

# State of Alabama Fiscal Year 2022

## Highway Safety Plan



Prepared for

The US Department of Transportation

National Highway Traffic Safety Administration

and

Federal Highway Administration

by the

State of Alabama

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## Highway Safety Plan

**NATIONAL PRIORITY SAFETY PROGRAM INCENTIVE GRANTS - The State applied for the following incentive grants:**

S. 405(b) Occupant Protection:	<b>Yes</b>
S. 405(e) Distracted Driving:	<b>No</b>
S. 405(c) State Traffic Safety Information System Improvements:	<b>Yes</b>
S. 405(f) Motorcyclist Safety Grants:	<b>No</b>
S. 405(d) Impaired Driving Countermeasures:	<b>Yes</b>
S. 405(g) State Graduated Driver Licensing Incentive:	<b>No</b>
S. 405(d) Alcohol-Ignition Interlock Law:	<b>No</b>
S. 405(h) Nonmotorized Safety:	<b>No</b>
S. 405(d) 24-7 Sobriety Programs:	<b>No</b>
S. 1906 Racial Profiling Data Collection:	<b>No</b>

# Highway Safety Planning Process

## Data Sources and Processes

### *Identification of Highway Safety Problems.*

The State of Alabama has a comprehensive, evidence-based enforcement plan that encompasses all traffic safety program areas. This section gives the steps of the planning and problem identification processes applied by the Alabama Office of Highway Safety (AOHS) in creating its Highway Safety Plan (HSP). The following outlines the procedures that are followed in developing the countermeasure programs that are included in the HSP:

- A general problem identification is initiated as soon as the close out of the previous year's state crash data is completed, usually in the April-May time frame.
- The most current year of data after the close out is combined with the previous two years of data in order to have three years of crash data to perform the problem identification. Research has shown that three years is an optimal time span for predicting future hotspots.
- Hotspot analyses are run for the major subjects of interest, in this case speed, impaired driving, and lack of seatbelt use using the Critical Analysis Reporting System (CARE).
- From these analyses, it becomes clear where the critical locations are as well as the answer to the more general who, what, where, when, how old and why questions to address how these crashes can best be addressed.
- To ensure that the Community Traffic Safety Project/Law Enforcement Liaison (CTSP/LEL) Coordinators are thoroughly involved in this process, they are required to submit their plans in the April-May time frame, at about the same time as the statewide problem identification is being performed. The submitted plans include feedback on previous years' efforts in their respective areas.
- These plans are then combined to produce the specific action items that are implemented.

The HSP is evidence-based, as demonstrated by the results of the problem identification steps documented. AOHS does recognize there are many excellent countermeasure programs that are in need of funding. For example, it is recognized that fatalities are caused by many factors other than speed, impaired driving, and lack of proper restraints.

However, optimality demands that the limited resources available be applied to those areas that have the maximum fatality-reduction potential. According to the analysis of state crash data from 2020 these "top three" issues demonstrate the greatest crash elimination and severity-reduction potentials for fatal and severe injury crashes. However, even if all the goals for these various programs are met, there will still be an intolerably high death and injury toll, and the State embraces all the principles of the national Toward Zero Deaths (TZD) effort.

AOHS uses the CARE system to develop a complete listing and mapping of problem crash locations (or hotspots) throughout the state. In addition to a breakdown by CTSP/LEL regions and Alabama Law Enforcement Agency (ALEA) posts, the results are also subdivided by crash type and roadway classification. This is because different agencies may deal with different roadway classifications, and different tactics may be applied to the different types of crashes. In addition, all agencies have access to the preliminary statewide plan. By providing both statewide and specific information to each area, the regional coordinators can identify the problems and locations in their region, and they can also determine how these locations relate to the statewide plan.

Once this information is provided to the CTSP/LEL Coordinators, they are instructed to focus their grant applications for the coming year on the hotspot locations given in the reports for their region. Other issues presented in their applications are reviewed by AOHS staff to ensure integrity and consistency among the regions. Once the grants are awarded, the enforcement programs are continuously evaluated, and any necessary adjustments are made throughout the fiscal year. The implementation of the Evidence-Based Enforcement Plan is demonstrated below in the following sections by major issue areas:

- Impaired driving and speed related crash hotspots – 402 funds
- Alcohol- and drug-related crashes hotspots – 405d funds
- Restraint-deficient hotspots – 402 funds

Media campaigns are also conducted alongside high visibility enforcement campaigns. The value of such integrated enforcement efforts is demonstrated by studies referenced in Page 1-24 of NHTSA Countermeasures that Work, the URL reference:

*Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition, 2017*

[https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478\\_v5\\_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf](https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf)

## Process for Developing Highway Safety Performance Measures and Targets

Performance measures and target development has been a process initiated by AOHS more than a decade ago and are updated annually as the traffic safety picture has changed. The AOHS staff review provided data and develop and select evidence-based countermeasure strategies and specific projects to address problem areas and to achieve performance targets.

Grant funds are allocated to the regions based on an assessment of their needs in terms of reducing the problems identified in their respective regions. Specific projects involving the state CTSPs will be largely focused on the problem locations discussed and defined in Hotspot Listings presented below. In addition, AOHS will continue participation in high visibility enforcement programs, such as the “Click It or Ticket” and “Drive Sober or Get Pulled Over”



campaigns. Generally, funding is allocated to each region based on the percentage of hotspots in the region. AOHS continues to pledge its support to these programs and will fund the participating regions and agencies accordingly.

There are several items of consideration that are essential to understanding the rationale for the performance measures and targets that are discussed in this as well as the following subsections. Many of the items below impact several of the performance measures. The following list presents considerations for the rationale for deriving the performance measures and targets for these various items:

*Baselines for Analysis and Agreement.* Generally, the baselines for the estimates were calculated from the most recent five years of data. This can be seen from the data that demonstrate the metrics over the past five available calendar years (2015-2019). Items C-1, C-2 and C-3a used the identical methodology as was approved in the coordination meetings with ALDOT in order to keep these goals consistent with the safety goals required by FHWA. **Goals for C-1, C-2, and C-3a were mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan Steering Committee and the Highway Safety Improvement Plan Committee.**

*Distinction between Data and Estimates.* The shaded areas in all graphs represent the projected number assuming that the established trend as given by a linear regression line over the previous known values continues. The rolling 5-year averages are used to create a linear model to project two future years. The linear projection and slope are represented in the chart. The first projected year is not shaded as heavily as the “out” years in order to convey an idea of the reliability of the projection. Clearly, the further out that an estimate is projected, the less reliable it will be.

*Accounting for Extrapolation Errors.* Extrapolating from a limited number of past values can lead to extreme errors, especially since the latest FARS value that we have in most cases is 2019, requiring (for example) that the estimates of 2020, 2021 and 2022 all be based on an extrapolation of 2015 through 2019. (Unless otherwise noted, all references to years of data are calendar years.) Rarely, if ever, does such a linear trend establish an accurate prediction, especially in crash data where it is commonly accepted that *regression to the mean* follows most dramatic departures (positive or negative) from the established trend. Nevertheless, these estimates are presented since they provide the *best data* upon which to make and refine the estimates.

As a further refinement, the slope from last year is compared with the current slope to determine if it: (1) changed from positive to negative, or (2) changed significantly from a steep to a relatively level slope. This projection and slope comparison is used to estimate the next two years individually. By comparing the liner projection, raw baseline, and the individual year values, the estimate for the value for the goal was obtained.

*All fatality count metrics.* The two paragraphs above are particularly applicable for any metric that is dependent on fatality counts. Consistent with the national trend, Alabama experienced almost a 23% reduction in fatalities between 2007 and 2010 compared to the average of the previous four years. Because of several economic factors (price of fuel and alcoholic beverages,

reduction in driving by high-risk groups, reduction in speeds for fuel conservation, and several other well-established factors), the typical regression to the mean did not occur in the 2011-2013 time frame. However, it was experienced in 2014, 2015, and especially in 2016 as the economy rebounded. Any trend line that includes fatality counts prior to 2008 will obviously produce a down trend that is clearly not feasible to maintain by traffic safety countermeasures alone. Thus, the data chosen for the five-year trend and the baseline will go back no further than 2010 for the current estimates. Even this generally produces a very optimistic projection, and since the state has been urged to be aggressive (but not unrealistic) in setting goals, they will generally be somewhere between the projected trend line point for 2022 and the baseline. In the past, notable exceptions to these general patterns were observed in motorcycle and pedestrian fatalities; motorcycle and pedestrian fatalities are discussed as separate items in this list below.

One luxury we have is that the 2020 estimates are known with fair certainty. However, FARS and our state data (from CARE) rarely, if ever, produce the same fatality results. To assist in getting a more reliable estimate, a relation between FARS and CARE was created using the past three years of data. The estimated CARE counts are converted to FARS values that are more likely to be reported. These individual year values, along with the linear projection, and raw baseline are all considered to set the final goals.

*Severe injury count metrics.* The considerations above for fatality counts also apply to severe injuries, and so the rationale for the estimates for severe injury counts follow this same pattern. However, there is another very important factor at work for the state's severe injury counts that is critical to note. In July 2009 the state generally (with the exception of about 15% of the reports at that time) went to a different definition of severe injury (also called "A" injury). In the FY 2017 HSP, the C-2 graph showed a precipitous drop between 2008 and 2010 caused largely by this change in the reporting definitions. It was determined prior to setting any goals or performance metrics for FY2018, that no A-injury statistics prior to 2011 would be used in the calculations. This should hold for FY2022 estimating process as well.

*Motorcycle fatalities.* The rationale regarding fatality trends in general (given above) does not apply to motorcycle fatalities. There are two reasons for this: (1) the same economic forces that reduce fatalities in general often work in just the opposite way when it comes to the use of motorcycles, i.e., they become a much more attractive mode of transportation because of the combined negative economic factors; and (2) because of this and the aging of the motorcycle-driving population in general, more and more motorcyclists are of a higher age and thus less able to either avoid or survive a severe injury. For these reasons, it should be expected that the sustainment of a goal slightly below the 81 baseline would be more realistic.

*Seat belt use.* The projection for 2022 is based upon the five-year rolling average that includes the new method for estimating seat belt used as prescribed by NHTSA.

*Five-year average goals.* Most of the crash related goals are set differently from years prior to 2014. Analysis concluded that since we were basing estimates on five-year averages, it would not be correct to predict given a one-year estimate. Thus, the goals given are generally for the five-year average that will be computed at the end of 2022. The graphs below display the five-year rolling averages: however, the numbers listed above the charts are the single year number for each year.

*Pedestrian fatalities.* Pedestrian fatalities have two contributing aspects: (1) the situation that brings the pedestrian into an inevitable crash by a motor vehicle, and (2) the ability of the pedestrian to take preventive action even when that collision cannot be avoided. To evaluate the effect of this second subtle (and usually ignored) factor, a comparison was made between those cases in which the pedestrian was killed and those in which the pedestrian was only injured. It was definitively shown that those who were killed were far more likely to be the subjects of impaired walking: on average they had 8 times the drug use indicators and twice the alcohol use indicators. Time of day also validated alcohol and drug use. There is no indicator on the form if the pedestrian was on a cell phone, texting or otherwise distracted. However, it seems clear that when such is the case, the pedestrian will be more apt to be caught by surprise and thus will not take last minute remedial action to protect themselves.

*Distracted Driving (DD) and walking.* While distracted driving has not been broken out as a separate subject for setting a target, it has become clear that it is playing a major part in causing crashes in conjunction with several other causal factors. NHTSA estimates on the percentage of fatality crashes caused by DD currently stand at 10%, but these estimates have been growing over the past five years. While Alabama's reported 52 DD fatal crashes in 2020 are below this estimate, it seems clear that this is a reporting issue for this new attribute on the crash report form, and it is expected to grow as officers become more accustomed to recognizing and reporting it. It should be recognized that DD is embedded within many of the other crash types, and in particular: youth risk taking, speed, impaired driving and pedestrian fatalities (see above).

*DUI Drugs and Alcohol.* A recent study by GHSA has confirmed that drug use, including both prescription and illegal drugs, have overcome alcohol as the major cause for impaired driving (nationally). This trend should be alarming to all traffic safety professionals in that the cultural acceptance of the use of marijuana is a reality. It also signals with it the reversal in any previous stigma with regard to other drugs. Further, this trend is in its infancy with the recent legalization of the "recreational use" of marijuana in several other states. The problem is greatly exacerbated by the fact that there is no simple test equivalent to the alcohol portable BAC test units, nor are there any standards that are analogous to the 0.08 % BAC, and thus no practical way for law enforcement officers to prove that a driver is inebriated by marijuana. The combination of alcohol and additional combinations of drugs are highly problematic. With the difficulty in identifying drugs, there can be little doubt that the reported use/abuse of alcohol and drugs is significantly under-reported.

*Assumption for all goals - excluding C-1: Number of Traffic Fatalities (FARS), C-2: Number of Severe Injuries in Traffic Crashes (State crash data files – most severe category: “A” Injuries), and C-3a: Total Fatality Rate/VMT (FARS/FHWA).*

Alabama experienced a minor increase in fatalities in 2015 and then a major increase in fatalities in 2016. Although the crash trends declined slightly in 2017 and 2018 compared to 2016, our baseline includes the lower totals from 2013, 2014 and 2015. The decision was made to project the 2017-2019 performance measure levels into 2021 and 2022, and to base the targets on that data. The rationale for this is that if we can maintain the 2017-2019 performance measure levels rather than seeing any further increases, this progress will be significant. A similar rationale was used for severe injuries. Some preliminary State data indicates that severe injuries are still on the upward trend.

### Evidence-Based Countermeasure Strategies/ Projects

The state has developed an Evidence-Based Enforcement (E-BE) plan to determine enforcement activity locations based on high-risk hotspots. These hotspots are identified according to criteria based on injury severity and the particular type of crash for which enforcement is being directed. These hotspots are then communicated to the Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) coordinators for each of the state’s traffic safety regions. It is the responsibility of the CTSP/LELs to facilitate both regular and special enforcement programs within their respective regions. This response will continue with a discussion of the analyses performed, the deployment of resources, and the process for continuous follow-up and improvement.

The highest level of problem identification analysis is given by Table 1, which will give a detailed explanation in the response to “State’s Overall Highway Safety Problems” below. At that point it will be seen that Table 1 identifies the most critical issues to be the following three items: (1) Restraint Deficient; (2) Impaired Driving and (3) Speeding. The first of these is the primary cause of increased injury severity in crashes. The second and third are crash causes, although speed can be both a cause and a severity increase. Impaired Driving is often highly correlated with both restraint deficiency and higher impact speeds. Thus, there is ample justification for considering these three simultaneously.

The following was the procedure employed to generate the hotspots that provided the basis for implementing the data driven approach for E-BE:

- Crashes that were in either the Speed or Impaired Driving category were identified and locations with the highest numbers of these crashes (particularly the severe crashes) were included in a list;
- Locations were defined by specific criteria depending on roadway classification;
- CARE identified hotspots in four major categories: (1) Interstate, (2) Federal and State Routes, (3) non-mileposted intersections (for Impaired Driving Crashes only) and (4) non-mileposted segments;
- The list was prioritized by crash frequency severity;
- Those areas where seat belt non-use was highest were also isolated for enforcement.

The hotspots that were defined, listed, and mapped are presented below.

Each of the four regional coordinators use these specifications as the basis for their plans for the upcoming year. Their data were formatted in the same way as the statewide reports but only included information on hotspots specific to the given region. While Interstate hotspots are covered by ALEA, the CTSP Coordinators were provided copies of the Interstate hotspots for their information. The reports provided on a regional basis are as follows:

- Regional Fatalities Bar Graph
- Top Speeding Related Mileposted State/Federal Route Crashes Map for Region
- Top Speeding Related Mileposted State/Federal Route Crashes Listing for Region
- Top Impaired Driving Related Mileposted State/Federal Route Crashes Map for Region
- Top Impaired Driving Related Mileposted State/Federal Route Crashes Listing for Region
- Top Impaired Driving Related Non-Mileposted Intersection Crashes Listing for Region
- Top Speeding Related Non-Mileposted Segment Crashes Listing for Region
- Top Impaired Driving Related Non-Mileposted Segment Crashes Listing for Region

Generally, each ALEA region receives a package of information that is formatted just like the statewide results but tailored to their particular region or roadway subset. All law enforcement agencies also have access to the statewide plan, and they are instructed to focus their E-BE details for the upcoming year on the hotspot locations. If any issues are raised at this point in the planning process, they are resolved by AOHS staff to ensure integrity and consistency among the regions

The effective allocation of resources ideally leads to a reduction in the number of hotspots within the next year on both a statewide level and within each individual region. That is, given that the total number of crashes remains relatively stable, the concentration of efforts at the hotspots will reduce crashes at those locations so they may no longer be defined as hotspots in the following year. Ideally, the goal would be to eliminate hotspots defined by the previous year's criteria altogether. With this in mind, funding is determined for each region based on the percentage of hotspots in that region. There is also a consideration of the percentage of alcohol, restraint, and speed crash issues that are present within each region. Federal funds distributed by the AOHS are used to focus completely on the high crash areas within each region.

Law enforcement agencies use saturation patrols, line patrols, checkpoints, and regular patrol in order for the E-BE projects to be effective. The enforcement activities and techniques that are used include:

- Conduct four local hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP regions.
- Conduct a statewide E-BE project in conjunction with the Alabama Law Enforcement Agency (ALEA).
- Continue to require the CTSP Coordinators to conduct selective enforcement efforts that focus their plans on hotspot locations identified by the data analyses provided for their respective regions.
- Participate in the "Click It or Ticket" Campaign.
- Conduct a statewide "Drive Sober or Get Pulled Over" Campaign in conjunction with the national campaign.
- Conduct sustained E-BE for impaired driving, speeding, and seat belts throughout the year.

The enforcement efforts are accompanied by PI&E campaigns that incorporate advertising, bonus spots, website links, and support of government agencies, and local coalitions in an effort to impact restraint usage. This part of the campaign consists of:

- Development of marketing approach based on Nielsen and Arbitron ratings and targeted primarily towards the 18-34 male age group.
- Placement of paid ads on broadcast television, cable television, digital ads, and radio in addition to public service spots. Paid advertising will be placed primarily in the largest media markets.
- Management of public relations efforts including press releases and special media events to stimulate media coverage and alert the public to the campaign.
- In addition to the paid and free media, the AOHS website will have updated information including ads, articles and other information pertaining to the seat belt campaigns.
- Each CTSP/LEL Coordinator will be responsible for generating sustained earned media in their area of the state throughout the year. The CTSP/LEL Coordinators are also responsible for developing press releases and conducting press events that are specifically targeted to their regions.

AOHS monitors law enforcement agencies' activity reports to determine if adjustments are needed for their plans. When activity reports are received, they are assessed against the latest crash data to identify successful crash reductions in targeted locations, as well as new areas of risk that may be developing. This results in E-BE programs being continuously evaluated and the necessary adjustments being made. Follow-up is conducted with agencies to address any lack of performance issues or activities. Adjustments are made to the HSP annually based on the problem identification that include the enforcement plans.

## Process Participants

AOHS recognizes that traffic safety cannot be limited to one agency. It is a joint effort involving many key partnerships throughout the state. In addition to AOHS, these include the following partners along with their general responsibilities:

- Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) Coordinators – employed in the field as an arm of the AOHS, these individuals live and have offices within their respective regions, and build ongoing relationships with local and state level law enforcement as well as all other traffic safety stakeholders in the local communities who serve that region.
- Alabama Law Enforcement Agency (ALEA) – this agency is responsible for all state-level law enforcement activities. This includes most enforcement on the state and county route system as well as the support for the many computer systems that they have used in the past and currently, such as eCrash and eCite, the state’s electronic crash and citation systems.
- Alabama Department of Transportation (ALDOT) – strong coordination among the traffic safety efforts between ADECA and ALDOT is stimulated by the monthly sponsored Safety Outreach meetings hosted by ALDOT. ADECA works closely with ALDOT in the development of common traffic safety performance measures and goals, which is a requirement of the Strategic Highway Safety Plan (SHSP).
- Strategic Highway Safety Plan (SHSP) Steering Committee – which also brings involvement and close concurrence with ALDOT and the following Federal agencies:
  - Federal Highway Administration (FHWA)
  - Federal Motor Carrier Safety Administration (FMCSA)
  - National Highway Traffic Safety Administration (NHTSA)
- Alabama Department of Public Health – provides data and information technology expertise for EMSIS and trauma data integration and use.
- Local law enforcement – including city police and county sheriffs, these partners are essential to all statewide and local enforcement programs.
- Media – provides continued support to inform the public of all selective enforcement and other initiatives.
- Traffic Records Coordinating Committee – a broad based committee that represents all developers and users of traffic safety information systems.
- State and local District Attorneys – involved to increase their level of readiness and proficiency for the effective prosecution of traffic related cases.
- Alabama Impaired Driving Prevention Council (AIDPC) - assembled by AOHS to develop and approve the Impaired Driving Strategic plan and to ensure that all aspects of the impaired driving problem are considered and as many alternative countermeasures as possible are evaluated. The council has representation from agencies and organizations with a working knowledge and deep understanding of the various parts of Alabama’s impaired driving prevention system and how the parts interrelate.
- The University of Alabama Center for Advanced Public Safety (UA-CAPS) – a quasi-research agency that provides the information foundation from crash, citation, EMS runs and other databases. See: <http://www.caps.ua.edu>.

## Description of Highway Safety Problems

### *Summary of Crash Severity by Crash Type (Table 1)*

Beginning in 2010 it was determined that a tool should be established to enable decision makers to view the state's traffic safety issues at the highest possible level. This tool was named "Table 1" and it appears below. It was reasoned that, all other things being equal, traffic safety resource allocations should go to address those issues that cause the greatest number of fatalities. While this is a good default position to start from, all other things are rarely equal, and optimal resource allocations must also take into account the cost of the countermeasures being considered and the proportion of the crashes that can reasonably be reduced by any given countermeasure. Thus, an item with a lower number of fatalities could become optimal to address if a lower cost countermeasure would reduce a larger number of its crashes and fatalities.

The eCrash system that went into effect July 1, 2009 creates data that meets most of the Model Minimum Uniform Crash Criteria (MMUCC). It provides data that are much timelier, since in many cases these reports are available the same day as the crash. Careful work was done to ensure that no variables or codes that could indicate a particular crash category of Table 1 were missed, and that the search criteria captured all of the crashes for each of the particular categories for this evidence-based analysis.

The category with the highest number of fatal crashes is listed at the top of Table 1, descending to the crash type category with the lowest number of fatal crashes listed last. The number and percent of crashes by severity are listed for each category (see footnote for the exception of "restraint deficient"). This enables an easy comparison between the various crash types. It is important to realize that the categories of Table 1 are *not mutually exclusive*. However, since this is true in all of the categories, these numbers serve to give the relative criticality of the particular categories that most often are the targets for funding or other resource allocations.



**Table 1. Top Fatality Causes Alabama CY2020 Data**

	<b>Crash Type (Causal Driver)</b>	<b>Fatal Number</b>	<b>Fatal %</b>	<b>Injuries</b>	<b>Injury %</b>	<b>PDO No.</b>	<b>PDO %</b>	<b>Total</b>
1	Seat Belt Restraint Fault*	392	3.74%	3,834	36.56%	6,260	59.70%	10,486
2	Speed Involved	192	2.14%	2,769	30.89%	6,003	66.97%	8,964
3	ID/DUI All Substances	141	2.72%	1,883	36.27%	3,167	61.01%	5,191
4	Hit Obstacle on Roadside	129	2.33%	1,680	30.29%	3,738	67.39%	5,547
5	Fail to Yield or Ran (All)	128	0.50%	7,265	28.40%	18,187	71.10%	25,580
6	Large Truck Involved	117	1.40%	1,529	18.27%	6,721	80.33%	8,367
7	Ped., Bicycle, School Bus	97	4.30%	674	29.88%	1,485	65.82%	2,256
8	License Deficiency Causal	103	1.56%	2,020	30.55%	4,489	67.89%	6,612
9	Pedestrian Involved	96	14.84%	529	81.76%	22	3.40%	647
10	Wrong Way Items	93	4.89%	613	32.25%	1,195	62.86%	1,901
11	Mature (65 or Older) Causal	83	0.71%	2,453	20.97%	9,162	78.32%	11,698
12	Aggressive Operation	81	3.20%	737	29.15%	1,710	67.64%	2,528
13	Youth (16-20) Causal Driver	73	0.39%	4,040	21.71%	14,495	77.90%	18,608
14	Motorcycle Involved	68	5.00%	943	69.39%	348	25.61%	1,359
15	Distracted Driving	52	0.45%	2,523	21.64%	9,083	77.91%	11,658
16	Utility Pole	28	1.17%	776	32.43%	1,589	66.40%	2,393
17	Drowsy Driving	23	0.84%	1,016	37.12%	1,698	62.04%	2,737
18	Workzone Related	18	0.77%	441	18.85%	1,880	80.38%	2,339
19	Vehicle Defects – All	18	0.41%	929	21.27%	3,420	78.31%	4,367
20	Vision Obscured	8	0.76%	275	25.99%	775	73.25%	1,058
21	Bicycle	8	3.79%	167	79.15%	36	17.06%	211
22	Child Restraint Fault*	5	0.24%	298	14.08%	1,813	85.68%	2,116
23	School Bus Involved	4	1.13%	61	17.18%	290	81.69%	355
24	Railroad Trains	3	5.88%	13	25.49%	35	68.63%	51
25	Roadway Defects – All	1	0.82%	32	26.23%	89	72.95%	122

\* All categories list number of crashes except for the “Seat Belt Restraint Fault” and “Child Restraint Fault” categories. The restraint categories cannot accurately be measured by number of crashes so they list number of unrestrained persons for each severity classification.

The comparison of gross fatality and injury counts is merely a first step in the analytical process to find optimal allocations of resources among programs. Obtaining this perspective is essential for intelligent decision making. Once the high-level decisions are made regarding which of the crash types will be addressed, further analyses must be performed to define countermeasures and improve their implementation. The severity classification in Table 1 also helps in this regard. For example, it might be noticed that the relative severity percentage of pedestrian, bicycle, motorcycle and railroad crashes are significantly higher than the other categories, as is true for the top three categories as well. This is an important aspect to be considered when the goal is reducing deaths.

### Procedure for Problem Identification

The overall problem identification for the Alabama Highway Safety Plan (HSP) begins with the most recently generated data for Table 1. This arranges crash types by the number of fatalities and sets a priority if in fact, “all other things were equal.” But all other things are not equal, and further analysis is needed to account for countermeasure effectiveness and cost. Nevertheless, Table 1 effectively gives everyone in the traffic safety community a high-level view of the source of fatalities as well as how these fatalities are reflected in the lower severity crashes.

Two entries in Table 1 are important with regard to the Occupant Protection Plan. The following defines these two entries:

- Restraint-Deficient Crashes (RD) – any crash in which one or more of the occupants of any involved vehicle (including drivers) were not properly restrained; and
- Child Restraint-Deficient Crashes (CRD) – any crash in which one or more children who are subject to child restraint laws were not properly restrained, independent of the restraint characteristics of the other occupants.

Clearly RD is at the top of this list, demonstrating that occupant restraint is one of the most critical issues in traffic safety and fatality reduction. Child Restraint Deficiencies (CRD) are near the bottom of Table 1 with only eleven fatalities. This reflects the extreme efforts that have gone into child protection by several agencies throughout the state. Special emphasis is given to children who are quite vulnerable if not properly restrained, and the importance of maintaining all of the child restraint programs is clear. The enforcement efforts for CRD is effectively the same as that for RD.

Table 1 shows that one of the most effective ways of reducing fatalities is to increase restraint use, and this example will be used to further illustrate the problem identification process that is applied to all potential countermeasures. In reading through this example, please do not restrict consideration to only seatbelts, but recognize how the same principles apply to all countermeasures under consideration. See references at end of this section.

The next step in the problem identification process is to analyze the data for these crashes and determine all the demographics related to them (e.g., who, what, where, when, how, how old, and the “why” of crashes involving non-restrained occupants). The goal is to (1) determine the most effective countermeasures that can be applied, and once these are defined, (2) identify the best tactics to be applied within each.

This starts by determining those types of crashes that were going to be targeted for occupant protection countermeasure implementation. For example, a recent study determined a very strong correlation between Restraint Deficiencies (RD) and other risky driving characteristics. DUI (alcohol and other drugs) and speed were correlated with non-use, and younger drivers 16-25 were particularly vulnerable. Young drivers are particularly susceptible to risk taking behaviors since the part of their brain that properly assesses risk is not fully developed until age 25. While the average seatbelt use rate for all occupants has been measured above 90%, for those involved in fatal crashes the use rate was approximately 45%.

(See Fatalities at <http://www.safehomealabama.gov/PlansAnalysis/FARSandALFatalities.aspx>)

Evidence-based enforcement (E-BE) has been determined to be one of the most effective methods for increasing restraint use in general. This requires that specific locations be identified where there were concentrations of crashes involving unrestrained occupants. Once these hotspots are defined using the Critical Analysis Reporting Environment (CARE) software, the Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) Coordinators across the state are given information on the hotspot locations for the state as a whole. They were also provided detailed hotspot reports specific to their region to assist them in focusing their area efforts. Using the reports and maps developed for each region, the CTSP/LEL Coordinators develop plans, including the time schedule and work assignments, for their respective regions that focuses on the hotspot locations.

