created to provide automated vehicle titling and registration services. STARS was established in 1996, and contains title records dating back to the year 1900 and registration records dating back to 1975. Data are entered into STARS by authorized employees at NCDMV branches. The data are entered using online STARS screens, which automatically transmit data to the database. In addition to online reporting, data are also reported through batch processes in which data are uploaded into STARS nightly.

Data that are submitted online at NCDMV branches are real time, while registration renewals done via mail and the Internet, for example, are input through nightly batch processes. Title data are never purged from STARS. However, registration data older than four years are archived on a monthly basis.

North Carolina Office of Emergency Medical Services

EMSPIC Performance Improvement Center

The North Carolina EMS Performance Improvement Center (EMSPIC) is located within Department of Emergency Medicine at the University of North Carolina at Chapel Hill. Systems that are currently maintained and supported by the EMSPIC are the Credentialing Information System, EMS Toolkit Project, Prehospital Medical Information System (PreMIS) and the State Medical Asset Resource Tracking Tool.

The North Carolina Office of EMS established a central location where, by regulation, incident data could be collected and maintained from all 101 North Carolina EMS systems/counties. This is accomplished by a contractual agreement in place since 1999. On January 1, 2008, the South Carolina Department of Health and Environmental Control, Division of EMS and Trauma, also entered into a contractual agreement with the EMSPIC to begin utilizing the systems listed above. The EMSPIC is strategically placed to provide a high level of information technology support and quality management expertise. The EMSPIC supports state, regional and local EMS service delivery from a patient care, resource allocation and regulatory perspective.

Prehospital Medical Information System

The Prehospital Medical Information System (PreMIS) provides a data entry and reporting capability for the evaluation of EMS patient care and system performance. PreMIS follows the NEMSIS standards. The benefits of PreMIS 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.

NC Trauma Registry System

Since 1987, North Carolina has 14 hospitals submitting data on trauma patients to the North Carolina Trauma Registry. Twelve of these facilities are designated by the state of North Carolina as level I, II, or III and two are non-designated. The North Carolina Office of Emergency Services maintains the North Carolina Trauma Registry and requires all state designated trauma centers to submit data, achieving the overall mission of collecting information on injured patients in North Carolina 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 supporting a regional trauma system.

NC Disease Event Tracking and Epidemiologic Collection Tool

The North Carolina 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 in the 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 Carolinas Poison Center, and PreMIS, as well as pilot data from select urgent care centers. NC DETECT is designed, developed and maintained by CCHI staff with funding by the NCDPH. New functionality is added regularly based on end user feedback.

2015 Strategic Plan

Overview

In 2015, the NC TRCC began the process of updating the 2014 Strategic Plan. The UNC Highway Safety Research Center 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:

- ITRE
- NC DHHS
- NC GHSP
- NCAOC
- NCDMV
- NCDOT
- NCSHP
- UNC-HSRC

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

- *North Carolina Traffic Safety Information Systems Strategic Plan, 2014*. This plan became the benchmark for progress with respect to improvements made over the past year.
- *State of North Carolina Traffic Records Assessment, 2012*. The assessment was completed by a NHTSA Technical Assessment Team in January 2012 and included several recommendations related to traffic safety information systems.
- *North Carolina Governor's Highway Safety Program FY 2014 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.
- *DMV-349 Revision Project, Phase I to Phase II Transition Notes*. This document was reviewed to determine specific needs related to the 58 recommended changes to the crash report content.

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, first developed in 2012, was intended to address improvements in traffic safety information systems over five years. However, 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 performance measures 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.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Ensure that the membership of the TRCC consists of all key stakeholders, including the owners, stewards and users of the data in NC.	<i>An annual review of stakeholders and expansion of the TRCC membership as necessary.</i>	Completed review and added two new members on Feb. 5, 2014	Reviewed membership, no new official members added
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. <i>(Note: Recommendation is to do this during the fall meeting, following funding decisions from NHTSA but prior to when proposals are due to NC GHSP, for timing and planning purposes.)</i>	Future effort	Ongoing (To be discussed during October 2015 TRCC meeting.)
	A set of guidelines created for use	Future effort	Future effort. Plans

	<p>in identifying and prioritizing projects.</p> <p>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.</p>	<p>Future effort</p>	<p>for the October 2015 TRCC include reviewing this item.</p> <p>Future effort. Plans for the October 2015 TRCC include reviewing this item.</p>
<p>Monitor and measure progress on existing goals and objectives.</p>	<p>Annual update of TRCC Strategic Plan.</p> <p>Periodic review of ongoing projects, focusing on progress toward meeting performance measures outlined in the strategic plan.</p> <p>Feedback to NC ECHS to report on progress made and new strategies proposed by the TRCC.</p> <p>Review NHTSA recommendations for TRCC activities to align our goals with the assessment document focus questions.</p>	<p>Completed (June 2014)</p> <p>Completed</p> <p>Future effort</p> <p>---</p>	<p>Completed (June 2015)</p> <p>Completed</p> <p>As needed for specific purpose/when appropriate</p> <p>This performance measure added May 2015</p>
<p>Identify gaps in the current traffic records systems and explore new solutions.</p>	<p>Establishment and revision of goals and objectives as part of development of the next strategic plan. <i>(Note: Explore external funding opportunities. Examples include: 405C, NC ECHS, FHWA, NHTSA, CDC).</i></p>	<p>Completed (May 2014)</p>	<p>Completed (May 2015)</p>
<p>Share NC achievements and best practices in traffic safety information systems with other states.</p>	<p>Participation in regional and national conferences and peer-to-peer exchanges.</p>	<p>TRCC members made presentations at the Traffic Records Forum (October 2013). See Appendix A for details.</p>	<p>TRCC members made presentations at the Traffic Records Forum in St. Louis, MO (October 2014). See Appendix A for details.</p>
<p>Monitor and evaluate the achievements and best</p>	<p>Participation in peer-to-peer exchanges.</p>	<p>TRCC members participated in the</p>	<p>TRCC members participated in the</p>

practices in traffic safety information systems in other states for potential implementation in NC.	<p>Review of promising strategies from other states, or items shared w/ other states, and sharing back with group.</p> <p>Monitor USDOT/other state's TRCCs for ideas for consideration.</p>	<p>Traffic Records Forum (October 2013)</p> <p>Future effort</p> <p>Ongoing</p>	<p>Traffic Records Forum in St. Louis, MO (October 2014)</p> <p>Ongoing</p> <p>Ongoing</p>
Ensure that state highway safety plans include traffic safety information systems as a major component.	<p>Review of NC Strategic Highway Safety Plan.</p> <p>Review of NC State Highway Safety Plan.</p>	<p>N/A (Plan not yet available)</p> <p>Completed (July 2013)</p>	<p>TRCC members participated in development of plan and submitted recommendations. Final plan not yet released.</p> <p>Completed (July 2014)</p>

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.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Continue to enhance and expand electronic crash reporting by all enforcement agencies in the State.	Number or percentage of law enforcement <u>agencies</u> submitting to the electronic crash reporting system.	16.74%	17.82%
	Number or percentage of reported <u>crashes</u> submitted via the electronic crash reporting system.	70.09%	70.54%
	Integration and use of additional features or options for crash reporting. <i>(Example: geo-locating.)</i>	Future effort	Future effort

<p>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.</p>	<p>Periodic meetings with third-party vendors to share business rules and communicate changes.</p> <p>Periodic review and validation of third-party vendors' compliance capabilities.</p> <p>Initial review and validation for new third-party vendors.</p>	<p>Biweekly meetings conducted by NCDMV</p> <p>Initial tests by NCDMV, but no periodic review yet</p> <p>Ongoing (1 new vendor in the last year)</p>	<p>Biweekly meetings conducted by NCDMV</p> <p>Initial tests by NCDMV, but no periodic review yet</p> <p>Working with all available vendors</p>
<p>Explore the feasibility of LEA-level metrics for improving crash reporting.</p>	<p>Feasibility study on the potential range and use of LEA-specific metrics. <i>(Note: Report on types of errors made and time period for reporting, compared to peers)</i></p> <p><i>Next: Review and see if it can be enhanced or built upon in the future/broadened to include quality.</i></p>	<p>Future effort</p>	<p>Future effort. During 2014, initial crash data submission LEA-specific assessments have been implemented.</p>
<p>Continue to enhance the integration of crash data systems.</p>	<p>Continuing to correct CRS records on the basis of analysis of TEAAS data.</p> <p>Periodic review of the integration process between the traffic safety unit and DMV.</p>	<p>When error is identified</p> <p>Protocol under development between NCDMV and NCDOT Traffic Safety Unit</p>	<p>When error is identified</p> <p>Protocol under development between NCDMV and NCDOT Traffic Safety Unit</p>
<p>Ensure that crash data continue to be submitted accurately and in a timely manner to the CRS.</p>	<p>Average lapsed time between the time of the crash and the time of the submission.</p> <p>Percentage of crash reports submitted in a timely manner. (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</p>	<p>34.69 days (print submissions) 3.05 days (electronic submissions)</p> <p>67.6% submitted within 10 days.</p>	<p>27.26 days (print submissions) 4.62 days (electronic submissions)</p> <p>64.6% submitted within 10 days</p>

	report.) Percentage of crash reports submitted accurately.	Future effort	Future effort (including discussion about defining accuracy)
Ensure that crash data continue to be accurately recorded and reported to the CRS.	The percentage of crash records that have no errors in the critical data elements. (Must define critical elements, example: crash severity.)	Future effort	Future effort
	The percentage of rejected crash reports.	5.11% (electronic submission only)	5.44% (electronic submission only)
	Periodic summary of crash report rejection reasons.	1,422 reasons for rejection (electronic submission only). Summary report on file.	1,219 reasons for rejection (electronic submission only). Summary report on file.
	Periodic review of business rules to target inaccurate fields.	Future effort	Future effort
Ensure that crash data continues to be recorded as completely as possible.	Percentage of reports that have no missing critical data elements. (<i>Note: Must define critical elements.</i>)	Future effort	Future effort
	Percentage of reports that have no missing data elements.	Future effort	Future effort
	Periodic review of business rules to address completeness.	Future effort	Future effort
	Feedback to LEAs with respect to their data quality.	Future effort	Future effort
	Year-to-year comparison of the number of reports received to review for possible missing data.	Future effort	Future effort
Ensure that crash data is recorded uniformly.	Percentage of data elements that are MMUCC compliant.	To be re-assessed with the new standard in the future.	To be re-assessed with the new standard in the future.

