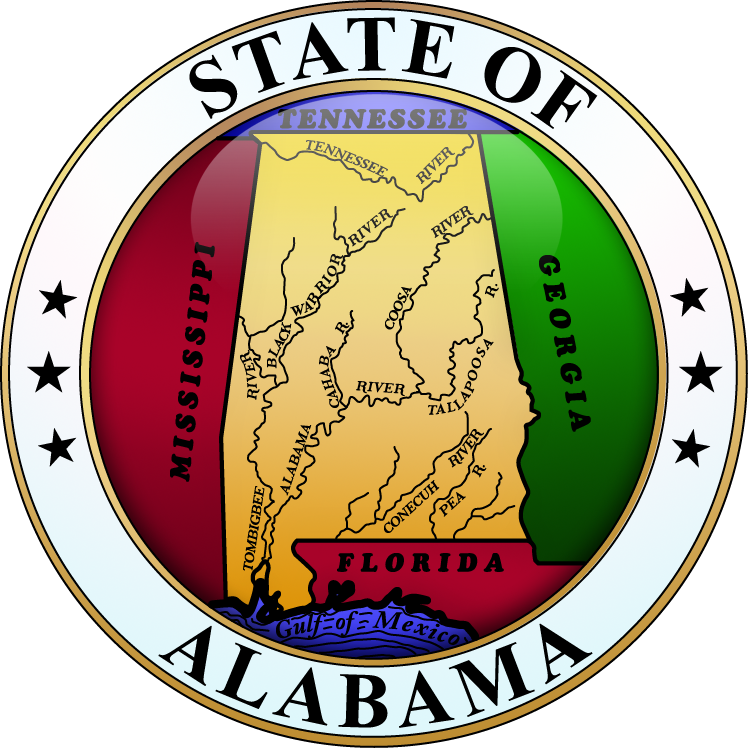
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**State of Alabama**

**Traffic Safety Information System (TSIS)**

**Strategic Plan 2014-2019**

**April 7, 2014**

## Table of Contents

Executive Summary

Background and History

TSIS Plan Vision

TSIS Stakeholders

Alabama Traffic Records Assessment

Section 1: Recommendations for Management and Planning

Section 2: Recommendations by Traffic Records System Components

Planned Projects

Overview and Organization

Project Specification

1. Enforcement and Adjudication Component

2. Crash Component

3. Driver Component

4. EMS-Medical Component

5. Roadway Data Systems Component

6. Vehicle Component

7. Integration Component

TSIS Measurable Performance Indicators

**STATE OF ALABAMA**

**TRAFFIC SAFETY INFORMATION SYSTEMS (TSIS)**

**STRATEGIC PLAN**

## Executive Summary

This document presents the Alabama Traffic Safety Information Systems (TSIS) Strategic Plan for the 2014-2019 time period, or planning horizon. It begins by providing context in terms of the overall background and history of the planning process over the past decade. Alabama’s Traffic Safety Information System (TSIS) components include all of the hardware, software and data needed to generate information that impacts either the frequency or the severity of traffic crashes. Just the definition of these various files and systems is an enormous project, and the problems involved in coordinating the inter-agency activities to support safety decision-making create serious issues in every state. The large number of agencies involved at both the state and local levels include a wide range of activities throughout the traffic safety community, including collection, editing, forwarding, data entry, processing and the distribution of generated information.

The document continues by recognizing that any effective planning process must begin with a *vision.* This vision in turn defines the goals that the implementation of this plan will attempt to accomplish over the next five years. Because the TSIS itself is quite diverse, the vision of its accomplishments over the next five years is also quite diverse. It a combination of all TSOS components with the most advanced technology that is anticipated to become available and feasible to implement over the next five years. It strives not only to advance the technology base being applied to each of the components, but to integrate these components into a cohesive system that can serve the data generation, data storage, case management, and analytics required to serve both the operational and the planning/research needs for information.

This is followed by a discussion of the roles of the various TSIS stakeholders, which include the Alabama Department of Economic and Community Affairs (ADECA); the Alabama Criminal Justice Information Center, the Alabama Administrative Office of Courts; the Alabama Department of Public Safety; the Alabama Department of Transportation; the Alabama Department of Public Health; the Alabama Department of Revenue; local law enforcement, departments of transportation, hospitals and emergency services; the National Highway Safety Administration (NHTSA); the Federal Highway Administration; and the Federal Motor Carriers Safety Administration. As members of the TSIS, these stakeholders provide input to the plan as well as engaging in discussions for its improvement and final approval.

The following gives a summary of the plan according to the six components into which they were organized:

* *Citation and Adjudication Component* includes the extension and roll out of the electronic citation, a proposed DUI defendant intake system, a method for moving digital information directly to the field officers using available cell phones, a statewide Internet-based incident reporting network, and technological advances to make the traffic citation reporting and processing system totally paperless.
* *Crash Component* includes the complete roll-out of eCrash, further integration of GIS capabilities into eCrash and CARE, the generation of an updated Crash Facts Book, and the development of the Alabama Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE) to produce a more effective interface to deliver CARE-generated information. This will also require a second version of eCrash to be developed based on the availability of automated location systems and feedback as to improvements needed to make the eCrash data entry system more effective and improve data quality.
* *Driver Component* calls for more effective driver licensing information (including pictures) to be distribution to the field through the extremely successful Law Enforcement Tactical System (LETS). This will require a more effective Driver History database that is updated automatically by eCrash and eCite.
* *EMS-Medical Component* includes continued support for the implementation of the National Emergency Medical Services Information System (NEMSIS), an ambulance stationing research project, the development of a spinal injury database, and a pilot project to reduce EMS delay time to the scene of crashes with a moving map display. This will be accomplished by the implementation of the Mobile Officers’ Virtual Environment (MOVE) in EMS vehicles and the processing of trauma center and EMS run time data through CARE and ADVANCE.
* The *Roadway Component* involves a wide diversity of projects in support of the State’s IHSDM/HSM/SA initiatives. This will include the integration of roadway features into CARE and the integration of Crash Modification Factors (CMFs) into the CORRECT system using the facilities of the CMF Clearinghouse. To effectively locate crashes on the roadway, it is essential that ALDOT complete their various projects along these lines so that they can be integrated into eCrash and used by CARE to fully utilize its GIS displays capabilities.
* *Vehicle Component* plans include the development and roll-out of an electronically readable vehicle registration card and a statewide distribution network that will make vehicle information immediately available to all consumers of these data in the state, including the LETS system.
* *Integration and Information Distribution Component,* which was added to the other functionally oriented categories above, considers those projects that transcend and have the goal of integrating and/or producing/distributing information from several databases. A major effort is proposed to populate the current Safe Home Alabama web portal so that it will integrate all of the information generated by all agencies and present it in one unified source to the traffic safety community. An example of this is the proposed new Safety Portal that will be a hub for all traffic safety and related data analytics. General TSIS management activities are also included in this component.

The project specification section that follows gives a high level view of the planned projects in each of these areas. A final section contains the TSIS measurable performance indicators for each of the projects given in the project specification section.

## Background and History

Alabama’s Traffic Safety Information System (TSIS) components include all of the hardware, software and data needed to generate information that impacts either the frequency or the severity of traffic crashes. Just the definition of these various files and systems is an enormous project, and the problems involved in coordinating the inter-agency activities to support safety decision-making create serious issues in every state. The large number of agencies involved at both the state and local levels include a wide range of activities throughout the traffic safety community, including collection, editing, forwarding, data entry, processing and the distribution of generated information. More recently the impact of case management systems in addition to the crash case have come into the purview of the state’s TSIS. Examples of these include the state’s electronic citation (eCite), which begins with the issuance of an electronic citation and proceeds electronically through the court system to ultimately impact the driver history record. Alabama’s Model Impaired Driver Access System (MIDAS) is another example, which intensively tracks alcohol and drug impairment cases from citation through treatment or incarceration.

These issues began to be addressed in Alabama when the National Highway Traffic Safety Administration (NHTSA) awarded Alabama a contract in July 1994 to coordinate and facilitate the creation of a strategic plan for traffic information systems within the state. The first step in this process was the performance of a Traffic Records Assessment (TRA) for the state of Alabama. The major result of the TRA was a set of over 50 recommendations for improving the traffic information system, which became the basis for the state’s Strategic Plan. Two subsequent TRAs have been conducted for the state, the most recent was completed in February 2011. Subsequent strategic plans have responded to recommendations from this assessment.