### *Narrative Description of Categories*

The purpose of these narrative descriptions is to give non-technical users of Table 1 a simple description of each of the items so that they can better be used to make comparisons that are essential to effective decisions regarding resource allocations that must be made among the various crash categories.

Unless otherwise indicated, the counts presented in Table 1 are Crashes. Exceptions are crash categories 1 and 22, restraint items. These two exceptions are for restraints, and an asterisk (\*) is placed on these items for the footnote that describes the reason for the exception (see Table 1 above).

The descriptions below are given in terms of the Table 1 item numbers that were used in the HSP. A brief rationale will be given for each category so that its use can be placed into a real-world context. The ordering within the current Table 1 is in terms of the number of fatalities that were found for each category during CY2020. This numbering will change when Table 1 is updated in the future, due to the changes in the categories as well and the changes in the number of fatal crashes counted within each category. There has been no attempt whatsoever to make

these categories mutually exclusive. It is easy to imagine crashes that might include five to ten of the categories simultaneously. Users of Table 1 will need to apply their knowledge of traffic crash causes and severities to estimate which of the multiple causes might be the primary cause for the fatalities indicated, and thus the higher priority to attack.

*Descriptions of the categories within Table 1:*

1. Seatbelt Restraint Fault\*

This item records those restraint faults (generally non-use but could be improper use) of restraint that have been found to generally result in an increased severity in those who are not properly restrained. It covers drivers and all occupants of age 6 and older. Those aged less than 6 are covered in Category 22, Child Restraint Fault.

2. Speed Involved

This item includes all crashes in which speed was indicated to be a factor, which is generally indicated as “Over Speed Limit.” However, for 2021 “Too Fast for Conditions” was added to this category.

3. ID/DUI All Substances

This item includes all crashes in which either alcohol or any other drug was indicated to be involved in the crash.

4. Hit Obstacle on Roadside

This item includes crashes where the vehicle ran off the road and struck an object on the roadside, restricted to obstacles for which the responsible agency would have some capability to remove or otherwise mitigate the hazard.

5. Fail to Yield or “Ran” (All)

This is a new item that includes all subcategories of Failure to Yield the Right-of-Way and “Ran XXX,” such as “Ran a Stop Sign” or “Ran a Traffic Signal.” The reporting of just one or a small subset of these did not seem to be warranted since the underlying cause of such behavior is the same regardless of where it manifests itself.

6. Large Truck Involved

Generally, this covers all trucks larger than the typical pickup truck. The attempt here is to concentrate on the size of the truck as opposed to its function or whether it is a CMV (some will be; others are not). For specific details, see the filter below. Also, see the comment under Motorcycle Involvement, Category 14.

7. Pedestrian, Bicycle and School Bus

This filter is obsolete and is in the table now as a place holder, and/or for those who have used this category in the past, to provide continued comparisons. Its original intention was to be a metric of younger school children involvement, but each of its constituents now has its own category.

8. Causal Driver License Status Deficiency

This item includes all crashes in which the causal driver had one or more of the following driver license status deficiencies: Denied, Expired, Fraudulent, Revoked, and/or Suspended. It serves as an indicator as to whether the change of license status has a significant effect on the crash expectations of those drivers involved.

9. Pedestrian Involved

This item includes all crashes that involved pedestrians in any way, independent of whether the pedestrian was the cause of the crash. See the comment under Motorcycle Involvement, Category 14.

10. Wrong Way Items

All crashes where the causal vehicle is in a lane for oncoming traffic; this includes median crossovers and lane departures into oncoming traffic on two-lane or four-lane roads. It also includes violations in no-passing zones, since these offenses would put the causal driver into oncoming traffic lanes.

11. Mature – Age > 65 Caused

This item includes all crashes in which the causal driver was of age greater than 65 (i.e., 66 or older).

12. Aggressive Operation

This code is selected by officers when there are two or more factors that are relevant and thus the indication is that the driver was under some psychological stress to disregard several safety considerations simultaneously.

13. Youth Age 16-20 Caused.

This item includes all crashes caused by drivers of age 16-20 inclusive.

14. Motorcycle Involved

This item is for those crashes in which a motorcycle was involved either as the causal vehicle or the second unit in the crash.

*General comment on vehicle type involvement.* Discussions were conducted as to whether categories that involved vehicle types should be those “involved” or those “caused by.” It was determined that countermeasures to these crashes could, and in some cases should, change the behaviors of vehicle drivers that are not of the category type who caused the crash. Thus, it was felt that all crashes in which they were involved should be included, and not just those caused by the driver of the specific vehicle type. This applies to all categories that are defined by a vehicle type, including pedestrians.

15. Distracted Driving

This item is an attempt to count all of the ways drivers can be distracted. These would include distracted by: Passenger; Use of Electronic Communication Device; Use of Other Electronic Device; Fallen Object; Fatigued/Asleep; Insect/Reptile; Other Distraction Inside the Vehicle; and/or Other Distraction Outside the Vehicle. Of these, Fatigued/Asleep is redundant with Drowsy Driving (see 16). For purposes of analysis, it is left as a contributor to this list to be consistent with the way it is reported on the crash report. It should be noted that Drowsy Driving may include items of fatigue and sleep that are not within the Distracted Driving category. See Category 17, which was a new category that was added for the 2020 HSP.

16. Utility Pole

There are many roadside obstacles that are struck by vehicles that run off the road. These are listed here since generally, utility poles are obstacles that are of special interest to utility companies.

17. Drowsy Driving

This item includes all indications that the driver or drivers were drowsy or falling asleep.

18. Workzone Related

There are about ten locations within a workzone in which a crash can be specified to have been located. This item includes any or all of them. The workzone does not need to be a cause of the crash in any way for it to be counted; the crash just needs to be in or adjacent to the workzone.

19. Vehicle Defects (All)

This includes all reportable vehicle defects, namely: Brakes, Steering, Tire Blowout/Separation, Improper Tread Depth, Wheels, Wipers, Windows/Windshield, Mirrors, Trailer Hitch/Coupling, Power Train, Fuel System, Exhaust, Headlights, Tail Lights, Turn Signal, Suspension, Cruise Control, Body/Doors, and Other. Paper Report Archive that are no longer reported as separate items in eCrash include: Tires, Lights, Restraint System, and Cargo.

20. Vision Obscured

This covers the following situations in which vision might be obscured by something in the roadway or its environment. Typically, the vision obstructions listed in the crash system are those that can be addressed by engineering types of countermeasures and thus exclude items of a temporary nature, such as obstructions caused by weather conditions. Roadway related obstructions are included.

21. Bicycle (Pedalcycle) Involved

This is all crashes in which a pedalcycle (mostly bicycles) were involved independent of who caused the crashes. See comment under Motorcycle Involvement, Category 14.

22. Child Restraint Fault\*

This includes the child passengers aged 5 or younger who were not properly restrained.

23. School Bus Involved

This is the number of crashes that involved a school bus independent of the causal unit. See comment under Motorcycle Involvement, Category 14.

24. Railroad Train Involved

This counts the number of crashes in which a railroad train was involved, independent of whom may have caused the crashes. See comment under Motorcycle Involvement, Category 14.

25. Contributing Roadway Defects

Any crash where a roadway defect was noted as a Contributing Circumstance in any of the following: C015, C202 or C542 (PCC, CUCC and V2 Contributing Circumstance is equal to either:

- 1 E Roadway/Sign/Signal Defect; or
- 2 P Roadway Defect

## Methods for Project Selection

The goal of Alabama project selection approach is to create the safest surface transportation system possible, using comparable metrics from other states in the Southeast to assess progress in maintaining continuous recognizable improvement. Its primary ideals are to save the most lives and reduce the most suffering possible. The approach to project selection is to apply an *evidence-based* approach that draws upon detailed problem identification efforts to quantify and compare alternatives that are given within the NHTSA document *Countermeasures That Work*. Over the years the primary focus has evolved to implementing an Evidence-Based Enforcement (E-BE), concentrating on enforcement with special emphasis on speed reduction, impaired driving elimination and increasing the use of restraints; using data that are centered around the hotspot analyses performed for each of these countermeasure subject areas.

The approach toward implementing this goal involves a concentration on the necessity for a cooperative effort that involves teamwork and diversity, including all organizations and individuals within the state who have traffic safety interests, many of which were given above. The focus of crash reduction countermeasures is on the locations with the highest potential for severe crash frequency and severity reduction, as identified for speed and impaired driving, which were the largest two causes of fatal crashes, and for restraint non-use, which is the greatest factor causing increased crash severity.

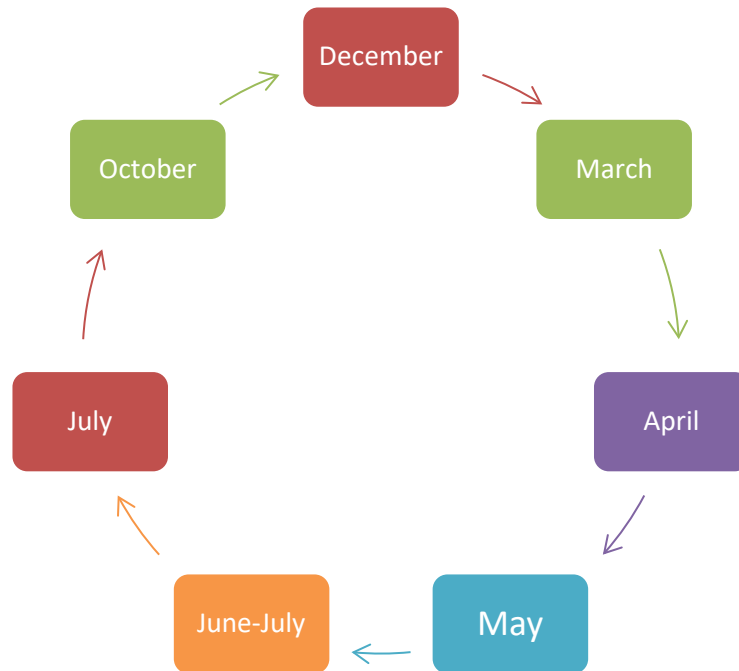
There are several approaches used in the *evidence-based* project selection, some of which are outlined as follows:

- Compare similar results from year to year from the data that is used to drive the countermeasure selections. For example, similar hot-spot analyses are performed from year to year to determine the changes in the crash statistics as well as the correlated demographics. This quantifies both improvements and setbacks.
- If the indications are that a program implemented in the previous fiscal year fell short of its intended target, analyses are performed to determine the various causes in terms of continual improvement in the future.
- If it is determined that a specific program was particularly successful, then its characteristics are studied to determine if they can be applied or even reinforced in future efforts.
- For new countermeasures, at the highest level, evaluate alternative overall countermeasure strategies and select the ones that will best solve the problem.
- Once new countermeasures are resolved, use further analytical techniques to fine tune those that have been selected for implementation. For example, the highest level might resolve that selective enforcement and PI&E are the superior countermeasure types to employ, while the second level would establish the specific locations and media markets to implement these countermeasures.



Project selection involves refining the performance measure targets each year. At the same time, evidence-based countermeasure strategies and specific projects to address problem areas and to achieve performance targets are developed and selected.

The AOHS planning process follows the timeline below:



- December- Annual Report (AR) is prepared and submitted to NHTSA. The AR serves as a key evaluation tool in determining the effectiveness of planned activities and individual projects.
- March- AOHS collects up to date state data from CAPS to determine hot spots in the CTSP regions. This analysis helps determine funding levels and percentages for enforcement campaigns, as well as helps evaluate and identify emerging issues.
- April- Results from data analysis and countermeasure selection are presented to project directors at the Quarterly Project meeting. Once this information is communicated, the involved agencies and potential subrecipients are given the application deadline.
- May- Grant applications are submitted.
- May-July- Applications are reviewed and recommended by AOHS for funding. AOHS also prepares the Highway Safety Plan for NHTSA.
- July 1- Submit Highway Safety Plan to NHTSA.
- October 1- Grant year begins

AOHS does not have a formal grant selection committee to oversee the submission and approval of project proposals outside of office staff. Rather, AOHS fully utilizes the year-round interactions and meetings with traffic safety stakeholders and committees to identify how the state can work together to address issues in a coordinated way. For example, the AOHS meets quarterly with the AIDPC and TRCC to stay informed on actions different organizations are taking throughout the state to address Impaired Driving and Traffic Records issues, respectively. These meetings allow for communication and collaboration amongst the different organizations and agencies' jurisdictions on current and emerging issues.

### List of Information and Data Sources

The following data sources are listed in order of the amount of use of each source:

- Crash data from the Alabama eCrash system.
- Citation data from the Alabama eCite system.
- FARS data for fatal crashes, from NHTSA.
- Traffic volume trends from FHWA Office of Highway Policy Information.
- Transportation Economic Trends 2017, Bureau of Transportation Statistics.
- AASHTO Traffic Volume Trends.

### Description of Outcomes regarding SHSP and HSIP Coordination

In addition to AOHS, the programs implemented receive extensive review and recommendations by those who developed the state's Strategic Highway Safety Plan (SHSP). The overall performance measures and targets set in the SHSP for the State of Alabama are complementary to, and consistent with, those developed by AOHS. Over the past several years, the AOHS Highway Safety Plans (HSP), including Table 1, have been incorporated into the SHSP, which is mandated by FHWA and the FAST Act. This reflects the statewide agreement with the targets and approaches being taken by AOHS in the use of Table 1 as a planning tool at the highest levels. These targets were set by AOHS using FARS and CARE crash data. In those cases where the goals had to be consistent with the SHSP and the HSIP, the appropriate ALDOT officials were involved in assuring the concurrence among the three documents.

AOHS has worked collectively with ALDOT in performance measures development and target setting for the common goals of the HSP, SHSP and the Highway Safety Improvement Plan (HSIP). The common goals were mutually accepted by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan committee. The major goals of both the HSP and the SHSP are to bring about the most effective and coordinated statewide allocation of traffic safety resources possible, including funding, equipment, and personnel.

## Performance Report

*Progress towards meeting State performance targets from the previous fiscal year's HSP*

Performance Measure:	2021 HSP				
	Target Period	Target Year(s)	Target Value FY21 HSP	Data Source*/ FY21 Progress Results	On Track to Meet FY21 Target YES/NO/In-Progress
C-1) Total Traffic Fatalities	5 year	2017-2021	961	2015-2019 FARS 953	In Progress
C-2) Serious Injuries in Traffic Crashes	5 year	2017-2021	6,595	2015-2019 State Crash Data	In Progress
C-3) Fatalities/VMT	5 year	2017-2021	1.36	2015-2019 FARS 1.36	In Progress
C-4) Unrestrained Passenger Vehicle Occupant Fatalities, All Seat Positions	5 year	2017-2021	400	2015-2019 FARS 376	In Progress
C-5) Alcohol-Impaired Driving Fatalities	5 year	2017-2021	260	2015-2019 FARS 267	In Progress
C-6) Speeding-Related Fatalities	5 year	2017-2021	256	2015-2019 FARS 260	In Progress
C-7) Motorcyclist Fatalities	5 year	2017-2021	81	2015-2019 FARS 87	In Progress
C-8) Unhelmeted Motorcyclist Fatalities	5 year	2017-2021	8	2015-2019 FARS 10	In Progress
C-9) Drivers Age 20 or Younger Involved in Fatal Crashes	5 year	2017-2021	120	2015-2019 FARS 129	In Progress
C-10) Pedestrian Fatalities	5 year	2017-2021	114	2015-2019 FARS 113	In Progress
C-11) Bicyclist Fatalities	5 year	2017-2021	7	2015-2019 FARS 7	In Progress
B-1) Observed Seat Belt Use for Passenger Vehicles, Front Seat Outboard Occupants (State Survey)	5 year	2021	93.2	State Survey 92.5%	In Progress

Performance Measure: C-1) Number of traffic fatalities (FARS)

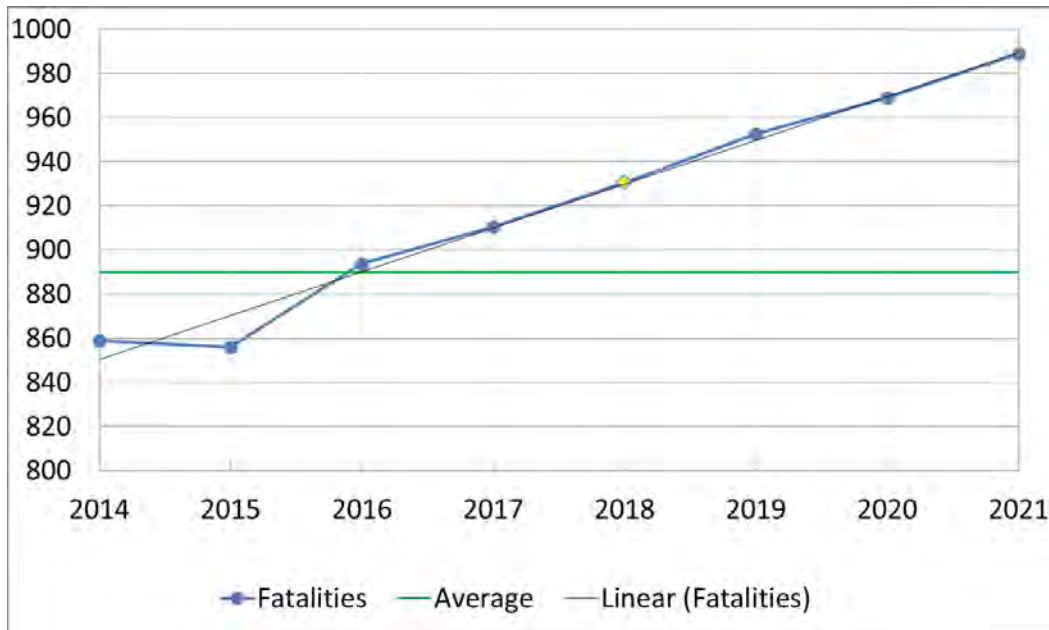
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
820	849	1083	948	953	931	<b>961</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to not allow Number of Traffic Fatalities to increase more than 3.22 percent from the five-year baseline average of 931 (2014-2018) to 961 by 2021. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan committee.** The five-year average (2015 to 2019) number of fatalities in traffic crashes for 2020 is 953. The goal is in progress to being achieved.

5 Year Rolling Averages of Traffic Fatalities



Performance Measure: C-2) Number of serious injuries in traffic crashes (State crash data files)

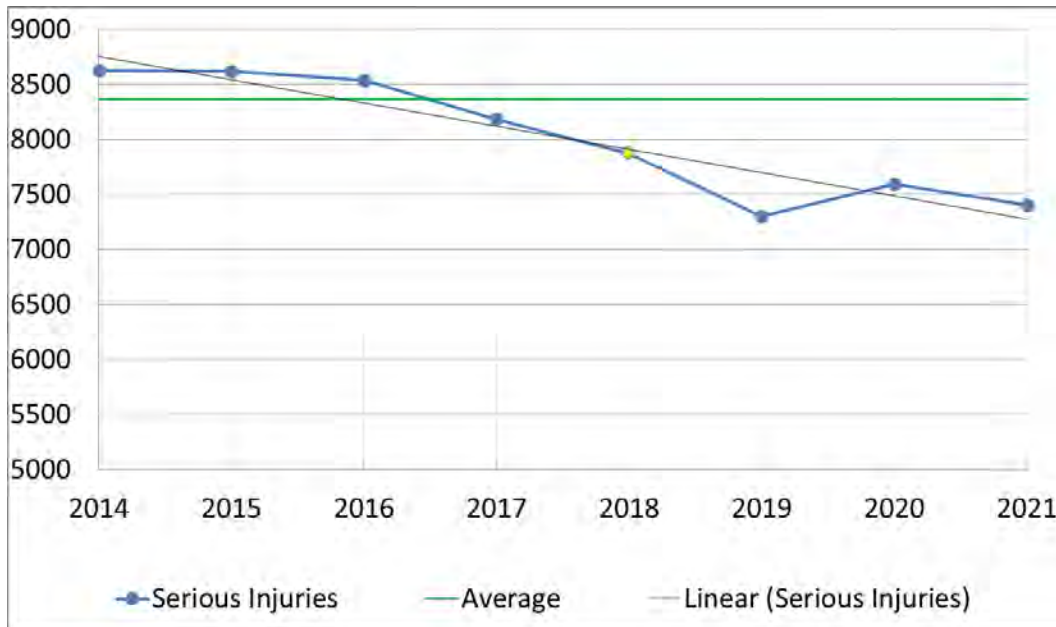
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
7967	8760	8152	7484	7002	7873	<b>6595</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to reduce Number of Severe injuries in Traffic Crashes by 16.23 percent from the five year baseline average of 7,873 (2014-2018) to 6,595 by 2021. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan Committee.** The five-year average (2015 to 2019) number of serious injuries in traffic crashes for 2020 is 7,300. The goal is in progress to being achieved. State data shows the number of serious injuries in 2020 to be 4,777. If this trend continues, it can be anticipated that in 2021 the five year goal could be in range to achieve the goal.

5 Year Average of Serious Injuries



Performance Measure: C-3) Fatalities/VMT (FARS, FHWA)

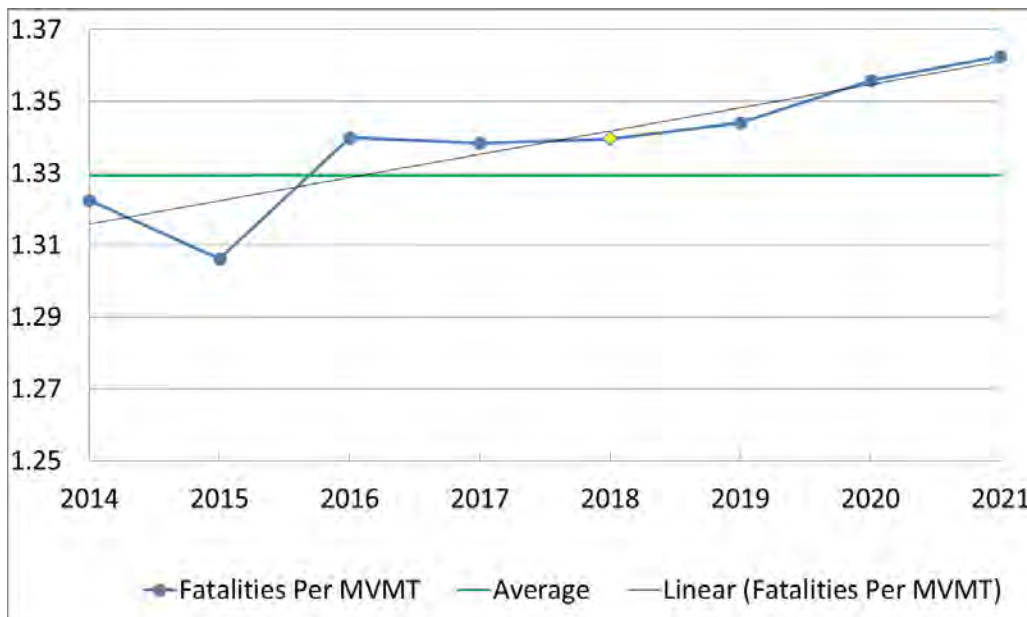
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
1.25	1.26	1.55	1.32	1.32	1.34	<b>1.36</b>

Performance Target justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to not allow the Total Fatality Rate/VMT to increase by more than 1.49 percent from the five-year baseline average of 1.34 (2014-2018) to 1.36 by 2021. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan committee.** The five-year average (2015-2019) fatality rate for 2020 is 1.36. The goal is in progress to being achieved.

5-Year Rolling Averages of Total Fatalities/100 MVMT.



Performance Measure: C-4) Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS)

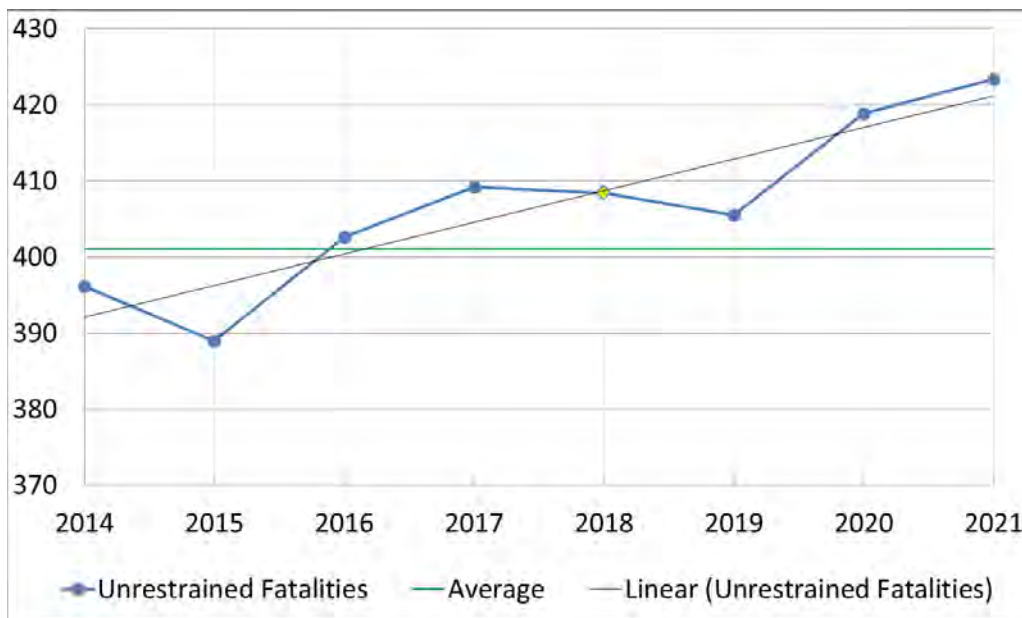
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
383	376	478	418	387	408	<b>400</b>

Performance Target Justification

AOHS has projected a realistic goal to reduce Unrestrained Passenger Vehicle Occupant Fatalities by 2 percent from the five-year baseline average of 408 (2014-2018) to 400 by 2021. The five-year average (2015-2019) number of unrestrained passenger vehicle occupant fatalities for 2020 is 376. The goal is in progress to being achieved.

5-Year Rolling Averages of Unrestrained Vehicle Occupant Fatalities



Performance Measure: C-5) Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above (FARS)

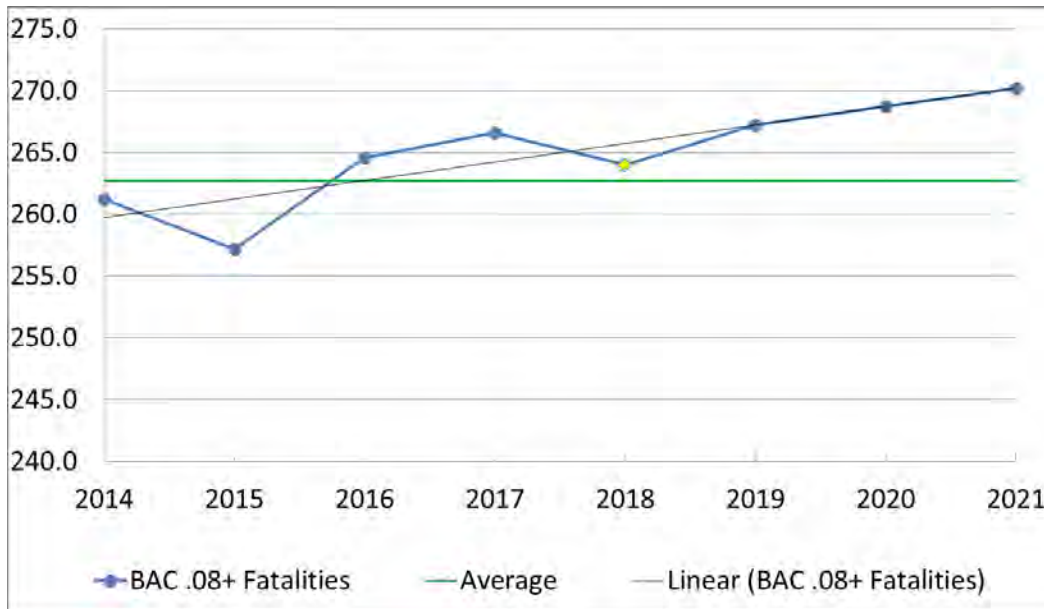
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
265	244	298	267	246	264	<b>260</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to reduce the alcohol-impaired driving fatalities by 1.5 percent from the five-year baseline average of 264 (2014-2018) to 260 in 2021. The five-year average (2015-2019) number of driver or motorcycle operator with a BAC of .08 and above (FARS) for 2019 is 267. The goal is in progress to being achieved.