	Year-to-year comparison of reportable vs. non-reportable crashes by LEAs.	74.45% reportable 25.55% non-reportable	74.69% reportable 25.31% non-reportable
Ensure that the crash data is accessible to key stakeholders.	Annual survey of crash data accessibility by stakeholder groups, including internal users within the NCDOT and external users such as other state agencies and universities.	Future effort	Future effort
	Potential workshop with stakeholders including IT to discuss accessibility issues.	Future effort	Future effort
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. <i>(Note: EMS as an example.)</i>	NCSHP has started internal discussions about online training.	Computer Based Training developed to be available to officers next year. Promotes online individualized training for officers on an as needed basis for TraCS10.
	Number of law enforcement officers who receive training, including a breakdown of standard and more extensive training.	All law enforcement officers receive basic (20 hours) training. NCSHP requires additional training (96 hours).	Trained 96 law enforcement train-the-trainer officers between April 1, 2014 and Jan 30, 2015 from 41 agencies using NISR training materials and materials developed by DMV TR training staff.
	Review of the current Basic Law Enforcement Training.	Future effort	Future effort
Explore the feasibility of creating a statewide streamlined or “limited” data entry protocol for non-injury crashes within the electronic crash reporting	Review of the implications on the CRS database.	Future effort	Future effort
	Review of the implications on safety analysis and decision making.	Future effort	Future effort

system at the time the DMV349 is updated.	<i>Note: The issues addressed should include data acquisition, compliance with NHTSA data guidance (e.g., MMUCC), legal considerations, and possible degradation in the information being captured in the crash report.</i>		
Develop standards for reporting location information.	Publication of spatial location reporting standards available to third-party vendors for ECRS.	Future effort	Future effort

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.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Continue to improve electronic citation audit procedures and implement the most promising improvements to ensure citations are tracked from time of issuance to disposition of citations.	Implementation of a tracking system for unused or voided citations.	Future effort	Software upgrade in progress
Continue to improve the electronic citation submission statewide.	Length of time for citations to be received at AOC.	84.01% received within three days	91.71% received within 3 days
Conduct a feasibility assessment of the value of and most effective means of sharing data across multiple systems within the data collection process, such as crash and citation, for consistency and accuracy of data.	Feasibility study report. <i>(Note: This is a project that will be addressed in the future, when all stewards are ready.)</i>	Future effort	Future effort
Increase data capture surrounding the case management of DWI charges and convictions to	Number of DWI data element fields added to the file.	In progress	All missing DWI elements added, and as a result NCAOC is in the

<p>aide in the analysis and tracking of these cases.</p>			<p>process of creating 18 reports that show DWI charges, convictions, monies collected and assessed and are sorted by judge, District Attorney, Defense Attorney and clerk. First 4 reports are being reviewed by judicial officials.</p>
<p>Provide an interface between eCitation and NCAWARE for the most frequent arrestable offenses to reduce duplicate data entry.</p>	<p>Percent reduction in number of cases for which there is duplicate data entry.</p>	<p>Future effort</p>	<p>Future effort. Must happen <i>after</i> e-citation upgrade.</p>
<p>Explore the value and feasibility of capturing detailed lat/long location information for citations.</p>	<p>Feasibility study report.</p>	<p>Future effort</p>	<p>Future effort</p>
<p>Explore the value and the feasibility of developing a centralized database for warning tickets that would be available to law enforcement officers and other stakeholders, such as researchers, in the road safety community.</p>	<p>Feasibility study report. <i>(Note: This is a low priority issue based on recent discussions with NHTSA and will be discussed at a later time.</i></p>	<p>Feasibility report on how to use warning ticket information in the context of safety analysis is a future effort. Currently collecting information about tickets and warning tickets, per state law (NC General Statute 114-10).</p>	<p>Feasibility report completed and per state law this is unable to be accomplished at this time</p>
<p>Capture and store large video as evidence in a secure location in data center.</p>	<p>Expand discovery automation system to handle remote blob storage.</p>	<p>----</p>	<p>In progress (this is a new performance measure added in 2015)</p>

Paperless process in court room with workflow between district attorney, judges and clerks.	Design and develop automated workflow process for citation in the courtroom.	----	In progress (this is a new performance measure added in 2015)
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Injury Surveillance Systems

Goal – Evaluate the need for and feasibility of a Statewide Surveillance Injury System.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Conduct a demonstration project that links injury surveillance data with crash data to identify issues associated with linkage.	Identification of a project with defined objectives that requires linking injury surveillance data and crash data.	Proposed projects now under consideration by NC GHSP	Wake Co 2013 pilot study has started. EMS Statewide Linkage Project on hold awaiting results of pilot study.
	Development of a work plan for the demonstration project.	Submitted as part of project proposals	Completed and activated
	Demonstration project report.	Future effort	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.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Conduct a data quality assessment of key roadway elements and attributes, assess the feasibility of the enhancement of data where the quality is deemed substandard or there are gaps in the data.	Assessment report.	NCCU selected, quality assessment began May 2014	Completed (Results to be presented to TRCC in an upcoming meeting.)
	Feasibility report for enhancement.	Future effort	Future effort
Expand the linear referencing system (foundation for linkage to roadway characteristics) to cover all public roads, state-	Percentage of NC roadway mileage that is included in the LRS.	75%	Scheduled to be completed in summer 2015.

and locally-owned.			
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. Ability of external customers to add or edit data to the primary roadway characteristics file.	Ownership and stewardship has been defined for most road data elements/attributes Future effort	In progress Future effort
Conduct a feasibility assessment of the development of supplemental roadway files that may be used in safety analysis. <i>(Examples include horizontal curves and grades.)</i>	Feasibility report that includes priorities for the development of supplemental files.	Currently exploring requiring the collection of such data on our primary system through our video log vendor. (Report is a future effort.)	Currently collecting information for primary highways.
Explore the feasibility of an intersection database.	Feasibility report.	Future effort	Future effort

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.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Publish online a basic summary of the number of licensed North Carolina drivers, which includes their age, race, sex and county of residence. <i>(Note: the publication should include motorcycle endorsements, commercial licenses and learner’s permits.)</i>	Annual online publication as part of NC Crash Facts.	Future effort	Future effort

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 insure all vehicles are properly licensed according to the laws of NC.

<i>Objective</i>	<i>Performance Measure/Target</i>	<i>4/1/2013-3/31/2014</i>	<i>4/1/2014-3/31/2015</i>
Publish online a summary of the number of NC registered vehicles – by type of vehicle and county.	Annual online publication as part of NC Crash Facts.	Future effort	Future effort
Explore the value and feasibility of adding vehicle color as a data element. <i>(Note: This could be accessed from the VIN.)</i>	Feasibility study report.	Proposed to CJLEADS	Nothing new to report

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, regardless of funding source.

Project Identification

The following section of this report will be dynamic and will reflect the ongoing efforts of the 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 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 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 TRCC partnership should also be considered.

The TRCC also recognizes that many projects or strategies will be easier to implement and may yield high payoff and have few obstacles to achieve relatively quick success. If resources become available to the TRCC, typically in the form of grants or possibly through the NC ECHS, a process should be in place to select these projects. Future effort is planned to develop a project prioritization protocol, which would involve the development of specific criteria for ranking projects.

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 first. Descriptions of these projects, as well as a list and description of past projects is available in Appendix C.