The following are the key events that have driven the planning process over the past decade:

* The Alabama Traffic Information Systems Council (ATISC) was created in 1994 as a prerequisite to obtaining funding from the National Highway Traffic Safety Administration (NHTSA) for the original Strategic Planning project.
* The Alabama Traffic Records and Safety Committee (ATRSC) was formed and had its first meeting on May 3, 2000. It commissioned the update to the Traffic Records Assessment and the Strategic Plan.
* The Alabama Traffic Records Coordinating Committee (TRCC) was organized with a membership to include policy level representatives of the key safety data systems within the state. Membership included the data managers, data collectors, and major data users for each of the following system components: Traffic Crash, Roadway Inventory, Citation/Adjudication, EMS/Injury Control, Driver License/Driver History, and Vehicle Registration and had its first meeting on March 28, 2006. The State TRCC prescribed by Section 405c should have the authority of overseeing the planning and improvement of the key safety data systems within the state. The State TRCC will be expected to approve the strategic plan and implementation plan on an annual basis.
* A Traffic Safety Information System (TSIS) five year plan was developed in 2006 and updated with minor changes every year thereafter. With these slight modifications, that planning document has provided guidance over the past five years on all TSIS efforts. That plan was forward looking and has served quite well in bringing into existence several new and revolutionary systems, including CARE ADVANCE (dashboard interfaces), eCite and eCrash.
* A five-year plan was developed after the February 2011 Traffic Records Assessment conducted by NHTSA. It reflected their recommendations but went on to specify definitive actions that not only address the issues cited but build upon the many commendations that were made in that document.
* The five year plan was updated to the 2013-2018 planning horizon in response to the MAP-21 format for qualification for the 405c funding cycles in 2013. The strategic plan was approved at that time by NHTSA, and the current document is an update to the 2014-2019 planning horizon.

## TSIS Plan Vision

TSIS coordination activities are required in the areas of crash records, emergency response and other medical records, traffic citations, roadway characteristics (construction, maintenance, traffic volumes, etc.), driver history, vehicle history and other demographic data. The coordination of this planning process is a microcosm of the overall ongoing coordination that is required to move the state ahead effectively in applying information technology to its transportation systems. Through a series of meetings, individual efforts and contacts, information was submitted and synthesized into the plan.

It is difficult to summarize such a comprehensive planning process in a nutshell. However, any effective planning process must begin with a *vision.* This vision will then define the goals that the implementation of this plan will attempt to accomplish over the next five years. The following is the vision that was adopted by the TRCC that provides the high level guidance to the planning process:

* All police and EMS vehicles (both state and local) will be equipped with laptops or other equipment that will enable the direct entry and retrieval of all relevant records (e.g., including crashes, citation, criminal and medical records). A common virtual environment within all of these vehicles will facilitate not only data entry and use, but also communications of imagery, GIS coordinates and other information to provide complete coordination among first responders and subsequent rescue units for such events as weather and terrorist emergencies.
* Global Positioning System (GPS) and Geographical Information Systems (GIS) technologies will enable officers and EMS personnel to automatically enter accurate locations directly into their respective crash, citation, EMS run and other records. By clicking the location on automated maps all of the necessary data will be accurately added to the records making unnecessary any further map or table lookup or other data entry (e.g., the route number or road name). This capability will be available to all law enforcement statewide to be used in any of their systems requiring location specification.
* Systems will be available in each unit to optimally map out quickest routes and alternative routes to emergencies around congestion. The system will contain and artificial intelligence capabilities that will modify alternative routes based on past approved experiences.
* Digital data and imagery will be pushed to both the central dispatch and local command cells where they are most needed to deal with emergencies such as weather events or hazardous materials catastrophes. Field inputs will be designed to enable officers to provide these data elements in a minimal time and effort on their part. Data will be piped back to them from all involved officers so that both the central and distributed commands can have not only situational awareness, but there will be full perception of resource availability so that resources can respond to emergency situations in the most effective way possible.
* Bar coding and electronic encryption on drivers' licenses, vehicle registrations and other identification cards will enable accurate and complete driver and registration data to be entered directly into the all records that consume these data.
* All citizens above the age of 15 will have STAR ID with a capability of adding data to their identification cards to meet a variety of traffic safety and other social and economic needs, including identification, authentication, and system/facility access.
* All citation, crash, EMS and other records will be submitted electronically on consistent and integrated data entry systems, and the data will be automatically uploaded to the central databases, saving considerable data entry costs and resulting in totally complete and consistent records that are readily available for analysis and case management.
* Data generated will be immediately available at the local levels to planners and countermeasure developers. Analytics software will be provided to enable them to obtain any information contained in these data to define problem locations, perform problem identifications, and formulate improved countermeasures on a continuous basis. The ultimate goal will be analytics in the field in real time.
* Data generated will also be piped to virtual real-time dashboards that will enable administrators to monitor and control their projects, and to view information generated from their respective systems in a wide variety of ways that respond to their operational needs.
* A centralized index of all available databases will exist that will enable users of these data to access the data needed.
* A system will exist to integrate the various disparate databases. For example, GIS will enable the roadway characteristics data to be merged with crash data to provide the basis for surfacing those roadway characteristics that have the maximum potential for crash frequency and severity reduction. Databases will have the ability to be integrated by any common key.
* Case number cross references will enable the merging of crash and medical/EMS data to enable optimal deployment of EMS resources and the development of new countermeasures. In the interim, key data elements in the EMSIS and Trauma data systems will be used to merge these data. Crash, EMS (ambulance run), and trauma data will have an integration capability that is both deterministic and probabilistic, depending on the data availability.
* The FHWA Highway Safety Manual (HSM) and Interactive Highway Safety Design Manual (IHSDM), along with the AASHTO Safety Analyst systems, will be implemented to the extent that they are seen to improve both (1) the safety of overall roadway designs, and (2) the ability of the current Cost-benefit Optimization for the Reduction of Roadway Caused Tragedies (CORRECT) to produce roadway improvements that produce the maximum safety benefits. This will necessitate that roadway characteristics are made available to roadway designers and high crash location investigation teams as required by the systems and manuals listed above.
* Internet portals that include both analytical and GIS capabilities will enable any and all of this information to be viewed on virtually any computer in use. This increased visualization in map form will enable decision-makers to better understand the true nature of problems, especially those which go beyond solutions at point locations and involve comparative analysis.
* A more intuitive user interface, including wizards, will be developed for CARE and the CARE Dashboard systems that will enable anyone who is computer literate to immediately obtain information directly from this system without prior training.
* A unified approach to court records will exist such that the violation, court referral, alternative sentencing and criminal histories will be available to all courts and other authorized officials throughout the state in real time.
* Dashboards will be developed for mobile systems such that they can be set to default to the most useful information that is needed by the field officer on a daily/hourly basis. In addition, they will provide the interface to more detailed alternative information that is currently only generated by the web based dashboard systems.
* All traffic safety efforts within the state will be recorded for and published in a common web site that will provide a reference back to the various web sites of the agencies and service organizations that are performing these activities. Called SafeHomeAlabama.gov, this web site will be kept current by efforts of members of all of the participating organizations.
* There will be a major effort throughout the traffic safety community led by the Traffic Records Coordinating Committee and other Information Technology specialists to recognize the feasibility of ultimately removing the driver from the critical role of vehicle control. The shift of emphasis toward recognizing that the Toward Zero Deaths (TZD) goal can only be achieved by these developing technologies is itself a major challenge that must be faced by technology specialists.

While this scenario might seem futuristic, *all of the technology needed to implement it is currently available*. This plan will enable this technology to be rolled out throughout Alabama in a systematic way, while taking advantage of the successful pilots in Alabama and throughout the country.

## TSIS Stakeholders

The TSIS Strategic Plan is a mechanism to attain the coordination that is essential to the goal of optimal traffic safety resource allocation. It is a *working document* that can and should be continuously updated and adapted to system development needs as they come into better focus. Its immediate objective is to document a plan for developing those technological advances that can be implemented within Alabama to best advance the cause of traffic safety.

With such a large complex system involving literally hundreds of data sources and thousands of data elements administered by dozens (but involving hundreds of different) agencies, one might ask if coordination is even possible. The answer depends entirely upon the willingness of each of the involved individuals to put aside departmental interests in order to attain the goal of maximizing the safety interests of the state’s roadway users. To this end, the Alabama Traffic Records Coordinating Committee (TRCC) has the responsibility to coordinate the many interdepartmental development efforts that are expected to be forthcoming from this plan.