5-Year Rolling Averages of Fatalities Involving a Driver with a BAC .08 and Above





## Performance Measure: C-6) Number of speeding-related fatalities (FARS)

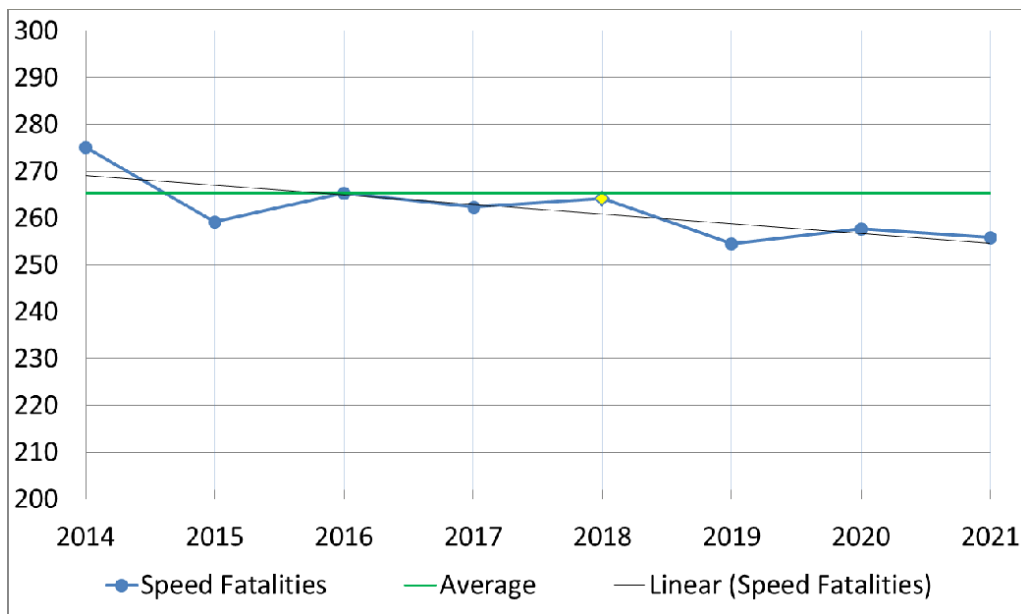
### Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
237	236	329	257	262	264	<b>256</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to reduce the alcohol-impaired driving fatalities by 3 percent from the five-year baseline average of 264 (2014-2018) to 256 in 2021. The five-year average (2015-2019) number of speeding-related fatalities (FARS) for 2020 is 260. The goal is in progress to being achieved.

### 5-Year Rolling Averages of Speeding-related Fatalities



## Performance Measure: C-7) Number of motorcyclist fatalities (FARS)

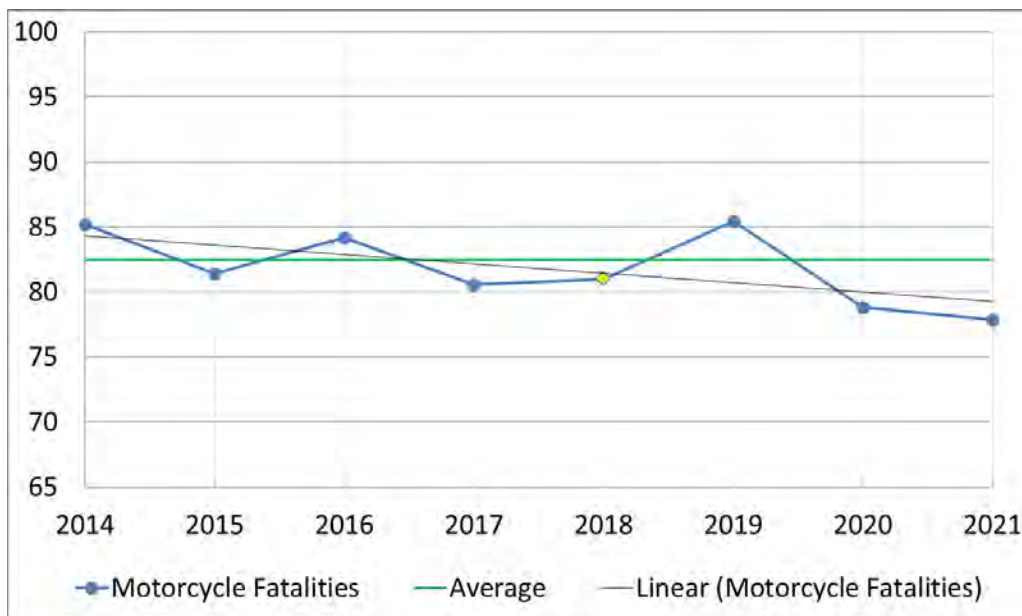
### Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
65	67	112	79	82	81	<b>81</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to maintain the number of motorcyclist fatalities at the baseline average of 81 (2014-2018) in 2021. The five-year average (2015-2019) number of motorcyclist fatalities (FARS) for 2020 is 87. The goal is in progress to being achieved. Early estimates from 2020 and 2021 suggest that the five year average could meet the goal.

### 5-Year Rolling Averages of Motorcyclist Fatalities



Performance Measure: C-8) Number of Unhelmeted motorcyclist fatalities (FARS)

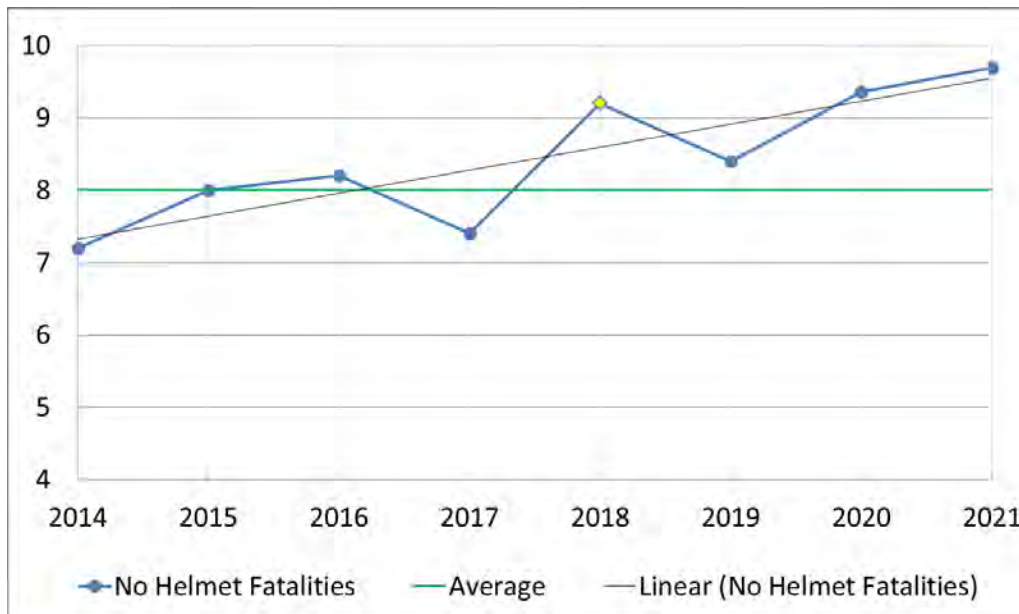
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
5	10	10	1	10	7	<b>8</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to not allow un-helmeted motorcyclist fatalities to increase by more than 12.5 percent of the five-year baseline average of 7 (2014-2018) to 8 in 2021. The five-year average (2015-2019) number of un- helmeted motorcyclist fatalities (FARS) for 2020 is 10. The goal is not in progress to being achieved.

5-Year Rolling Averages of Un-Helmeted Motorcyclist Fatalities



Performance Measure: C-9) Number of drivers age 20 or younger involved in fatal crashes (FARS)

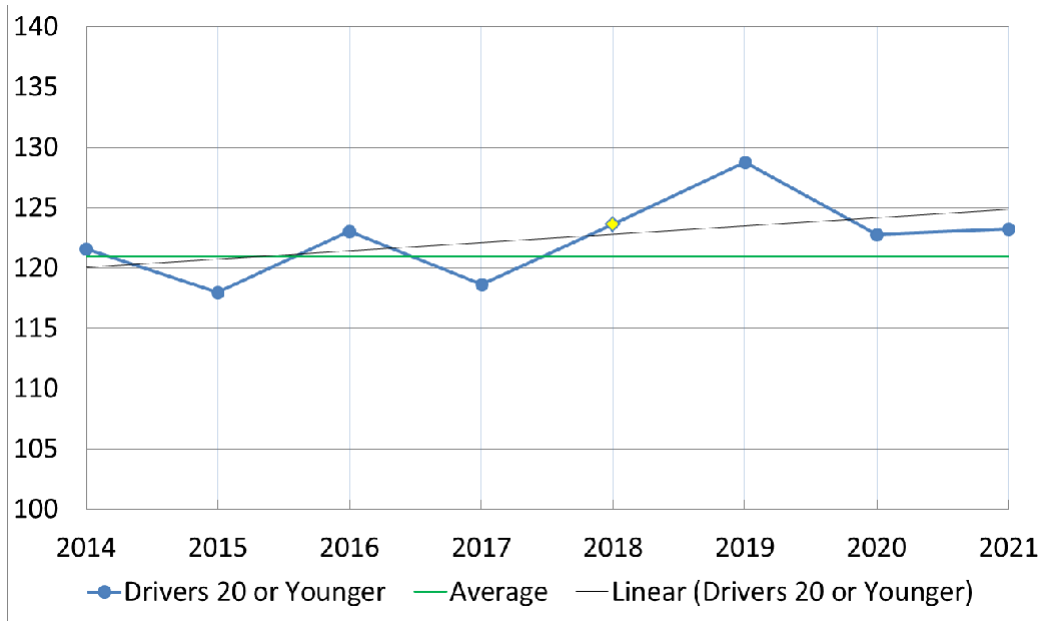
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
91	122	161	117	127	124	<b>123</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to decrease the drivers age 20 or younger involved in Fatal Crashes by .08 percent from the five-year baseline average of 124 (2014-2018) to 123 in 2021. The five-year average (2015-2019) is 129. The goal is in progress to being achieved.

5-Year Rolling Averages of Drivers Age 20 or Younger involved in a Fatal Crash



## Performance Measure: C-10) Number of pedestrian fatalities (FARS)

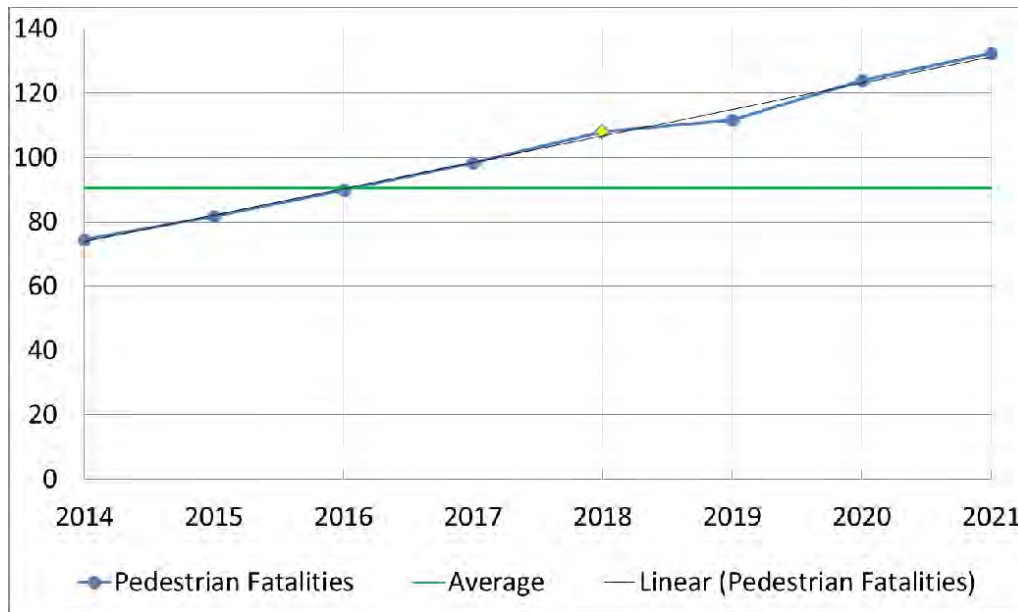
### Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
96	98	102	119	107	108	<b>115</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to not allow the number of pedestrian fatalities to increase more than 6.48 percent from the baseline average of 108 (2014-2018) to 115 in 2021. The five-year average (2015-2019) is 129. The goal is in progress to being achieved.

### Five Year Rolling Average of Pedestrian Fatalities



## Performance Measure: C-11) Number of bicyclists fatalities (FARS)

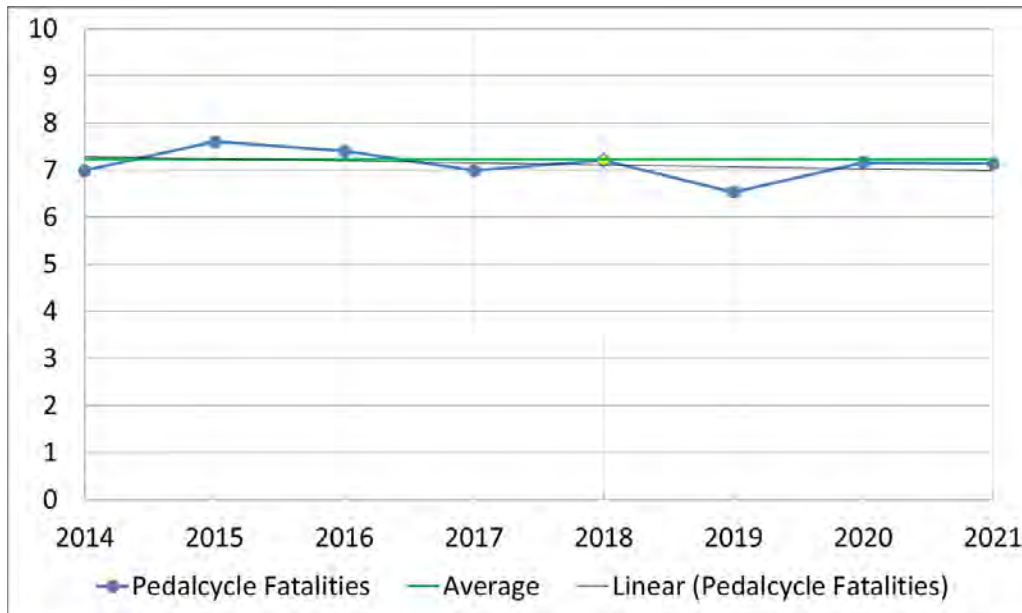
### Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
6	5	9	6	9	7	7

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to maintain the number of bicycle fatalities to the five-year baseline average of 7 (2014-2018) in 2021. A recent study of bicycle crashes showed that while the overall trend line is down, there has been an increase in the 2014-2016 time frame. It is important to recognize that with low numbers such as these, no one year can serve as a reliable sample in predicting future bicycle fatality realities. The five-year average (2015 to 2019) number of bicyclist fatalities (FARS) for 2019 is 7. The goal is in progress to being achieved.

### 5-Year Rolling Averages of Bicyclist Fatalities



Performance Measure: B-1) Observed seat belt use for passenger vehicles, front seat outboard occupants (survey)

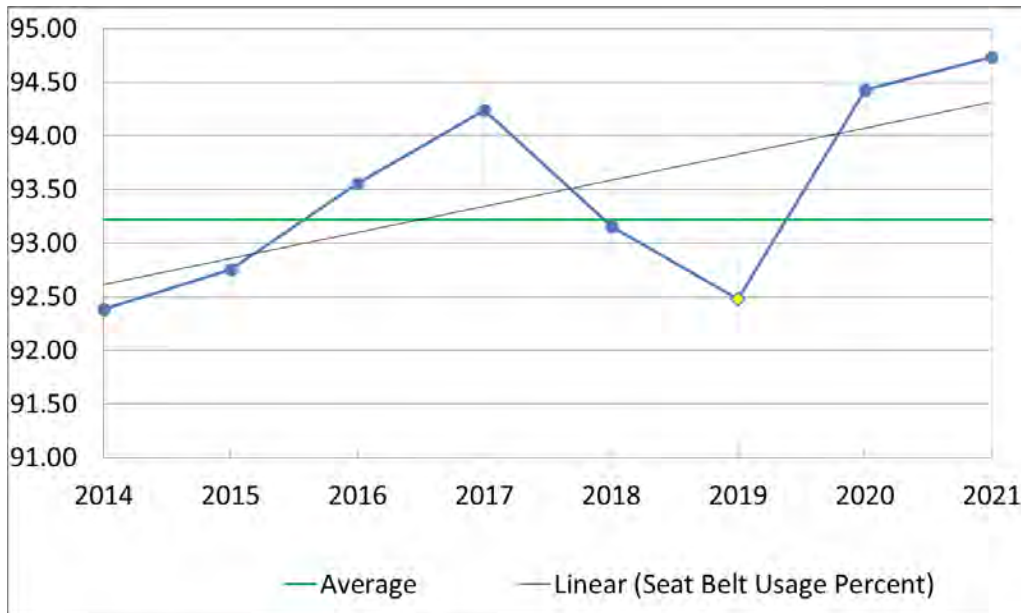
Performance Target details

2014	2015	2016	2017	2018	Baseline	Goal
95.7	93.3	92.0	92.9	91.9	93.2	<b>93.2</b>

Performance Target Justification

Based on analysis of previous observed seat belt usage rate observational surveys and trends in recent state crash data, AOHS has projected a realistic goal to maintain the observed seat belt usage at the five-year baseline average (2014 -2018) of 93.2% in 2021. The five-year average (2015 to 2019) observed seat belt use for passenger vehicles, front seat outboard occupants (survey) for 2020 is 92.5%. The goal is in progress to being achieved.

**5-Year Rolling Averages of Observed Seat Belt Use**



## Performance Plan

PERFORMANCE PLAN CHART – 2022 Highway Safety Plan			BASE YEARS				
			2015	2016	2017	2018	2019
C-1	Traffic Fatalities	FARS Annual	850	1083	948	953	930
	Curb total fatalities to 961 (2018 - 2022 rolling average) by 2022	5-Year Rolling Avg.	857	894	911	931	953
C-2	Serious Injuries in Traffic Crashes	State Annual	8760	8152	7484	7005	5103
	Reduce serious traffic injuries to 6000 (2018 – 2022 rolling average) by 2022	5-Year Rolling Avg.	8619	8542	8185	7873	7300
C-3	Fatalities/100M VMT	FARS Annual	1.26	1.56	1.34	1.34	1.30
	Curb fatalities/100 MVMT to 1.40 (2018 - 2022 rolling average) by 2022.	5-Year Rolling Avg.	1.31	1.35	1.35	1.35	1.36
C-4	Unrestrained Passenger Vehicle Occupant Fatalities, All Seat Positions	FARS Annual	355	423	398	354	352
	Reduce unrestrained passenger vehicle occupant fatalities, all seat positions 1.6 percent from 376 (2015-2019 rolling average) to 370 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	362	370	379	376	376
C-5	Alcohol-Impaired Driving Fatalities	FARS Annual	244	298	265	249	277
	Reduce alcohol impaired driving fatalities 1.5 percent from 267 (2015-2019 rolling average) to 263 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	254	261	266	264	267
C-6	Speeding-Related Fatalities	FARS Annual	236	329	257	262	216
	Reduce speeding-related fatalities by 1.92 percent from 260 (2015-2019 rolling average) to 255 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	259	266	262	264	260



			BASE YEARS				
PERFORMANCE PLAN CHART – 2022 Highway Safety Plan			2015	2016	2017	2018	2019
C-7	Motorcyclist Fatalities	FARS Annual	67	112	79	82	93
	Reduce motorcyclist fatalities by 3.57 percent from 87 (2015-2019 rolling average) to 84 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	81	84	81	81	87
C-8	Unhelmeted Motorcyclist Fatalities	FARS Annual	9	11	6	10	15
	Curb the increase of unhelmeted motorcyclist fatalities to no more than 10 percent from 10 (2015-2019 rolling average) to 11 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	8	8	7	9	10
C-9	Drivers Age 20 or Younger involved in Fatal Crashes	FARS Annual	122	161	117	127	118
	Maintain drivers age 20 and younger involved in fatal crashes at 129 (2015-2019 rolling average) by 2022.	5-Year Rolling Avg.	118	123	119	124	129
C-10	Pedestrian Fatalities	FARS Annual	98	120	119	107	119
	Curb the increase pedestrian fatalities to no more than 1.77 percent from 113 (2015-2019 rolling average) to 115 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	82	90	98	108	113
C-11	Bicyclist Fatalities	FARS Annual	9	3	7	9	6
	Maintain bicyclist fatalities at 7 (2015-2019 rolling average) by 2022.	5-Year Rolling Avg.	8	7	7	7	7
			<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
B-1	Observed Seat Belt Use for Passenger Vehicles, Front Seat Outboard Occupants (State Survey)	State Annual	93.3	92.0	92.9	91.8	92.3
	Maintain observed seat belt use for passenger vehicles, front seat outboard occupants by at 92.5 percent in 2019 by 2022.	5-Year Rolling Avg.	92.8	93.6	94.2	93.1	92.5

## Performance Measure: C-1) Number of traffic fatalities (FARS)

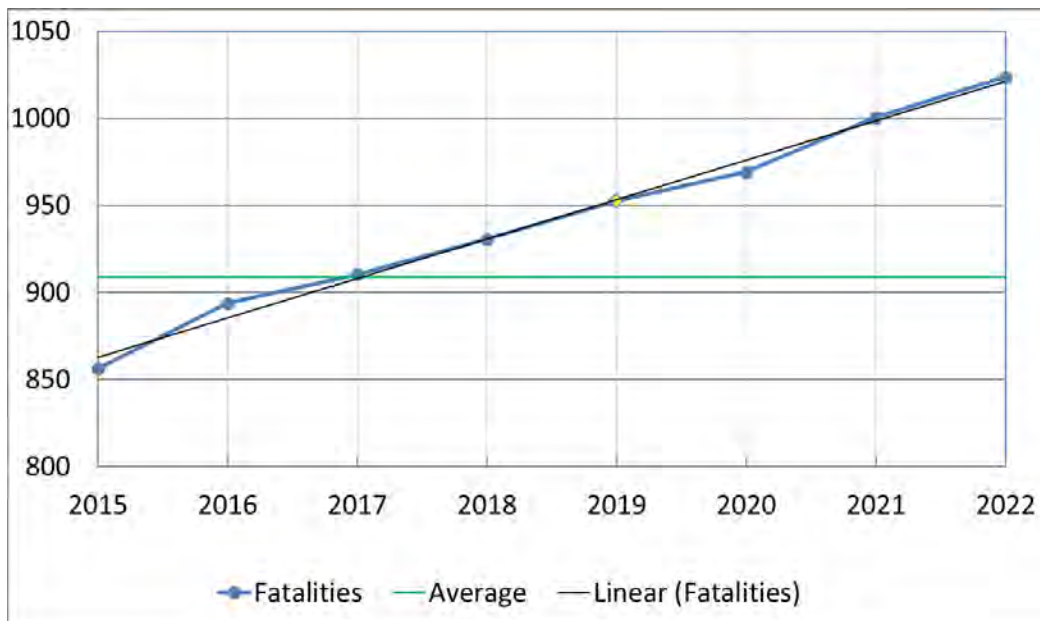
### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
849	1083	948	953	930	953	<b>961</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to not allow Number of Traffic Fatalities to increase more than .84 percent from the five-year baseline average of 953 (2015-2019) to 961 by 2022. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan committee.**

### 5 Year Rolling Averages of Traffic Fatalities



Performance Measure: C-2) Number of serious injuries in traffic crashes (State crash data files)

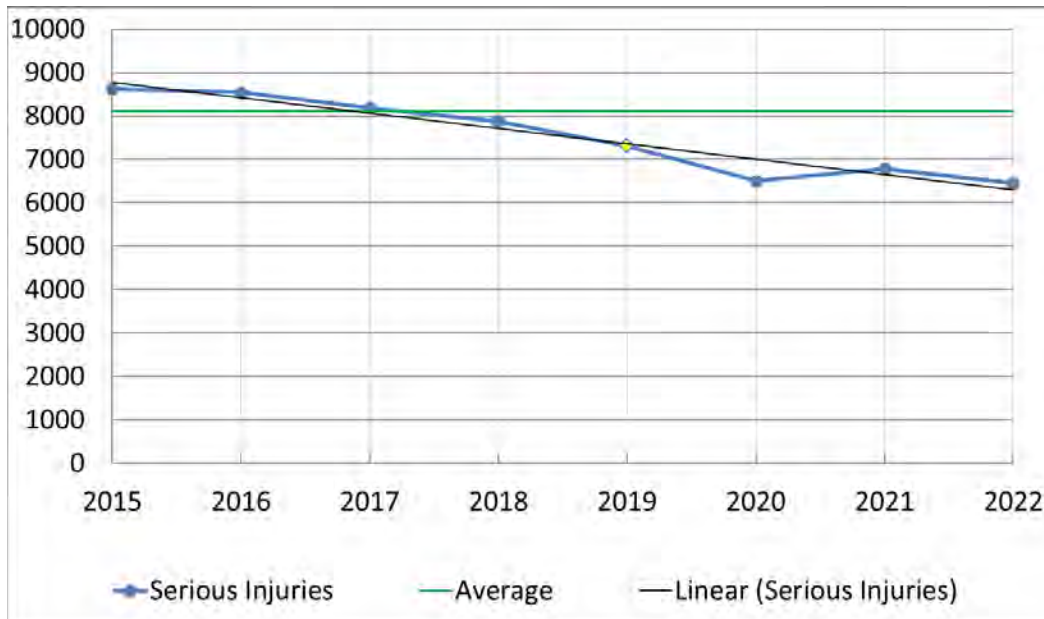
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
8760	8152	7484	7002	5103	7300	<b>6000</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to reduce Number of Severe injuries in Traffic Crashes by 18 percent from the five year baseline average of 7,300 (2015-2019) to 6,000 by 2022. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan Committee.**

5 Year Average of Serious Injuries



Performance Measure: C-3) Fatalities/VMT (FARS, FHWA)

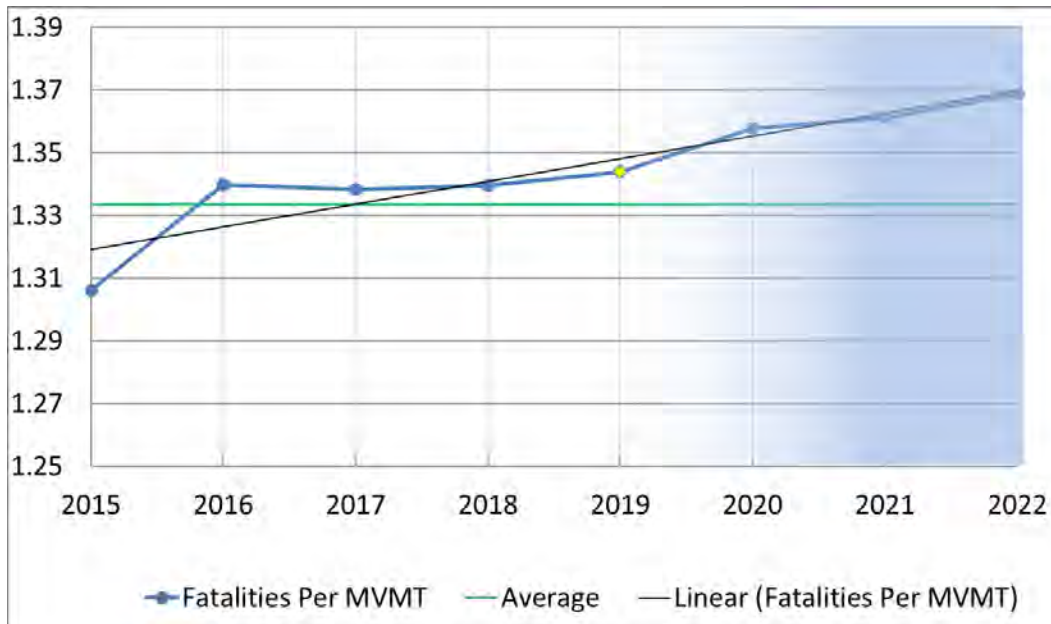
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
1.26	1.55	1.32	1.32	1.27	1.34	<b>1.40</b>

Performance Target justification

Based on analysis of previous 5-year averages and trends in more recent state crash data, AOHS has projected a realistic goal to not allow the Total Fatality Rate/VMT to increase by more than 4.46 percent from the five-year baseline average of 1.34 (2015-2019) to 1.4 by 2022. **This goal was mutually agreed upon by the Alabama Office of Highway Safety, the Strategic Highway Safety Plan steering committee and the Highway Safety Improvement Plan committee.**

5-Year Rolling Averages of Total Fatalities/100 MVMT.



Performance Measure: C-4) Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS)

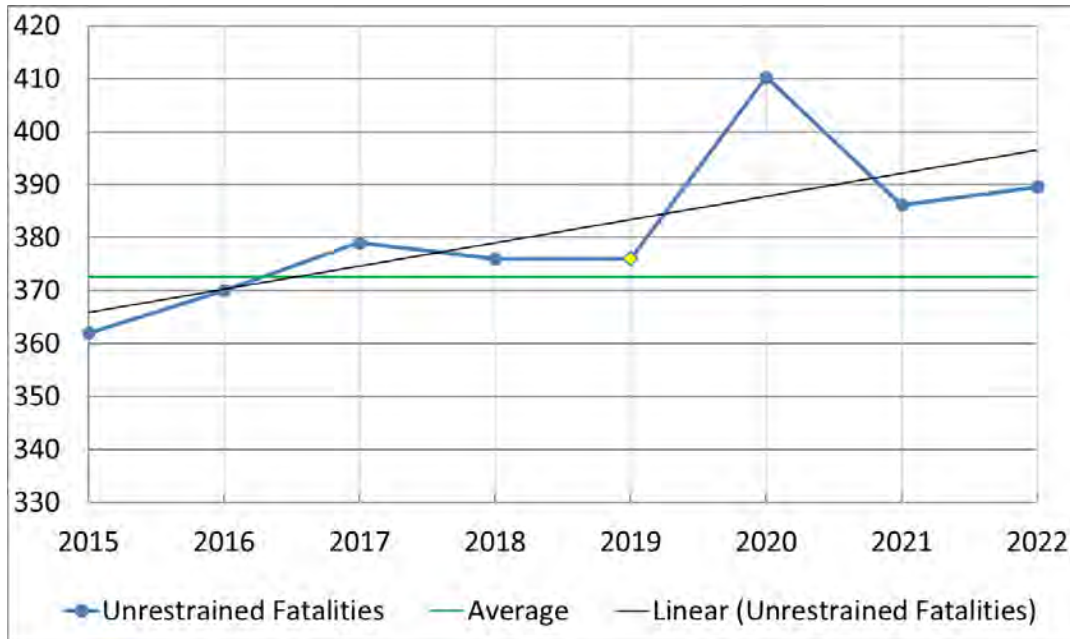
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
355	423	398	354	352	376	<b>370</b>

### Performance Target Justification

AOHS has projected a realistic goal to reduce Unrestrained Passenger Vehicle Occupant Fatalities by 1.6 percent from the five-year baseline average of 376 (2015-2019) to 370 in 2022.