Current projects

Cross Ref. #	Project	Project Number	Coordinating Agency	Budget	Budget Source
	405(c)-funded projects				
1	eCitation Printers	M3DA-15-16-05	NCAOC	\$303,050	NC GHSP
2	eCitation Upgrade	M3DA-15-16-03	NCAOC	\$282,804	NC GHSP
3	NC Traffic Safety Information Systems Strategic Plan Update	M3DA-15-16-04	HSRC	\$39,263	NC GHSP
4	Performance-based Web Analytic Solution for NCSHP	M3DA-15-16-06	NCSU / ITRE	\$135,648	NC GHSP
	Non 405(c)-funded projects				
5	Automated Criminal Infraction System (ACIS)		NCAOC		NCAOC
6	Criminal Court Information System – Clerk Component (CCIS-CC)		NCAOC	\$ 6,301,022	NCAOC
7	Criminal Court Information System – District Attorney Component (CCIS-DA)		NCAOC	\$3,333,348.24	NCAOC
8	eCitation		NCAOC	2,001,616	NC GHSP/Governor’s Crime Commission
9	Linkage Project		EMSPIC		EMSPIC
10	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 the UNC Injury Prevention	\$135,430	NC GHSP

			Research Center		
11	NC Crash Data Web Site	K9-15-15-03	HSRC	\$59,656	NC GHSP
12	North Carolina Warrant Repository/NCAWARE		NCAOC	\$13,000,000	NCAOC
13	payNcticket		NCAOC	\$185,459	NCAOC
14	Quick Response System	K9-15-15-02	HSRC	\$44,640	NC GHSP
15	SaDIP2011	FM-SAD-003-11-01-00	NCDMV	\$872,400	NCDMV/NCSHP
16	Weldon Electronics Enhancement	TR-15-14-03	Weldon PD	\$18,000	NC GHSP

Presentations by TRCC members in 2014

Traffic Records Forum - 2014

Greene, J., Guptill, P., Ferrara, G., Schaberg, E., & Rodgman, E. (2014, October). *Low cost traffic records data improvements on a tight budget*. Presented to the 40th International Forum on Traffic Records & Highway Information Systems, St. Louis, MO.

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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Derek Traughber	EMSPIC	dtraughber@emspic.org
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Sharon Schiro	UNC School of Public Health	sharon_schiro@med.unc.edu

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

Completed (historical) projects

Project	Project Number	Coordinating Agency	Budget	Budget Source
408/405(c)-funded Projects				
ASU In-car Computer Grant	K9-14-11-06	Appalachian State University	\$30,000	GHSP
TRACS Upgrade	K9-14-11-03	NCDMV	\$43,300	GHSP
Air Cards Technology to Reduce Speed Related Crashes and Increase Seat Belt Use	K9-13-11-02	NCSHP	\$608,160	GHSP
Division of Motor Vehicles (DMV) Gap Analysis	K9-09-11-05	DMV	\$56,109	GHSP
eCitation Printers	K9-13-11-03	NCAOC	\$214,500	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/NCAWARE Arrestables Interface	K9-13-11-06	NCAOC	\$133,572	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
GIS location of Crashes	K9-11-11-03	ITRE	\$15,898	GHSP
Linking EMS, Trauma, Healthcare and Crash Data Systems	K9-10-11-03	EMSPIC		
MDTs to Enable More Officers to Perform Ecitation and Electronic Crash - GPD (Garner)	K9-10-11-11	Garner Police Department	\$10,000	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
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 - N.C. Highway Patrol	K9-10-11-07	N. C. State Highway Patrol	\$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 DOT Traffic Engineering TR Guidebook	K9-09-11-06	DOT	\$6,342	GHSP
NC DOT Traffic Engineering TRCC Support	K9-09-11-07	DOT	\$33,000	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	NCSU ITRE	\$28,049	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

Project	Project Number	Coordinating Agency	Budget	Budget Source
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
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	N. C. DOT - Division of Motor Vehicles	\$117,420	GHSP
Non 408/405(c)-funded Projects				
Alcohol Facts Web Site 2014	TR-14-10-03	HSRC	40,066	GHSP
Traffic Records Systems Support Person	M3DA-14-20-02	NC DMV	\$ 176,800	GHSP
Administrative Office of the Courts (NCAOC) e-Citation Printers	K9-09-11-04	NCAOC	\$328,157	GHSP
PreMIS migration to NEMESIS v3 Standard		EMSPIC		OEMS
Quantifying and Describing EMS Patient Transports following Motor Vehicle Crashes in North Carolina		EMSPIC		EMSPIC
SADIP 2011	FM-SAD-003-11-01-00	NCDMV-TR	\$872,400	NCDMV- TR, NCSHP
Traffic Records Support Position	M3DA-14-20-02	NCDMV	\$176,800	GHSP
2013 North Carolina Traffic Safety	TR-13-10-03	HSRC	\$22,807	GHSP

Project	Project Number	Coordinating Agency	Budget	Budget Source
Information Systems Strategic Plan Update				
ACIS/Eastern Band of Cherokee Indians (ECBI)		NCAOC	\$67,990	EBCI/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
Local Law Enforcement MDT Projects		Local PD	\$19,682	GHSP
NC Crash Data Web-site	TR-12-10-02	HSRC	\$51,782	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 2012	FM-SAD-0022-12-01-00	NCDMV-TR	\$946,400	NCDMV-TR
UNC HSRC Crash Web Site Update		HSRC	\$48,483	GHSP
Web Site Using NC Crash Data	TR-13-10-02	HSRC	\$55,421	GHSP

2015 Traffic Records Current Project Status Reports

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

1.) eCitation Printers

Number(s): M3DA-15-16-05

Agency(ies): NCAOC

Project Leader(s): Janet Greene, Jennifer Barbour

Performance Period: 10/01/2014 – 09/30/2015

Description: Purchase and distribute printers to law enforcement to enable them to participate in eCitation. The eCitation program is available to all law enforcement agencies (LEAs) statewide. The NCAOC provides the software and support, while SHP provides the law enforcement training, all free of charge. The LEAs are responsible for providing the computer equipment. Many LEAs would like to participate in eCitation, but are unable to purchase the printers necessary for generating the cited copy of the citation in the car. This grant provides printers for those LEAs unable to purchase them and therefore increases the number of law enforcement officers on eCitation and the percentage of ecitations versus paper citations issued.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures: Increase percentage of ecitations versus paper citations.

Status: In progress and will continue. 708 printers have been ordered after receiving a waiver from NHTSA on the Buy America Act.

Sponsoring Agency 1: NC GHSP (\$303,050)

Sponsoring Agency 2: NCAOC

Total budget:

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

2.) eCitation Upgrade

Number(s): M3DA-15-16-03

Agency(ies): NCAOC

Project Leader(s): Janet Greene

Performance Period: 10/01/2014 – 09/30/2015

Project Description: eCitation is a very successful system which generates over 88% of citations electronically. The system's technological platform is no longer supported. In order to be responsive to the needs of the judiciary and law enforcement and to allow for mobile technologies, the system must be upgraded using more modern and robust technologies.

Description: Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures: The developed code will be tested against the requirements and design documents to ensure that all business rules are functioning properly in the system.

Status: RFPs for a contract programmer and contract analyst are in the process of being reposted. No candidates submitted for the contract programmer were viable and the candidate selected for the contract analyst accepted another position.

Sponsoring Agency 1: NC GHSP (\$282,804)

Total budget: \$282,804

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

3.) NC Traffic Safety Information Systems Strategic Plan Update

Number(s): M3DA-15-16-04

Agency(ies): UNC HSRC

Project Leader(s): David Harkey

Performance Period: 10/01/2014 – 09/30/2015

Description: The North Carolina Strategic Plan for Traffic Safety Information Systems is being updated for 2015. The plan documents the roles of the NC ECHS and the NC TRCC, provides strategic direction for improving transportation data systems in the state and progress reports on ongoing safety data projects, and includes status information about the various traffic records systems in North Carolina.

Performance Areas:

Performance Measures: The draft strategic plan will be developed using the input from NC TRCC membership planning sessions and the review of the existing materials.

Status: In progress and will continue.

Sponsoring Agency 1: NC GHSP (\$39,263)

Total budget: \$39,263

For more information, contact: Frank Hackney, 919-733-3083, fhackney@ncdot.gov

4.) Performance-based Web Analytic Solution for NCSHP

Number(s): M3DA-15-16-06

Agency(ies): NCSU / ITRE

Project Leader(s): Greg Ferrara

Performance Period: 10/01/14 – 09/30/15

Description: This project includes both public map analytics and vision zero analytics improvements:

- Public Map Analytics -- Develop a map analytic application to help the public identify high crash locations for exposing awareness of traffic fatalities to the driving public using an interactive visual tool. Users will be able to filter for crash attributes to interactively visualize the results on both the map, graphs and data table. Filtered results can be shown as a heat map to expose spatial patterns. This first year, ITRE will:
 - Define requirements and audiences for application
 - Adapt data holdings to service VANTAGE for NCVisionZero
 - Adapt existing design to requirements
 - Build a prototype based on existing VANTAGE for MCE
 - Test application
 - Release application
- Vision Zero Analytics Improvements – ITRE will develop functional improvements and maintain the existing scorecard, dashboard and reports.
 - Align improvements with NCSHP MCE's COVERLAB Analytics improvements.
 - Maintain existing data updates, security and architecture necessary to support both applications.

Performance Areas: Completeness, Timeliness, Accessibility

Performance Measures: Number of distinct website hits. Number of times website accessed.

Status:

This project has two components:

- Public Crash Map Analytics – Technology options and design have been completed. Initial development begins in May. First version delivered in September 2015.
- Vision Zero Analytics Updates / Improvements – Trained ~400 NCSHP supervisors and civilian trainers. Embedded VZA into NCSHP reporting regime in the Strategic Leadership Forum. Identified Law Enforcement Liasons as additional user group. Identified technology option for embedding the map into the dashboard views.