The following agencies participate in TRCC and share coordination responsibilities for traffic safety and their corresponding information systems:

* Alabama Department of Economic and Community Affairs (ADECA), which is charged with the overall planning responsibilities for traffic safety in general, including various plans (e.g., Impaired Driving, Seatbelts, Selective Enforcement, etc.) including this TSIS strategic plan.
* Alabama Criminal Justice Information Center (ACJIC) continues to be a major contributor to TSIS systems, including taking the primary role in developing the Mobile Officer’s Virtual Environment (MOVE), the Uniform Crime Reporting (UCR) Local Template for Reporting and Analysis (ULTRA), the Law Enforcement Tactical System (LETS), and the Centralized Agency Management System (CAMS) all of which have been documented in detail in previous TSIS strategic plans.
* Alabama Administrative Office of Courts has coordination responsibilities for all of the courts, which involves violation, adjudication, and criminal (including driver) histories.
* Alabama Department of Public Safety, which is responsible for the collection of violation and crash data, and is the custodian of several databases in this regard;
* Alabama Department of Transportation, which is responsible for building and maintaining safe roadways, and has also recently assumed responsible by federal legislation for a wide variety of countermeasures that are not roadway related;
* Alabama Department of Public Health, which has jurisdiction over all Emergency Medical Services, hospital, and trauma registry data;
* Alabama Department of Revenue, which handles the vehicle registration functions;
* Local police, departments of transportation, hospitals and emergency services;
* National Highway Safety Administration (NHTSA), which has had general responsibility for driver and vehicle countermeasures;
* Federal Highway Administration, which has in the past been mainly focused on roadway engineering countermeasures, but has recently been given flexibility by federal legislation for the distribution of other countermeasure funding as well; and
* Federal Motor Carriers Safety Administration, which has interests in commercial vehicle and driver safety.

The purpose of listing these agencies is to demonstrate the immense problem involved in coordinating the development of an effective statewide traffic safety information system. Coordination is quite difficult even within many of the larger of these state departments. In the past there were very few formal inter-departmental procedures established to organize and operate the data systems. Most of the essential interactions between agencies have been handled with informal relationships between individuals within the departments who had common traffic safety information interests. Little, if any, of this interaction has been dedicated to the design and development of systems for the future. Also, diminishing resources have tended to put a strain on the informal relationships that have served the state so well in the past.

## Alabama Traffic Records Assessment

In January 2011, Alabama hosted a team of traffic records experts for the third NHSTA-sponsored assessment of traffic records and traffic information system in the state. This review was particularly helpful in that;

* Outside experts critically reviewed the six major component areas (Crash, Roadway, Driver, Vehicle, Citation and Statewide Injury Surveillance) of traffic information systems and offered commentary on their functions
* The assessment drew the attention of the state’s traffic records community and involved them in the assessment as it was on-going. Indeed, the impromptu planning sessions that occurred after a component was reviewed was very beneficial

While the entire assessment is included in the appendices, a brief summary of the findings are presented here.

Overall the assessment team found that Alabama had made significant progress in meeting the goals of a modern traffic record system as formulated in the earlier Plan and guided by the state’s Traffic Records Coordinating Committee (TRCC).

In recent years, Alabama has made major advancements in the use of technology to timely and accurately capture data for Citations and Crashes with the use of electronic citation (eCite) and eCrash field applications. These applications now account for reporting over 90% of the respective activities in these areas. Indeed, Alabama has implemented a nearly paperless process for both crash report and traffic citations. With the application of the Critical Analysis Reporting Environment (CARE) to these data streams, traffic safety professionals and the public have a reporting tool that provides the critical analysis of the data.

Alabama has also maintained adequate Roadway, and Driver’s and Vehicles Data Systems that are in regular use by the community. Again, the Assessment Team, while making recommendations in these areas, found these systems met the requirement of the traffic safety community and the standards suggested by NHSTA.

In the area of Statewide Injury Surveillance System (SWISS) Data Component, the Team recommendations were the most numerous as coordination and improvements in this area have seen the slowest advancements. Despite the shortcomings in this area, Alabama has had significant improvement in two areas:

* Emergency Medical Services Information System (EMSIS) has been deployed and is electronically collecting data from all licensed EMS agencies.
* A statewide trauma registry is being developed by building upon the well-established Alabama Head and Spinal Cord Injury Registry (AHSCIR).

Alabama’s SWISS component is lacking in data from statewide emergency departments and hospital discharge data.

Finally, in the area of Traffic Record System Management, the Team found that Alabama had an effective structure utilizing a two-tiered Traffic Records Coordinating Committee (TRCC). The Team did recommend that Alabama employee a full-time Traffic Records Coordinator to further advance the work of the TRCC.

A list of the critical needs was established by the 2011 Traffic Records Assessment. This was updated with a progress report on each recommendation for a recent review by the TRCC. The status of each TRA recommendations will be given in the following format:

* The recommendation itself exactly as in the February 4, 2011 TRA;
* An indicator of overall status given by one of the following:
  + Completed
  + Significant progress; completion is imminent
  + Acceptable progress
  + Initiation; project is in the initiation stage
  + On hold; being given serious consideration but the item has not yet been initiated.
* A brief description of the reason for the indicator given above.

The status indicator will be given in bold to provide a demarcation between the TRA recommendation and the status explanation. The review is in two sections: (1) management and planning; and (2) traffic records system components.

### Section 1: Recommendations for Management and Planning

#### 1-A: Traffic Records Coordinating Committee

* Hire or assign a full time Traffic Records Coordinator. **Acceptable Progress.** Terry Henderson is functioning as the Traffic Records Coordinator on a part-time basis with the assistance of the University of Alabama Center for Advanced Public Safety (UA-CAPS) to provide logistical and technical support. This is covering the functional requirements of a full time coordinator; adding someone a dedicated full time person to perform this function is cost-prohibitive.
* Perform a Quality Improvement Training Needs Assessment for the TRCC members. **Significant progress.** The TRCC considered this at their April 3, 2014 meeting and determined that a subcommittee should be created that would perform the needs assessment by a survey of the TRCC members.
* Review all systems for current deficiencies. **Significant progress.** This is ongoing as is seen in the updates to the Alabama Traffic Safety Information Systems (TSIS) Strategic Plan. All updates of existing systems reflect our ongoing review of deficiencies. A major effort in this regard to update and improve the quality of eCrash data is being undertaken at the writing of this document.

#### 1-B: Strategic Planning

* Charge the TRCC with the development of a new Strategic Plan for Traffic Records Improvement addressing the deficiencies and recommendations in this report. As previously performed with the development of the original TSIS, assure that all TRCC members participate in the development of the Plan and the selection and priority setting of the projects in the Plan. **Completed.** The TRCC is required to approve all changes in the Strategic Plan. The Strategic Plan is being updated on at least an annualized basis and the TRCC is involved in both the updates and approving the final result.
* Charge the Traffic Records Coordinator with the development of a progress reporting system and the continual monitoring and reporting of progress status of projects included in the TSIS Strategic Plan and the Section 405c grant program. The progress report should be shared with all TRCC members. **Acceptable progress.** Progress reports, all of which relate to the Strategic Plan are presented at each TRCC meeting, and are available in the minutes of these meetings. In addition, the current document is being updated to reflect recent developments.
* Develop a formal quality control program addressing all components of the traffic records system. **Initiation.** This is a vague requirement that could require extensive resources if performed centrally for *all* components of the traffic records system. However, QC groups within each of the respective custodial agencies are being formed (if not already ongoing). An example is the recently formed eCrash QC group that was formed to review all data elements in eCrash by comparing pre- and post-eCrash data element values. This group will shortly initiate updates for at least a dozen data elements being collected by eCrash.