### 5-Year Rolling Averages of Unrestrained Vehicle Occupant Fatalities



Performance Measure: C-5) Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 and above (FARS)

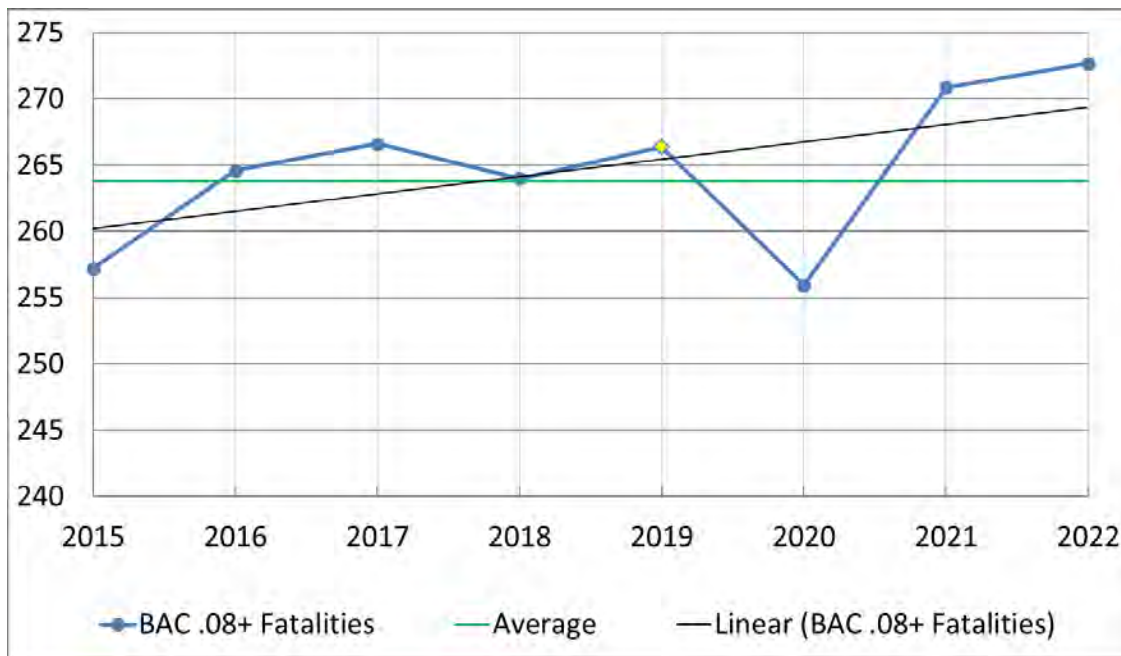
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
244	298	267	246	277	266	<b>263</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to reduce the alcohol-impaired driving fatalities by 1.13 percent from the five-year baseline average of 266 (2015-2019) to 263 in 2022.

5-Year Rolling Averages of Fatalities Involving a Driver with a BAC .08 and Above



## Performance Measure: C-6) Number of speeding-related fatalities (FARS)

### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
236	329	257	262	216	260	<b>255</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to reduce the alcohol-impaired driving fatalities by 1.92 percent from the five-year baseline average of 260 (2015-2019) to 255 in 2022.

### 5-Year Rolling Averages of Speeding-related Fatalities



## Performance Measure: C-7) Number of motorcyclist fatalities (FARS)

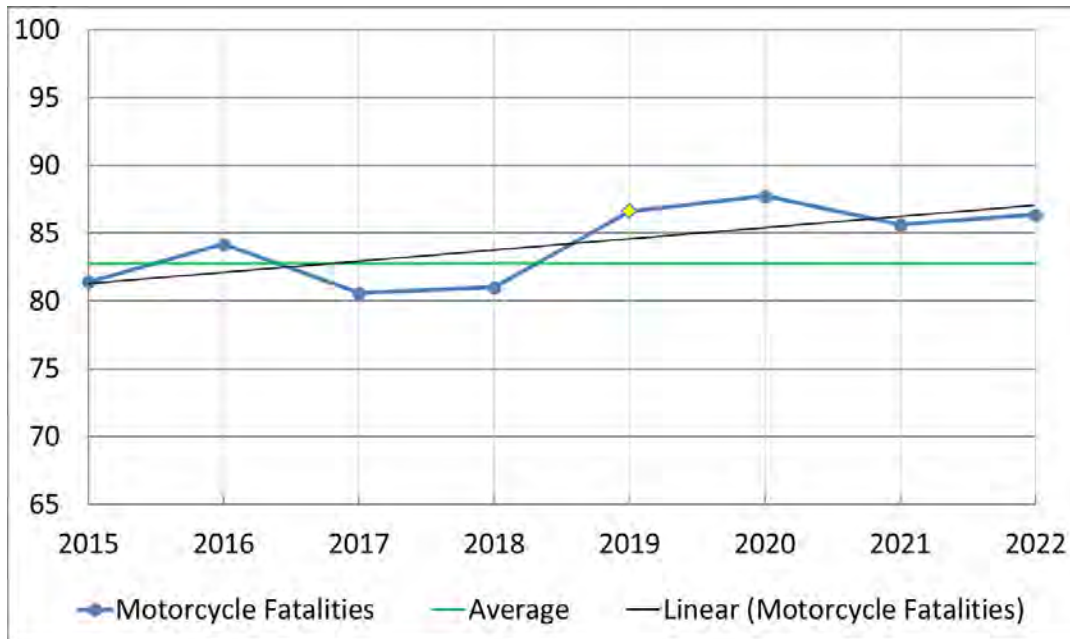
### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
67	112	79	82	93	87	<b>84</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to reduce the number of motorcyclist fatalities by 3.44 percent from the baseline average of 87 (2015-2019) to 84 in 2022.

### 5-Year Rolling Averages of Motorcyclist Fatalities





## Performance Measure: C-8) Number of Unhelmeted motorcyclist fatalities (FARS)

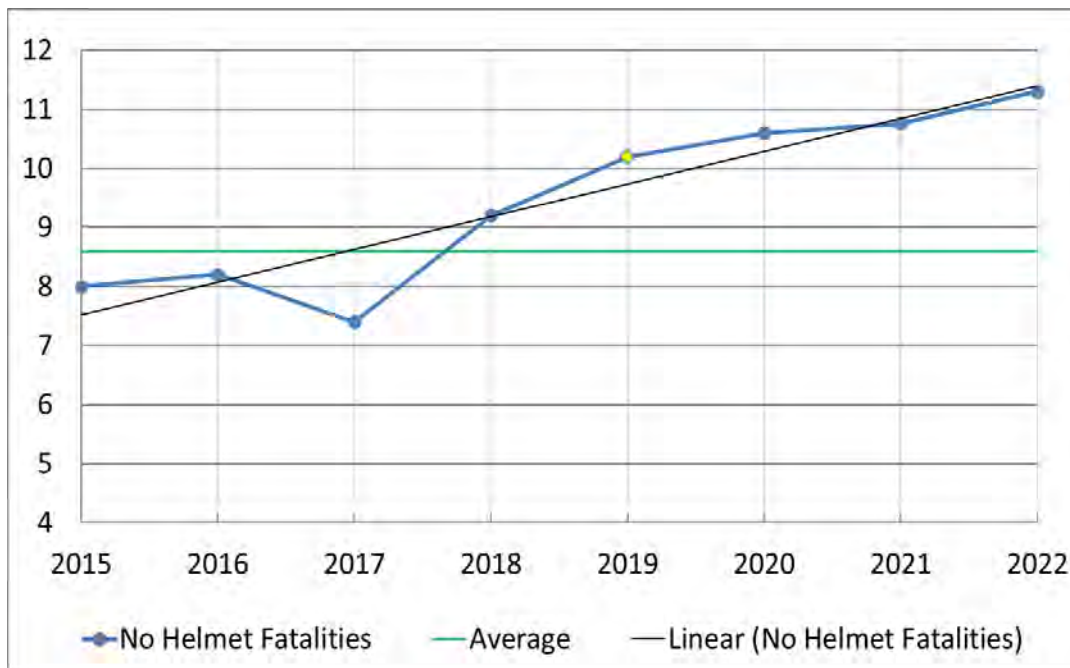
### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
9	11	6	10	15	10	11

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to not allow un-helmeted motorcyclist fatalities to increase by more than 10 percent of the five-year baseline average of 10 (2015-2019) to 11 in 2022.

### 5-Year Rolling Averages of Un-Helmeted Motorcyclist Fatalities



Performance Measure: C-9) Number of drivers age 20 or younger involved in fatal crashes (FARS)

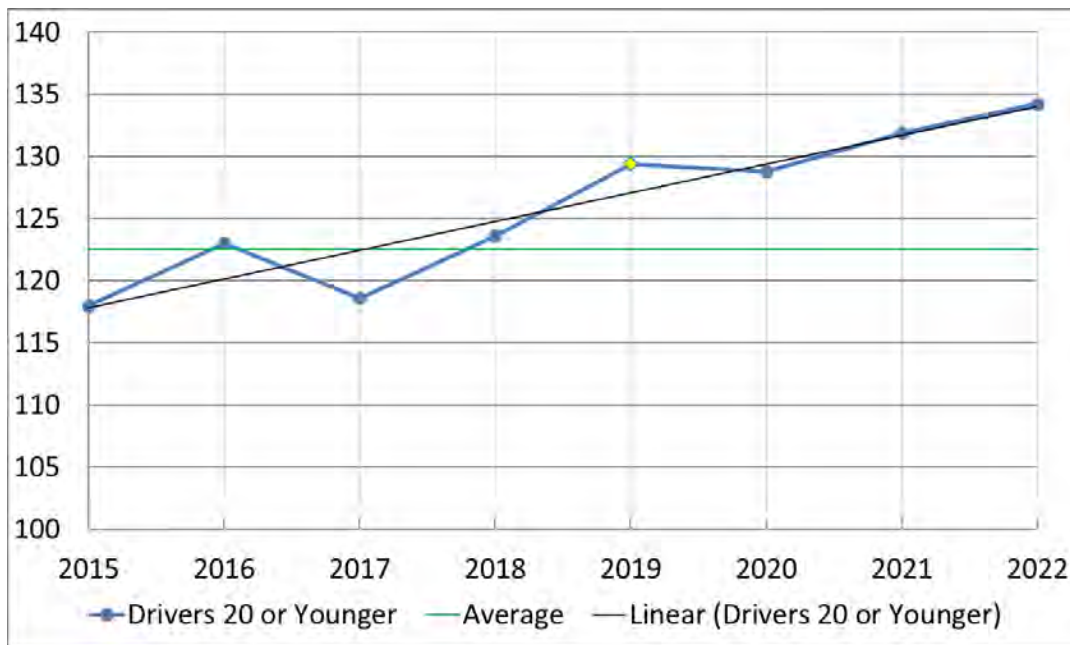
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
122	161	117	127	120	129	<b>129</b>

Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to maintain the baseline of drivers age 20 or younger involved in Fatal Crashes at 129 (2015-2019) in 2022.

5-Year Rolling Averages of Drivers Age 20 or Younger involved in a Fatal Crash



## Performance Measure: C-10) Number of pedestrian fatalities (FARS)

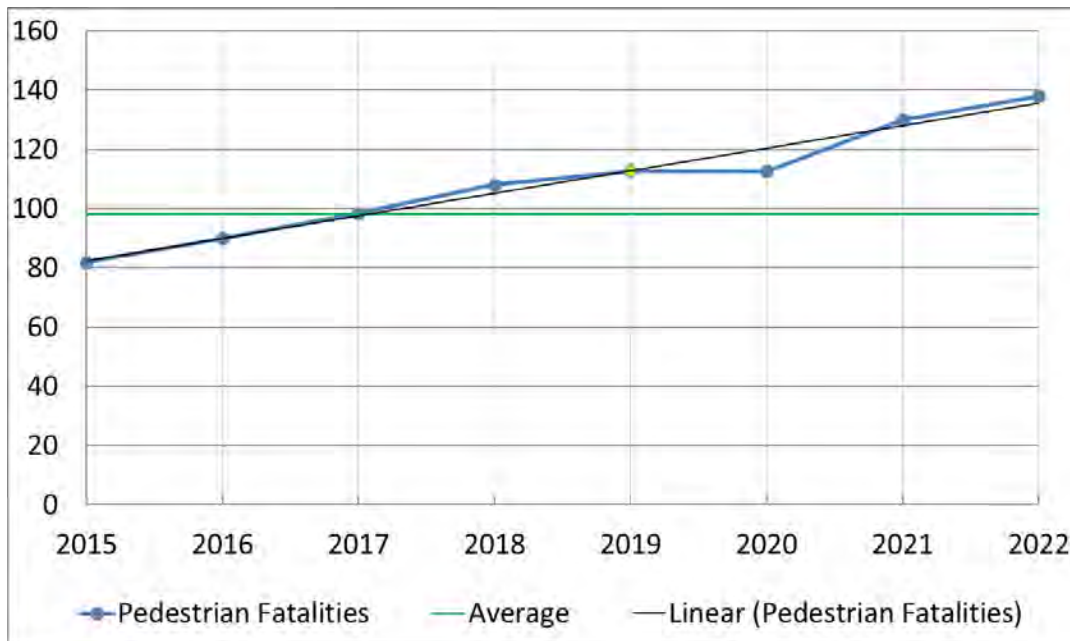
### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
98	120	119	107	119	113	<b>115</b>

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to not allow the number of pedestrian fatalities to increase more than 1.77 percent from the baseline average of 113 (2015-2019) to 115 in 2022.

### Five Year Rolling Average of Pedestrian Fatalities



## Performance Measure: C-11) Number of bicyclist fatalities (FARS)

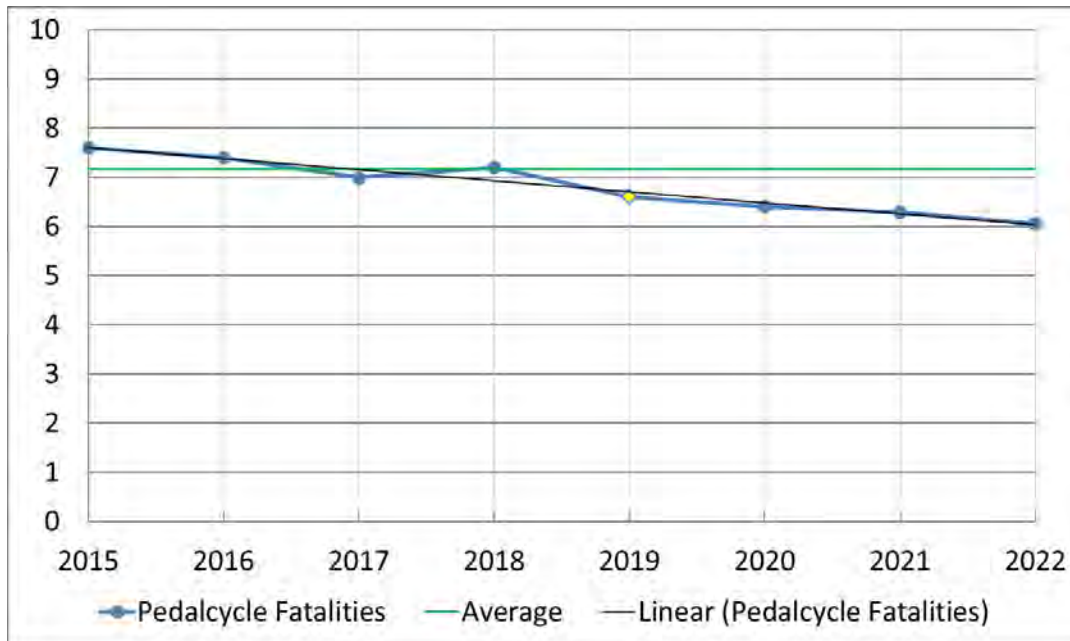
### Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
9	9	4	7	7	7	7

### Performance Target Justification

Based on analysis of previous 5-year averages and trends in recent state crash data, AOHS has projected a realistic goal to maintain the number of bicycle fatalities to the five-year baseline average of 7 (2015-2019) in 2022.

### 5-Year Rolling Averages of Bicyclist Fatalities



Performance Measure: B-1) Observed seat belt use for passenger vehicles, front seat outboard occupants (survey)

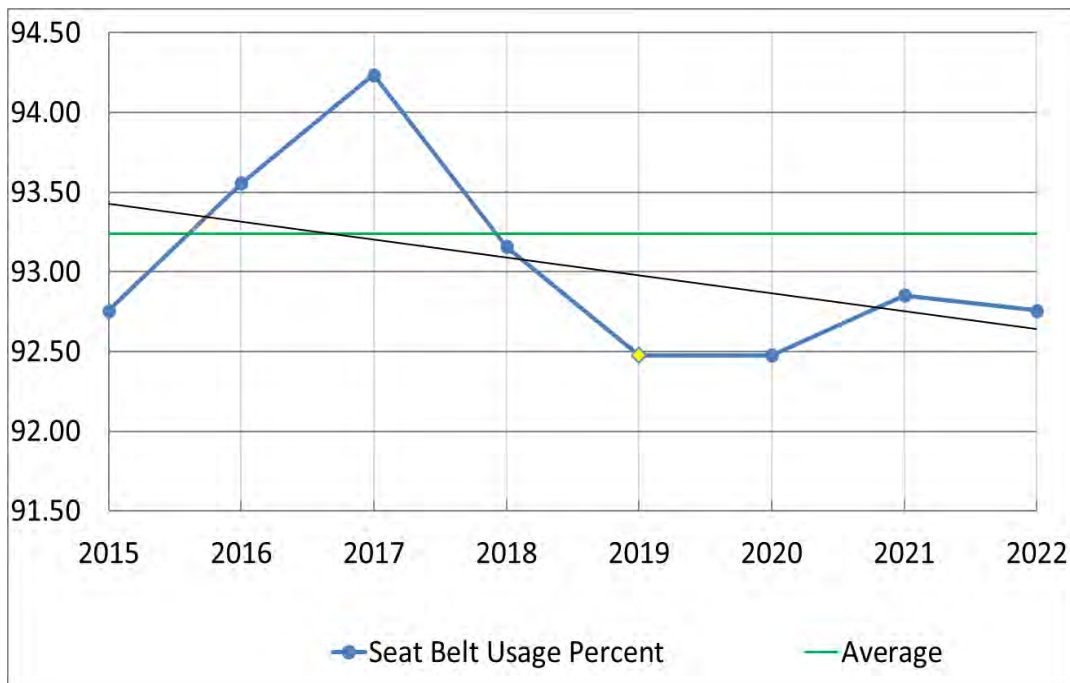
Performance Target details

2015	2016	2017	2018	2019	Baseline	Goal
93.3	92.0	92.9	91.9	92.3	92.5	<b>92.5</b>

Performance Target Justification

Based on analysis of previous observed seat belt usage rate observational surveys and trends in recent state crash data, AOHS has projected a realistic goal to maintain the observed seat belt usage at the five-year baseline average (2015 -2019) of 92.5% in 2022.

**5-Year Rolling Averages of Observed Seat Belt Use**



Certification:

**State HSP performance targets are identical to the State DOT targets for common performance measures (fatality, fatality rate, and serious injuries) reported in the HSIP annual report, as coordinated through the State SHSP.**

I certify: **Yes**

## Alabama Traffic Safety Activity Measures

<b>Year</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
A-1) Speeding Citations	30,807	36,027	43,345	37,292	39,077
A-2) DUI Arrests	906	830	687	987	770
A-3) Seat Belt Citations	10,575	12,002	12,574	9,875	10,337

## Program Area: Impaired Driving (Drug and Alcohol)

### *Description of Highway Safety Problems*

The AOHS conducted a problem identification analysis for Impaired Driving in the State of Alabama to pinpoint common factors and assess strategies that could be used to combat the growing issue. AOHS compared FY2020 Impaired Driving (ID) crashes against FY2016-2019 ID crashes to determine any significant changes that have occurred in FY2020 from the previous four fiscal years. Impaired Driving (ID) includes both alcohol and all other drugs, and the goal was to pinpoint common factors and assess strategies that could be used to combat any growing issues. A review was also conducted of the current legislation in Alabama regarding ID laws and penalties. The findings were then taken into consideration when planning enforcement campaigns, as well as training programs to fund in the upcoming fiscal year.

This section also presents the results of a comparison of ID crashes compared to non-ID crashes in the five-year period for which state data are available (CY2016-2020). An over-represented value of an attribute is a situation found where that attribute has a greater share of ID crashes than would be expected if it were the same as that attribute in non-ID crashes. That is, the non-ID crashes are serving as a control to which the ID crashes are being compared. In this way anything different about ID crashes surfaces and can be subjected to further analyses. These findings typically do not change from year to year as long as the normal influences on crashes remain in effect.

### *Overall Crashes by Year*

Before getting into the ID subset, it is good to get a feel for the overall difference in the crash frequencies over the past years. The following table gives a comparison of total crashes over CY2016-2020 by severity.

### **Crashes by Severity for Years 2016-2020**

	2016	2017	2018	2019	2020	Total
Fatal Injury	996	861	871	844	852	4,424
Suspected Serious Injury	6,111	5,583	5,231	3,895	3,575	24,395
Suspected Minor Injury	11,607	11,688	11,903	12,761	11,316	59,275
Possible Injury	14,947	15,010	15,113	14,737	11,496	71,303
Property Damage Only	118,633	119,541	122,686	122,256	103,274	586,390
Unknown	4,072	4,512	4,236	4,194	3,499	20,513
<b>TOTAL</b>	<b>156,366</b>	<b>157,195</b>	<b>160,040</b>	<b>158,687</b>	<b>134,012</b>	<b>766,300</b>



*Location Analysis*

**Top Impaired Driving Statewide Locations**

FY2022 - Impaired	Hotspots
Mileposted Interstate Locations	7
State and Federal Routes	21
Intersections	82
Segments	23
<b>TOTAL</b>	<b>133</b>

**FY2022 Top 7 Mileposted Interstate Locations (5 miles in length) in Alabama with 8 or More Impaired Driving Related Crashes Resulting in Injury or Fatality**

Hotspot	County	City	Route	Beg MP	End MP	Total Crashes	Fatal Crashes	Injury Crashes	S/CRS	C/MVM	S/CRS	ADT	Agency ORI
1	Shelby	Alabaster	I-65	236.4	241.4	8	2	6	25	0.01	25	76550	Alabaster PD
2	Jefferson	Birmingham	I-59	123.8	128.8	13	3	10	24.62	0.01	24.62	123317	Birmingham PD
3	Jefferson	Rural Jefferson	I-65	266.8	271.8	9	2	7	23.33	0.01	23.33	91608	ALEA - Birmingham Post Madison PD
4	Madison	Madison	I-565	6.6	11.6	8	1	7	17.5	0.02	17.5	58307	Madison PD
5	Montgomery	Montgomery	I-85	1.1	6.1	10	0	10	15	0.01	15	108679	Montgomery PD
6	Jefferson	Rural Jefferson	I-59	116.9	121.9	13	0	13	14.62	0.02	14.62	84068	ALEA - Birmingham Post Bessemer PD
7	Jefferson	Bessemer	I-59	111.9	116.9	11	0	11	14.55	0.02	14.55	59039	Bessemer PD

**FY2022 Top 21 Mileposted State and Federal Route Locations (5 Miles in Length) in Alabama with 3 or More Impaired Driving Related Crashes Resulting in Injury or Fatality**

Hotspot	County	City	Route	Beg MP	End MP	Total Crashes	Fatal Crashes	Injury Crashes	S/CRS	C/MVM	S/CRS	ADT	Agency ORI
1	Limestone	Rural Limestone	S-2	80.9	85.9	9	2	7	30	0.04	30	22743	ALEA - Decatur Post
2	Marshall	Boaz	S-1	278.5	283.5	10	0	10	25	0.03	25	32697	Boaz PD
3	Tuscaloosa	Rural Tuscaloosa	S-6	56.1	61.1	9	1	8	24.44	0.08	24.44	12010	ALEA - Tuscaloosa Post
4	Marshall	Boaz	S-205	0.7	5.7	9	0	9	22.22	0.22	22.22	4552	Boaz PD
5	Baldwin	Gulf Shores	S-59	1.9	6.9	9	1	8	22.22	0.02	22.22	48750	Gulf Shores PD
6	Calhoun	Anniston	S-21	253.2	258.2	9	0	9	22.22	0.03	22.22	34109	Anniston PD
7	Shelby	Rural Shelby	S-38	2.4	7.4	11	1	10	21.82	0.01	21.82	81454	Mountain Brook PD
8	Russell	Phenix City	S-1	110.6	115.6	12	0	12	21.67	0.04	21.67	36180	Phenix City PD
9	Madison	Rural Madison	S-1	341.4	346.4	13	0	13	21.54	0.05	21.54	29051	ALEA - Huntsville Post
10	Marshall	Albertville	S-1	283.5	288.5	9	0	9	21.11	0.03	21.11	29509	Albertville PD
11	Houston	Dothan	S-53	23	28	9	0	9	21.11	0.04	21.11	28134	Dothan PD
12	Mobile	Rural Mobile	S-42	10.5	15.5	11	0	11	20.91	0.05	20.91	24317	ALEA - Mobile Post
13	Jefferson	Hoover	S-150	7.3	12	10	0	10	19	0.03	19	35414	Hoover PD
14	Madison	Huntsville	S-53	318.7	323.7	13	0	13	18.46	0.06	18.46	24742	Huntsville PD
15	Baldwin	Daphne	S-42	35.4	40.4	11	0	11	18.18	0.04	18.18	34260	Daphne PD
16	Houston	Dothan	S-1	11.1	16.1	10	0	10	18	0.06	18	17424	Dothan PD
17	Shelby	Alabaster	S-3	251.4	256.4	10	0	10	18	0.03	18	31698	Alabaster PD
18	Morgan	Decatur	S-3	351.9	356.9	13	0	13	16.15	0.05	16.15	26396	Decatur PD
19	Madison	Madison	S-2	87.7	92.7	12	1	11	15.83	0.03	15.83	48129	Madison PD
20	Tuscaloosa	Tuscaloosa	S-215	2.7	7.7	9	0	9	15.56	0.04	15.56	23270	Tuscaloosa PD
21	Elmore	Millbrook	S-14	159.3	164.3	11	0	11	14.55	0.05	14.55	22510	Millbrook PD

### *Problem Identification Analysis Results for Impaired Driving in the State of Alabama*

It is clear from looking at the high total frequencies in 2016, that there is a significant decrease in the trend over the five years (2016-2020). Fatal crashes had a dramatic increase in 2016, while there has been a regression to the mean in the years that followed, with the best of these being in 2019. The reduction from 2016 to 2020 is 14.5%. With regard to interpreting the remaining severity data, we should view 2019 and 2020 as generally lower in number in the highest severity (Fatal and Suspected Serious Injury) categories. Suspected Minor Injury and Possible Injury were up in 2019, but significantly lower in 2020.

A summary of findings is given after the analyses presented below. The first category is a general comparison of 2020 against 2016-2019. All of the other categories below (e.g., Geographical Factors, etc.) are obtained from a comparison of ID vs. Non-ID crashes for all five years (2016-2020).

#### *Impaired Driving (ID) Comparison Against Non-ID Crashes for CY 2016-2020*

- In a comparison, over the five years, all fatal ID crashes (930 crashes with a proportion of 3.28%) were almost seven times the proportion of crashes that were non-ID.
- Suspected Serious Injury (SSI) and Suspected Minor Injury (SMI) crashes were also highly overrepresented with an Odds Ratio for SSI of 3.7 times its expectation for non-ID, and the Odds Ratio for SMI being 2.2 times its non-ID expectation.

#### *Geographical Factors*

[Terminology: *expected numbers* (or expectations) for attribute items below are obtained from the proportion for non-ID crashes.]

- County - Generally, the overrepresented counties are those with combined large population centers and large rural areas, as opposed to the highly urbanized counties or the extremely rural counties. One reason the highly urbanized counties are underrepresented is the large number of low severity crashes that occur there separate and apart from ID crashes. See the rural-urban comparison below. Placed in Max Gain order, the counties with the highest potential for reduction were: Baldwin, Cullman, Madison, Marshall, Limestone, Blount (had more than twice expected in comparison with its non-ID crashes), Jackson, Walker, Elmore, and St Claire.
- City Comparisons of ID crashes to Non-ID Crash Frequency. There is little surprise in this result, which generally tracks the rural areas in the counties by population. Traffic safety professionals should look for any locations that fall counter to this trend. The county rural areas (virtual cities) with max gains in excess of 150 ID crashes over their expected numbers (in order of max gain) are: Rural Mobile, Rural Cullman, Rural Madison, Rural Baldwin, Rural Tuscaloosa, Rural Limestone, Rural Blount, Rural Marshall, Rural Elmore, Rural Walker, and Rural Lee.