Sponsoring Agency 1: NC GHSP (\$135,648)

Total budget: \$135,648

For more information, contact: Greg Ferrara, 919-515-8656, gpferrar@ncsu.edu

5.) Automated Criminal Infraction System (ACIS)

Number(s): n/a

Agency(ies): NCAOC

Project Leader(s): Wanda Thomas

Performance Period: 01/01/2014 – 12/31/2014

Description: ACIS is an automated, statewide system which provides direct operational support to the Clerk of Superior Court Offices in the areas of district and superior court criminal case processing. The system is comprised of two major components:

- Criminal Module – Criminal case data is entered from case initiating documents such as Warrants for Arrest, Orders for Arrest, or Bills of Indictment or data is received electronically from NCAWARE. Cases are tracked from initiation through disposition, with some post-disposition entries such as probation violation. If appealed, notations are made including results of appeal.
- Infraction Module – The majority of infraction data is electronically transmitted from the eCitation system with less than 20% of data entered from paper processes. Infraction cases are also tracked from initiation through disposition in the system.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance measures:

- Accuracy: All data, except some free text offenses (offenses used less often where no standardized code and language has been established) and clerk notes/special conditions is rigorously validated and data integrity is ensured. ACIS data is shared with all other state criminal justice agencies, the DOT/DMV, many federal agencies, special interest groups and the public in general. Data about an individual's court record must be accurate.
- Completeness: All criminal and infraction cases are tracked within ACIS. It contains a comprehensive repository of all cases. Infraction cases are purged from the system 5 years after their disposition date.
- Integration:
 - Division of Motor Vehicles (DMV) – transmittal of charge and disposition data for motor vehicle offenses

- State Bureau of Investigation (SBI) – transmittal of charged and disposition data; match occurs with SBI records to retrieve the state identification number (SID) or fingerprint number.
- State Highway Patrol (SHP) – transmittal of all SHP trooper issued citation data
- Department of Correction (DOC) – transmittal of charge and disposition data for defendants sentenced to active prison time or supervised probation.
- **Timeliness:** With the implementation of eCitation in 1999 and NCAWARE in 2008, most of the case initiation data in ACIS is received electronically real-time. Results of case trials/hearings are often entered by clerk staff the day of court but not during court. Court proceedings still rely on paper files or shucks during the trial.
- **Uniformity:** All 100 counties track all court cases in ACIS. North Carolina has a uniform court system with standardized, uniform forms. The same data is captured the same way in ACIS in all 100 counties.
- **Accessibility:** ACIS is available 24 hours a day except for scheduled semi-monthly maintenance (generally one hour on a Sunday) to court personnel, law enforcement, all criminal justice agencies, the DOT/DMV, federal criminal justice agencies such as ICE, the Department of Health and Human Services, and to the public through contracted public access vendors

Status: December 2014 – “Turned off” disposition and judgment functionality as this component was implemented in CCIS-CC.

Sponsoring Agency 1: NCAOC

Total budget:

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

6.) Criminal Court Information System – Clerk Component (CCIS-CC)

Number(s): n/a

Agency(ies): NCAOC

Project Leader(s): Mark Prakke

Performance Period: 01/01/2014 – 12/31/2014

Description: CCIS-CC is a web-based criminal case management system which will ultimately replace the Automated Criminal Infraction System (ACIS). Functionality is being delivered incrementally and as functions are delivered in CCIS-CC, the corresponding functions are “turned off” in ACIS.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance measures:

- **Accuracy:** All data, except some free text offenses (offenses used less often where no standardized code and language has been established) is rigorously validated and data integrity is ensured.
- **Completeness:** All criminal and infraction cases are tracked within ACIS or CCIS-CC. Data for both systems is stored on the same physical database and accessed by both systems. Along with ACIS, CCIS-CC contains a comprehensive repository of all cases. Infraction cases are purged from the system 5 years after their disposition date.

- Integration: Existing ACIS interfaces.
- Timeliness: With the implementation of eCitation in 1999 and NCAWARE in 2008, most of the case initiation data in CCIS-CC and ACIS is received electronically, real-time. Results of case trials/hearings are often entered by clerk staff the day of court but not during court. Court proceedings still rely on paper files or shucks during the trial.
- Uniformity: All 100 counties track all court cases in ACIS and CCIS-CC. North Carolina has a uniform court system with standardized, uniform forms. The same data is captured the same way in ACIS and CCIS-CC in all 100 counties.
- Accessibility: CCIS-CC is available 24 hours a day except for scheduled semi-monthly maintenance (generally one hour on a Sunday) to court personnel.

Status: December 2014 – Redesign of ACIS disposition functionality for CCIS-CC providing new capabilities for entering judgment details, transfers, appeals, withdrawals, and remands. This release also replaced the functionality of CourtFlow and added the initial data elements identified by the Sentencing Commission group for the Justice Reinvestment Act (JRA).

Sponsoring Agency 1: NCAOC (\$6,301,022)

Total Budget: \$6,301,022

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

7.) Criminal Court Information System – District Attorney Component (CCIS-DA)

Number(s): n/a

Agency(ies): NCAOC

Project Leader(s): Jeff McEntire

Performance Period: 01/01/2013 – 12/31/2013

Description: 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.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures:

- Accuracy: All data, except some free text offenses (offenses used less often where no standardized code and language has been established) is rigorously validated and data integrity is ensured.
- Completeness: All district and superior cases assigned to the District Attorney offices may be downloaded from ACIS and managed by each local office.
- Integration: Interfaces with ACIS to download case data real-time. Also interfaces with the Discovery Automation System (DAS) which allows uploads of law enforcement discovery.
- Timeliness: Cases may be selected and downloaded real-time from ACIS.
- Uniformity: CCIS-DA is implemented in all 100 counties. North Carolina has a uniform court system with standardized, uniform forms, and offense charging language.
- Accessibility: CCIS-DA is available 24 hours a day except for scheduled semi-monthly maintenance (generally one hour on a Sunday) to District Attorney staff.

Status: 1,303 users in district attorneys' office, 398,359 active cases, 7,088,880 closed cases

Sponsoring Agency 1: NCAOC (\$3,333,348.24)

Total budget: \$3,333,348.24

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

8.) ecitation

Project Leader(s): Jennifer Barbour

Performance Period: January 2014 – December 2014

Description: eCitation®, using existing wireless connections, allows the law enforcement officer to create and issue citations from the patrol car. All generated citations are transmitted to the Automated Criminal Infraction System (ACIS) where the citation and case information can be accessed immediately. The system is available statewide and is in use by over 19,346 law enforcement officers from 426 agencies and all 100 counties Clerk of Superior Court Offices.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures:

- Accuracy: All data is rigorously validated and data integrity is ensured.
- Completeness: Any traffic citation with non-arrestable offenses may be generated through eCitation®. Over 88.5% of all citations are generated through eCitation®.
- Integration: eCitation® directly interfaces with ACIS via the transmittal of the citation from the officer's client component. ACIS in turn transmits the citation information to both DMV and the NC State Highway Patrol. The eCitation® officer component also directly interfaces with DMV's license and registration systems to pre-fill demographic and vehicle data on the citation.
- Timeliness: The citation may be automatically transmitted to ACIS at time of issuance or the officer may choose to override this function and transmit later for reasons such as being out of wireless coverage range. Interfaces to DMV and SHP are overnight.
- Uniformity: eCitation® is operational in all 100 counties. North Carolina has a unified court system and all forms including the citation form are uniform throughout the state
- Accessibility: The system is available, free of charge, to any law enforcement officer with a computer and a printer in the patrol car.
- Status: Purchased 708 printers with grant monies. Distributed 708 printers to law enforcement as of December 31, 2014.

Currently undertaking major endeavor to upgrade eCitation using a new technical platform

Sponsoring Agency 1: GHSP (\$500,000)

Sponsoring Agency 2: Governor's Crime Commission (printers) (\$220,875)

Sponsoring Agency 3: GHSP grants to purchase printers for law enforcement (\$1,580,191)

Total budget: \$2,001,616

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

9.) Linkage Project

Agency(ies): EMSPIC

Project Leader(s): Derek Traugher

Performance Period: Ongoing

Description: To maintain ongoing linkages with the following data sources: EMS, Trauma, Crash, Emergency Department, Hospital Discharge, Stroke and RACE. Maintain and continue creation of an online reporting system that includes reports of the linked data. Currently, these are developed on an as-needed basis. Create security levels for various stakeholders, including the TRCC members.

NOTE #1: EMSPIC does not maintain current linkages with RACE at this time.

NOTE #2: We also download and link against the AOC database every night to crosscheck EMS personnel (with existing certifications or seeking new certifications) against known violations.

NOTE #3: We do not have current crash data or Hospital Discharge data. Once received and loaded we will update the status for their associated linkages.

Performance Areas: Accuracy, Completeness, Timeliness

Performance Measures:

- Maintain Linkages when available for EMS to: 1) Trauma Registry, 2) Crash, 3) 24-hour Emergency Department, 4) Stroke Registry, 5) EMSToEMS, 6) AOC, 7) Hospital Discharge.
- Maintain ability to provide linkages as requested and approved by Offices of EMS and associated linkage data providers.
- For each category above, attempt to achieve a linkage percentage $\geq 40\%$ for linkable records, and $\geq 10\%$ for 24ED visits. Linkable records are those having all fields completed facilitating a linkage attempt for that record.