#### 1-C: Data Integration

* Work with agency stakeholders through the TRCC to address information sharing obstacles and develop a plan to address these concerns with the goal of sharing non-identifying information across the traffic records system enterprise. **Significant progress.** The projects within this current TSIS Strategic Plan consider a number of integration items that demonstrate a degree of data sharing that goes well beyond this recommendation. However, the ideal degree of integration has not been achieved, so this is an ongoing process and will not be marked as completed.
* Develop an outreach plan to demonstrate the use of integrated data files in CARE in an attempt to promote data integration efforts and encourage agencies to share their data with other traffic system stakeholders. **Acceptable progress.** While a formal plan has not been documented, there are continuous attempts being made, as demonstrated by the recently-approved Strategic Plan, to expand the use of CARE in all areas and aspects of traffic safety. An internal Concept Paper has been developed in terms of the further growth and development of CARE applications. A short-term objective is to re-write this document so that it can be distributed to the entire traffic safety community within the state. An assignment was made to this effect at the April 3, 2014 meeting of the TRCC.
* Conduct a Privacy Impact Assessment, if not already done, to address information sharing issues and develop agreements for standard information sharing policies among traffic system component stakeholders. **Completed.** A Confidentiality Agreement (CA) has been developed to resolve issues of data confidentiality. This has resolved most of the confidentiality issues with regard to data sharing, with the possible exception of medical data. Those working with medical data are subject to HIPAA compliance rules, which are being observed by all involved.

#### 1-D: Data Uses and Program Management

* Expand the use of the CARE warehouse to include other government users and researchers. **Significant progress.** See the Integration section of the updated TSIS Strategic Plan. We do not see any time in the near future when this will be able to be considered as completed. Efforts to expand CARE will be made over the next decade, the goal being to add at least two significant traffic safety databases per year.

### Section 2: Recommendations by Traffic Records System Components

#### 2-A: Crash Data Component

* Transition the remaining 14 law enforcement agencies to either the eCrash system or provide technical assistance to their RMS vendors to accept their crash report format into eCrash as soon as possible. **Significant progress.** Birmingham has converted over to eCrash, and we are expecting that the proportion of eCrash submissions will exceed 100% by the end of 2014. DPS has stated that they will stop accepting paper forms.
* Seek a funding mechanism to provide the MapPoint software for all law enforcement agency patrol vehicles so GIS location data can be collected universally for all crashes. If successful, eliminate the requirement for the officer to provide link-node data on the eCrash report. **Completed.** We believe that the TRA Team meant “MapClick” as opposed to “MapPoint” in that MapPoint is a commercial package and they would not recommend any specific commercial package. However, the intent of this recommendation has been completed and the project is underway (i.e., funding has been obtained) to develop and implement the MapClick system for locating crashes and all other events and objects within the State. While the securing of funding has been completed, the complete transition of all eCrash locations to MapClick has not, and this will take several more years for the local agencies. However, all of DPS units are now on MapClick, and the number is growing for total statewide implementation (anticipated to be 95% by January 1, 2017).
* Encourage through the TRCC those traffic records custodial agencies that do not provide their files to CARE to do so citing the benefits to them and the overall traffic records community. **Significant progress.** See the Integration section of the TSIS strategic plan. Several agencies have been contacted and are providing their data. Some agencies have been deferred due to the lack of resources; the TRCC does not want to commit to an agency until it is sure that there are adequate resources available to follow through on the efforts necessary to put a database under CARE.
* Engineer into eCrash additional edits to address more specifically the accuracy of the data collected where feasible. **Significant progress.** In the past these were dealt with as they are detected. An excellent example is the recent modification in the eCrash data entry system to accommodate distracted driving. This data element was grossly under-reported due to its competition with all of the (non-mutually exclusive) contributing circumstances. A new data element was developed at the crash level and it enables officers to mark this cause for all crashes that in any way involved distracted driving. Another effort to identify and address all issues that could be but are not currently being resolved by edit checks is currently underway and we see it being extremely successful in the next planning horizon.
* Conduct an evaluation of the quality of the eCrash dataset based not on the number of automated field completion errors found but on the overall accuracy of data after report approval. Note: this is to identify if there is a false sense of security in the automated validation process by those actually approving reports. **Initiation.** While it is extremely difficult for the TRCC to see how this would be accomplished without significant funding to obtain the data for it, the current QC efforts include the comparing of all variable values being produced by eCrash with their counterparts that have been produces over the past ten years by the paper data entry forms. This effort shows great promise for a major improvement in eCrash data quality. It should be noticed that faults detected will be addressed in three ways as a result of this effort: (1) changes and deployments to eCrash per se, (2) changes in the ETL that translates raw eCrash data to that processed by CARE, and (3) law enforcement officer training.
* Develop a tracking system to ensure all fatal crash occurrences are identified and submitted to the FARS unit for inclusion into the FARS program. **Completed.** Mr. Bill Shanks at the DPS FARS unit has in place such a tracking system.
* Create a quality review oversight process for statewide eCrash reports to ensure that report content conforms to a uniform standard procedure regardless of the agency authoring the report. Implement within eCrash a capability to produce periodic data quality reports. This needs to be separate from the existing automated error checking process and should concentrate on accuracy and consistency in reporting across all jurisdictions. **Initiation.** The current QC effort for eCrash has demonstrated that the same approach can be used to evaluate the quality of local data entry. This will be accomplished by performing IMPACTs over all variable comparing a local area (e.g., a city) to all comparable areas within the state. Outliers will be evidence of improper reporting and will be followed up on.

#### 2-B: Roadway Data Component

* Charge the Traffic Records Coordinating Committee (TRCC) to fast track a project to develop a uniform location reference system for all public roads. **Significant progress.** ALDOT is giving this its highest priority, and CAPS is continuing to develop the infrastructure for MapClick at the local levels.
* Create an enterprise roadway information system that will serve the information needs of ALDOT executives to manage the transportation assets for safety and mobility. **Acceptable progress.** ALDOT has a Comprehensive Project Management System (CPMS) for this purpose that deals with past, current and planned projects. This system needs to be augmented with an inventory of transportation assets. Work is in process to create such a database.

#### 2-C: Driver Data Component

* Determine if there is a legal constraint prohibiting the recording of adverse histories of serious offenses when licensing non-CDL drivers from other states. If so, explore opportunities to change the constraint. If not, compose a listing of serious offense convictions that are reasonable for Alabama to retain from a previous state of record. Examples recommended include the following: DUI/DWI, speeding in excess of 25mph over the posted limit, aggressive driving, reckless driving, driving while unlicensed, making improper or erratic lane changes, and others Alabama considers serious. **Completed.** The state maintains a driver history database of all violations from which the most severe can be extracted.
* Determine whether suspending licenses based on a DUI arrest (*admin per se*) independent of the judicial processing of those cases provides a significant benefit in view of the current requirement to rescind those suspensions when a court dismisses the charges or finds the defendant not guilty. **Significant progress.** A system has been developed to address the rescission of the paper forms, which was approaching 40%. The beta test involved 37 AST-60 reports that were created to date of which there were no rescissions. Further steps are still required in terms of total statewide implementation.

#### 2-D: Vehicle Data Component

* None

#### 2-E: Citation/Adjudication Data Component

* Examine, through the TRCC, means by which to include the remaining small percentage of paper tickets into the State central database to ensure a comprehensive picture of the enforcement activity statewide. **Acceptable progress.** Efforts are continuing to extend the benefits of eCite to all municipalities. This is an ongoing effort that is expected to continue over several years. It is not something that can be mandated. However, as local jurisdictions see the advantages of eCite, they are systematically adopting it.
* Integrate the MIDAS system with the driver license system to develop a flag that indicates a driver whose license is suspended or revoked is eligible to reinstate due to compliance with court orders or, minimally, require that prior to reinstatement of a driver privilege or license, the Driver License Division personnel ensure the MIDAS system shows that a driver has completed all court requirements for re-licensure. **On hold.** This will be investigated with AOC during the 2014 calendar year.
* Survey law enforcement agencies to determine those who share common records management vendors to provide for economies of scale in contracting for programming to integrate records management systems with eCrash and eCite systems provided by the State of Alabama. **Significant Progress.** An assignment was made to initiate such a survey at the April 3, 2013 meeting of the TRCC.
* Use data generated by the MIDAS system to determine if the administrative sanction for driving under the influence can be changed to improve its effectiveness. **On hold.** This will be investigated with AOC during the 2014 calendar year.