- Overall Area Comparisons Conclusions – Generally those rural areas adjacent to (or containing) significant urbanized areas are overrepresented, since these urban areas generate more traffic in the rural areas. Possible factors for relatively fewer severe ID crashes within urban areas include:
  - Less need for motor vehicle travel and shorter distances to the drinking establishments or parties;
  - Larger police presence in the metropolitan areas; and
  - Lower speeds in rural areas.
- Severity of Crash by Rural-Urban – While only about 41.4% of crashes occur in rural areas, 67.7% of the fatal crashes occur there. Similar results are found for the highest severity non-fatal crashes (Suspected Serious Injury), where the proportion is 58.7%. This is obviously the result of higher impact speeds in the rural areas. Note that additional causes of increased severity are given in the Factors Affecting Severity Section, below.
- Rural/Urban ID Crash Frequency – Not only are impaired driving crashes more severe in rural areas, but the frequency of ID crashes in rural areas is quite high, despite the much lower population and traffic volumes. ID crashes occurred in about 41.4% rural as compared to about 58.6% urban areas. Compared to non-ID crashes, only 22.2% of the crashes are expected in the rural areas, so the rural proportion is over double its expected value (significant odds ratio = 1.866).
- Highway Classifications – County roads had 2.1 times their expected proportion of crashes, and State routes had about 3.4% more than expected. All other roadway classifications were underrepresented. County road characteristics no doubt contribute to the crash frequency. County roads are also known to be less “crashworthy,” i.e., they result in more severe crashes at comparable impact speeds because of narrow shoulders and obstacles close to the roadway.
- Locale – Reflecting the rural over-representation, open country and residential roadways show a high-level of over-representation (1.612 and 1.333 odds ratios, respectively) as compared with the more urbanized area types, especially Shopping or Business, which only had about half of their expected proportion.

### *Time Factors*

- Year – The earliest and latest years (2016 and 2020) were found to be the most overrepresented. These have significantly high Odds Ratios of 1.055 and 1.082, respectively. The in-between years all have Odds Ratios that indicate fewer ID crashes that would be predicted from their non-ID counterparts. As a result, there was no measurable trend over the years, and we conclude that the proportion of ID to non-ID crashes is effectively stable of the years.
- Month – ID crashes were significantly higher than expected in March, April and July, all of which had either 1.057 or 1.058 Odds Ratios. September and October were the only two significantly underrepresented months, with Odds Ratios of 0.914 and 0.935, respectively.

- Day of the Week – This analysis is not only useful for the typical work week, but it also reflects the typical “holiday (virtual) weekend” patterns. The days can be classified as follows:
  - Typical work weekday (Monday through Thursday) – these days are underrepresented in ID crashes due to the need for many to go to work the following day.
  - Friday – this pattern is also reflected in the day before a weekend (or holiday), i.e., before a day off. The high ID frequency on this day is due to those who are getting an early substance abuse start to the weekend, recognizing they have no work responsibilities the following day. However, the large numbers of non-ID crashes on Fridays causes Friday to be underrepresented, with an Odds Ratio of 0.899 despite it having the third highest ID crash frequency, right behind Saturday and Sunday.
  - Saturday – the “Saturday” pattern is the worse for ID crashes in that it has both an early morning component (like Sunday) and a late night component (like Friday). So, it could be viewed as a combination of the typical Friday and Sunday.
  - Sunday – since this is the last day of a holiday sequence or weekend, its overrepresentation comes mainly from those who start on Saturday night and do not complete their use of alcohol/drugs until after midnight. Sunday is the most overrepresented day with over twice its expected number of ID crashes; however, the low number of non-ID crashes on Sunday also contributes to this overrepresentation.
- “Holiday Weekends” – these can be viewed as a sequence of the weekend-pattern days. For example, the Wednesday before Thanksgiving would follow the Friday pattern assuming most are at work on Wednesday (which has not been typical recently). The Thanksgiving Thursday, Friday and Saturday would follow the Saturday pattern, and the Sunday at the end of the weekend would follow the typical Sunday pattern. This is the reason long holiday events (i.e., several days off) can be more prone to ID crashes than the typical weekend. Three-day weekends typically give Monday off, so Monday would behave like the typical Sunday, and both the Saturday and Sunday would follow the Saturday pattern.
- Time of Day – The extent to which nighttime hours are overrepresented is quite striking. Optimal times for ID enforcement would start immediately following any rush hour details and would continue through at least 4:00 to 4:59 AM (odds ratio 3.331). The 5-6 AM hour is also significantly overrepresented with an odds ratio of 1.451.
- Time of Day by Day of the Week – This quantifies the extent of the crash concentrations on (1) Friday nights, (2) Saturday mornings and Saturday nights; and (3) early Sunday mornings. This is a very useful summary for deploying selective enforcement details, especially during weekend hours.

### *Factors Affecting Severity*

- ID Crash Severity - The rate of injuries and fatalities are consistently higher in ID crashes than that of non-ID crashes. Fatality crash proportions for ID crashes are nearly 6.934 times their expected proportion, while the next two highest (non-fatal) injury classifications have over twice their expected values when compared with non-ID crashes. The odds ratio is over three (3.708) for the highest non-fatal classification, Suspected Serious Injury. The other attributes analyzed in this section give the reasons for this disparity.
- Speed at Impact – All impact speeds above 45 MPH (with the sole exception of 66-70 MPH) are dramatically overrepresented with odds ratios above 2.00. See the next attribute. The overrepresentations increase, as expected, with increased speed with 46-50 MPH having an odds ratio of 2.082, and over 100 MPH being 10.332. Past analyses have found the general rule of thumb that for every 10 MPH increase in speeds, the probability of the crash being fatal doubles. This was validated by a cross-tabulation of impact speeds by severity for CY2016-2020.
- Restraint Use by Impaired Drivers – The impaired drivers are close to 8 times more likely to be unrestrained than the non-ID causal drivers (7.556 Odds Ratio). Clearly ID drivers lose a good part of their concept of risk when they are willing to drive while impaired. The combination of high speeds and no restraint is deadly (see the next item).
- Fatality Crashes by Restraint Use for Impaired Drivers – A comparison of the probability of a fatal crash indicates that a fatality is almost six (5.84) times more likely if the impaired driver is not using proper restraints. Generally, one in 65 ID crashes are fatal; but without restraints, the fatal crash ratio is 1 in about 11. So, the combined effect of lower restraint use and higher speeds is a devastating combination that accounts for much of the high lethality of ID crashes.
- Number Injured (Including Fatalities) – Not only are ID crashes generally more severe to the driver, but the number of multiple injuries in these ID crashes is overrepresented as well. This might have something to do with the preference of those going out to socialize to take some of their friends with them. All of the multiple injury categories are overrepresented in the ID crashes, as is the single injury classification. All of the multiple injury classifications above 3 injuries had at least twice their expectations, and the 1, 2 and 3 injuries all had close to twice their expectations (as measured by the Odds Ratio) as well.
- Police Arrival Delay – ID crashes generally had longer police arrival delays; in this case all arrival delays over 31 minutes were overrepresented. There can be little doubt this has to do with the rural nature of these crashes and the potential that the late night occurrence might not be discovered for some time. Delay times of 91 to 120 and 121 to 180 minutes had over twice their expected proportions as compared to non-ID crashes.
- EMS Arrival Delay – Higher EMS delays were overrepresented for impaired driving injury crashes in all categories above ten minutes, and dramatically (over twice the expected) for the very longer times of 61 minutes and above. This obviously contributes to the severity of crashes including the chances the crash results in one or more fatalities. As for the very long times, these might be due to the delay in discovering crashes that have run off the roads as much as their generally overrepresented rural locations.

### *Driver and Vehicle Demographics*

- Driver Age – Younger (16 to 20-year-old) drivers have a very serious problem in crash causation even in the absence of impairment. However, these crashes are not generally caused. In fact, 16-18-year-old drivers are highly statistically underrepresented, with Odds Ratios of 0.136, 0.229, and 0.389, respectively, but this under-representation diminishes linearly through age 22. The first statistically significant age over-representation takes place at age 24, and it continues on to age 56. There is a bimodal distribution in the 21-54 year olds; the first group is 21 through about 34; a second group is seen from 43 to 56. Generally, the first of these might be classified largely as social drinkers; while it is inescapable that the middle-aged driver-caused ID crashes are largely attributed to problem drinkers, or those addicted to alcohol or other drugs.
- Impaired Driver Gender – Males are a far greater issue in ID crashes, and if there are countermeasures that can be directed toward them, doing so would be much more cost-effective than those not gender-based, all other things being equal. The ratio of male to female causal ID drivers is close to 3 to 1, with males having 74.04% of the crashes and females having 25.96%.
- Causal Vehicle Type – Pick-ups had a significant overrepresentation and came out at the top of the Max Gain order because of their number of ID involvements. Motorcycles were also highly overrepresented. Also of interest is the proportion of pedestrians that involve ID, which is over three times their expected number. Four wheel ATVs had the highest over-representation (Odds Ratio = 3.795), perhaps because drivers do not believe the ID laws apply to them as long as they are not on the public highways. In order of their number of overrepresented crashes, the following had significant odds ratios: Passenger Car, Pick-Up (Four-Tire Light Truck), Motorcycle, Pedestrian, and 4-Wheel/Off Road ATV.
- Driver License Status – ID crashes are very highly overrepresented in causal drivers without legitimate licenses, which challenges the effectiveness of license suspension and revocations as a traffic safety countermeasure. There is no way to estimate its deterrent value, but the correlation of irregular licenses with ID crashes indicates that within itself, these actions are not definitive. Those who will drive while intoxicated will only rarely be affected by their license status. Revoked is overrepresented for the ID causal drivers by over seven times its expected proportion (compared to non-ID crashes). The following gives the highest overrepresented categories along with the number of *additional* crashes (in parenthesis) that were attributed to the over-representation in the five-year period: Suspended (1766), Revoked (1474), Not Applicable or Unlicensed (1500), and Expired (292).
- Driver Employment Status – ID driver unemployment rate is 35.17%, and its proportion is about 80% higher than expected over the 2016-2020 time period. Self-employed and employed sum to 64.83%. This is an important factor that will be given continued consideration as the economy rebounds from the 2020 COVID-19 pandemic.

## Countermeasure Strategies in Program Area

Countermeasure Strategy
Drug Recognition Expert (DRE) Training
High Visibility Enforcement
Prosecutor Training

### Countermeasure Strategy: Drug Recognition Expert (DRE) Training

Program Area: **Impaired Driving (Drug and Alcohol)**

#### Project Safety Impacts

Without proper training and adequate resources, the average law enforcement officer will find that convicting the drug impaired driver is almost infinitely more difficult than convicting the alcohol impaired driver. The presence of DREs in Alabama will impact both the highway and the courtroom. A Drug Recognition Expert Program (DRE) will be funded to train and certify law enforcement officers from various agencies around Alabama as Drug Recognition Experts. Each certified DRE will be able to diagnose an individual arrested for DUI to be either under the influence of some drug other than alcohol or suffering from a medical issue. If the DRE determines the defendant is under the influence of a drug, then the DRE will identify the category or categories of impairing drugs. The training staff of certified DRE instructors will evaluate the achievement and field certifications. The state's DRE Coordinator will conduct continuous evaluations of certified DREs based on their level of activity, number of evaluations and toxicological confirmation rates. The DRE Coordinator will also ensure the DREs fulfill their two-year recertification requirement.

A multidisciplinary approach and close coordination among all components of the criminal justice system was sought in developing the strategies to combat the issue of Impaired Driving. This set of countermeasure approaches includes the entire criminal justice system, including laws, enforcement, prosecution, adjudication, criminal and administrative sanctions, and related communications. As detailed in the Alabama Impaired Driving Strategic Plan, the state's goal is to achieve both *specific* and *general* deterrence through goals defined as:

- **Specific deterrence** focuses on individual offenders and seeks to ensure that impaired drivers will be detected, arrested, prosecuted, and subject to swift, sure, and appropriate sanctions, and thereby reduce recidivism;
- **General deterrence** seeks to increase the public perception that impaired drivers will face severe consequences, thus discouraging all individuals from driving impaired.

Projected traffic safety impacts of the DRE program include increased number of DWI citations and convictions in court of guilty individuals.



### Linkage Between Program Area

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.
- Use further analytics to fine-tune the particular countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.

This analytical review includes all the countermeasures that are presented in this plan as well as the particular tactics to be applied in their implementations

After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during the fiscal year linked to the particular program area:

- Fund and support the Drug Recognition Expert Training Program

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

### Rationale

Alabama is one of 49 states and the District of Columbia to implement the Drug Evaluation and Classification Program (DECP). At the heart of this program is the Drug Recognition Expert (DRE). A DRE is a law enforcement officer trained in detecting and recognizing impairment caused by substances other than alcohol. The Los Angeles Police Department originated the program in the early 1970s when officers noticed that many of the individuals arrested for driving under the influence had very low or zero alcohol concentrations. The officers reasonably suspected that the arrestees were under the influence of drugs but lacked the knowledge and skills to support their suspicions. Working with medical doctors, research psychologists, and other medical professionals they developed a simple, standardized procedure for recognizing drug influence and impairment, which led to the first DRE program. In the early 1980s, the National Highway Traffic Safety Administration (NHTSA) took notice of the LAPD's DRE program. The two agencies collaborated to develop a standardized DRE protocol which led to the DEC program. During the ensuing years, NHTSA and various other agencies and research groups examined the DEC program. Their studies demonstrated that a properly trained DRE can

successfully identify drug impairment and accurately determine the category of drugs causing such impairment. Recent studies conducted by NHTSA have established the value of DRE programs.

A continuation and expansion of this program in Alabama will enable law enforcement officers to better detect, apprehend, assess, document, and subsequently help the prosecutor prove, in court, the defendant was under the influence of a drug while driving (or committing any other improper act, e.g., domestic violence and homicide). In order to implement the program successfully in Alabama, AOHS will fund a State DRE coordinator to facilitate and plan training courses, reimburse allowable travel expenses for trainees, as well as associated costs with hosting training courses.

**Planned Activity: Drug Recognition Expert Training Program**

Planned activity number: **M5CS-22-ID-M5**

Primary Countermeasure Strategy ID: **Drug Recognition Expert (DRE) Training**

**Planned Activity Description**

The goal of the Drug Recognition Expert Program (DRE) is to train and certify law enforcement officers from various agencies around Alabama as Drug Recognition Experts. Each certified DRE will be able to diagnose an individual arrested for DUI to be either under the influence of some drug other than alcohol or suffering from a medical issue. If the DRE determines the defendant is under the influence of a drug, then the DRE will identify the category or categories of impairing drugs.

**Intended Subrecipients**

Alabama Law Enforcement Agency

**Funding sources**

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405d Impaired Driving Mid	405d Mid Drug and Alcohol Training (FAST)	\$345,000.00	\$86,250.00	

## Countermeasure Strategy: High Visibility Enforcement

### Program Area: **Impaired Driving (Drug and Alcohol)**

#### Project Safety Impacts

To implement the State's Evidence-Based Enforcement Plan, there will be four local Selective Traffic Enforcement Program (STEP) projects during the coming year as well as one statewide STEP project. Each of these STEP projects will focus on Hotspot crashes and the problem locations that have been identified across the state. One STEP project will take place in each of the four CTSP/LEL regions and the statewide STEP project will be conducted in conjunction with the Alabama Law Enforcement Agency (ALEA). By conducting these STEP projects, additional efforts can be focused on the reduction of impaired driving related crashes and speed related crashes. The Law Enforcement activity will be sustained for twelve (12) months. The enforcement effort is evidence-based, with the objective of preventing traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated, and the necessary adjustment will be made.

There will also be four local Alcohol High Visibility Enforcement projects during the coming year as well as one statewide Alcohol High Visibility Enforcement project. Each of these projects will focus on alcohol related Hotspot crashes and the problem locations that have been identified across the state. One project will take place in each of the four CTSP/LEL regions and the statewide project will be conducted in conjunction with the Alabama Law Enforcement Agency (ALEA). By conducting these HVE projects, additional evidence-based efforts can be focused on the reduction of impaired driving related crashes. The law enforcement activity will be sustained for twelve (12) months. However, at least three additional "Drive Sober or Get Pulled Over" mobilizations will take place during holiday periods known for increased travel and a higher potential for impaired motorists to be on the roadways and in conjunction with a paid media campaign. These periods include Christmas and New Year's, St. Patrick's Day, and the Fourth of July. For the seventh year since 2015, this HVE campaign will be accompanied by a comprehensive, multiplatform media campaign throughout the state. The enforcement effort is evidence-based, which will prevent traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated, and the necessary adjustments will be made. *NHTSA Countermeasures that Work* (Page 1-21) reviewed intensive alcohol selective enforcement efforts such as publicized saturation patrol programs.

The value of such integrated enforcement efforts is demonstrated by studies referenced in Page 1-24 of *NHTSA Countermeasures that Work*. In one study a three-site evaluation of integrated impaired driving, speed, and seat belt use enforcement indicated that "sites that combined high publicity with increased enforcement reduced crashes likely to involve alcohol (such as single-vehicle nighttime crashes) by 10% to 35%. Another study of comprehensive programs in six communities used integrated enforcement methods where it was reported that these programs reduced fatal crashes involving alcohol by 42%. About half the speeding drivers detected through these enforcement activities had been drinking and about half the impaired drivers were speeding. It is well established that the same risk-taking motivations that seem to compel some drivers to be impaired and speed also leads them to avoid using proper restraints.

They recommend saturation patrols that are publicized extensively and conducted regularly, as well as roving patrols in which individual patrol officers concentrate on detecting and arresting impaired drivers in an area where impaired driving is common or where alcohol-involved crashes have occurred. A demonstration program in Michigan, where sobriety checkpoints are prohibited by State law, revealed that saturation patrols can be effective in reducing alcohol-related fatal crashes when accompanied by intensive publicity.

It is projected that High Visibility Enforcement projects in each of the CTSP/LEL and State Trooper Regions conducted year-round and during targeted holiday periods, when tied with a multimedia PI&E campaign will achieve the following:

- Reduce of the number and severity of the hotspots found over time.
- Increase of the number of citations by citation type issued over time

#### Linkage Between Program Area

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.
- Use further analytics to fine-tune the particular countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.

This analytical review includes all the countermeasures that are presented in this plan as well as the particular tactics to be applied in their implementations

After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during FY 2022:

- Community Traffic Safety Programs/Law Enforcement Liaison (CTSP/LEL) – will provide coordination for the local implementations of the statewide evidence-based enforcement program, and the CTSP/LEL Coordinators and the administrative support for their offices will be maintained.
- The University of Alabama Center for Advanced Public Safety (UA-CAPS) will provide the information required for allocating traffic safety resources in an optimal way, and they will

continue to be supported in providing AOHS with Alabama crash and traffic safety data throughout the year.

- Conduct four local Hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP/LEL regions focusing on hotspot locations.
- Perform statewide E-BE projects in conjunction with the Alabama Law Enforcement Agency (ALEA), also focusing on hotspot locations.
- Participate in national and regional High Visibility Enforcement campaign on the statewide level, paired with a corresponding mass media campaign.

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

### Rationale

AOHS's problem identification process analyzes the data for crashes and determines all of the demographics related to them (e.g., the who, what, where, when, how, how old, and the “why” of crashes involving non-restrained occupants). The goal is to (1) determine the most effective countermeasures that can be applied, and once these are defined, (2) identify the best tactics to be applied within each.

This starts by determining those types of crashes that were going to be targeted for countermeasure implementation. For example, a recent study determined a very strong correlation between Restraint Deficiencies (RD) and other risky driving characteristics. In particular, DUI (alcohol and other drugs) and speed were correlated with non-use, and younger drivers 16-25 were particularly vulnerable. Young drivers are particularly susceptible to risk taking behaviors due to the fact that the part of their brain that properly assesses risk is not fully developed until age 25. While the average seatbelt use rate for all occupants has been measured above 90%, for those involved in fatal crashes the use rate was approximately 45%.

(See Fatalities at <http://www.safehomealabama.gov/PlansAnalysis/FARSandALFatalities.aspx> )

Evidence-based enforcement (E-BE) has been determined to be one of the most effective methods for increasing restraint use in general. This requires that specific locations be identified where there were concentrations of crashes involving unrestrained occupants. Once these hotspots are defined using the Critical Analysis Reporting Environment (CARE) software, the Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) Coordinators across the state are given information on the hotspot locations for the state as a whole. They were also provided detailed hotspot reports specific to their region to assist them in focusing their area efforts. Using the reports and maps developed for each region, the CTSP/LEL Coordinators develop plans, including the time schedule and work assignments, for their respective regions that focuses on the hotspot locations.

**Planned Activity: Drive Sober or Get Pulled Over High Visibility Enforcement Campaign**  
Planned activity number: **M5HVE-22-DS-M5**

Primary Countermeasure Strategy ID: **High Visibility Enforcement**

**Planned Activity Description**

In addition to paid media, AOHS will have a High Visibility Enforcement program focused on Impaired Driving for a two week period. The enforcement program will consist of members from the Municipal Law Enforcement Agencies, County Sheriffs and Alabama Law Enforcement Agency. This campaign will begin in August and conclude on Labor Day, in line with the dates for the national Drive Sober or Get Pulled Over campaign.

**Intended Subrecipients**

Regional CTSP/LEL Offices

**Funding sources**

<b>Source Fiscal Year</b>	<b>Funding Source ID</b>	<b>Eligible Use of Funds</b>	<b>Estimated Funding Amount</b>	<b>Match Amount</b>	<b>Local Benefit</b>
2020	FAST Act 405d Impaired Driving Mid	405d Mid HVE (FAST)	\$200,000.00	\$50,000.00	

## Planned Activity: Impaired Driving - High Visibility Enforcement Campaign

Planned activity number: **M5HVE-22-ID-M5**

Primary Countermeasure Strategy ID: **High Visibility Enforcement**

### Planned Activity Description

There will be four local Alcohol High Visibility Enforcement projects during the coming year as well as one statewide Alcohol High Visibility Enforcement project. Each of these projects will focus on alcohol related Hotspot crashes and the problem locations that have been identified across the state. One project will take place in each of the four CTSP/LEL regions and the statewide project will be conducted by the Alabama Law Enforcement Agency (ALEA). By conducting these HVE projects, additional evidence-based efforts can be focused on the reduction of impaired driving related crashes. The law enforcement activity will be sustained for twelve (12) months. However, at least three additional “Drive Sober or Get Pulled Over” mobilizations will take place during holiday periods known for increased travel and a higher potential for impaired motorists to be on the roadways and in conjunction with a paid media campaign. These periods include Christmas and New Year’s, St. Patrick’s Day, and the Fourth of July. For the seventh year since 2015, this HVE campaign will be accompanied by a comprehensive, multiplatform media campaign throughout the state. The enforcement effort is evidence-based, which will prevent traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated and the necessary adjustments will be made.

### Intended Subrecipients

The Alabama Law Enforcement Agency and Regional CTSP/LEL offices

### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405d Impaired Driving Mid	405d Mid HVE (FAST)	\$1,300,000.00	\$325,000.00	

## Planned Activity: Impaired Driving- Paid Media Campaign

Planned activity number: **M5PEM-22-ID-M5**

Primary Countermeasure Strategy ID: **High Visibility Enforcement**

### Planned Activity Description

As a part of the nationwide impaired driving campaign to reduce impaired driving-related fatalities, Alabama will participate in High Visibility Impaired Driving Enforcement Paid Media Campaigns for the seventh year since 2015. The campaign messages will be placed and aired during holiday periods known for increased travel and a higher potential for impaired motorists to be on the roadways. These periods include Christmas and New Year's, St. Patrick's Day, Cinco de Mayo and the Fourth of July. Along with traditional print, radio and television advertisements, Auburn University will use additional means of reaching the motoring public. Through professional services contracts, Alabama will be also able to place campaign messages in movie theatres, as well as participate in an increased online presence via web ads and newer mediums such as iHeart Radio, Spotify and Pandora.

### Intended Subrecipients

Auburn University

### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405d Impaired DrivingMid	405d Mid Paid/Earned Media (FAST)	\$700,000.00	\$175,000.00	

## Countermeasure Strategy: Prosecutor Training

Program Area: **Impaired Driving (Drug and Alcohol)**

### Project Safety Impacts

According to *NHTSA Countermeasures that Work* (Page 1-30), "DWI cases can be highly complex and difficult to prosecute, yet they are often assigned to the least experienced prosecutors". In one survey, about half of prosecutors and judges said the training and education they received prior to assuming their position was inadequate for preparing them to prosecute and preside over DWI cases (Robertson & Simpson, 2002a). Traffic Safety Resource Prosecutors (TSRPs) are current (or former) prosecutors who specialize in the prosecution of traffic crimes, and DWI cases in particular. They provide training, education, and technical support to other prosecutors and law enforcement agencies within their State. Judicial Outreach Liaisons (JOLs) are current (or former) judges who are experienced in handling DWI cases. Many JOLs have presided over DWI or Drug courts. They share information and provide education to judges and other court personnel about DWI cases."



A multidisciplinary approach and close coordination among all components of the criminal justice system was sought in developing the strategies to combat the issue of Impaired Driving. This set of countermeasure approaches includes the entire criminal justice system, including laws, enforcement, prosecution, adjudication, criminal and administrative sanctions, and related communications. As detailed in the Alabama Impaired Driving Strategic Plan, the state's goal is to achieve both *specific* and *general* deterrence through goals defined as:

- **Specific deterrence** focuses on individual offenders and seeks to ensure that impaired drivers will be detected, arrested, prosecuted, and subject to swift, sure, and appropriate sanctions, and thereby reduce recidivism.
- **General deterrence** seeks to increase the public perception that impaired drivers will face severe consequences, thus discouraging all individuals from driving impaired.

By offering educational opportunities and technical support throughout the state, courts are better prepared to prosecute DWI offenders. AOHS will allocate sufficient funds to allow for a full time Traffic Safety Resource Prosecutor to provide training requirements to all District Attorneys, ADA's and their staff in order to increase the level of readiness and proficiency for the effective prosecution of traffic impaired driving cases. Additionally, the goals of this program will emphasize:

- Practical Impaired Driving Course: Nuts & Bolts
- Handling the DUI Experts
- Impaired Driving Legal Updates
- Search & Seizure
- Jury Selection

#### [Linkage Between Program Area](#)

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.

- Use further analytics to fine-tune the particular countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.
- After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during the fiscal year:
  - Planning and Administration – The Alabama Office of Highway Safety (AOHS) will continue to perform the overall administrative functions for the planned programs and projects.
  - Community Traffic Safety Programs/Law Enforcement Liaison (CTSP/LEL) – will provide coordination for the local implementations of the statewide occupant protection program, and the CTSP/LEL Coordinators and the administrative support for their offices will be maintained.
  - The University of Alabama Center for Advanced Public Safety (UA-CAPS) will provide the information required for allocating traffic safety resources in an optimal way, and they will continue to be supported in providing AOHS with Alabama crash and traffic safety data throughout the year.
  - Conduct four local Hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP/LEL regions focusing on hotspot locations.
  - Perform statewide E-BE projects in conjunction with the Alabama Law Enforcement Agency (ALEA), also focusing on hotspot locations.
  - Continue the Law Enforcement Liaison (LEL) programs statewide. Beginning in FY 2007, this program was absorbed by the regional CTSP/LEL offices and was funded through the Community Traffic Safety Projects. This funding arrangement will continue.
  - Participate in national and regional High Visibility Enforcement campaign on the statewide level, paired with a corresponding mass media campaign.
  - Fund and support the Drug Recognition Expert Training Program
  - Continue to fund Traffic Safety Resource Prosecutor Program

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

## Rationale

While Alabama has not been as permissive as many states in their marijuana laws, it has seen a general increase in ID caused by drugs as opposed to alcohol. This is an alarming trend that is indicative of the increased social acceptance of drug use. During the most recent 2021 Alabama legislative session, a restrictive medical marijuana legalization bill was passed and signed by the governor. The under-reporting of drug cases must be much higher than alcohol cases since there is a general inability of most law enforcement officers to identify many of the drug-related ID cases. Alabama has taken this problem identification and continues to recognize the importance of offering educational training to judges, prosecutors, and law enforcement officers to better identify and litigate impaired driving cases.

The TSRP program will be a utilized resource in the battle against impaired driving and the problems being faced both on the law enforcement level and the prosecutorial level. It will focus on the overall goal of increasing the level of readiness and proficiency for the effective investigation, preparation, and prosecution of traffic related cases involving impaired driving from misdemeanor offenses to traffic homicide cases. The TSRP will further serve as a liaison while providing technical assistance, training, and counsel to prosecutors and law enforcement, as well as information to communities regarding the dangers of driving under the influence.

Funding for the TSRP program was determined by identifying the costs necessary for any planned activity associated with the countermeasure.

## Planned Activity: Traffic Safety Resource Prosecutor Program

Planned activity number: **FP-22-FP-AL**

Primary Countermeasure Strategy ID: **Prosecutor Training**

## Planned Activity Description

Goals for the TSRP program are to provide training requirements to all District Attorneys, ADAs and their staff in order to increase the level of readiness and proficiency for the effective prosecution of traffic impaired driving cases.