Status: EMS maintains linkages to Trauma (on demand), Crash (yearly), 24-hour ED (daily), Stroke Registry (daily), Hospital Discharge (quarterly), EMSToEMS (daily) and AOC (daily). All linkages mentioned are current except for 2012 Crash and Hospital Discharge. These datasets were missed when the project transitioned from Chad Lohmeier to Derek Traugher.

EMSPIC serves a significant number of research requests that include linkages, from independent researchers (both non-profit and for profit), internal EMS state offices and agencies, educational institutions, and grant funders. We have not tracked historical counts in these categories. As of April 29, 2015, all linkage related contract requests/agreements have been fulfilled except one crash related request for NCDETECT.

- EMS-to-Trauma Registry (56% linkage with EMS on average): Note that the NC Trauma Registry began transitioning to a new software version of the Trauma Registry developed by Digital Innovation, Inc. in 2013. We are building a completely new linkage process to run against both version 4 and version 5 of the Trauma Registry together. At present we have a 1) 51.5% linkage between EMS and version 4 Trauma Registry records, 1) 61.4% linkage between EMS and version 5 Trauma Registry records.
- EMS-to-Crash (46.3% linkage with EMS in 2011): year 2012-2015 crash data has not been obtained by the EMSPIC so we can't provide linkage results at this time. For 2011 we obtained a 46.3% linkage with EMS records. We are seeking a source to obtain the historical crash data so we can update our linkages.
- EMS-to-24HourED (14.4% linkage with EMS): We typically expect about 10% of all ED visits to arrive by EMS transport, so we expect the linkage percentages to also be

around 10% in general (due to very high number of walk-ins). In 2014 we obtained a 14.4% linkage with EMS and so far in 2015 we have a 14% linkage.

- EMS-to-Stroke Registry (53.1% linkage with EMS in 2014): The EMSPIC wrote and maintains the Stroke Registry application for NC. 83.1% linkage with EMS so far in 2015.
- EMS-to-EMS: We have not determined an accurate way to measure the success of EMS-to-EMS linkages at this time. We will update this once we determine a metric.
- AOC-to-EMS: We do not have an accurate way to measure the success of linkages between AOC and EMS. This is because not all EMS folks will be found in the AOC database.
- Hospital Discharge: We just obtained historical Hospital Discharge data so we can't report any status on this item in 2014 until it is loaded and linked. We hope to have the linkage results in a few months.

Sponsoring Agency 1:

Total budget:

For more information, contact: Derek Traughber, 919-843-0201, dtraughber@emspic.org

10.) Motor Vehicle Crash Injuries in Wake County, NC: Exploring available data sources and potential data linkages

Number(s): TR-15-14-02

Agency(ies): Carolina Center for Health Informatics and the UNC Injury Prevention Research Center

Project Leader(s): Anna Waller

Performance Period: 10/01/14 – 09/30/15

Description: This project will describe motor vehicle traffic crash (MVTC) injury in Wake County during calendar year 2013 using several different data sources. We will obtain crash data from crash reports, emergency departments (EDs), and emergency medical services (EMS). Additionally, we will receive previously linked EMS and crash report data from EMSPIC and the NC DOT. MVTC injury will be identified and described within each data source separately. Based upon initial exploratory analyses of each data source separately, we will examine whether linkage is possible between the data sources. Finally, recommendations will be made for future work to link NC MVTC injury data sources, based on the results of this project. The proposed demonstration project has a two year performance period.

The study objects are listed below.

1. Identify and obtain sources of MVTC data for Wake County.
2. Conduct descriptive analyses for each data source, resulting in a report that describes the picture of MVTC injury in Wake County from each data source.
3. If deemed possible from results of the second objective, attempt data linkage between data sets and describe the outcomes.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures: We are required to submit quarterly progress reports to GHSP updating them on our progress of completing our quarterly goals. If we are unable to meet one

of the goals for that quarter, we are required to list the reasoning for why we have failed to complete one of the pre-assigned goals.

Status: As of April 22, 2015, we have received ED data through NC DETECT and DMV crash report data through Eric Rodgman. We have finished running descriptive statistics on these two data sources and have developed preliminary recommendations based on these data. We are still waiting to receive Wake EMS data. We have a small sample dataset of EMS data, but are unable to finish analyses until we have the full 2013 Wake MVTC data. Finally, we are still waiting to receive the previously linked Wake EMS and crash report data.

Below are our preliminary recommendations after analyzing the ED data and the crash report data.

- Most individuals involved in a crash do not sustain an injury according to crash report data (85%). Therefore, use of ED data alone may be missing a large proportion of the MVTC data.
- Over half of the patients presenting to the ED following a crash were walk-ins to the ED. Therefore, they either drove themselves to the hospital or were taken by someone else other than EMS.
- Forty-five percent of persons presenting to the ED following a crash had “self-pay” as the expected source of payment for the visit. 33% of patients used some form of insurance to cover the costs, and 12% were covered by Medicaid.
- Crash report data are an excellent source of data for obtaining information regarding the crash event. However, crash report data do not provide details about the specific MVTC injuries. ED data are a better source when reporting injury outcomes of a crash.
- There is a lot of variation in the way EMS data are reported on crash reports. It is suggested that the variable for EMS reporting be modified to increase uniformity in reporting of this information. For instance, we suggest adding a binary EMS response variable before the current free text variables. This question could be a binary variable: Was EMS called to the scene? Yes/No. This would force basic EMS response data to be captured for every crash report and will help in potentially linking crash report data to EMS data.
- There appears to be variation in the manner in which certain variables are reported on the crash reports. For example, we noted inconsistencies in the coding of air bag deployment on crash reports. For example, school buses were coded using the no airbag deployment option and the no airbag deployed option. It is our recommendation that the current crash report coding manual be modified to verify coding rules are uniform for all individuals.
- When identifying MVC injury in ED data, it is important to use text searches in addition to External Cause of Injury codes (E-codes). If we had limited the search to just E-codes alone, we would have missed 13% of the ED visits due to MVC.
- E-codes are not useful for identifying specific information regarding details surrounding the crash such as whether the crash was a single or multivehicle crash and seating position for the crash. Although there is specificity in the E-codes for some crash information (e.g. single versus multiple vehicle crashes), the actual use of the codes in

practice does not indicate they are effectively reflecting crash level information. For example, many ED visits have multiple, contradictory MVC related E-codes assigned to them.

Sponsoring Agency 1: NC GHSP (\$135,430)

Total budget: \$135,430

For more information, contact: Frank Hackney, 919-733-3083, fhackney@ncdot.gov

11.) NC Crash Data Web Site

Number(s): K9-15-15-03

Agency(ies): UNC HSRC

Project Leader(s): Robert Foss

Performance Period: 10/01/15 – 09/30/15

Description: The website will be enhanced with upgrades and continuing maintenance. We will add 2013 crash data, beginning in the spring of 2014. This will be completed in the late summer of 2014. As in past projects, the upgrades and data additions will be beta tested and any problems corrected.

Each data year will continue to appear as both a subset option and as a variable in a selection list. Additional subset options can be incorporated, if needed by users, while maintaining the simple table queries that are currently available. Troubleshooting and maintenance will also be carried out over the course of the year, including conversion of the data and programs to the latest version of SAS. As use increases, questions will increase and be handled by staff. The increased use may also identify problems with certain data or variables and may result in recommendations for how to improve the output, as has been the case in past years. Problems will be corrected and enhancements made, if possible, or noted for future activity. We continue to streamline the operation of the system to accommodate the ever-increasing volume, taking advantage of any new system and programming options that become available as new software versions are released. The function and performance of the system will be monitored for any forward-compatibility issues created by new browser releases.

Performance Areas: Accessibility

Performance Measures: These objectives will be accomplished through the following project tasks:

- Task 1: Upgrade the website by adding data from 2013. NC crash data for 2013 will be obtained. The data will be configured to fit the web site specifications. This includes matching formats for 2001-2012 with the 2013 year and correcting extraneous values. The website will also be re-programmed to accept the 2013 “year” as a variable and a determination made as to how best to output data by year. Instructions for using the “year” variable will be modified and incorporated.
- Task 2: Maintain the website and correct identified problems. Periodic checks will be made to ensure that the website is functioning correctly. This includes troubleshooting any problems with the application server and the data server. Some users may also have a problem with their web browser that may call for a remedy. In addition, users of the web site may periodically identify problems with the data. These will be discussed among staff and, if necessary, with DMV and NCDOT Traffic Engineering Branch. Needed

corrections will be made. Some users may also have problems interpreting the data; staff will help with the interpretation.

- Task 3: Conduct a beta test of the system and make needed revisions. There will continue to be a wide variety of users of this system. A feedback mechanism has been created to solicit comments on problems and suggestions for possible improvements to the site. Suggested improvements that are within the project scope and budget will be made.
- All of the above project activity will be documented in Quarterly Progress Reports and the Final Accomplishment Report.

Status: In progress and will continue.