#### 2-F: Statewide Injury Surveillance System (SWISS) Data Component

* Develop annual reports on trauma and motor vehicle crashes to be available on the ADPH website. **Completed.** Very flexible reports are available through the current CARE system. It also enables data export that can also be used to generate very flexible reports. A number of standardized reports have also been developed that contribute to this purpose.
* Promote the use of EMSIS and Alabama Trauma Registry (ATR) data as an injury prevention tool to the public, public safety professionals, and researchers. **Acceptable progress.** As these systems have been brought under CARE their accessibilities have increased. There are certainly other professionals who can use these capabilities and efforts will continue to be made to assure that their benefits are extended to them.
* Make EMSIS and ATR data available through an online query tool by incorporating it into CARE or similar program. **Completed.** These capabilities are now available.
* Explore the possibility of collecting dispatch information from BLS/Rescuer providers and 911 calls. **Completed.** This was discussed at the April 2014 meeting of the TRCC and it was determined that it would be impossible to obtain this information (at least at this time with our current technologies) from the Basic Life Support (BLS) providers. On the other hand, it was recommended that the Advanced Life Support providers would have much greater potential for obtaining immediate benefits.
* Conduct a review of trauma centers to ensure all ATR eligible cases are being submitted. **Completed.** This is constantly under review by the DPH, and they know the percentage of eligible cases being submitted and are making every effort to get this up to 100%,
* Develop a method of integrating EMS information into ATR electronically from EMSIS and eliminate the need for entry from paper forms. **Acceptable progress.** A project has been launched to develop an EMSIS-compliant data entry system that is freely available to all EMS providers.
* Explore the possibility of requiring all hospitals to submit all ATR eligible cases. **Initiation.** A project has been initiated to pre-populate the trauma registry case files with EMS run data. This project will provide the basis for obtaining the ATR case data. It is expected, however, that there will be no way to require such data; it will be provided voluntarily. This will provide the pilot for ultimately requiring all hospitals to submit their ATR cases.
* Ensure adequate representation on the TRCC by members from all components of the SWISS. **Completed.** Current membership is fairly comprehensive; the TRCC will continue efforts to involve all interested parties.
* Develop an emergency department and hospital discharge databases. **Completed.** These databases currently exist.
* Develop a means to share information on motor vehicle crashes fatalities between vital records, FARS, and the Driver License Division. **Completed.** CARE currently provides these capabilities. Further educational efforts are required, however, to assure that this capability is known of by the appropriate people, and that they are trained on CARE sufficiently to enable them to use these systems.

## Planned Projects

### Overview and Organization

It is impossible to make such major changes without significant impacts on current operations. Thus, it is essential that these changes be phased in over the next five years to minimize this downside. This plan is the first step in that direction. It should not be considered a static end in itself. Rather, it is a working document that can and should be updated on a regular basis and especially as progress is made. Some of the items planned are already in the process of being implemented, and their mention in this plan is to see that these items are brought to completion.

The following gives a summary of the plan according to the six components into which they were organized:

* *Citation and Adjudication Component* includes the extension and roll out of the electronic citation, a proposed DUI defendant intake system, a method for moving digital information directly to the field officers using available cell phones, a statewide Internet-based incident reporting network, and technological advances to make the traffic citation reporting and processing system totally paperless.
* *Crash Component* includes the complete roll-out of eCrash, further integration of GIS capabilities into eCrash and CARE, the generation of an updated Crash Facts Book, and the development of the Alabama Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE) to produce a more effective interface to deliver CARE-generated information. This will also require a second version of eCrash to be developed based on the availability of automated location systems and feedback as to improvements needed to make the eCrash data entry system more effective and improve data quality.
* *Driver Component* calls for more effective driver licensing information (including pictures) to be distribution to the field through the extremely successful Law Enforcement Tactical System (LETS). This will require a more effective Driver History database that is updated automatically by eCrash and eCite.
* *EMS-Medical Component* includes continued support for the implementation of the National Emergency Medical Services Information System (NEMSIS), an ambulance stationing research project, the development of a spinal injury database, and a pilot project to reduce EMS delay time to the scene of crashes with a moving map display. This will be accomplished by the implementation of the Mobile Officers’ Virtual Environment (MOVE) in EMS vehicles and the processing of trauma center and EMS run time data through CARE and ADVANCE.
* The *Roadway Component* involves a wide diversity of projects in support of the State’s IHSDM/HSM/SA initiatives. This will include the integration of roadway features into CARE and the integration of Crash Modification Factors (CMFs) into the CORRECT system using the facilities of the CMF Clearinghouse. To effectively locate crashes on the roadway, it is essential that ALDOT complete their various projects along these lines so that they can be integrated into eCrash and used by CARE to fully utilize its GIS displays capabilities.
* *Vehicle Component* plans include a statewide distribution network that will make vehicle information immediately available to all consumers of these data in the state, including the LETS system.
* We have added an *Integration and Information Distribution Component* to the other functionally oriented categories above in order to consider those projects that transcend and have the goal of integrating and/or producing/distributing information from several databases. A major effort is proposed to populate the current Safe Home Alabama web portal so that it will integrate all of the information generated by all agencies and present it in one unified source to the traffic safety community. An example of this is the proposed new Safety Portal that will be a hub for all traffic safety and related data analytics. General TSIS management activities are also included in this component.

### Project Specification

Projects have been designed to address these critical needs, and their implementation will be prioritized to this effect. The following is a statement of the projects planned within each of the six TSIS component areas and another added component for integration (overall TSIS management is considered within the Integration and Information Distribution Component):

#### 1. Enforcement and Adjudication Component

* 1. Completion of the eCite roll-out. This will result in a total roll-out of eCite and elimination of all paper citations statewide. In the interim, a method will be sought to enable current paper tickets to be electronically submitted in a format that is compatible with eCite so that there is a comprehensive picture of the enforcement activity statewide.
  2. DPS Motor Carrier integration with National FMCSA initiatives. This project will support the DPS Motor Carriers unit in bringing about in-state regulation of motor carriers and the integration of these systems with the National FMCSA ongoing initiatives. This includes at least five major software developments as given in the FMCSA documentation.
  3. Full implementation of the *Virtual Citation.* The development of the technology infrastructure necessary to support the full implementation of the recently passed legislation by the Alabama legislature that allows for electronic citations to serve as an “alternative approach” to tickets completed using the Alabama Uniform Traffic Citation form, including the development of the technology to print the notice to appear, as well as the technology to support electronic swearing.
  4. Municipal electronic disposition system. Some preliminary work on this has begun with regard to district courts and Commercial Motor Vehicles (CMV). It needs to be further developed and applied at the district levels and then expanded into the municipal courts.
  5. Upgrades to eCite. There are a number of current issues with eCite that would justify a new version. These issues will be the basis for a complete systems analysis and some re-design of the system to make it more effective in increasing officers’ productivity and presence in the field.