## Intended Subrecipients

Office of Prosecution Services

## Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act NHTSA 402	Alcohol (FAST)	\$175,000.00	\$35,000.00	\$0.00

## Program Area: Occupant Protection (Adult and Child Passenger Safety)

### *Description of Highway Safety Problems*

The central basis for the development of occupant restraint countermeasures by the Alabama Office of Highway Safety (AOHS) is the strategic Occupant Protection Plan, which was developed for the state in FY2012, and it has been updated each year in the May-June time frame. This plan is evidence-based to reflect the particular occupant protection issues within the State. The major goal of the plan is to ensure that resources dedicated to occupant protection are allocated to bring about the maximum traffic safety benefits to the roadway users of the State. The plan considers all restraint programs to be conducted in Alabama over a five year planning horizon with special emphasis on those that are proposed to be funded under the 405b Occupant Protection Grants and 402 Grants section for FY 2022. The purpose of the 405b program is to “encourage States to adopt and implement occupant protection laws and programs to reduce highway deaths and injuries from individuals riding unrestrained in motor vehicles.”

Having a front seat occupant seatbelt usage rate measured in FY2019 at 92.3% qualifies Alabama as a high seat belt use state. This means that the State qualifies for special restraint funding by (1) submitting an occupant protection plan, (2) participating in the Click It or Ticket campaign, (3) maintaining child restraint inspection stations, and (4) having an adequate number of child passenger safety technicians. Alabama meets all requirements.

The overall problem identification for the Alabama Highway Safety Plan (HSP) begins with the most recently generated data for Table 1. This arranges crash types by the number of fatalities and sets a priority if, in fact, “all other things were equal.” But all other things are not equal, and further analysis is needed to account for countermeasure effectiveness and cost. In addition, the categories of Crash Types are not mutually exclusive, so there are interactions between them that need to be given further analysis. For example, any of the crash causes might occur with or without occupants being properly restrained. As an example, certain age groups have been found more inclined to use restraints than others. Nevertheless, Table 1 serves effectively in giving the traffic safety community a high-level view of the source of fatalities as well as how these fatalities are also reflected in the lower severity crashes.

**Table 1: Top Fatality Causes Alabama CY2020 Data**

	<b>Crash Type (Causal Driver)</b>	<b>Fatal Number</b>	<b>Fatal %</b>	<b>Injuries</b>	<b>Injury %</b>	<b>PDO No.</b>	<b>PDO %</b>	<b>Total</b>
1	Restraint Deficient Crashes*	392	3.74%	3,834	36.56%	6,260	59.70%	10,486
2	Speed Involved	192	2.14%	2,769	30.89%	6,003	66.97%	8,964
3	ID/DUI All Substances	141	2.72%	1,883	36.27%	3,167	61.01%	5,191
4	Hit Obstacle on Roadside	129	2.33%	1,680	30.29%	3,738	67.39%	5,547
5	Fail to Yield or Ran (All)	128	0.50%	7,265	28.40%	18,187	71.10%	25,580
6	Large Truck Involved	117	1.40%	1,529	18.27%	6,721	80.33%	8,367
7	Ped., Bicycle, School Bus	97	4.30%	674	29.88%	1485	65.82%	2,256
8	License Deficiency Causal	103	1.56%	2,020	30.55%	4,489	67.89%	6,612
9	Pedestrian Involved	96	14.84%	529	81.76%	22	3.40%	647
10	Wrong Way Items	93	4.89%	613	32.25%	1,195	62.86%	1,901
11	Mature (65 or Older) Causal	83	0.71%	2,453	20.97%	9,162	78.32%	11,698
12	Aggressive Operation	81	3.20%	737	29.15%	1,710	67.64%	2,528
13	Youth (16-20) Causal Driver	73	0.39%	4,040	21.71%	14,495	77.90%	18,608
14	Motorcycle Involved	68	5.00%	943	69.39%	348	25.61%	1,359
15	Distracted Driving	52	0.45%	2,523	21.64%	9,083	77.91%	11,658
16	Utility Pole	28	1.17%	776	32.43%	1,589	66.40%	2,393
17	Drowsy Driving	23	0.84%	1,016	37.12%	1,698	62.04%	2,737
18	Workzone Related	18	0.77%	441	18.85%	1,880	80.38%	2,339
19	Vehicle Defects – All	18	0.41%	929	21.27%	3,420	78.31%	4,367
20	Vision Obscured	8	0.76%	275	25.99%	775	73.25%	1,058
21	Bicycle	8	3.79%	167	79.15%	36	17.06%	211
22	Child Restraint Deficient*	5	0.24%	298	14.08%	1,813	85.68%	2,116
23	School Bus Involved	4	1.13%	61	17.18%	290	81.69%	355
24	Railroad Trains	3	5.88%	13	25.49%	35	68.63%	51
25	Roadway Defects – All	1	0.82%	32	26.23%	89	72.95%	122

\*All categories list number of crashes except for the “Restraint Deficient” and “Child Restraint Deficient” categories. The restraint categories cannot accurately be measured by number of crashes, so they list number of unrestrained persons for each severity classification.

Two entries in Table 1 are important with regard to the Occupant Protection Plan. The following defines these two entries:

- Restraint-Deficient Crashes (RD) – any crash in which one or more of the occupants of any involved vehicle (including drivers) were not properly restrained; and
- Child Restraint-Deficient Crashes (CRD) – any crash in which one or more children, aged five years or under, were not properly restrained, independent of the restraint characteristics of the other occupants.

Clearly RD is at the top of this list, demonstrating that occupant restraint is one of the most critical issues in traffic safety and fatality reduction. The categories given in Table 1 are not mutually exclusive (e.g., you could have unrestrained passengers in an alcohol/drug crash that involved speeding, and many other combinations). However, they still tend to demonstrate the relative criticality of each of the particular categories. Because RD is of the highest level of concern, the State puts considerable emphasis on occupant protection, and extensive analyses have been performed in an effort to determine the best approach to increasing restraint use.

Child Restraint Deficiencies (CRD) are near the bottom of Table 1 with five fatalities. This reflects the efforts that have gone into child protection by several agencies throughout the state. Special emphasis is given to children, reflecting the importance of maintaining all of the child restraint programs. The enforcement efforts for CRD effectively follows the same pattern as that for RD.

Table 1 shows clearly that one of the most effective ways of reducing fatalities is to increase restraint use. The next step in the problem identification process is to analyze the data for these crashes and determine all of the driver demographics related to them (e.g., who, what, where, when, how old, and why of crashes involving non-restrained occupants). The goal is to (1) determine the most effective countermeasures that can be applied, and once these are defined, (2) identify the best tactics to be applied for each.

Evidence-based enforcement (E-BE) has been determined to be one of the most effective methods for increasing restraint use in general. This requires specific locations be identified where there are concentrations of crashes involving unrestrained occupants. Once these hotspots are defined using the Critical Analysis Reporting Environment (CARE) software, the Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) Coordinators across the state are provided detailed hotspot reports specific to their region to assist them in focusing their area's efforts. Using the reports and maps developed for each region, the CTSP/LEL Coordinators develop plans, including the time schedule and work assignments, for their respective regions that focuses on the hotspot locations. The goals set on a regional basis are in line with the goals and strategies laid out in this plan.

## Restraint Issues Problem Identification

This section contains the result of a problem identification study that was conducted based on data over calendar years 2016-2020. This was the latest data that were available at the time of the analysis, and it is representative of the restraint picture going forward into FY2022.

The goal of this problem identification is to ensure that the restraint enforcement program considered by the state throughout FY2022 is evidence-based, the evidence being derived from past data obtained from crash reports.

For all of the results below, two subsets of data were established and compared: (1) where there was at least one occupant of the vehicle not properly restrained, and (2) where all occupants were properly restrained. Most of the attributes considered involve the causal drivers since they would have the most influence on whether the occupants of their vehicles were restrained at the time of the crash.

When a given attribute is stated to be overrepresented, that means that in the comparison between the two subsets, this particular attribute had a statistically significantly higher than expected proportion in the unrestrained as opposed to the restrained subset. When the term “expected proportion” is used, this is obtained from the proportion of the attribute that exists in the subset containing all restrained occupants; and so, the same would be expected of the unrestrained occupants if no differences existed.

Please review the definitions of “Restraint Deficient” (RD) given above. The following summarizes the findings of the analysis that compared RD crashes with those in which all occupants were properly restrained:

### *Geographical Factors*

- Counties with the greatest overrepresentation factors (combined Odds Ratios and Max Gains) for unrestrained occupants include Talladega, Walker, Cullman, Jackson, Marshall, Escambia, DeKalb, Monroe, Blount and Conecuh.
- The number of crashes involving unrestrained occupants is greatly overrepresented in rural areas in comparison to the urban areas. The odds ratio for rural areas is 2.228 times that of what would be expected if rural and urban restraint use were the same.
- The most overrepresented (worst) areas for seatbelt non-use are the rural county areas in Mobile, Walker, Baldwin, Talladega, Tuscaloosa, Cullman, and Escambia Counties.

- The most underrepresented (best) areas for occupant seatbelt use are in the urban areas, specifically, the cities of Birmingham, Montgomery, Huntsville and Mobile.
- Crash incidents deficient in occupant restraints use are greatly overrepresented on county highways, with 2.25 times the expected number of crashes. County and State were the only roadway classifications that were overrepresented. Federal, Interstate and Municipal roads were significantly underrepresented. This is a very definitive result that indicates that seatbelt selective enforcement will be much more productive on performed on County and State roadway classifications.
- In the analysis of locale, crashes involving no restraints are most commonly overrepresented in Open Country areas (close to twice the expected), while Shopping or Business locale is the most significantly underrepresented.

#### *Time Factors*

- Saturday and Sunday are the most overrepresented days of the week for crashes in which some of the occupants did not use restraints, with proportions 30% to 40% higher than expected. This correlates highly with impaired driving crashes (see Item 11). All work days are underrepresented in non-use.
- In the evaluation of time of day, overrepresentations peak during the 7 PM to 7 AM time periods (averaging approximately two times their expected proportions). After the 6 AM hour, they taper off, falling back below crashes with restrained occupants who are overrepresented in the 7 AM to 7 PM time periods. This also correlates with alcohol and drug use. Additional cross-tabulations performed for crashes involving injury showed fatal crashes being dramatically overrepresented in the early morning hours (12 midnight to 7 AM).

#### *Analysis of Time of Day by Day of Week.*

- Crosstab analyses of time of day by day of the week for crashes in which restraints were not used enables officers to determine target times and days to enforce restraint laws so that severe crashes may be prevented. The late night and early morning overrepresentations were largely on the weekend days starting on Friday night and ending on Sunday morning. As opposed to this, concentrations during the week were in the 6AM to 6PM mid-day times, which would be more typical of problem drinkers.
- The cross-tabulation of time of day by day of the week that was restricted to each of the injury classifications showed a very high resemblance to the same analysis for impaired driving (alcohol and other drugs involvement), especially for fatal crashes.

#### *Crash Causal Factors*

- Primary Contributing Circumstance overrepresented factors indicate that other risk-taking behaviors are quite often associated with crashes in which restraints are not used, including DUI (5.4 times its expected proportion), over the speed limit (5.7 times), and aggressive operation (3.8 times), running off the road and fatigue/sleep (both over two times their expected proportions).



- Crashes attributed to drivers of vehicles with unrestrained occupants are greatly overrepresented in vehicles with model years 1986-2006, which could be attributed to the lack of standard safety restraints in some of these older model vehicles, or perhaps the removal (or wearing out) of these restraints over time. All vehicles newer than 2012 were significantly underrepresented in having occupants who were not restrained.

*Severity Factors*

- Fatal, incapacitating, and non-incapacitating injuries are all overrepresented in crashes where one or more occupants were not restrained; this analysis quantified the benefits of restraint use. The probability of the crash resulting in fatality was found to be close to 20 times higher when all occupants were restrained. The probability of a Suspected Serious Injury was multiplied about 7 times, and that of Suspected Minor Injury was multiplied over three times. The probability that the crash would result in no injuries (PDO) was about half of what was true for the fully restrained occupants.
- The speed at impact for crashes for restraint-deficient crashes is significantly overrepresented (more than twice the expected value) in all of the categories above 45 MPH, indicating that these crashes consistently occur at higher speeds than crashes in which restraints were being used. This is highly correlated with rural driving and other risk-taking behaviors (e.g. Impaired Driving). Extreme risk taking is seen at the highest speed levels, as given in the following table. The Odds Ratio gives the multiplier for the probability that the occupants were not properly restrained.

<b>Speed</b>	<b>Odds Ratio</b>
75	3.5
80	5.4
85	7.7
90	9.1
95	17.7
100	8.9
Over 100	13.3

- Fatal injuries in crashes with restraint deficiencies are highly overrepresented on Interstate and state roadways, and they are also somewhat overrepresented on county and federal roads. “Possible Injuries” and “Property Damage Only” were highly overrepresented on municipal highways. See speed of impact above; numerous studies have confirmed that the probability of a given crash being fatal doubles with each speed increase of 10 MPH over the 40 MPH threshold).

- Analysis of number injured per crash shows that the proportion of two or more injuries (including fatalities) in restraint-deficient crashes is overrepresented by odds ratios greater than 3) from 2 to 9 injuries per crash. Crashes without restraints are not only causing much more severe injuries, but a greater number of injuries and fatalities per crash.

#### *Causal Driver Demographics*

- Analysis of individual driver ages indicates that crashes involving restraint deficiencies are about as expected for the 16-17 year-old drivers. They become significantly overrepresented in non-use for drivers in the age range of 18-40. Above this age range non-use is about as expected until age 52 and above, where restraint non-use becomes significantly underrepresented. Generally, older drivers are more risk averse, and are thus more apt to buckle up and require such from their passengers. The exception is in child restraints (see that discussion below).
- Male drivers account for a majority (about 62%) of crashes in which restraints are deficient, and they are significantly overrepresented by a factor of 1.252 times the proportion than expected as compared to the restrained subset.

#### *Ejection and Back Seat Analysis*

- As expected, total ejection of unrestrained occupants is highly overrepresented (over 37 times the expected proportion). Ejection is one major cause for many fatalities in which safety equipment is not properly utilized. There were 2,646 total ejections for the unrestrained occupants over the five years, of the data of which 643 resulted in fatalities; this is a proportion of one fatality in every 4.1 crashes. The non-ejected occupant probability of fatality for restrained occupants is one in every 2,614 crashes. Thus, if ejected there is about 637 times the chances of being killed as opposed to being properly restrained and not ejected.
- The non-restrained person is over 375 times more likely to be totally ejected than those who are properly restrained.
- If ejected, the probability of death increases by 206 times, from one in 1250 crashes to one in 6. Ejections that are not fatal invariably result in extremely severe injury.
- A detailed analysis using 2015-2019 crash reports determined that if all back-seat occupants were properly restrained it would result in an estimated saving of 33 lives per year.
- The results given below for child restraints were obtained by a comparison of occupants aged 5 and under who were (1) properly restrained in approved child safety restraints against (2) those either not restrained or restrained improperly. Ambiguous entries were ignored.

#### *Child Restraint Deficiency*

- Children not restrained have a proportion of fatal injury that is about 28 times higher in proportion than those properly restrained. The other three injury classifications, while not increased as much, are greater (by factors of): Incapacitating (Serious) Injury (9.1), Non-Incapacitating (Minor) Injury (4.2) and Non Visible but Complains of Pain (2.3).

- Overrepresented crash types (Manner of Crash) in which these CDR children were involved with statistically significant odds ratios (crashes over the five years, odds ratio): Single Vehicle Crashes (479, 2.1), Side Impact of 90 degrees (410, 1.3); Head-on Front to Front (93, 1.8); Angle Oncoming Frontal (89, 1.2), and Angle Front to Side, opposite direction (101, 1.1).
- Primary Contributing Circumstances with odds ratios greater than 2.8: DUI, Aggressive Operation, and Over Speed Limit. These were for the crashes and it does not necessarily indicate the vehicles in which the CDR children were occupants when they were in multiple vehicle crashes.
- Morning and afternoon rush hours were high if not overrepresented. The afternoon was about twice as bad (308 crashes) as opposed to morning (163 crashes). These are the typical hours when parents would have children in their vehicles – before and after taking the older kids to school.
- County roads were significantly overrepresented with an odds ratio of 1.141. Municipal roads were the only other ones that were overrepresented, but their odds ratio was only 1.035, and not large enough to be statistically significant. All other roadway classifications were underrepresented.
- Of those not properly restrained, 52 were totally ejected from the vehicle, of which 12 were killed. This one-in-five probability can be compared to the death probability when properly restrained, which is one-in every 2,503 children involved.
- With Child Restraint Deficiency crashes, the age range of the overrepresented drivers were predominantly very young and older drivers. Those in the 17 to 25 had high Odds Ratios of which most were statistically significant. On the other end of the age scale, drivers 51 and older were generally overrepresented. This would seem to be the age group who are transporting grandchildren, and whose vehicles may not be equipped with child restraints.

## Countermeasure Strategies in Program Area

Countermeasure Strategy
Child Restraint System Inspection Station(s)
Short-term, High Visibility Seat Belt Law Enforcement

### Countermeasure Strategy: Child Restraint System Inspection Station(s)

Program Area: **Occupant Protection (Adult and Child Passenger Safety)**

#### Project Safety Impacts

Child Restraint Deficiencies (CRD) are near the bottom of an analysis of top fatality causes in Alabama. This reflects the extreme efforts that have gone into child protection by several agencies throughout the state. Special emphasis is given to children, who are quite vulnerable if not properly restrained, and the importance of maintaining all child restraint programs is clear. One of the most effective ways of reducing fatalities is to increase restraint use, and this example will be used to further illustrate the problem identification process that is applied to all potential countermeasures. Inspection events can positively change parents' and caregivers' attitude towards installing child restraints correctly by improving their knowledge.

AOHS will fund the state's Child's Passenger Safety program, which will facilitate and maintain a network of fitting stations and events to cover a majority of the state. The program will also organize training and recertification classes for technicians.

A general outline of this program follows:

- Recruit a sufficient number of potential technicians throughout the state in order to address areas identified as needed fitting stations or knowledgeable staff available for assistance;
- Training of “first time” technicians;
- Recertification of previously trained technicians;
- Inspection stations will continue to be made available to the public;
- Technicians ensuring that child passenger restraints are installed correctly and that caregivers know how to install them correctly;
- Outreach to underserved communities providing technicians for additional trained CPS professionals in all communities.

The goal for the CPS program is to develop trained CPS professionals in as many communities over the state as possible. The ultimate vision is to create statewide community inspection stations where parents and other caregivers can obtain proper education about restraining their children for safety, while at the same time providing a supporting public information and education program that informs and motivates the public in proper child restraint use.

Table 4 below shows the location of the anticipated classes for FY 2022 as well as an estimation of the number of attendees that will be funded through this program. Due to the limited number of instructors in the state, the CPS program will contract with Children’s Hospital to hold at least one training once their restrictions due to Covid-19 are eased. This is not to suggest that this is the only training class to be held in the state over the whole year, merely the only confirmed class to be funded by this office. Other classes not funded by AOHS will be held by Children’s for internal employees, and at least four planned training classes for ALDOT. Once enough instructors complete their curriculum, subsequent years will have an increased number of training classes that can be scheduled through the ADPH program.

**Table 4. Class Location and Attendee Estimate**

<b>Class Location</b>	<b>Estimated Number of Students</b>
Central Alabama District	15

**Inspection Stations**

ADPH plans to maintain current inspection stations, as well as establish at least one sanctioned station in every public health district. All these inspections stations will be staffed with nationally certified CPS technicians during posted working hours. Some of the inspection stations will work on an appointment only basis.

Table 5 illustrates the proportion of Alabama’s population that is covered by inspection stations. The table demonstrates that 58.14% of the population of Alabama is covered.

The list below identifies the location of inspection stations and/or inspection events as well as the populations they serve. The table also affirms that each station and/or event will be staffed by a certified technician. As a requirement of the program, each Public Health Department is required to conduct a seat check event each month.

**Table 5. Proportion of Alabama’s Population Covered by Inspection Stations**

<b>Location</b>	<b>Population served</b>	<b>% of total population</b>
Baldwin County Health Department	182,265	3.81%
Bullock County Health Department	10914	0.23%
Calhoun County Health Department	118572	2.48%
Children's Hospital Birmingham- Jefferson County	658466	13.78%
Clarke County Health Department	25833	0.54%
Demopolis Police Department	7483	0.16%
Southeast Alabama Medical Center- Houston County	101547	2.12%
Elmore County Health Department	79303	1.66%
Enterprise Police & Fire Departments	26562	0.56%
Etowah County Health Department	104430	2.18%
Lamar County Health Department	14564	0.30%
Macon County Health Department	21452	0.45%
Madison County Health Department	334811	7.00%
Marshall County Health Department	93019	1.95%
Morgan County Health Department	119490	2.50%
USA Hospital- Mobile County	412992	8.64%
Montgomery SAFE Kids & Baptist East- Montgomery County	229,363	4.80%
Ozark Police Department	14907	0.31%
Perry County Health Department	10591	0.22%
Saraland Police Department	13405	0.28%
St. Clair County Health Department	83593	1.75%

Sylacauga Fire Department	12749	0.27%
Troy Fire & Police Department	18033	0.38%
Walker County Health Department	67023	1.40%
Washington County Health Department	17581	0.37%
<b>Total</b>	<b>2,778,948</b>	<b>58.14%</b>

\*2020 Census Data, Alabama’s total population in the 2020 Federal Census was 5,024,279, however the individual county population was not posted at the time of this HSP creation. In order to maintain as accurate population percentages as possible we are waiting to update until complete data is posted.

**Table 6. Station and/or Events and Population Served**

<b>Station/Events</b>	<b>Rural</b>	<b>Urban</b>	<b>At-Risk</b>	<b>Certified Tech Present</b>
Baldwin County Health Department	Rural			YES
Bullock County Health Department	Rural		Low Income, Minority	YES
Calhoun County Health Department	Rural			YES
Children's Hospital Birmingham		Urban	Low Income, Minority	YES
Clarke County Health Department	Rural		Low Income, Minority	YES
Demopolis Police Department	Rural		Low Income, Minority	YES
Southeast Alabama Medical Center- Houston County		Urban		YES
Elmore County Health Department	Rural			YES
Enterprise Police & Fire Departments	Rural		Low Income	YES
Etowah County Health Department		Urban		YES
Huntsville Hospital, Huntsville Police Department & Huntsville Pediatrics		Urban		YES
Lamar County Health Department	Rural			YES
Macon County Health Department	Rural		Low Income , Minority	YES
Madison County Health Department		Urban		YES
Marshall County Health Department	Rural			YES
Morgan County Health Department		Urban		YES
Montgomery SAFE Kids & Baptist East		Urban	Minority	YES
Northport Fire & Police		Urban	Low Income, Minority	YES
Ozark Police Department	Rural		Low Income	YES



Perry County Health Department	Rural		Low Income , Minority	YES
Saraland Police Department	Rural			YES
St. Clair County Health Department	Rural			YES
Sylacauga Fire Department	Rural		Low Income	YES
Troy Fire & Police Department	Rural			YES
Tuscaloosa Police Department		Urban		YES
Tuscaloosa SAFE Kids		Urban		YES
USA Children’s Hospital –Mobile County		Urban		
Walker County Health Department	Rural		Low Income	YES
Washington County Health Department	Rural		Low Income, Minority	YES

#### Linkage Between Program Area

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.
- Use further analytics to fine-tune the countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.

This analytical review includes all of the countermeasures that are presented in this plan as well as the particular tactics to be applied in their implementations

After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during each fiscal year:

- Planning and Administration – The Alabama Office of Highway Safety (AOHS) will continue to perform the overall administrative functions for the planned programs and projects.
- Community Traffic Safety Programs/Law Enforcement Liaison (CTSP/LEL) – will provide coordination for the local implementations of the statewide E-BE, and the CTSP/LEL Coordinators and the administrative support for their offices will be maintained.
- The University of Alabama Center for Advanced Public Safety (UA-CAPS) will provide the information required for allocating traffic safety resources in an optimal way, and they will continue to be supported in providing AOHS with Alabama crash and traffic safety data throughout the year.
- Conduct four local Hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP/LEL regions focusing on hotspot locations.
- Perform statewide E-BE projects in conjunction with the Alabama Law Enforcement Agency (ALEA), also focusing on hotspot locations.
- Continue the Law Enforcement Liaison (LEL) programs statewide. Beginning in FY 2007, this program was absorbed by the regional CTSP/LEL offices and was funded through the Community Traffic Safety Projects. This funding arrangement will continue in FY 2022.
- Participate in national and regional High Visibility Enforcement campaign on the statewide level, paired with a corresponding mass media campaign.
- Continue the Child Passenger Safety Program to maintain the network of restraint inspection stations in Alabama, as well as certify technicians.

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

#### Rationale

According to *NHTSA Countermeasures that Work* (Page 2-1), NHTSA estimates that correctly used child restraints are even more effective than seat belts in reducing fatalities. Child restraints reduce fatalities by 71% for infants younger than 1 year old and by 54% for children 1 to 4 years old in passenger cars. In light trucks, the fatality reductions are 58% for infants and 59% for children 1 to 4 years old. In addition, research conducted by the Partners for Child Passenger Safety Program at the Children's Hospital of Philadelphia found that belt-positioning booster seats reduce the risk of injury to children 4 to 8 in crashes by 45% when compared to the effectiveness of seat belts alone. The proper use of child restraints is not trivial, and most parents are not intuitively aware of all the complexities involved. Improper application of even the correct devices can lead to increased injury or even death. It is clear that this training project is a key component of the overall child restraint effort.

## Planned Activity: Child Passenger Safety Training Program

Planned activity number: **M1PE-22-M1**

Primary Countermeasure Strategy ID: **Child Restraint System Inspection Station(s)**

### Planned Activity Description

2020 brought unforeseeable challenges to the Child Passenger Training program in Alabama. The project has been focused on growing technicians within the state, and developing instructors to provide trainings for certifications. When in person classes were unable to occur or postponed indefinitely due to shutdowns during the year, the outcomes on goals were significantly affected. In spite of the challenges, the program will continue to have the goal of successfully recruiting, training and maintaining a sufficient number of child passenger safety technicians based on the Alabama's problem identification. AOHS will continue to partner with the Alabama Department of Public Health (ADPH) to implement the state's Child Passenger Safety (CPS) Program.

The CPS program will be staffed by a Program Coordinator located at the ADPH central office, and three district coordinators: ADPH employees are located in six of public health districts (Northern, Northeastern, West Central, East Central, Southeastern, Southwestern). To recruit a network of technicians and instructors, information about upcoming CPS technician certification classes, as well as information about car seat fitting stations and car seat check events will be added to the CPS website section at <http://www.alabamapublichealth.gov/injuryprevention/car-seats.html>. The site will include downloadable educational materials and information regarding car seat installation tips, Alabama car seat laws and general car seat safety information. These materials will be publicized to parents statewide through a variety of avenues, including a series of brochures and pamphlets, along with social media, and other youth focused ADPH programs.

The Program Coordinator will be responsible for the overall project, including: organizing CPS certification and recertification notification, developing program materials, coordinating efforts with other agencies and the public health districts, and maintaining the CPS website. The Program Coordinator will become a certified Car Seat Technician, and work to locate instructor candidates in the state. Each district coordinator will spend ten percent of their time devoted to organizing and conducting car seat clinics and seat check events in their district for the public, as safety allows.

In order to become CPS Instructors, CPS Technicians must participate in CPS Trainings as Course Assistants with CPS Mentors (current instructors) and participate in CPS events for at least six months. At the end of the six-month period, potential instructors submit an Instructor Candidacy application. Upon approval from Safe Kids, the CPS Technician officially becomes an Instructor Candidate. The Instructor Candidates will then work with their CPS Mentor to schedule a training that they will instruct along with their mentor. CPS Instructors who wish to become Lead Instructors can elect to take the Lead Instructor Quiz once they feel comfortable with their technical and teaching skills. The program will focus on aggressively identifying potential instructor candidates from the training class to continue in the process.

To obtain training and mentors for ADPH program staff, the Program Coordinator will contract with the staff at Children's Hospital in Birmingham. Currently, they are the one of the only organizations with instructors who can provide trainings within the state but are still unsure of when they will be allowed to do in person classes. They will be able to perform at least one training for the AOHS, but if there is interest and staff are allowed to work, additional trainings will be conducted. Each training will consist of a 3-day CPS technician certification class and a 1-day CPS recertification class for any interested participants. Information about upcoming trainings will be posted on the ADPH Child Passenger Safety website.

The Program Coordinator will also ensure that the Safe Kids online listing of technicians is up-to-date and work directly with Safe Kids to correct any issues. This will be accomplished by contacting each CPS Technician listed on the Safe Kids website, and verifying their status as a certified technician, and inquiring about the use of their certification. The Program Coordinator will create a database with an updated list of CPS Technicians and indicate technicians that are willing to participate in CPS Seat Check Events around the state. Any discrepancies with the CPS Technician List on the Safe Kids website will be resolved with the help of Safe Kids staff.

The Program Coordinator will work with the District Coordinators to identify additional permanent fitting stations across the state. The current list of statewide fitting stations on the Safe Kids website will be vetted to ensure that each station does in fact have a certified CPS Technician who can conduct car seat checks and install car seats. The Program Coordinator will also inquire about fitting stations when contacting technicians about their certification status and connect technicians who are interested in participating in seat check events with fitting stations in their area.

Information about upcoming CPS Technician trainings and recertification, as well as information about car seat fitting stations and seat check events will be added to the ADPH CPS website. The revamped site will also include educational materials information that will be available for download that covers car seat installation tips, Alabama laws regarding car seats, and general seat belt safety information. Brochures and flyers will be created in-house by the Program Coordinator and the ADPH Health Marketing Division. The ADPH CPS website will be maintained by the Program Coordinator.