Sponsoring Agency 1: NC GHSP (\$59,656)

Total budget: \$59,656

For more information, contact: Frank Hackney, 919-733-3083, fhackney@ncdot.gov

12.) North Carolina Warrant Repository/NCAWARE

Number(s): n/a

Agency(ies): NCAOC

Project Leader(s): Wendy Johnson

Performance Period: 01/01/2014 – 12/31/2014

Description: NCAWARE is a custom developed, web-based system that maintains and tracks unserved criminal processes such as warrants for arrest, orders for arrest, and criminal summons. With the implementation of NCAWARE and accompanying legislation which provided for a statewide electronic warrant repository, officers 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 and thus decreasing processing time. NCAWARE currently has over 6.5 million processes and over 42,600 court and law enforcement users.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures:

- Accuracy: All data, except some free text offenses (offenses used less often where no standardized code and language has been established) and officer notes is rigorously validated and data integrity is ensured. It is critical that data be accurate to prevent re-arrest of individuals and to ensure service of processes.
- Completeness: As of February 2014, NCAWARE was operational in all 100 counties. The Statewide Warrant Search feature pulls all processes in NCAWARE and any non-converted cases from ACIS to give a comprehensive view of all outstanding processes for an individual. All data is housed in a relational DB2 criminal enterprise database.
- Integration:
 - Division of Motor Vehicles (DMV) – pre-fill of both driver and vehicle data.
 - ACIS – immediate transmittal through messaging of all case/process activity.
- Timeliness: All data is captured at the point of entry and is transferred to ACIS real-time. All data from Mecklenburg County CJIS is transmitted immediately to NCAWARE and then to ACIS real-time.

- **Uniformity:** Currently all 100 counties track all processes in NCAWARE. North Carolina has a uniform court system with standardized, uniform forms. The same data is captured the same way in NCAWARE in all counties.
- **Accessibility:** NCAWARE is available 24 hours a day except for scheduled semi-monthly maintenance (generally one hour on a Sunday) to court personnel, law enforcement, all criminal justice agencies, the DOT/DMV, and federal criminal justice agencies such as ICE.

Status: NCAWARE implemented Buncombe County in February 2014. 1,956,070 processes were entered in NCAWARE in 2014.

Sponsoring Agency 1: NCAOC (\$13,000,000)

Total budget: \$13,000,000

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

13.) PayNCticket

Number(s): n/a

Agency(ies): NCAOC

Project Leader(s): Wanda Thomas

Performance Period: 1/01/2014 – 12/31/2014

Description: payNCticket allows the public to go online and pay their waivable traffic citations using either a credit or debit card. The system automatically disposes of the case in the Automated Criminal Infraction System (ACIS) once the payment is made. The system provides custom front end pages which allow the cited person to search and select his/her citation for payment. The vendor, NIC, provides card verification and processing services.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures:

- **Accuracy:** All data is rigorously validated and data integrity is ensured.
- **Completeness:** Any citation with waivable only offenses may be paid and disposed using payNCticket.
- **Integration:** payNCticket directly interfaces with ACIS and the Financial Management System (FMS) to immediately mark the case paid and disposed. In turn ACIS will transmit the data to both DMV and the NC State Highway Patrol (SHP) systems.
- **Timeliness:** Case disposition in ACIS is real-time. Interfaces with DMV and SHP are overnight.
- **Uniformity:** payNCticket is operational in all 100 counties.
- **Accessibility:** payNCticket is available 24 hours a day except for scheduled semi-monthly maintenance (generally one hour on a Sunday) to the public.

Status/Results: 374 citation payments made per day, \$86,697 collected per day, 490,204 total citation payments, \$107,666,939 total collected, 22,468 hours saved by clerks of court, nearly 28.4 percent of waived offenses paid using payNCticket

Sponsoring Agency 1: NCAOC (\$185,459.00)

Total budget: \$185,459.00

For more information, contact: Janet Greene, 919-890-2041, Janet.greene@nccourts.org

14.) Quick Response System**Number(s):** K9-15-15-02**Agency(ies):** HSRC**Project Leader(s):** Eric Rodgman**Performance Period:** 10/01/2014 – 09/30/2015

Description: NC GHSP, North Carolina law enforcement agents and citizens of the state continue to request the most up-to-date and accurate data and information on a wide variety of motor vehicle safety issues using the NC DMV 349 Crash Report data, the NC AOC DWI Conviction Summary Report data, the NC driver license record data and the NC vehicle registration data. The information varies from summary counts of young drivers (ages 15-19) in crashes in a selected county to the number of DWI convictions in a county for all drivers in a particular year.

For years HSRC has provided personnel resources and time to help NC GHSP be responsive to the citizens of the state. There are typically about 100 calls / contacts per year about crashes, various vehicle types, and the ethnicity and injury to persons involved in crashes. These usually involve calls where the information and/or summary counts are defined for the time period (e.g., 1-3 years), the location (e.g., the entire state, a specific county or city), and the summary counts of interest (e.g., counts of all reportable crashes, the number of pedestrians, the number of underage drinking aged drivers ages 15-20 driving passenger vehicles). Once a request has been specified, HSRC provides the data analyst/data management skills to write the query and then run the query on the NC DOT Oracle crash data at HSRC to summarize the data as requested. The data is checked and sent out in the form requested by the user (mostly as an email attachment, but sometimes as a fax document, or, in rare instances, printed and sent via mail).

Performance Areas: Accessibility

Performance Measures: Continuing to provide quick response resources. This includes information stored at HSRC in the form of available data (selected and formatted on request usually by county or city), published material on specific topics and safety information, and up-to-date information on important personal contacts, computer web sites, and agencies which can usually help. As in the last several years, HSRC plans to dedicate the necessary database analyst and traffic safety consulting support to address all the needs of our North Carolina citizens.

Status: In progress and will continue.**Sponsoring Agency 1:** NC GHSP (\$44,640)**Total budget:** \$44,640**For more information, contact:** Frank Hackney, 919-733-3083, fhackney@ncdot.gov**15.) SADIP 2011****Number(s):** FM-SAD-003-11-01-00**Agency(ies):** NCDMV-TR**Project Leader(s):** Julian H. Council, Michael Thomas, Joe Kirshner**Performance Period:** Sep 2011-Sep 2013 – extended until March 2015

Description: SaDIP 2011 – Electronic Crash Reporting System Rollout. This grant was initially for a 2-year time frame to expire Sep 2013. An extension was requested due to the unforeseen

resignation of two technical staff members and resource replacement delays as a result of a statewide hiring freeze.

Performance Areas: Accuracy, Completeness, Integration, Timeliness, Uniformity, Accessibility

Performance Measures: Safety Net performance measures of timeliness, completeness and accuracy measure the receipt of the submitted crash reports and improve the quality of the crash data repository. Crash Data is readily available within a 48 hour timeframe of the crash, for input into analytical systems making highway safety improvements at the state and federal level a marked accessibility and uniformity improvement measure.

Status: These funds were being used for training of staff and train the trainer users of TraCS program for implementation of TraCS 10. TraCS 10 was implemented December, 2014.

We have 14 successfully completed deployments in all through ECRS. Traffic Records continues to work with Law Enforcement Agencies who do not currently submit crash reports electronically. A computer based training module was also completed by March 2015. This Module will become available in the near future to all Law Enforcement Agencies submitting their crash reports through TraCS.

Sponsoring Agency 1: NCDMV- TR (\$500,000)

Sponsoring Agency 2: NCSHP (\$372,400)

Total Budget \$872,400

For more information, contact: Julian Council, 919-861-3061, jhcouncil@ncdot.gov

16.) Weldon Electronics Enhancement

Number(s): TR-15-14-03

Agency(ies): Weldon PD

Project Leader(s): Chief Mark Macon

Performance Period: 10/01/2014 – 09/30/2015

Description: Weldon Police Department would like to continue to keep up with the technologies of today, but did not have in-car computer set-ups in any of their vehicles. Citations were still hand-written and crash reports brought back to the department to process. They requested assistance to purchase 6 in-car computer systems with the E-Citation and TRaCs programs. This will reduce the amount of time that officers are spending in writing citation and completing crash reports and get them back out on the road. It will also increase the accuracy in which the reports are done. They frequently conduct checking stations and this equipment would greatly increase their efficiency and accuracy.

Performance Areas: Accuracy

Performance Measures: No computers prior to this so no data to compare to for eCitations and electronic crash reporting.

Status: In progress and will continue.

Sponsoring Agency 1: NC GHSP (\$18,000)

Sponsoring Agency 2: Weldon PD (\$18,000)

Total budget: \$36,000

For more information, contact: Frank Hackney, 919-733-3083, fhackney@ncdot.gov

Traffic Records Coordinating Committee Certification

The following NC TRCC members have electronically certified this document:

Name	Agency	Email Address
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Derek Traughber	EMSPIC	dtraughber@emspic.org



STATE OF NORTH CAROLINA

TRAFFIC RECORDS ASSESSMENT

January 08 – 13, 2012

National Highway Traffic
Safety Administration
Technical Assessment Team

Sergeant Christopher D. Corea
Michael J. McDonald
Tracy Joyce Smith, MBA
Langston A. Spell
John J. Zogby

EXECUTIVE SUMMARY

The National Highway Traffic Safety Administration (NHTSA), in response to a request by the Governor's Highway Safety Program of North Carolina, assembled a team to conduct a traffic records assessment. The Governor's Highway Safety Program carried out the logistical and administrative steps necessary for an onsite assessment. A team of professionals with backgrounds and expertise in the various traffic records data systems (crash, driver, vehicle, roadway, citation and adjudication, and EMS/injury surveillance) conducted the assessment January 8th through 13th, 2012.