#### 2. Crash Component

1. Develop infrastructure to support MapClick for improved crash location capability. This is essential so that these project results (and/or other alternative approaches) can be applied to upgrade eCrash to include the ability of officers to obtain *all* required location data (coordinates, node numbers, link numbers, road names, road codes and milepoints) by a single click on a map available in the officer’s vehicle. This will also result in a safety location portal for obtaining hotspots and related information.
2. MapClick project. This is a software system that will use as input available GIS-smart maps that have layers for coordinates, node numbers, link numbers, road names, road codes and milepoints. The reporting officer (or other data collector) will use existing GPS (if available) to obtain the general location of the crash (or any other event or object) on the map. The data collector will then expand the map so that a precise location can be selected. Clicking on that spot on the map will put all of the data into the record – the recording officer might check this data for general reasonableness, but generally will not be required to enter any other data into the record. As long as the *same maps* are used to generate GIS outputs as are used in the underlying MapClick data collection perfect accuracy is not required, and thus it is not necessary for perfect maps to be generated in order for this system to work. It is, however, necessary that all of the layers of data be present because if this system does not generate all of the required data it will not be accepted by the law enforcement community and will not be of much value since its use will not be universal.
3. eCrash Upgrades. A new version of eCrash recently integrated the “MapClick” capability as well as making major upgrades throughout the eCrash reporting system and added a variable for officers’ opinions for impaired driving. A recent quality control effort has identified over a dozen faults in the current system and a list of the required upgrades is currently being assembled, including a number of edit checks. It will also include a consideration of changes recently made in MMUCC. One reported need is a variable that indicates damage to roadway inventory items (state or county property) in order to facilitate their replacements.
4. CARE upgrades. This ongoing product will result in a new CARE desktop interface, continual upgrading of the data, and an enterprise CARE version for ALDOT internal use. GIS upgrades will augment CARE’s current GIS map-generation capabilities with spatial and attribute filter dropdowns, the ability to export these filters and the ability to create templates for the various types of printers that might be employed in map production, including the consideration of the security and confidentiality issues that need to be resolved as this technology is deployed on web-based systems for engineering, law enforcement and other uses. As a final innovation, it has been requested that CARE add an unofficial crash report that was in a completely different format from the official reports (that are sold) but contained all of the information on the crash report and was stamped for Engineering or Law Enforcement (Official Use) only.
5. CARE scripting and dashboard capabilities. Scripting will enable standard reports to be easily designed and then run from CARE. It will essentially “capture” a series of CARE commands and save them into a program. When a user wants to reproduce that functionality, this will be available by means of entering a command and parameters to direct the saved script. The dashboard capability will enable local agencies to see a default presentation that they will be able to modify using the dashboard as another interface to their crash records. This project was initiated in 2013 and has shown tremendous benefits; however, the current scripting capability is quite limited and needs to be expanded considerably.
6. Upgrade to the Crash Facts document. The Alabama Crash Facts Book was designed in the 1984 time frame, right after a change in the crash reporting form. There are two needs that must be addressed at this time: (1) enabling the generation of this information on a routine basis directly out of CARE, and (2) preparing for the change in the crash reporting form that will accompany the implementation of the e-crash. This project will accomplish both by putting into CARE a system by which a series of steps used to generate information can be incorporated into a script and re-used. This will insure that the results are uniform and consistent from year to year, and that the information is totally up-gradable as new data formats are applied. An upgrade in the 2013 time frame was applied to the 2012 data and has been very well received. The need for additional fine tuning of this upgrade is expected.
7. Final roll-out of eCrash. The eCrash system was a major project that has obvious positive effects on timeliness, consistency, completeness, uniformity (including MMUCC compatibility), and efficiency of the state’s crash reporting. It is imperative that the entire state either use eCrash or submit eCrash compatible data electronically so that the full utility of these innovations can be achieved. An edict not to receive any additional paper forms after December 1, 2013 was a major positive step in this direction. However, not all local agencies have responded to this edict.
8. Special location type exception reports. This will generate reports similar to those in the Early Warning programs. However, instead of the exception reports being criteria based, they will be based on a location type specification to the system (e.g., all workzones, recently completed improvements, wet-weather crash locations, etc.). This project has been started and a number of exception reports have been generated, but the full potential of this capability has not yet been reached.
9. Unreported crash incident reporting. There are a number of incidents that should be reported but are not, the most notable probably being deer strikes. In Michigan where it is required to report deer strikes in a crash report, over 30,000 per year are reported. Alabama has more deer than Michigan, and yet in 2010 eCrash (85% of crashes reported) only recorded 2,162 crashes involving deer. It is envisioned that this reporting capability could exist as a portal that would be initiated by voluntary reporting from the general public.

#### 3. Driver Component

1. DUI driver data intake and reporting system. The eCite system uses MOVE to automatically query LETS to determine if the offender has a criminal record, outstanding warrants or protection orders, or is otherwise dangerous to the arresting officer (e.g., has offenses involving firearms). This project will enlarge this capability to touch the MIDAS system for DUI information to provide a final link back to the field so that the officer can determine if the individual has a history of DUI offenses. It will also provide the linkage from the officer to MIDAS to initiate or augment a current case record. DUI (drugs and alcohol) accounts for about 40% of fatalities in the state of Alabama, and this is seen as an information tool that will be a major deterrent to DUI.
2. MIDAS offender completion validation. This is an innovation of the MIDAS system to enable it to validate when an offender has completed his/her time of suspension or otherwise satisfied their alternative or traditional sanctions prior to re-instatement.
3. Traffic safety incident data availability. Comparable to the DUI driver data intake and reporting system discussed above, a system is needed to enable officers and law enforcement agencies to obtain full access to the ULTRA system. ULTRA is a statewide initiative sponsored by ACJIC for recording, summarizing and reporting incidents before and after they arise to the status of resulting in arrests.
4. LETS upgrades for traffic safety. The Law Enforcement Tactical System (LETS) project has without question been the most successful law enforcement IT project conducted within Alabama in the past decade. Under the direction of ACJIC, this project will take advantage of this momentum for traffic safety by integrating into LETS provisions by which serial traffic violators can easily be identified either directly by officers with networked laptops or PDAs, or by dispatchers as the officers check in. Electronic citation information will enable officers to know it a driver has been given a recent warning or related citation. LETS has also been quite successfully used at DUI and safety belt enforcement check stops. Close to $1 million has already been invested into LETS; this allocation will be leveraged to assure that traffic safety applications obtain full use of the system.
5. MOVE upgrades. There are a number of additional components that can be added to MOVE to enable officers to be more efficient in their investigation and reporting activities. For example, an insurance validation system would serve to provide a direct link from the officer in the field to a database indicating if the driver has liability insurance. One major innovation to MOVE will be to add those components that are currently being developed for EMS so that all first responders are all have the same umbrella communications network. ACJIC has also recommended several other upgrades to MOVE, including enhancements for real time data, map and building layout communications directly to field officers to deal with various emergencies (e.g., weather, hazardous materials, major traffic and other disasters, both natural and man-made).
6. TZD education and research. Public Information and Education is essential to the acceptance of driverless vehicles by the general public. A series of PI&E spots are required to augment the advertising that has already begun in this direction by the manufacturers. The spots will be more generic not only for conditioning the general public but for motivating them manufacturers themselves to take the lead in the development of this technology. Part of this will include research to determine the ultimate role of the “driver” and the transitional role that will have to be played over the next half century in this evolution.

#### 4. EMS-Medical Component

1. National Emergency Medical Services Information System (NEMSIS). This project involves further development and continued implementation of the new Emergency Medical Service Information System (EMSIS) software. The software will assure continued NEMSIS compliance.
2. EMS-Trauma data integration through CARE. A prototype system for the EMSIS data has proven its value in providing valuable information from this EMS run database. To integrate trauma data into this system a two-phased approach will be performed: (1) the refinement of the current CARE/EMSIS system and the incorporation of trauma data under CARE, and (2) the integration of these datasets into a third dataset using key variables for case matching. Consideration for the best match methods in Phase 2 will be an integral part of the first phase.
3. Additional medical database access. This is a long-term project that must first be defined in terms of the various databases that could be made available to the state, e.g., trauma registry, electronic death reporting system (EDRS), emergency room and hospital discharge databases. Current contacts within the Alabama Department of Public Health will be the starting point for a high level preliminary requirements document as a starting point for this project. Ultimately records from volunteer fire departments might be included in this overall effort.
4. Model Inventory of Emergency Care Elements. Develop and populate a repository of the Model Inventory of Emergency Care Elements (MIECE) for the State. The MIECE repository will be used to provide First Responders an inventory of emergency care resources in the occurrence of a mass casualty event.
5. NEMSIS data entry. Electronic EMS run system, Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE). As part of the NEMSIS effort and to assure more consistency and completeness of reporting, RESCUE will be a data entry system that will operate under MOVE to ultimately be deployed to all ambulances and other EMS units statewide to replace the current fragmented data entry system. The RESCUE system will also assure that the data elements gathered are NEMSIS v3 compliant.
6. Supporting software for RESCUE. A number of supporting software modules will be needed to implement RESCUE. These deal primarily with the interfaces to other systems currently receiving data from or providing data to the existing EMS run data entry system.