## Intended Subrecipients

Alabama Department of Public Health

### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405b OP High	405b High Public Education (FAST)	\$175,000	\$43,750.00	

## Countermeasure Strategy: Short-term, High Visibility Seat Belt Law Enforcement

Program Area: **Occupant Protection (Adult and Child Passenger Safety)**

### Project Safety Impacts

The value of Short-term, High Visibility Seat Belt Enforcement, such as Click it or Ticket (CIOT) projects is well documented (see *NHTSA Countermeasures that Work* Page 2-13) High-visibility, short-duration seat belt law enforcement programs were demonstrated in individual communities in the late 1980s. North Carolina's CIOT program took this model statewide beginning in 1993 and raised the use rate above 80%. The CIOT model expanded nationwide in 2003 and seat belt use increased nationwide in almost all states from 2000-2006, in part due to CIOT seat belt enforcement programs. The national seat belt use rate reached 90.1% in 2016. For example, Hedlund et al. (2008) compared 16 States with high seat belt rates and 15 States with low seat belt rates. The single most important difference between the two groups was the level of enforcement, rather than demographic characteristics or the amount spent on media. High-belt-use States issued twice as many citations per capita during their Click It or Ticket campaigns as low-belt-use States. Similarly, Hinch et al. (2014) found that law enforcement in primary belt use law States issued more seat belt citations in the 2012 campaign than did law enforcement in secondary belt use law States.

It is projected Short-Term, High Visibility Seat Belt Enforcement projects in each of the CTSP/LEL and State Trooper Regions conducted during the national "Click It or Ticket" campaign, along with a multi-platform paid media campaign, will achieve the following:

- Reduce of the number and severity of the hotspots found over time.
- Increase of the number of citations by citation type issued over time.
- Increase the seat belt usage rate among the various regions.

### Linkage Between Program Area

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.
- Use further analytics to fine-tune the particular countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.

This analytical review includes all of the countermeasures that are presented in this plan as well as the particular tactics to be applied in their implementations

After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during FY 2022:

- Planning and Administration – The Alabama Office of Highway Safety (AOHS) will continue to perform the overall administrative functions for the planned programs and projects.
- Community Traffic Safety Programs/Law Enforcement Liaison (CTSP/LEL) – will provide coordination for the local implementations of the statewide occupant protection program, and the CTSP/LEL Coordinators and the administrative support for their offices will be maintained.
- The University of Alabama Center for Advanced Public Safety (UA-CAPS) will provide the information required for allocating traffic safety resources in an optimal way, and they will continue to be supported in providing AOHS with Alabama crash and traffic safety data throughout the year.
- Conduct four local Hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP/LEL regions focusing on hotspot locations.
- Perform statewide E-BE projects in conjunction with the Alabama Law Enforcement Agency (ALEA), also focusing on hotspot locations.
- Participate in national and regional High Visibility Enforcement campaign on the statewide level, paired with a corresponding mass media campaign.
- Continue the Child Passenger Safety Program to maintain the network of restraint inspection stations in Alabama, as well as certify technicians.

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

### Rationale

Alabama continues to steadily improve its seat belt and child restraint use rates that experienced a major improvement upon passing its Primary Seat belt Law in 1999. As part of the cooperative process with NHTSA, an Evidence-Based Enforcement (E-BE) project called “Click It or Ticket” (CIOT) is run on an annual basis in April, May and June of each year. Alabama’s program will consist of a coordinated effort among law enforcement agencies from the municipal to the state level.

Data availability and its analysis is also essential to the effective management of the overall restraint program and its improvement. Data collected is used for problem identification and evaluation that is organized according to the following categories:

- Observational survey of occupant protection and child restraint use. Pre and post surveys for seat belt programs will be conducted using the NHTSA-compliant seat belt survey design. A telephone survey will be used to evaluate the effectiveness of the paid media related to the CIOT campaign.
- Occupant protection and child restraint crash analysis. These are performed to ensure the locations and other demographics are the most advantageous by the problem identification efforts.
- Continued problem identification and evaluation. The efforts exemplified in the Problem Identification will be repeated, extended and updated as needed to ensure the most effective distribution of resources that can be obtained from evidence-based decisions. In addition, several evaluation studies are described to determine program success and to improve the program in future years.

Specific countermeasures within each of these data categories were checked for their effectiveness estimates from the NHTSA-recommended document: *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition, 2017*.

**Planned Activity: Click It or Ticket High Visibility Enforcement Campaign**

Planned activity number: **M1HVE-22-FP-PT**

Primary Countermeasure Strategy ID: **Short-term, High Visibility Seat Belt Law Enforcement**

**Planned Activity Description**

The Alabama Highway Safety Office will conduct a High Visibility Enforcement program for a two week period. The enforcement program will consist of members from the Municipal Law Enforcement Agencies, County Sheriffs and Alabama Law Enforcement Agency.

**Intended Subrecipients**

Regional CTSP/LEL Offices

**Funding sources**

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2019	FAST Act NHTSA 402	Occupant Protection(FAST)	\$200,000.00	\$50,000.00	\$200,000.00

**Planned Activity: Click It or Ticket Observational Survey**

Planned activity number: **M1OP-22-OP-M1**

Primary Countermeasure Strategy ID: **Short-term, High Visibility Seat Belt Law Enforcement**

**Planned Activity Description**

Pre- and post- program surveys will be conducted by the University of Alabama Center for Advanced Public Safety (UA-CAPS) as part of the “Click It or Ticket” campaign and extending to all of the various restraint projects, including the determination of child restraint usage rates. The total restraint use program will consist of waves of surveys, enforcement and media blitzes, carefully scheduled to maximize public understanding of restraint use.

**Intended Subrecipients**

University of Alabama

**Funding sources**

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405b OP High	405b High OP Information System (FAST)	\$220,000.00	\$55,000.00	



## Planned Activity: Click It or Ticket Paid Media Campaign

Planned activity number: **M1PEM-22-OP-M1**

Primary Countermeasure Strategy ID: **Short-term, High Visibility Seat Belt Law Enforcement**

### Planned Activity Description

As a part of the nationwide initiative to increase seat belt usage, Alabama will participate in the “Click It or Ticket” High Visibility Paid Media campaign. This campaign will be scheduled in May and conclude on the Memorial Day Holiday. This has been a highly successful program in the past several years. Alabama will continue to lend its full support to the program in the coming year.

The value of Click it or Ticket (CIOT) projects is well documented (see *NHTSA Countermeasures that Work* Page 2-4). High-visibility, short-duration belt law enforcement programs were demonstrated in individual communities in the late 1980s. North Carolina’s CIOT program took this model statewide beginning in 1993 and raised the seat belt use rate above 80%. The CIOT model expanded nationwide in 2003 and seat belt use increased nationwide in almost all states from 2000-2006, in part due to CIOT seat belt enforcement programs.

### Intended Subrecipients

Auburn University

### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405b OP High	405b High Paid Advertising (FAST)	\$340,000.00	\$85,000.00	

## Program Area: Planning & Administration

### Description of Highway Safety Problems

In a coordinated effort over the past four decades, Alabama has been committed to supporting the various NHTSA focus areas. It has done this by meeting the requirements for Section 402 funding since the creation of NHTSA in the late 1960s. AOHS is organized with a central staff and four regional Community Traffic Safety Program (CTSP) Coordinators who report directly to the Governor's Representative. The CTSP Coordinators work closely together with the AOHS central administration to implement all programs that involve local police and county agencies as well as safety advocates.

In order to manage the AOHS's programs, staff are employed at the state level. Planning and Administration (P&A) costs are those direct and indirect expenses that are attributable to the overall management of the State's HSP. Costs include salaries and related personnel benefits for the GRs and for other technical, administrative and clerical staff in the SHSOs. P&A costs also include office expenses such as travel, equipment, supplies, rent, and utilities necessary to carry out the functions of the SHSO. The level of funding in order to accommodate the state office's needs is evaluated each year, just as in other program areas.

Alabama's HSP has been consistent over the past decade with the following established attributes:

- **Vision:** To create the safest surface transportation system possible, using comparable metrics from other states in the Southeast to assess progress in maintaining continuous recognizable improvement.
- **Primary ideals:** To save the most lives and reduce the most suffering possible.
- **Countermeasure selection approach:** To apply an *evidence-based* approach that draws upon detailed problem identification efforts to quantify and compare alternatives that are given within the NHTSA document *Countermeasures That Work*.
- **Primary focus:** To implement Evidence-Based Enforcement (E-BE), concentrating on enforcement with special emphasis on speed reduction, impaired driving elimination and increasing the use of restraints; using data that are centered around the hotspot analyses performed for each of these countermeasure subject areas.
- **Implementation Approach:** To stress the necessity for a cooperative effort that involves teamwork and diversity, including all organizations and individuals within the state who have traffic safety interests.
- **Participant mission:** To focus crash reduction countermeasures on the locations with the highest potential for severe crash frequency and severity reduction, as identified for speed and impaired driving, which were the largest two causes of fatal crashes, and for restraint non-use, which is the greatest factor causing increased crash severity.

There are several approaches used in the *evidence-based* approach that are outlined as follows:

- Compare similar results from year to year from the data that is used to drive the countermeasure selections. For example, similar hot-spot analyses are performed from year to year to determine the changes in the crash statistics as well as the correlated demographics. This quantifies both improvements and setbacks.
- If the indications are that a program implemented in the previous fiscal year fell short of its intended target, analyses are performed to determine the various causes in terms of continual improvement in the future.
- If it is determined that a specific program was particularly successful, then its characteristics are studied to determine if they can be applied or even reinforced in future efforts.
- For new countermeasures, at the highest level, evaluate alternative overall countermeasure strategies and select the ones that will best solve the problem; this will be illustrated at the highest level with Table 1, found below.
- Once new countermeasures are resolved, use further analytical techniques to fine-tune those that have been selected for implementation. For example, the highest level might resolve that selective enforcement and PI&E are the superior countermeasure types to employ, while the second level would establish the specific locations and media markets to implement these countermeasures.

#### Planned Activities

##### Planned Activities in Program Area

Unique Identifier	Planned Activity Name	Primary Countermeasure Strategy ID
PA-22-FP-PA	Planning and Administration	Planning & Administration

#### Planned Activity: Planning and Administration

Planned activity number: **PA-22-FP-PA**

Primary Countermeasure Strategy ID: **Planning & Administration**

#### Planned Activity Description

P & A will include both direct and indirect costs for personnel with their associated costs. Personnel in the direct cost category include the Highway Safety Unit Chief who spends 100% of her time with NHTSA programs, as well as the Justice Programs Unit Chief who will spend approximately 25% of his time on highway traffic safety related issues. Personnel in the indirect cost category will use ADECA Indirect Cost Rate, which includes the LETS Division Chief/GR, an Administrative Assistant, the LETS Accounting Unit Manager and one Accounting Staff Member devoted to highway traffic safety. All P & A costs will be split 50% Federal and 50% State.

For additional support, we have a State Highway Safety Program Supervisor as well as an additional Program Manager who will work as a centralized point of contact for regional CTSP/LEL offices and act as liaison to municipal, county, state and federal officials or individuals with regard to the administration so that program goals and objectives of the 402 Highway Safety program are accomplished effectively within ADECA and NHTSA guidelines. The Program Supervisor or Manager reviews, monitors and recommends program expenditures, assists in the development of program plans, budgets: reviews and recommends grants, contracts and related budgets, assists in the development and reporting of program policies and procedures as necessary to ensure compliance with appropriate rules, regulations and procedures.

**Intended Subrecipients**

Alabama Department of Economic and Community Affairs

**Funding sources**

<b>Source Fiscal Year</b>	<b>Funding Source ID</b>	<b>Eligible Use of Funds</b>	<b>Estimated Funding Amount</b>	<b>Match Amount</b>	<b>Local Benefit</b>
2020	FAST Act NHTSA 402	Community Traffic Safety Project (FAST)	\$190,000.00	\$47,500.00	\$0.00
2020	FAST Act NHTSA 402	Planning and Administration (FAST)	\$300,000.00	\$300,000.00	\$0.00

## Program Area: Police Traffic Services

### *Description of Highway Safety Problems*

The HSP is completely evidence-based as demonstrated by the results of these problem identification steps that are documented in detail in the plan. AOHS also works with the University of Alabama Center for Advanced Public Safety (UA- CAPS) to assist with the problem identification, and to work with the AOHS staff in assembling a tentative statewide planning document. Using the CARE system, a complete listing and mapping of problem crash locations (or hotspots) throughout the state is developed. In addition to a breakdown by CTSP/LEL region, the results are also subdivided by crash type and roadway classification. This is because different agencies may deal with different roadway classifications, and different tactics may be applied to different types of crashes.

A similar exercise involves the ALEA/State Troopers Division, which is given information on interstates and rural state routes that it is responsible to patrol. Generally, each ALEA region receives a package of information that is formatted just like the statewide results, but tailored to their particular region or roadway subset. In addition, all agencies have access to the preliminary statewide plan. By providing both statewide information and information specific to each area, the regional coordinators are able to identify the problems and locations in their region, and they can also determine how these locations relate to the statewide plan.

Once this information is provided to the CTSP/LEL Coordinators, they are instructed to focus their plans for the coming year on the hotspot locations given in the reports for their region. At this point it is a minor adjustment for them to revise the hotspot definition part of their plan. Other issues presented in their tentative plans are reviewed by AOHS staff to ensure integrity and consistency among the regions. The enforcement program is continuously evaluated, and any necessary adjustments are made. The implementation of the Evidence-Based Enforcement Plan is demonstrated below in the following sections by major issue areas:

- Impaired driving and speed related crash hotspots – 402 funds
- Alcohol- and drug-related crashes hotspots – 405d funds
- Restraint-deficient hotspots – 405b funds

These enforcement efforts are supported by media campaigns to the extent possible. The value of such integrated enforcement efforts is demonstrated by studies referenced in Page 1-24 of *NHTSA Countermeasures that Work*, the URL reference:

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition, 2017

[https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478\\_v5\\_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf](https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf)

Beginning in 2010 it was determined that a tool should be established to enable decision-makers to view the state's traffic safety issues at the highest possible level. This tool was named "Table 1" and it appears below. It was reasoned that, all other things being equal, traffic safety resource allocations should go to address those issues that cause the greatest number of fatalities. While this is a good default position to start from, all other things are rarely equal, and optimal resource allocations must also take into account the cost of the countermeasures being considered and the proportion of the crashes that can reasonably be reduced by any given countermeasure. Thus, an item with a lower number of fatalities could become optimal to address if a lower cost countermeasure would reduce a larger number of its crashes.

The eCrash system that went into effect July 1, 2009 creates data that meets most of the Model Minimum Uniform Crash Criteria (MMUCC). It provides data that are much timelier, since in many cases these reports are available the same day as the crash. Careful work was done to ensure that no variables or codes that could indicate a particular crash category of Table 1 were missed, and that the search criteria captured all of the crashes for each of the particular categories for this evidence-based analysis.

There are no limitations on the various subjects that may be added for consideration in Table 1, and all SHSP participants are encouraged to add any categories that they feel are appropriate. Distracted Driving (DD) was added most recently for the FY 2018 HSP. The category with the highest number of fatal crashes is listed at the top of Table 1, descending to the crash type category with the lowest number of fatal crashes listed last. The number and percent of crashes by severity are listed for each category (see footnote for the exception of "restraint deficient"). This enables an easy comparison between the various crash types. It is important to realize the categories of Table 1 are not mutually exclusive. However, since this is true in all of the categories, these numbers serve to give the relative criticality of the particular categories that most often are the targets for funding or other resource allocations.

**Table 1. Top Fatality Causes Alabama CY2020 Data**

	<b>Crash Type (Causal Driver)</b>	<b>Fatal Number</b>	<b>Fatal %</b>	<b>Injuries</b>	<b>Injury %</b>	<b>PDO No.</b>	<b>PDO %</b>	<b>Total</b>
1	Seat Belt Restraint Fault*	392	3.74%	3,834	36.56%	6,260	59.70%	10,486
2	Speed Involved	192	2.14%	2,769	30.89%	6,003	66.97%	8,964
3	ID/DUI All Substances	141	2.72%	1,883	36.27%	3,167	61.01%	5,191
4	Hit Obstacle on Roadside	129	2.33%	1,680	30.29%	3,738	67.39%	5,547
5	Fail to Yield or Ran (All)	128	0.50%	7,265	28.40%	18,187	71.10%	25,580
6	Large Truck Involved	117	1.40%	1,529	18.27%	6,721	80.33%	8,367
7	Ped., Bicycle, School Bus	97	4.30%	674	29.88%	1,485	65.82%	2,256
8	License Deficiency Causal	103	1.56%	2,020	30.55%	4,489	67.89%	6,612
9	Pedestrian Involved	96	14.84%	529	81.76%	22	3.40%	647
10	Wrong Way Items	93	4.89%	613	32.25%	1,195	62.86%	1,901
11	Mature (65 or Older) Causal	83	0.71%	2,453	20.97%	9,162	78.32%	11,698
12	Aggressive Operation	81	3.20%	737	29.15%	1,710	67.64%	2,528
13	Youth (16-20) Causal Driver	73	0.39%	4,040	21.71%	14,495	77.90%	18,608
14	Motorcycle Involved	68	5.00%	943	69.39%	348	25.61%	1,359
15	Distracted Driving	52	0.45%	2,523	21.64%	9,083	77.91%	11,658
16	Utility Pole	28	1.17%	776	32.43%	1,589	66.40%	2,393
17	Drowsy Driving	23	0.84%	1,016	37.12%	1,698	62.04%	2,737
18	Workzone Related	18	0.77%	441	18.85%	1,880	80.38%	2,339
19	Vehicle Defects – All	18	0.41%	929	21.27%	3,420	78.31%	4,367
20	Vision Obscured	8	0.76%	275	25.99%	775	73.25%	1,058
21	Bicycle	8	3.79%	167	79.15%	36	17.06%	211
22	Child Restraint Fault*	5	0.24%	298	14.08%	1,813	85.68%	2,116
23	School Bus Involved	4	1.13%	61	17.18%	290	81.69%	355
24	Railroad Trains	3	5.88%	13	25.49%	35	68.63%	51
25	Roadway Defects – All	1	0.82%	32	26.23%	89	72.95%	122

\*All categories list number of crashes except for the “Seat Belt Restraint Fault” and “Child Restraint Fault” categories. The restraint categories cannot accurately be measured by number of crashes so they list number of unrestrained persons for each severity classification.

The comparison of gross fatality and injury counts is merely a first step in the analytical process to find optimal allocations of resources among programs. Obtaining this first-cut perspective is essential for intelligent decision making. Once the high-level decisions are made regarding which of the crash types will be addressed, further analyses must be performed to define countermeasures and improve their implementation. The severity classification in Table 1 also helps in this regard. For example, it might be noticed that the relative severity percentage of pedestrian, bicycle, motorcycle and railroad crashes are significantly higher than the other categories, as is true for the top three categories as well. This is an important aspect to be considered when the ultimate goal is reducing deaths.

### Countermeasure Strategies in Program Area

Countermeasure Strategy
High Visibility Enforcement

### Countermeasure Strategy: High Visibility Enforcement

Program Area: **Police Traffic Services**

#### *Project Safety Impacts*

To implement the State’s Evidence-Based Enforcement Plan, there will be four local Selective Traffic Enforcement Program (STEP) projects during the coming year as well as one statewide STEP project. Each of these STEP projects will focus on Hotspot crashes and the problem locations that have been identified across the state. One STEP project will take place in each of the four CTSP/LEL regions and the statewide STEP project will be conducted in conjunction with the Alabama Law Enforcement Agency (ALEA). By conducting these STEP projects, additional efforts can be focused on the reduction of impaired driving related crashes and speed related crashes. The Law Enforcement activity will be sustained for twelve (12) months. The enforcement effort is evidence-based, with the objective of preventing traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated, and the necessary adjustment will be made.

There will also be four local Alcohol High Visibility Enforcement projects during the coming year as well as one statewide Alcohol High Visibility Enforcement project. Each of these projects will focus on alcohol related Hotspot crashes and the problem locations that have been identified across the state. One project will take place in each of the four CTSP/LEL regions and the statewide project will be conducted in conjunction with the Alabama Law Enforcement Agency (ALEA). By conducting these HVE projects, additional evidence-based efforts can be focused on the reduction of impaired driving related crashes. The law enforcement activity will be sustained for twelve (12) months. However, at least three additional “Drive Sober or Get Pulled Over” mobilizations will take place during holiday periods known for increased travel and



a higher potential for impaired motorists to be on the roadways and in conjunction with a paid media campaign. These periods include Christmas and New Year's, St. Patrick's Day, Cinco de Mayo and the Fourth of July. For the seventh year since 2015, this HVE campaign will be accompanied by a comprehensive, multiplatform media campaign throughout the state. The enforcement effort is evidence-based, which will prevent traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated, and the necessary adjustments will be made. *NHTSA Countermeasures that Work* (Page 1-21) reviewed intensive alcohol selective enforcement efforts such as publicized saturation patrol programs. These patrols aim to deter driving after drinking by increasing the perceived risk of arrest.

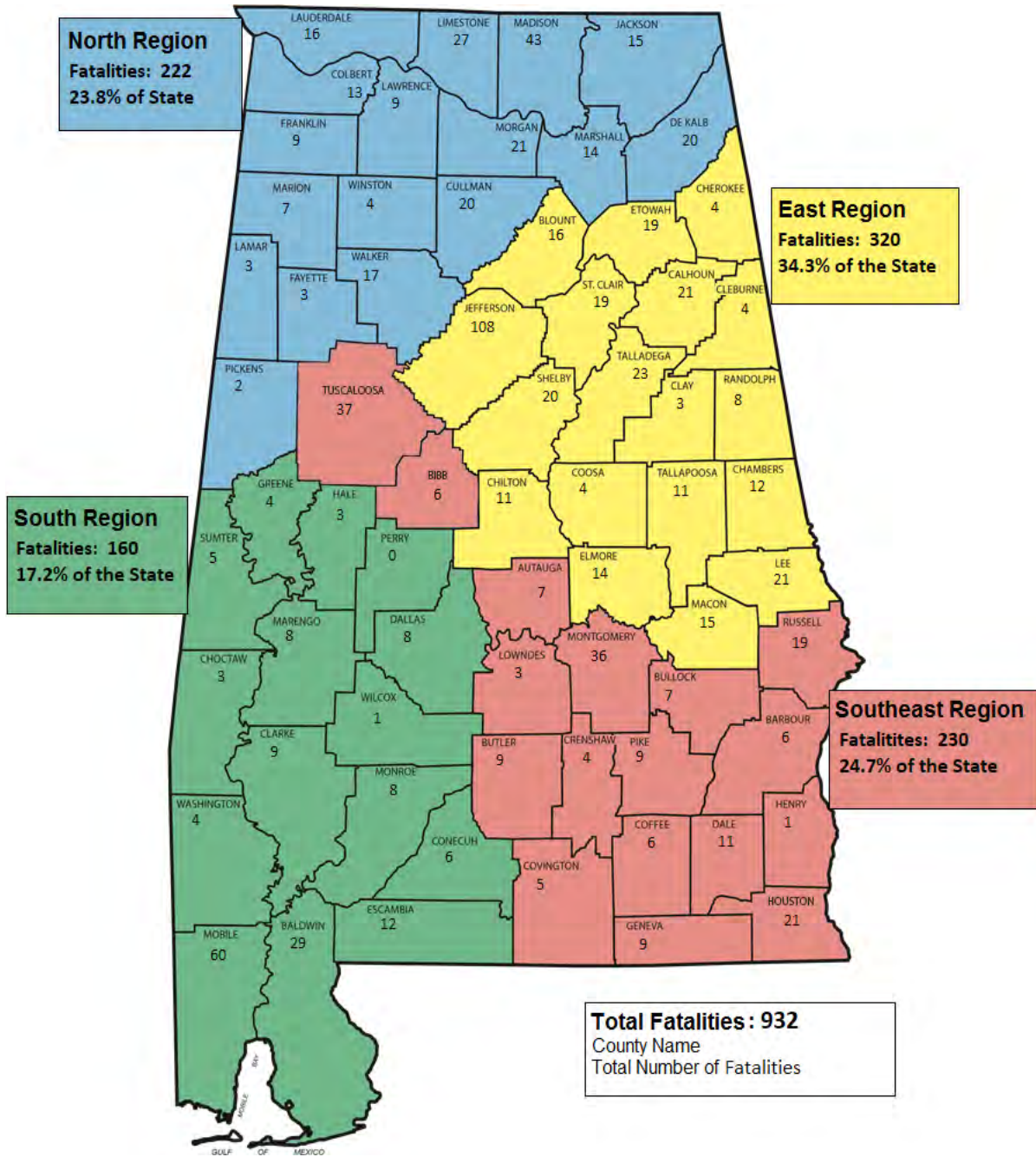
The value of such integrated enforcement efforts is demonstrated by studies referenced in Page 1-24 of *NHTSA Countermeasures that Work*. In one study a three-site evaluation of integrated impaired driving, speed, and seat belt use enforcement indicated that "sites that combined high publicity with increased enforcement reduced crashes likely to involve alcohol (such as single-vehicle nighttime crashes) by 10% to 35%. Another study of comprehensive programs in six communities used integrated enforcement methods where it was reported that these programs reduced fatal crashes involving alcohol by 42%. About half the speeding drivers detected through these enforcement activities had been drinking and about half the impaired drivers were speeding. It is well established that the same risk-taking motivations that seem to compel some drivers to be impaired and speed also leads them to avoid using proper restraints.

They recommend saturation patrols that are publicized extensively and conducted regularly, as well as roving patrols in which individual patrol officers concentrate on detecting and arresting impaired drivers in an area where impaired driving is common or where alcohol-involved crashes have occurred. A demonstration program in Michigan, where sobriety checkpoints are prohibited by State law, revealed that saturation patrols can be effective in reducing alcohol-related fatal crashes when accompanied by intensive publicity.

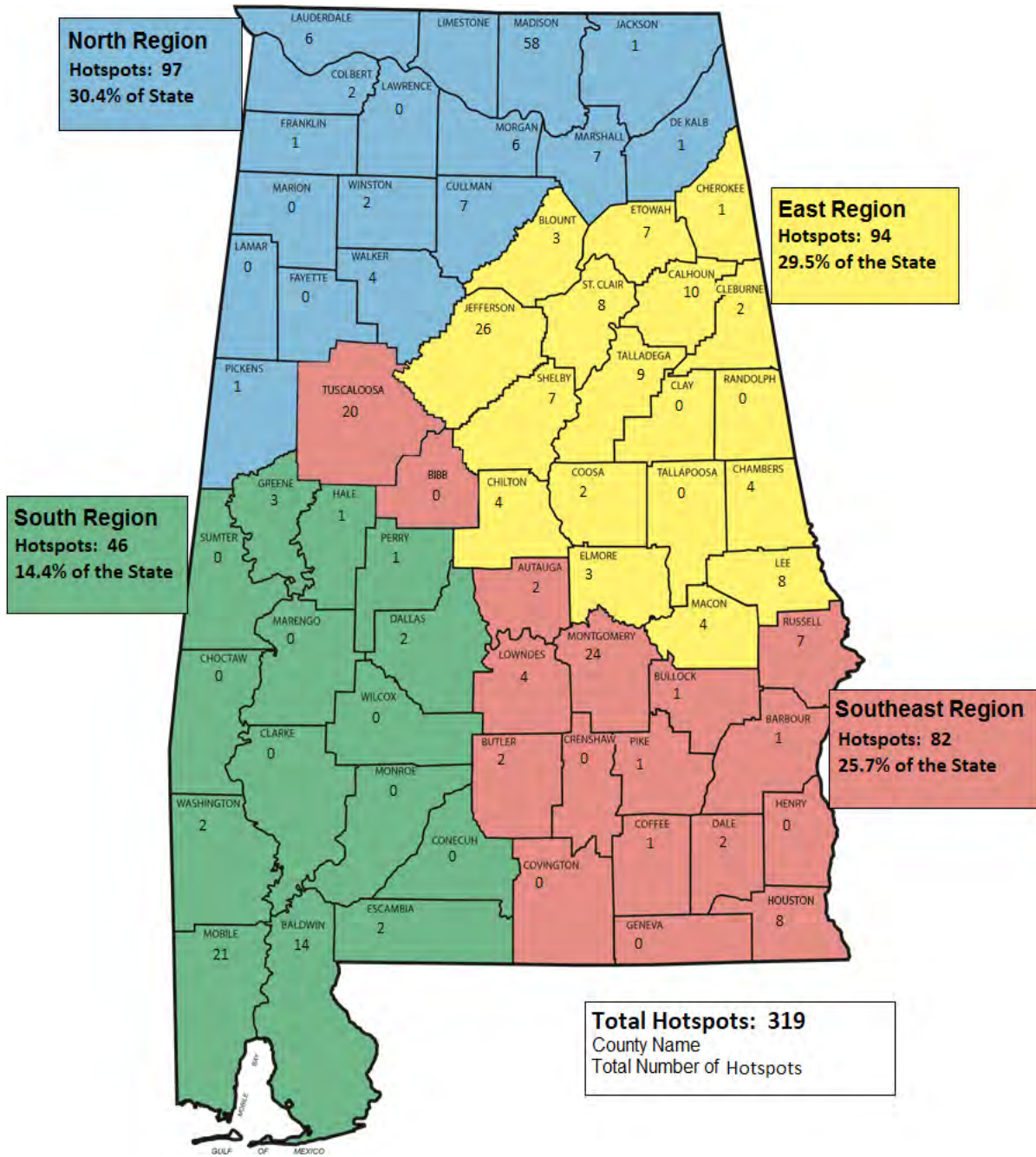
It is projected that High Visibility Enforcement projects in each of the CTSP/LEL and State Trooper Regions conducted year round and during targeted holiday periods, when tied with a multimedia PI&E campaign will achieve the following:

- Reduce of the number and severity of the hotspots found over time.
- Increase of the number of citations by citation type issued over time. The maps below reflect the fatalities and hot spots in each CTSP area in the state.