The scope of this assessment included all of the components of a traffic records system. The purpose was to determine whether the traffic records system in North Carolina is capable of supporting management's needs to identify the State's highway safety problems, to manage the counter-measures applied in attempts to reduce or eliminate those problems, and to evaluate those efforts for their effectiveness.

Background

North Carolina underwent a traffic records assessment in 2007, during which deficiencies were identified that were the basis for recommendations enumerated in that report. During this assessment, the State has demonstrated notable progress in its traffic records system that has resulted from implementation of some of the recommendations for improvement and the State's own initiative in identifying and seeking solutions.

At the time of the 2007 assessment, the State reported that most of the nearly 300,000 crash reports it received annually were paper reports, though a small percentage of reports were being received electronically. Five years later, the timeliness of the data has improved substantially as the percentage of electronic crash submissions has grown. Data entry of paper reports is timely. Fifty-five percent of crash reports are now received electronically by the Division of Motor Vehicles. Another 30 percent of the total volume of reports is completed using field data collection software, but they are not yet transmitted to the Crash Records Section at DMV in the electronic format. They are, instead, data entered by DMV personnel. Once the interface is complete for these remaining electronic reports, 85 percent of crashes will be automatically uploaded into the State crash file.

Driver licensing has taken a number of steps toward compliance with the Real ID Act. Using facial recognition and document authentication technology, they are working to ensure that each applicant for a driver license or state ID card is well-vetted and properly enrolled into the driver license database. Their future plans involve re-configuration of the office process flow to include taking the applicant's photograph at the beginning of the process, in order to aid in fraud investigations should an applicant leave after having given counterfeit identity documents or fraudulent information, but before completion of the application and issuance process.

Though electronic citations have been used in North Carolina for over a decade, the Highway Patrol estimates that 80 percent of its citations are now electronically generated. Because of the drop-down menus for roadway names, automated fine calculations, and the ability to cut and paste information on the mobile data computers from the NCDMV databases into the

citation form, accuracy of the citation data has been improved. Due to the fact that data re-entry of handwritten citations is not required, introduction of errors into the system is lessened as well.

Injury Surveillance data is strengthened by the fact that North Carolina has enacted legislation to mandate emergency medical system data and trauma data transmission to the State.

At this time, however, some issues and deficiencies remain and continue to impact the ability of the present traffic records system to optimally support North Carolina's management of its highway safety programs. These are discussed in the summary below and the full report that follows.

Crash Records

The NCDOT DMV is the official custodian of the State's crash file. The current crash file was implemented in 1999 and there has not been a major re-write of the database since its inception. The crash report is documented in North Carolina in two formats. The paper form DMV-349 is still in use and accounts for approximately 45 percent of the annual volume of crash reports submitted. Electronic crash reports account for the balance and are generated from two sources; an e-crash field reporting module from third-party vendors and North Carolina TraCS which was developed by the NCDOT Information Technology (IT) staff and is provided free of charge to local, tribal, and state law enforcement. Both electronic versions follow the approved NCDOT format and contain over 300 data fields and perform validation edit routines of State mandated business rules for accuracy and completeness.

Because electronic reports generated by third-party vendor systems must first be printed and submitted in hard copy to the DMV, NCDOT IT staff recently completed a pilot with three local agencies who use the same Records Management System (RMS) vendor to enable their system to submit completed and successfully validated e-crash reports electronically using XML exchange. This pilot was successful and the NCDOT is poised to address the other vendors who supply RMS software. NCDOT estimated that 30 percent of the total crash volume annually is submitted by printed reports from RMS vendors' systems that capture crash reports electronically. Addressing these additional vendor systems as quickly as possible will improve the timeliness of the crash database and eliminate the redundant data entry currently imposed on the data capture staff.

North Carolina has an impressive business process that results in a high degree of confidence and accuracy in its crash file. The system is governed by an excellent Quality Control process. Broader data quality metrics should be developed to provide a more comprehensive view of the entire data collection process.

Roadway Component Records

The State has made significant improvements in the highway safety information environment since the last traffic records assessment. Two issues noted in that report were location referencing and status of the Geographic Information System. Because the electronic collection

of traffic crashes has increased appreciably the ability to locate the crash occurrence on the public road system has also increased appreciably. This was due to a software routine built into the automated system that aids in the location process. NCDOT has also made great progress in the development and implementation of the Arc Geographic Information System (GIS) used to house and display roadway characteristics data on the State road system. The information systems used in roadway safety programming are fundamentally sound and are meeting the needs of the roadway safety community.

Driver and Vehicle Records

The NCDMV was not able to implement a total rewrite of the State Automated Driver License System (SADLS) and the State Title and Registration System (STARS) that was anticipated for 2008. Nonetheless, the over-the-counter driver license process was changed to central issuance with improved control over the validation of personal identification of applicants. Use of the Systematic Alien Verification for Entitlements (SAVE) file was initiated in 2007. Also, registration of vehicles and processing of title applications has been extended to qualified auto dealerships.

The NCDMV is poised to complete the rewrite of their driver and vehicle systems and has the changes defined for tightening the control in order to counter attempts to obtain a driver license under fraudulent conditions. No recommendations were needed to enable North Carolina to satisfy the requirements of the traffic records system *Advisory*.

Statewide Injury Surveillance System (SWISS) Records

North Carolina's injury surveillance data are captured in two disparate systems. One system resides within the Office of Emergency Medical Services. This system is reported to include all data components recommended by the *Advisory*.

A second injury surveillance system resides within the Injury Epidemiology Unit of the Division of Public Health, Injury and Violence Prevention Branch. This injury surveillance system is comprised of emergency department, hospital discharge, and vital statistics (death) data.

EMS agencies transmit data to the State either via commercial software (90 percent) or using an on-line state-supplied application at no cost (10 percent). EMS data are linked to emergency department data on a daily basis. Aggregate information is available about the number of agencies and personnel in the State and agency level reports address response time, call volume and disposition.

Hospital discharge and emergency department data processing is contracted to an outside vendor that compiles reports and responds to requests for data. Ninety-seven percent of emergency departments in the State post to the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) with the remaining three percent due to begin reporting within the year. De-identified discharge sets are shared with the State Center for Health Statistics.

Twelve designated trauma centers and two non-designated hospitals submit data to the National Trauma Data Bank. Trauma records are linked to EMS reports.

Mortality data is reported to the local registrar within five days of death. The registrar prepares death certificates and forwards them to Vital Records and on to the National Center for Health Statistics. This process would benefit from the development of an electronic registration system in terms of timeliness of the records.

The existence and use of two different injury surveillance systems introduces the opportunity for conflicting reports and statistics. Efforts should be made to develop a single comprehensive injury surveillance system for the State.

Citation and Adjudication Records

North Carolina led the nation in its efforts to develop the electronic citation, which it began in 1999 with a pilot program with the Highway Patrol. That program has grown and is embraced by law enforcement agencies throughout the State to the point that 82.3 percent of the traffic citations issued annually are completed and transmitted electronically. The Administrative Office of the Courts has taken an active role in this process, working to purchase printers for law enforcement officers, to enable agencies to implement electronic citations.

Because of the volume of electronic citations and the fact that paper citations are added to the electronic database through data entry by court staff, there is virtually a complete database of enforcement actions within the State. One missing element that should be considered for inclusion into the dataset is warning citations. This information is vital to law enforcement in terms of learning about subsequent behavior of a warned versus a cited violator. Such data should be made a part of the citation database.

Although this rich enforcement data source exists, it is unclear whether it is being used to its fullest capacity. The Traffic Records Coordinating Committee should market the available traffic safety data within the state, such as citation and adjudication data. Once the locations on citations and crash reports are harmonized, it will be possible to review the effect of various enforcement countermeasures on crash incidence and severity in North Carolina.

Traffic Records Coordinating Committee (TRCC)

North Carolina has a long-standing Traffic Records Coordinating Committee which has been meeting regularly for the last decade. The State's size has tended to limit attendance for some local level members due to the time commitment required to travel to meetings.

The Executive Committee for Highway Safety acts as the TRCCs executive level committee members. The heads of the State Departments that are responsible for the record systems that comprise the North Carolina traffic records system comprise the executive level. The Injury Surveillance System has not had consistent recent involvement and the Director of the Administrative Office of the Courts is not a member. Efforts should be made to secure full involvement of the NCAOC and Public Health executives.

Strategic Planning

The 2007 strategic plan was based on the recommendations of the 2007 Traffic Records Assessment. The TRCC helped in developing the original strategic plan, and is instrumental in its continuation and revisions. They were supported in this effort by the North Carolina Executive Committee for Highway Safety (NC ECHS) which is comprised of executive members of the major State safety stakeholder agencies and operates as the de-facto TRCC executive committee. The TRCC members provide project input to the TRCC and these projects are incorporated into the Plan. Stakeholder agencies are actively involved with the implementation of the Plan's strategies and projects.