#### 5. Roadway Data Systems Component

1. Statewide roadway data inventory. The state (including both ALDOT and many local jurisdictions) has spent millions of dollars on the creation and storage of roadway data. Yet, when a preliminary analysis was performed to determine the availability of the data for IHSDM/HSM implementation, it was found that there is no central repository of these data, nor is there even a centralized data dictionary so that it could be determined which data elements even exist. A critical first step is to create such a data dictionary that would list the data elements, where they are created, who is responsible for their storage and update, and the current use to which they are being employed. Without such a document any further data gathering might be found to be unnecessarily redundant, and there would be no hope that the current data will ever be fully employed in the IHSDM/HSM efforts. While this effort should begin with the data that exists for state, federal and Interstate (i.e., mileposted) routes, it should not be limited to these routes, recognizing that in 2009 about 46% of fatalities occurred on county roads and city streets.
2. IHSDM/HSM implementation project. This project is currently in its preliminary investigation stages in order to formulate a plan for the implementation of IHSDM, HSM, and Safety Analyst. It is expected that over the next five years that these systems will be an integral part of the design and roadway improvement functions throughout the state.
3. Roadway Issue Dispatch (RID) roll out. This project has created an automated form that is an add-on to the current law enforcement MOVE system. It give polices officers that have MOVE the capability to report any roadway conditions that could be considered as hazardous. For state, Federal and Interstate roadways, this information is immediately forwarded to the appropriate person within ALDOT for immediate remedial action. The project will determine and implement the most effective disposition of forms completed and electronically submitted by local law enforcement. The form is available to DPS but needs to be further rolled out and implemented by local law enforcement agencies.
4. Develop and populate a repository of the Model Inventory of Roadway Elements (MIRE) for state routes. Over the course of this plan complete 80% of the elements for at least 80% of state routes. Develop a plan for population of MIRE for all public routes. Relate the MIRE data to crash data in the CARE system for analysis and consideration of roadway engineering data in the state traffic safety program.
5. Roadway Improvement Safety Evaluation (RISE). This project is in its infancy; its goal is to create economies of scale and safety uniformity within the roadway system. This will be accomplished by leveraging funds already dedicated (required) to be spent for roadway maintenance to also serve safety interests. That is, while the crews are in the field doing maintenance they will be called upon to perform consistent safety upgrades along the entire corridor where they are working. This systematic optimization system is seen to be a revolutionary approach toward roadway safety improvements that we know of no other state using.

#### 6. Vehicle Component

1. Vehicle registration cards. A vehicle registration card is as important as a license card when it comes to collecting accurate data. Currently the drivers’ license card is swiped to provide data for eCite and eCrash. A vehicle registration card would pay its way very quickly in terms of saved officer time and nearly perfect data accuracy, and it would go a long way toward countering vehicle theft.
2. Vehicle data LETS integration. This project would take the current improved and timely data that is being obtained from the Motor Vehicle Title, Registration and Insurance Portal (MVTrip) and assure that it is available to all officers in the field on a timely basis.
3. Online Insurance Verification System (OVIS). OIVS is an online system to determine conformance with the State mandatory insurance law. It is integrated with LETS (within MOVE) so that officers have access to the relevant information at the roadside. This system is in need of continual updates that are surfacing as it is being rolled out and implemented statewide.
4. Effective TZD infrastructure. See CARE ETL development below under Integration; specifically for the crash-vehicle data integration. Toward Zero Deaths (TZD) can only become a reality if ultimately vehicles are equipped with the technology that essentially eliminates any possibility of a crash. This is not a pipe dream; effective prototypes in this direction have been demonstrated reflected by some jurisdictions approving the use of driverless vehicles. This element of the plan is to establish the fact that Alabama will use all of the data resources at its disposal to support this effort and to make TZD a reality in the shortest time possible.

#### 7. Integration and Information Distribution Component

This component contains the management elements essential to maintaining and effective integrated TSIS effort. Because the distribution of information usually requires this integration, we combine with it those projects that are dedicated to information distribution in general.

1. SafeHomeAlabama.gov. This web portal includes all state agencies, the legislature’s newly re-constituted State Safety Coordinating Committee, and all known service groups. Its goal is to be totally comprehensive in keeping the entire traffic safety community aware of the most recent developments in traffic safety both in Alabama and Nationally. Much of the information generated will be directly obtained from the TSIS given in the plan. The rationale behind this web portal is that it is of no use to gather data unless it can be translated into useful information for countermeasure development. This is the first formal statewide system for distributing traffic safety information. While a prototype of the portal is currently in place and being updated by about 30 SHA Associates, the site needs further enhancement and continued effort to see that it is maintained with up-to-date information. This project will be extended in this plan to include publicizing and linking to what we define to be the “Safety Portal.” See the Safety Portal project below.
2. TSIS Coordination. The state has never had the resources to employ a formal full-time TSIS coordinator. The function has been performed by the Traffic Records Coordinating Committee, with the Chair providing the coordination functions assisted by the ADECA staff. Examples of the TSIS Coordination responsibilities include: (1) Administer the allocation of the Section 405c funds, including the performance of full effectiveness and administrative evaluations of all activities within the TSIS Strategic plan, whether Section 405c-supported or not; (2) Generally promote and be a champion for the integration of data and information systems among all of the involved departments; (3) Survey nationally TSIS innovations and make them known to the respective subject matter experts within Alabama; (4) Update the TSIS Strategic Plan on at least a semi-annual basis; (5) Be the executive secretary and facilitate the activities of the TRCC; and (6) Assure the continued enhancement and maintenance of information within SafeHomeAlabama.gov. The state will make increased efforts to get the State Safety Coordinating Committee involved in providing additional coordination among the various entities that have traffic records responsibilities.
3. Mobile Officers’ Virtual Environment (MOVE). This is the basis for bringing together all of the systems currently used by field law enforcement officers, including eCite, eCrash, officers’ logbook, roadway issues reports, and all of the paperless office upgrades being made for DPS and local agencies. MOVE will be upgraded to apply to several more applications and to operate more effectively with current applications. In addition, MOVE will be extended so that it can operate within EMS units to support a number of EMS applications, including the new RESCUE data entry system.
4. Mobile device technology. Listed under the Integration component because it affects all of the data entry and query systems within all other components. This will involve porting the current systems to advanced mobile devices such as iPads, iPhones, and other devices operating under the Android and other mobile device operating systems.
5. Data-Driven Approaches to Crime and Traffic Safety (DDACTS). This approach, which is heavily supported by NHTSA and DOJ, seeks to take advantage of the officers in the field to assure that they are in the right place at the right time with the right equipment and software to perform whatever their immediate mission assignment might be; and to serve as the most effective deterrent to both crime and traffic violations. This is the epitome of the benefits of integration of data from both the traffic safety and the criminal justice communities. MOVE and CARE perform this data integration currently; DDACTS will create new applications of these data to further optimize officer activities and other law enforcement resources.
6. CARE ETL development. The CARE Extract-Translate-Load (ETL) component has been proven as an effective method for integrating databases that were originated for a variety of other purposes than traffic safety. By creating a crash data linkage with related data, benefits are derived in both the traffic safety and the other involved disciplines. The following are the immediate proposed integrations:

* Crash and roadway characteristics data. This has been in prototype form for a number of years, proving the concept; it needs to be enlarged to cover the new data elements being collected within ALDOT.
* Crash and citation data. Some prototypes exist along this line as well that compare the locations of crashes with the locations of citations, which is invaluable for officer location deployment decisions.
* Crash and EMS/Injury data. This has been designed and is in its infancy; working prototypes are expected in the near future.
* Crash and vehicle data. This is in need of design and development, the goal being to load the CARE datasets with vehicle characteristics that are now available via the tag number through the vehicle database to surface the Vehicle Identification Number, and then to use that number to engage the ETL to load the dataset with vehicle characteristics.

1. Safety Portal. This is a new web site that will be based on CARE/ADVANCE technologies. Its goal is to enable those in the traffic safety community to access all of the information that they are authorized to consume under a single portal. This will eliminate the need for a different portal for each agency. It will be a consolidation of the current, largely distributed access that is required to the many disparate databases, and at the same time facilitate the capabilities to integrate two or more of these databases to produce information as discussed above.

## TSIS Measurable Performance Indicators

A summary of the TSIS project goals in terms of measurable performance indicators is presented in the table at the end of this section. Each of the projects is listed under the particular TSIS component to which they relate (e.g., crash, roadway, etc.). In most cases IT projects only return their benefits when fully completed and deployed (e.g., a half-completed software development project generally does not produce any tangible benefits). There are some exceptions in data development projects, but in most cases the goals established would be effective once the envisioned project to satisfy it was totally completed.

The state would have to perform studies that cost well beyond the total Section 405c allocation to the state in order to establish the benchmarks and performance metrics to any degree of reliability. For this reason, the best estimates were used in many cases. In some cases the ongoing and proposed projects have the objective of establishing data or systems that currently do not exist, and therefore the current benchmark is zero. In other cases the benefits of the systems being developed will not be realized until these systems are deployed, and in these cases the metric is a degree of completion as opposed to some impact on the TSIS itself. Thus, to the extent possible the metrics that are recommended in NHTSA document **DOT HS 811 441 entitled "Model Performance Measures for State Traffic Records Systems"** were used as the basis for the performance metrics given below.  In addition, the annual required Interim report that the State submits to NHTSA uses the metrics that are specified in the **DOT HS 811 411** document.