A workshop should be scheduled for members of the TRCC to develop a new strategic plan under the guidance of a facilitator. The facilitator would lead the strategic planning process, especially encouraging TRCC members to define problems and develop solutions. The TRCC should secure the commitment of personnel and resources to address multiyear data systems planning across different state agencies. The TRCC-driven planning process should result in a statewide data improvement program that assures coordination of efforts and sharing of data between the various safety data systems. The stated intent of the TRCC to contract the services of the Highway Safety Research Center should satisfy this purpose.

The following are the major recommendations for improvements to the State's traffic records system. The references indicate the sections of the report from which the recommendations are drawn.

MAJOR RECOMMENDATIONS

Crash Records System

- Expand the capability as soon as possible to allow the remaining third-party vendors to electronically submit e-crash reports generated from their software. **(Section 2-A)**
- Study the case for accepting non-reportable crash data into the crash file and work with the Traffic Records Coordinating Committee to develop a short form crash report to address crashes that can easily be handled without a full DMV-349 report. If developed, carefully implement and market the short form crash report to ensure there is no intentional degradation in the reportable crash experience. **(Section 2-A)**
- Provide for a specific structured field to document citation numbers on all versions of the crash report and include this field in both the data entry process and the Oracle database crash file. **(Section 2-A)**
- Develop and implement a broader and more specific data quality metric report that can leverage the validation error logs and share them regularly with the law enforcement

community. Such an effort will more clearly indicate the level of training required to use and understand the crash report. **(Section 2-A)**

Citation and Adjudication Records

- Develop a centralized database for warning tickets that is available to law enforcement officers and others in the traffic records community. **(Section 2-E)**
- Create electronic citation audit procedures to ensure citations are tracked from time of issuance to disposition of citations. **(Section 2-E)**
- Develop an effective way of sharing data across multiple systems within the data collection process, such as crash and citation, for consistency and accuracy of data. **(Section 2-E)**

Traffic Records Coordinating Committee (TRCC)

- Add representation to the Traffic Records Coordinating Committee including local law enforcement and local engineers. **(Section 1-A)**
- Add representation to the Executive Committee for Highway Safety from the Division of Public Health to represent EMS, Trauma and Injury and Violence Prevention sections. **(Section 1-A)**
- Develop meaningful data quality metrics and measures following the guidelines in NHTSA's *Model Performance Measures for State Traffic Records Systems*. **(Section 1-A)**

Statewide Injury Surveillance System (SWISS)

- Develop one comprehensive, inclusive of all components, injury surveillance system. **(Section 2-F)**
 - Employ the services of the North Carolina Institute of Medicine whose mission, according to their website, is "To seek constructive solutions to statewide problems that impede the improvement of health and efficient and effective delivery of healthcare for all North Carolina citizens."
- Or*
 - Form a subcommittee of the Traffic Records Coordinating Committee, including representation from all components of the injury surveillance system. The subcommittee would be charged with:
 - Developing policies and procedures to govern the integrated data.

- Identifying obstacles to data linkage for each component and solutions to overcome said obstacles.
- Identifying gaps in the components' data and solutions to close those gaps.
- Determining the best agency or entity to perform the linkage, house, and maintain the data. The agency or entity would be responsible for analyzing and/or releasing the linked data only. Data owners and/or custodians would remain responsible for any requests for their respective component. The best type of agency or entity would be one that is HIPAA compliant whether as a covered entity or business associate.
- Other tasks as necessary to realize an injury surveillance system.

Roadway Information

- Perform a benefit/cost analysis of collecting the subset of fundamental data elements of MIRE for use in enhanced safety analyses. **(Section 2-B)**

Strategic Planning

- Charge the TRCC with the development of a new Traffic Safety Information Systems Strategic Plan addressing the recommendations in this traffic records assessment. Identify deficiencies apart from those noted in the traffic records assessment by canvassing each TRCC member and especially each traffic records system component custodian for their input. **(Section 1-B)**
- Assure that all TRCC members participate in the development of the Traffic Safety Information Systems Strategic Plan and the selection and priority setting of the projects in the Plan. It is advisable to acquire the skills of a facilitator to conduct workshops for the Plan development. **(Section 1-B)**

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.

Plans are to update and modify the North Carolina crash report form in 2013. When this is initiated, effort will be made to increase compliance on the crash report form and in the data dictionaries. The goal would be to adopt the MMUCC elements and attribute recommendations as much as possible and document the reasoning for any deviations from MMUCC. The current 96% compliance on the crash report form demonstrates this intent.

A summary of N.C.'s MMUCC compliance can be found in the table below.

N.C.'s MMUCC Compliance can be summarized as follows:

The State of North Carolina certifies that it will undertake projects as part of the Traffic Safety Information System Improvement Program which will endeavor to collect the missing data elements and attributes as soon as practical. The North Carolina TRCC will review the 2012 MMUCC Guideline (4th Edition) when it is released.

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.

N.C. is one of the initial five states to begin submitting data into the National EMS Database. North Carolina collects all of the NEMSIS "national elements" with the exception of the 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 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 N.C.'s NEMSIS compliance can be found in the table below.

N.C.'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 of the national data elements with the exception of 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 N.C.
- 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 (MIRE)

The North Carolina Department of Transportation has reviewed the MIRE, 1st Edition, data elements as well as the Fundamental Data Elements (a subset of MIRE). Both of these documents were produced by the FHWA. MIRE includes 202 unique data elements and the FDE includes 38 data elements that are included in a number of safety analysis tools and seen as critical for safety analysis.

In 2011, North Carolina began integrating their roadway inventory data into a geographic information system (GIS). The result of this migration was the ability to assess the quality of the roadway inventory data throughout the almost 80,000 miles of roads in the network. The short-term strategy for the department is to enhance the quality of the data that currently exist and fill gaps in the inventory by completing missing information for elements that already exist. Future efforts will focus on a more detailed review of MIRE and FDE and whether there is the need and the resources available to add any of the elements or attributes in these guidance documents.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

2015 North Carolina Traffic Records Coordinating Committee Charter

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.

Goal

The NC TRCC will provide direction and facilitate coordination among the safety data stewards and stakeholders to improve the transportation safety information systems in North Carolina. The functions (directly from the MAP-21 bill) of the NC Traffic Records Coordinating Committee shall:

- (i) Have authority to review any of the State's highway safety data and traffic records systems and any changes to such systems before the changes are implemented;
- (ii) Consider and coordinate the views of organizations in the State that are involved in the collection, administration, and use of highway safety data and traffic records systems, and represent those views to outside organizations;
- (iii) Review and evaluate new technologies to keep the highway safety data and traffic records system current; and
- (iv) Approve annually the membership of the TRCC, the TRCC coordinator, any change to the State's multi-year Strategic Plan required under paragraph (c) of this section, and performance measures to be used to demonstrate quantitative progress in the accuracy, completeness, timeliness, uniformity, accessibility or integration of a core highway safety database.

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GOVERNOR'S HIGHWAY SAFETY PROGRAM
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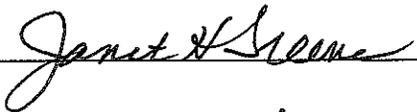
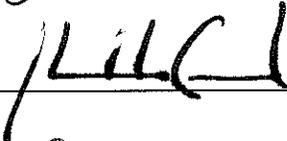
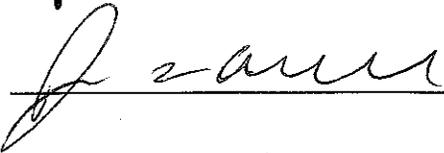
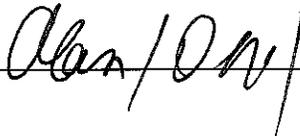
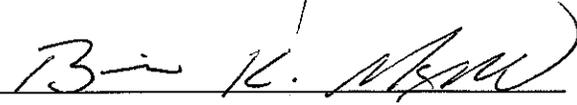
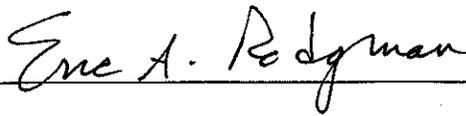
LOCATION:
215 EAST LANE STREET
RALEIGH NC

Objectives:

- Provide for coordination, cooperation, and collaboration of agency activities that could affect or improve the state traffic safety data or systems while ensuring the protection of confidential information.
- Prepare, update, and maintain NC's TRCC Strategic Plan for the implementation of traffic safety systems and data improvements.
- Recommend and provide strategies to NC's Executive Committee for Highway Safety for endorsement and action.
- Develop interagency project teams to develop implementation plans for carrying out the objectives of the strategic plan as necessary.
- Provide a forum for review and endorsement of programs, regulations, projects and methodologies to implement the improvements identified in the strategic plan.
- Review programs, regulations, projects, and methodologies for agreement with the TRCC's mission and goals.
- 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 amongst 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 whenever 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 importance in improving quality of life.

NC TRCC Member Signatures Endorsing the NC TRCC Charter as noted:

	NC AOC Janet Greene
	NC DMV TR Julian Council
	NC DOT GIS Jon Arnold
	NC EMSPIC Derek Traugber
	NC SHP ^{Eric Schaberg} John Ivansson
	NC DHHS Alan Dellapenna
	NC TRCC Co-chair Brian Mayhew
	NC TRCC Co-chair Eric Rodgman
	NC Data Coordinator Frank Hackney

Traffic Records Coordinating Committee Charter Certification