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| --- | --- |
| **Projects** | **Goals (Measurable Performance Metric)** |
| *1. Citations and Adjudication Projects*  1a. Completion of the eCite roll-out  1b. DPS Motor Carrier Integration with FMCSA Initiatives  1c. Full implementation of the Virtual Citation.  1d. Municipal electronic disposition system.  1e. Upgrades to eCite. | *1. Citations and Adjudication Metrics*  1a. Average time of getting citation information into the database: from several days to an average of less than one day. Proportion of agencies on eCite increased from 90% by 2% per year.  1b. From less that 50% current compliance to 100% compliance with Federal standards.  1c. For all eCite agencies, eliminate the need for paper tickets and officer swearing to the ticket in person at the courthouse. Reduce the time spent in printing to a few seconds and the time spent swearing to tickets to a few minutes per day.  1d. Five beta test municipalities after the first year of the start of development; at least 20 municipalities using the system after the second year.  1e. At least 10 upgrades completed and included in the next version release. |
| *2. Crash Component Project*  2a. Develop infrastructure for improved crash location capability.  2b. MapClick project.    2c. eCrash upgrades  2d. CARE upgrades.  2e. CARE scripting and dashboard capabilities.  2f. Upgrade to the Crash Facts document.  2g. Final roll-out of eCrash.  2h. Special location type exception reports.  2i. Unreported crash incident reporting. | *2. Crash Component Metrics*  2a. Increase the completeness of maps from the current estimate of 60% by 10% per year so that the state is virtually covered by 2018.  2b. Increase the accuracy and completeness of the crash location entry for on-system (mileposted) locations from it current level of about 85% to at least 98%; for off-system segment locations, increase the accuracy from 0% to at least 98%. This can be measured by the number of cases that contain a 99999 in the node field, indicating that the node entered was either invalid or unknown. Reduce this from its current value of approximately 20% of cases to less than 2% of cases.  2c. Modify the eCrash data entry screens so that the data collected is over 96% MMUCC compliant; reduce time to enter locations from an average of 15 minutes to less than one minute with consistent accuracy as described in item 2b.  2d. Give users greater intuitive access to crash data and the information in the crash database thereby increasing the number of queries that they can perform without assistance from its current estimate of 60% to over 80%; and also increasing the number of queries that they will make from an average of 20 queries per user to well over 50 queries per user per year.  2e. Provide greater productivity in enabling users to save complex queries and reuse them, resulting in a 20% increase in the number of reports generated, and a 30% increase in the accuracy of queries since they will not have to be re-created periodically.  2f. Increase in the consistency of information presented from year to year; with the introduction of eCrash data this consistency dropped to about 90%; with this upgrade, the consistency will be 100%, providing users the capability to compare figures from year to year.  2g. MMUCC compliance increase from 85% to 100% for the eCrash data elements that are currently MMUCC compliant; consistency among all data elements; timeliness improvement from an average of about six weeks to be entered for the remaining paper forms to the eCrash delay of an average of 18 hours.  2h. Since the information being produced from these reports does not currently exist, there will be a 100% increase in information content from each type of exception report that will be created.  2i. These will create new data that does not  currently exist; these data will generate information that cannot be derived from any current data source. At least 100 reports in the first prototype year. |
| *3. Driver Component Projects*  3a. DUI driver data intake and reporting system.  3b. MIDAS offender completion validation.  3c. Traffic safety incident data availability.  3d. LETS upgrades for traffic safety.  3e. Mobile Officer Virtual Environment (MOVE) Upgrades | *3. Driver Component Metrics*  3a. Law enforcement identification and apprehension of at least ten additional DUI offenders (per month) with outstanding warrants or court obligations.  3b. Currently this capability does not exist. The identification within the database of an estimated 30% of existing offenders within the database who have not completed their time of suspension or satisfied their alternative or traditional sanctions.  3c. This system and thus the information that it would generate does not currently exist. This will result in the availability to law enforcement of selected incidents that relate to traffic safety (e.g., habitual drug use). The first prototype should support 50-100 queries per day.  3d. This capability does not currently exist. It is expected that it will be able to detect hundreds of serial traffic violators per month based on an expected 50-100 queries per day.  3e. Most of the additional capabilities that enable officers to complete forms in their vehicles will require upgrades to the current MOVE system. Since this is a supportive role, it can only be measured in terms of the other systems that it supports. It is expected that at least ten new functions will be added to MOVE over the next five years, on average two per year. |
| *4. EMS-Medical*  4a. NEMSIS  4b. EMS-Trauma data integration through CARE.  4c. Additional medical database access.  4d. MIECE Repository.  4e. RESCUE electronic EMS run data entry. | *4. EMS-Medical*  4a. Consistency: will maintain continued 100% NEMSIS compliance.  4b. Data access. None of the trauma data is accessible currently except through the writing of specialized queries and programs. This will make 100% of the data elements accessible to all computer literate users and thus increase accessibility by allowing data to be more readily imported and viewable by related health and safety organizations. This project will not start until 2016.  4c. Access available to one additional major database per year.  4d. Beta test of the MIECE data entry system completed by the end of the first year of project initiation.  4e. Beta test of the RESCUE system completed by the end of the second year from project initiation. |
| *5. Roadway data systems projects*  5a. Statewide roadway data inventory  5b. IHSDM/HSM implementation project.  5c. Roadway issue dispatch (RID) project.  5d. MIRE creation for state routes.  5e. Roadway Improvement Safety Evaluation (RISE) | *5. Roadway data system metrics*  5a. Accessibility: currently these data are widely distributed and not accessible for IHSDM/HSM implementation. Add data elements to a IHSDM/HSM warehouse to make 20% of these data elements accessible per year so that at the end of the five year planning horizon 100% of the required data elements will be accessible.  5b. Improve the accuracy and the consistency of roadway modification benefit estimates by at least 50% over the planning horizon (e.g., if the accuracy is currently 80%, then a success would be in raising this accuracy to 90%), and thereby improving the optimization process so that an additional benefit of ten lives per year can be saved through roadway improvement projects.  5c. The addition of ten RID reports per month routed to either ALDOT or the appropriate county or city engineer.  5d. Ongoing progress of 20% of the data elements functional per year after initiation of the project.  5e. Beta test with at least five maintenance projects during the second year after project initiation. |
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| *6. Vehicle Projects*  6a. Vehicle registration cards.  6b. Vehicle data LETS integration.  6c. Online Insurance Verification System (OVIS) updates.  6d. Effective TZD infrastructure. | *6. Vehicle Performance Metrics*  6a. Improve the accuracy of person and vehicle validation from its current value of approximately 90% to 98%. Implement cards statewide starting in 2018.  6b. Decrease the time that it takes an officer in the field to obtain vehicle and insurance verification from an average of six minutes to less than five seconds.  6c. Detect at least five areas where improvements can be made and develop them during the first year after project initiation.  6d. Documented interaction with TZD researchers resulting in the use of CARE and other tools and data to support and continue to develop the TZD infrastructure. |
| *7. Integration Projects*  7a. SafeHomeAlabama.gov  7b. TSIS Coordinator  7c. Mobile Officers’ Virtual Environment (MOVE) upgrades to support integration.  7d. Mobile device technology.  7e. Data-Driver Approaches to Crime and Traffic Safety (DDACTS)  7f. CARE ETL development.  7g. Safety Portal | *7. Integration Performance Metrics*  7a. Timeliness: add 10 more associates and pages to SHA and assure that information received is posted out on the web site within one hour of receipt.  7b. Presence of a functioning full-time TSIS coordinator, as evidenced by a complete documentation of all TSIS efforts and a complete knowledge of all co-efforts that are being performed in the TSIS community (i.e., any information systems effort that relates or can relate to traffic safety.  7c. Addition of at least three new functions to MOVE over the 2015 fiscal year.  7d. At least three applications ported over to smart phone or smart tablet technology within the 2015 fiscal year.  7e. Creation of at least one implemented DDACTS system by the end of FY 2015; e.g., the integration of crash, incident and citation data to determine optimal placement of law enforcement assets.  7f. One application functional every six months of the following: (1) crash-roadway; (2) crash-citation; (3) crash-EMS/injury; (4) crash-vehicle.  7g. The functioning portal with two major CARE/ADVANCE datasets added per year over the planning horizon. |

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