## State Map with Fatalities by Region



## State Map with Hot Spots by Region



### Linkage Between Program Area

As part of the Alabama Office of Highway Safety (AOHS) traffic safety planning effort, special problem identification studies are performed for the various program areas chosen. When any new issues arise, or for all countermeasures for which discretionary funds are expended, special analytical procedures are employed. The process is as follows:

- Analyze results of problem identification to set performance measure targets for the program year
- Evaluate the potential overall countermeasure strategies at a very high-level in the light of evidence-based information that is generated primarily from crash records with some supplements provided by citation records.
- Select the overall programs that will be implemented from a strategic point of view.
- Use further analytics to fine-tune the particular countermeasures that will be implemented, e.g., the specific locations for selective enforcement and determine allocation of funds.

This analytical review includes all of the countermeasures that are presented in this plan as well as the particular tactics to be applied in their implementations

After reviewing performance goals, the AOHS then examines and selects countermeasures to help achieve the state's targets. The following outlines the strategies of countermeasures to be applied during FY 2022:

- Community Traffic Safety Programs/Law Enforcement Liaison (CTSP/LEL) – will provide coordination for the local implementations of the statewide occupant protection program, and the CTSP/LEL Coordinators and the administrative support for their offices will be maintained.
- The University of Alabama Center for Advanced Public Safety (UA-CAPS) will provide the information required for allocating traffic safety resources in an optimal way, and they will continue to be supported in providing AOHS with Alabama crash and traffic safety data throughout the year.
- Conduct four local Hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP/LEL regions focusing on hotspot locations.
- Perform statewide E-BE projects in conjunction with the Alabama Law Enforcement Agency (ALEA), also focusing on hotspot locations.
- Continue the Law Enforcement Liaison (LEL) programs statewide. Beginning in FY 2007, this program was absorbed by the regional CTSP/LEL offices and was funded through the Community Traffic Safety Projects. This funding arrangement will continue in FY 2022.

- Participate in national and regional High Visibility Enforcement campaigns on the statewide level, paired with a corresponding mass media campaign.

Funding allocation is determined by evaluating the threshold of resources that are required to carry out each planned activity for the duration of the project in a calculated and realistic manner.

#### Rationale

AOHS's problem identification process analyzes the data for crashes and determines all of the demographics related to them (e.g., the who, what, where, when, how, how old, and the “why” of crashes involving non-restrained occupants). The goal is to (1) determine the most effective countermeasures that can be applied, and once these are defined, (2) identify the best tactics to be applied within each.

This starts by determining those types of crashes that were going to be targeted for occupant protection countermeasure implementation. For example, a recent study determined a very strong correlation between Restraint Deficiencies (RD) and other risky driving characteristics. In particular, DUI (alcohol and other drugs) and speed were correlated with non-use, and younger drivers 16-25 were particularly vulnerable. Young drivers are particularly susceptible to risk taking behaviors due to the fact that the part of their brain that properly assesses risk is not fully developed until age 25. While the average seatbelt use rate for all occupants has been measured above 90%, for those involved in fatal crashes the use rate was approximately 45%.

(See Fatalities at <http://www.safehomealabama.gov/PlansAnalysis/FARSandALFatalities.aspx> )

Evidence-based enforcement (E-BE) has been determined to be one of the most effective methods for increasing restraint use in general. This requires that specific locations be identified where there were concentrations of crashes involving unrestrained occupants. Once these hotspots are defined using the Critical Analysis Reporting Environment (CARE) software, the Community Traffic Safety Program/Law Enforcement Liaison (CTSP/LEL) Coordinators across the state are given information on the hotspot locations for the state as a whole. They were also provided detailed hotspot reports specific to their region to assist them in focusing their area efforts. Using the reports and maps developed for each region, the CTSP/LEL Coordinators develop plans, including the time schedule and work assignments, for their respective regions that focuses on the hotspot locations.

#### Planned Activity: Community Traffic Safety Program

Planned activity number: **FP-22-FP-CP**

Primary Countermeasure Strategy ID: **High Visibility Enforcement**

#### Planned Activity Description

The major focus of the CTSP/LEL efforts is involved with assuring the effective execution of focused evidence-based selective enforcement on alcohol and speed hotspots. This covers three of the four basic strategies recommended in the NHTSA Countermeasures that Work document (Page 1-4) to reduce alcohol-impaired crashes and drinking and driving: (1) Deterrence: enact,



publicize, enforce, and adjudicate laws prohibiting alcohol-impaired driving so that people choose not to drive impaired; (2) Prevention: reduce drinking and keep drinkers from driving; and (3) Communications and outreach: inform the public of the dangers of impaired driving and establish positive social norms that make driving while impaired unacceptable.

**Intended Subrecipients**

Regional CTSP/LEL Offices

**Funding sources**

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act NHTSA 402	Community Traffic Safety Project (FAST)	\$750,000.00	\$187,500.00	\$750,000.00

**Planned Activity: Evidence-Based Traffic Safety Enforcement Program**

Planned activity number: **PT-22-FP-PT**

Primary Countermeasure Strategy ID: **High Visibility Enforcement**

**Planned Activity Description**

To implement the State’s Evidence-Based Enforcement Plan, there will be four local Selective Traffic Enforcement Program (STEP) projects during the coming year as well as one statewide STEP project. Each of these STEP projects will focus on Hotspot crashes and the problem locations that have been identified across the state. One STEP project will take place in each of the four CTSP/LEL regions and the statewide STEP project will be conducted in conjunction with the Alabama Law Enforcement Agency (ALEA). By conducting these STEP projects, additional efforts can be focused on the reduction of impaired driving related crashes and speed related crashes. The Law Enforcement activity will be sustained for twelve (12) months. The enforcement effort is evidence-based, with the objective of preventing traffic violations, crashes, and crash fatalities and injuries in locations most at risk. The enforcement program will continuously be evaluated, and the necessary adjustment will be made.

**Intended Subrecipients**

The Alabama Law Enforcement Agency and Regional CTSP/LEL offices

**Funding sources**

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act NHTSA 402	Police Traffic Services (FAST)	\$3,800,000.00	\$760,000.00	\$3,000,000.00

## Program Area: Traffic Records

### *Description of Highway Safety Problems*

The AOHS undergoes a Traffic Records Assessment (TRA) every five years in order to evaluate and improve the performance of the information systems within the state. The following gives a description of the eight traffic records components, taken from the AOHS TSIS Strategic Plan (FY2022-FY2026). These are consistent with the seven NHTSA operational components plus the administrative component:

- *General TSIS Management Component* was established for the management and administration of the Traffic Records Coordinating Committee (TRCC), and to provide for functions that are common to all other components (such as the administration of Quality Control). It is not intended to usurp the management authority of any of the agencies that are involved in the support of operation of the TSIS in serving its coordinating function.
- *Crash Component* includes the total 100% roll-out and subsequent upgrades to eCrash, further integration of GIS capabilities into eCrash and CARE, the generation of an updated Crash Facts Book, and the development of the Automated Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE) to produce a more effective interface to deliver CARE-generated information. This anticipates a second version of eCrash to be developed based on the most recent MMUCC specifications, the availability of automated location systems, and feedback as to improvements needed to make the eCrash data entry system more effective as well as data quality improvements. Longer term plans call for a system to allow the public to report potential crash incidents, the development of a centralized (enterprise) CARE system, the completion of the advanced collision diagramming system, and the development of software that will enable the generation of hotspots based on GIS coordinates.
- *Vehicle Component* plans include the development and rollout 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. Other projects call for an online insurance verification system (OVIS), and the development of the data infrastructure to support crash avoidance and ultimately driverless vehicles. Several projects are specified, all of which have the commonality of transforming all of the current systems to a higher level of technology. Projects are anticipated in the future to address data needs regarding safety issues of autonomous vehicles (AVs).
- *Driver Component* calls for more effective driver licensing information (including pictures) to be distributed to the field through the extremely successful Law Enforcement Tactical System (LETS) that was implemented well over a decade ago. This will require a more effective Driver History database, which will be updated automatically by eCrash and eCite, to be available to officers in the field via an upgraded new version of the Mobile Officer's Virtual Environment (MOVE) system, which is the umbrella portal

system that encompasses all of the mobile applications available to law enforcement. It will also entail PI&E projects that will address drivers transitioning to vehicles with advanced crash prevention systems. Finally, a study has been proposed to identify methods by which driver and other records can be protected against fraudulent uses.

- *Roadway Component* involves a wide diversity of projects in support of the State's Interactive Highway Safety Design Manual (IHSDM), Highway Safety Manual (HSM), and Safety Analyst (SA) initiatives (IHSDM/HSM/SA). The primary focus of plans in this component is to continue to develop and populate a repository of the Model Inventory of Roadway Elements (MIRE) for both state and local routes. Ultimately this database will be used in the integration of roadway features into CARE, and the integration of Crash Modification Factors (CMFs) into the Cost-benefit Optimization for the Reduction of Roadway Environment Caused Tragedies (CORRECT) system using the facilities of the CMF Clearinghouse. To effectively locate crashes on the roadway, the plan is for ALDOT to complete their various GIS projects so that the results can be integrated into eCrash and used by CARE to fully employ its GIS displays capabilities.
- *Citation and Adjudication Component* includes the extension and roll out of the electronic citation to all jurisdictions, a proposed improved virtual 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.
- *EMS-Medical Component* includes continued support for completion of the development of the Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE) system, which will implement the National Emergency Medical Services Information System (NEMSIS) standards. Other planned projects include 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. Finally, a project to develop the First Responder Solution Technique (FIRST) seeks to provide Law Enforcement agencies with quick, accurate, and location-aware inventory of available emergency medical assistance facilities.
- *Integration and Information Distribution Component* considers results produced from all the above-planned projects, and thus transcends them with the goal of integrating data and results from the six operational components above, producing information from these integrations, and distributing this information. A major effort is proposed to populate the current Safe Home Alabama web portal so that it will integrate the information generated by all agencies and present it in one unified source to the traffic safety community. An example of this is the Safety Portal that is a hub for all traffic safety and related data analytics. Considerations for maintaining and upgrading this Safety Portal are planned. General innovations of MOVE and the use of mobile platforms for MOVE and its applications are also included. Integration is also necessary for the Data-Driven



Approaches to Crime and Traffic Safety (DDACTS) that are now being recommended by various federal agencies. Finally, a number of ETLs will be developed to enable the integration of crash, citation, roadway, EMS/injury and vehicle data so that analytics can be performed on these datasets to generate information that is not currently available. An ETL (Extract-Translate-Load) is middleware that sits between the raw data and the information generator (e.g., CARE) to pre-process the raw data to make it more understandable and useful to the users that are generating information.

In reviewing the above, it is very important to recognize that the plan under consideration is for the next five fiscal years (FY2022 through FY2026 inclusive). Some of the projects are underway, but others might not be started for a few years. The reason for getting them into the plan is to shape the overall strategies of all of the development groups that will be involved, many of which have a large proportion of their responsibilities outside of the traffic records arena. Many things can happen over this planning horizon, and we anticipate, for example, that the strides that will be made in automated vehicle (AV) development will be quite surprising perhaps eclipsing those of the past five years with exponential growth.

**Countermeasure Strategies in Program Area**

<b>Countermeasure Strategy</b>
Improves accessibility of a core highway safety database
Improves accuracy of a core highway safety database
Improves completeness of a core highway safety database
Improves timeliness of a core highway safety database
Improves uniformity of a core highway safety database

**Countermeasure Strategy: Improves accessibility of a core highway safety database**

Program Area: **Traffic Records**

**Project Safety Impacts**

The countermeasure strategy is to improve accessibility of a core highway safety database. The projects this year will improve accessibility to more than one core highway safety database. Of particular emphasis this year will be accessibility to the crash and the EMS database. The accessibility will be improved by providing this data to users on a statistical and analytics web-based portal.

Improving accessibility of the crash data to all users (including law enforcement, traffic safety professionals and even the general public) and the Emergency Medical Service data to qualified users is of utmost importance because of the usefulness of the information the portal dashboards produce and the impact it can have on planning, both strategic long-term planning and day-to-day planning.

This countermeasure will greatly complement other similar data attribute improvement countermeasures that will be targeted in these traffic records projects. All the countermeasures relate to improvements in some aspect of the data.

### Linkage Between Program Area

The State's Traffic Safety Information System (TSIS) is driven by a five-year Strategic Plan, which has the objective of allocating 405c funds to provide information to allocate traffic safety countermeasure resources in the best possible way. Both transactional and analytical data are generated from the various traffic records systems modules, which have been divided functionally by NHTSA into the following modules: (1) Management and Strategic Planning, (2) Crash, (3) Vehicle, (4) Driver, (5) Roadway, (6) Citation-Adjudication, (7) Injury Surveillance and (8) Data Use and Integration. Transactional data are obtained from day to day operations, e.g., crash case records, citation records, EMS run records – each of these records are originated by the occurrence of some event (e.g., crash, citation, injury). The basic purpose of transactional data is to keep a record of that occurrence. Analytical data, on the other hand, is usually more concerned with aggregating transactional data in order to draw conclusions (produce information) that is useful in strategic planning and the operational implementation of tactical factors that improve the effectiveness of the use of available traffic safety resources.

Alabama Office of Highway Safety has recognized for decades the role that Traffic Safety Information Systems (TSIS) plays in identifying optimal countermeasure implementation. This process starts with annual problem identification efforts that have been ongoing for decades. Our objective is to first identify the subset of countermeasures that have the highest potential for crash reduction, and then to select the optimal set of countermeasures out of all proposed alternatives. It is a two-phase process starting with determining the crash types that will be addressed, and then finding the most promising countermeasures that address these crashes.

AOHS has set the following high-level goals regarding its traffic records efforts:

- To ensure that all agencies with responsibility for traffic safety have timely access and complete information needed to identify problems, select optimal countermeasures, and evaluate implemented improvements.
- To ensure that effective data are available that pinpoint and target the exact locations of speed, impaired driving and restraint-deficient hotspots for each region in the state.
- To administer the Section 405c funded projects so that the comprehensive traffic records plan developed to support those efforts is brought to fruition.
- To provide support to innovations in moving toward better use of available technologies, e.g., data entry at the point of incidents, automated uploading, and paperless operations.
- To support all efforts to move Toward Zero Deaths (TZD), including all roadway and vehicle technologies that will eventually lead to safer autonomous vehicle operations.

The planned activities for this project will have users on a statewide basis therefore meriting the funding that is being allocated to these projects. An expansive and huge impact will result from these projects.

### Rationale

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data accessibility is one of the core performances attributes. Improved accessibility is therefore a worthy countermeasure.

### Countermeasure Strategy: Improves accuracy of a core highway safety database

Program Area: **Traffic Records**

### Project Safety Impacts

The countermeasure strategy is to improve accuracy of a core highway safety database. One of the projects this year is MapClick software attaining full consistency with the ALDOT linear referencing system. This project will improve accuracy in the crash database.

MapClick dramatically increases the accuracy of location coding and saves officers' time on every crash report since the map can be clicked in the officer's vehicle averting the need to find the location on a paper map. Further innovation of MapClick is essential so that officers can obtain *all* required location data (coordinates, node numbers, link numbers, road names, road codes and milepoints for all public routes) by a single click. It is essential to transition away from the traditional link/node locational system to a statewide ALDOT maintained Linear Reference System (LRS) for all roadways (whether on the state system or not).

Improving accuracy of the location components of the crash data is of extreme importance as it facilitates better analysis of the data. The location variables are some of the most important data that users want to know about the crash data. If the location data is faulty, it skews the hotspot analysis on which Alabama relies to direct enforcement efforts. This countermeasure will greatly complement other similar data attribute improvement countermeasures that will be targeted in these traffic records projects. All the countermeasures relate to improvements in some aspect of the data.

### Linkage Between Program Area

The State's Traffic Safety Information System (TSIS) is driven by a five-year Strategic Plan, which has the objective of allocating 405c funds to provide information to allocate traffic safety countermeasure resources in the best possible way. Both transactional and analytical data are generated from the various traffic records systems modules, which have been divided functionally by NHTSA into the following modules: (1) Management and Strategic Planning, (2) Crash, (3) Vehicle, (4) Driver, (5) Roadway, (6) Citation-Adjudication, (7) Injury Surveillance and (8) Data Use and Integration. Transactional data are obtained from day to day operations, e.g., crash case records, citation records, EMS run records – each of these records are originated by the occurrence of some event (e.g., crash, citation, injury). The basic purpose of transactional data is to keep a record of that particular occurrence.

Analytical data, on the other hand, is usually more concerned with aggregating transactional data in order to draw conclusions (produce information) that is useful in strategic planning and the operational implementation of tactical factors that improve the effectiveness of the use of available traffic safety resources.

Alabama Office of Highway Safety has recognized for decades the role that Traffic Safety Information Systems (TSIS) plays in identifying optimal countermeasure implementation. This process starts with annual problem identification efforts that have been ongoing for decades. Our objective is to first identify the subset of countermeasures that have the highest potential for maximum gain, and then to select the optimal set of countermeasures out of all proposed alternatives. It is a two-phase process starting with determining the crash types that will be addressed, and then finding the most promising countermeasures that address these crashes.

AOHS has set the following high-level goals regarding its traffic records efforts:

- To ensure that all agencies with responsibility for traffic safety have timely access and complete information needed to identify problems, select optimal countermeasures, and evaluate implemented improvements.
- To ensure that effective data are available that pinpoint and target the exact locations of speed, impaired driving and restraint-deficient hotspots for each region in the state.
- To administer the Section 405c funded projects so that the comprehensive traffic records plan developed to support those efforts is brought to fruition.
- To provide support to innovations in moving toward better use of available technologies, e.g., data entry at the point of incidents, automated uploading, and paperless operations.
- To support all efforts to move Toward Zero Deaths (TZD), including all roadway and vehicle technologies that will eventually lead to safer autonomous vehicle operations.

The planned activities for this project will have users on a statewide basis therefore justifying the funding that is being allocated to these projects. Not only will law enforcement users benefit from this project, but all data users will benefit with the improved accuracy of the data.

#### Rationale

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data accuracy is one of the core performance attributes. Improved accuracy is therefore a worthy countermeasure.

## Countermeasure Strategy: Improves completeness of a core highway safety database Program Area: **Traffic Records**

### Project Safety Impacts

The crash countermeasure strategy of the TSIS is to complete the development and processing of a comprehensive core highway safety database. The projects this year will improve completeness to more than one core highway safety database. A particular emphasis will be on the further development in the crash and the EMS databases. Completeness will be improved as the MMUCC 5 version of eCrash is developed and as more agencies start using the NEMSIS 3.4 compliant RESCUE, which is the electronic patient care report for EMS runs. Improving completeness in the crash and the EMS data is extremely useful and essential as UA-CAPS analyzes the data and provide this information to state agency partners and others so the most accurate possible information is provided to all decision makers.

This countermeasure will greatly complement other similar data attribute improvement countermeasures that will be targeted in these traffic records projects. All the countermeasures relate to improvements in some aspect either the data content or its processing.

### Linkage Between Program Area

The State's Traffic Safety Information System (TSIS) is driven by a five-year Strategic Plan, which has the objective of allocating 405c funds to provide information to allocate traffic safety countermeasure resources in the best possible way. Both transactional and analytical data are generated from the various traffic records systems modules, which have been divided functionally by NHTSA into the following modules: (1) Management and Strategic Planning, (2) Crash, (3) Vehicle, (4) Driver, (5) Roadway, (6) Citation-Adjudication, (7) Injury Surveillance and (8) Data Use and Integration. Transactional data are obtained from day to day operations, e.g., crash case records, citation records, EMS run records – each of these records are originated by the occurrence of some event (e.g., crash, citation, injury). The basic purpose of transactional data is to keep a record of that particular occurrence. Analytical data, on the other hand, is usually more concerned with aggregating transactional data in order to draw conclusions (produce information) that is useful in strategic planning and the operational implementation of tactical factors that improve the effectiveness of the use of available traffic safety resources.

Alabama Office of Highway Safety has recognized for decades the role that Traffic Safety Information Systems (TSIS) plays in identifying optimal countermeasure implementation. This process starts with annual problem identification efforts that have been ongoing for decades. Our objective is to first identify the subset of countermeasures that have the highest potential for crash reduction, and then to select the optimal set of countermeasures out of all proposed alternatives. It is a two-phase process starting with determining the crash types that will be addressed, and then finding the most promising countermeasures that address these crashes.

AOHS has set the following high-level goals regarding its traffic records efforts:

- To ensure that all agencies with responsibility for traffic safety have timely access and complete information needed to identify problems, select optimal countermeasures, and evaluate implemented improvements.
- To ensure that effective data are available that pinpoint and target the exact locations of speed, impaired driving and restraint-deficient hotspots for each region in the state.
- To administer the Section 405c funded projects so that the comprehensive traffic records plan developed to support those efforts is brought to fruition.
- To provide support to innovations in moving toward better use of available technologies, e.g., data entry at the point of incidents, automated uploading, and paperless operations.
- To support all efforts to move Toward Zero Deaths (TZD), including all roadway and vehicle technologies that will eventually lead to safer autonomous vehicle operations.

The planned activities for this project will have users on a statewide basis therefore meriting the funding that is being allocated to these projects. Since the projects are this extensive, huge impact will result from these projects.

#### Rationale

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data completeness is one of the core performance attributes. Improved completeness is therefore a worthy countermeasure.

#### Countermeasure Strategy: Improves timeliness of a core highway safety database

Program Area: **Traffic Records**

#### Project Safety Impacts

The countermeasure strategy is to improve timeliness of a core highway safety database. One of the projects this year will improve timeliness to the EMS database. The development of the Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE) data entry system for the Electronic Patient Care Report (ePCR – also known as ambulance run reports) has been quite successful. As Alabama continues to expand the user base through the RESCUE project this year, the timeliness of the state EMS database will improve.

Improving timeliness of the EMS data for Alabama is very helpful as it facilitates better analysis of the data. In addition, the data can be transferred to the federal database in a timelier manner.

This countermeasure will greatly complement other similar data attribute improvement countermeasures that will be targeted in these traffic records projects. All the countermeasures relate to improvements in some aspect of the data.

### Linkage Between Program Area

The State's Traffic Safety Information System (TSIS) is driven by a five-year Strategic Plan, which has the objective of allocating 405c funds to provide information to allocate traffic safety countermeasure resources in the best possible way. Both transactional and analytical data are generated from the various traffic records systems modules, which have been divided functionally by NHTSA into the following modules: (1) Management and Strategic Planning, (2) Crash, (3) Vehicle, (4) Driver, (5) Roadway, (6) Citation-Adjudication, (7) Injury Surveillance and (8) Data Use and Integration. Transactional data are obtained from day to day operations, e.g., crash case records, citation records, EMS run records – each of these records are originated by the occurrence of some event (e.g., crash, citation, injury). The basic purpose of transactional data is to keep a record of that particular occurrence. Analytical data, on the other hand, is usually more concerned with aggregating transactional data in order to draw conclusions (produce information) that is useful in strategic planning and the operational implementation of tactical factors that improve the effectiveness of the use of available traffic safety resources.

Alabama Office of Highway Safety has recognized for decades the role that Traffic Safety Information Systems (TSIS) plays in identifying optimal countermeasure implementation. This process starts with annual problem identification efforts. Our objective is to first identify the subset of countermeasures that have the highest potential for maximum gain, and then to select the optimal set of countermeasures out of all proposed alternatives.

AOHS has set the following high-level goals regarding its traffic records efforts:

- To ensure that all agencies with responsibility for traffic safety have timely access and complete information needed to identify problems, select optimal countermeasures, and evaluate implemented improvements.
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- To support all efforts to move Toward Zero Deaths (TZD), including all roadway and vehicle technologies that will eventually lead to safer autonomous vehicle operations.

The planned activities for this project will have users on a statewide basis therefore deserving the funding that is being allocated to this project. Not only will the state of Alabama benefit from this project but the federal reporting agency will benefit with the improved timeliness of the NEMSIS data.



## Rationale

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data timeliness is one of the core performance attributes. Improved timeliness is therefore a worthy countermeasure.

## Countermeasure Strategy: Improves uniformity of a core highway safety database

Program Area: **Traffic Records**

### Project Safety Impacts

The countermeasure strategy is to improve uniformity of a core highway safety database. The projects this year will improve uniformity to more than one core highway safety database. The uniformity of the crash data will be improved as UA-CAPS works to develop the MMUCC 5 version of eCrash. The uniformity of the location data will be improved as MapClick becomes fully consistent with the ALDOT linear referencing system. This location data will affect both crash and citation database as MapClick is used to populate eCrash and eCite. The uniformity of EMS data will improve as more agencies start using the NEMSIS 3.4 compliant RESCUE, which is the electronic patient care report for EMS runs.

Improving uniformity of the crash, citation and the EMS data is of utmost importance as it facilitates better analysis of the data. Improving uniformity to these two national data standards makes the Alabama data easier to compare to other states to see how we rank nationally and how traffic safety issues are trending.

This countermeasure will greatly complement other similar data attribute improvement countermeasures that will be targeted in these traffic records projects. All of the countermeasures relate to improvements in some aspect of the data.

### Linkage Between Program Area

The State's Traffic Safety Information System (TSIS) is driven by a five-year Strategic Plan, which has the objective of allocating 405c funds to provide information to allocate traffic safety countermeasure resources in the best possible way. Both transactional and analytical data are generated from the various traffic records systems modules, which have been divided functionally by NHTSA into the following modules: (1) Management and Strategic Planning, (2) Crash, (3) Vehicle, (4) Driver, (5) Roadway, (6) Citation-Adjudication, (7) Injury Surveillance and (8) Data Use and Integration. Transactional data are obtained from day to day operations, e.g., crash case records, citation records, EMS run records – each of these records are originated by the occurrence of some event (e.g., crash, citation, injury). The basic purpose of transactional data is to keep a record of that occurrence. Analytical data, on the other hand, is usually more concerned with aggregating transactional data in order to draw conclusions (produce information) that is useful in strategic planning and the operational implementation of tactical factors that improve the effectiveness of the use of available traffic safety resources.



Alabama Office of Highway Safety has recognized for decades the role that Traffic Safety Information Systems (TSIS) plays in identifying optimal countermeasure implementation. This process starts with annual problem identification efforts. Our objective is to first identify the subset of countermeasures that have the highest potential for maximum gain, and then to select the optimal set of countermeasures out of all proposed alternatives. It is a two-phase process starting with determining the crash types that will be addressed, and then finding the most promising countermeasures that address these crashes.

AOHS has set the following high-level goals regarding its traffic records efforts:

- To ensure that all agencies with responsibility for traffic safety have timely access and complete information needed to identify problems, select optimal countermeasures, and evaluate implemented improvements.
- To ensure that effective data are available that pinpoint and target the exact locations of speed, impaired driving and restraint-deficient hotspots for each region in the state.
- To administer the Section 405c funded projects so that the comprehensive traffic records plan developed to support those efforts is brought to fruition.
- To provide support to innovations in moving toward better use of available technologies, e.g., data entry at the point of incidents, automated uploading, and paperless operations.
- To support all efforts to move Toward Zero Deaths (TZD), including all roadway and vehicle technologies that will eventually lead to safer autonomous vehicle operations.

The planned activities for these projects will have users on a statewide basis therefore deserving the funding that is being allocated to these projects. Since these projects are so widespread, immense impact will result from them.

#### Rationale

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data uniformity is one of the core performance attributes. Improved uniformity is therefore a worthy countermeasure.

## Planned Activity: Traffic Safety Information Systems

Planned activity number: **22-TF-TR-001**

Primary Countermeasure Strategy ID: **Improves completeness of a core highway safety database**

### Planned Activity Description

The University of Alabama Center for Advanced Public Safety (CAPS) will continue to improve traffic safety by advancing data and statistical analysis tools. CAPS will continue to support data information requests, assist in the development of the State’s Highway Safety Plan, and continue to spread eCite and other CAPS developed software to law enforcement agencies throughout the state, maintain CAPS-developed software systems, coordinate the phone surveys concerning the Drive Sober campaign and the NHTSA survey on driver attitudes and some other traffic safety outreach efforts, maintain the SafeHomeAlabama.gov website with comprehensive traffic safety information, support the OHS with respect to the Traffic Records Coordinating Committee, other committees, the Traffic Records Assessment that is due this year, and reports as needed.

### Intended Subrecipients

University of Alabama

### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2022	Other		\$1,100,000.00		

### Planned Activity: Traffic Safety Records Improvement Program

Planned activity number: **M3DA-22-TR-M3**

Primary Countermeasure Strategy ID: **Improves completeness of a core highway safety database**

#### Planned Activity Description

The University of Alabama Center for Advanced Public Safety (CAPS) is seeking to continue to improve traffic safety through software development projects using innovative technologies. The technology development projects this year will include testing and preparing to deploy the new MMUCC 5 version of eCrash; continuing RESCUE projects including beginning work on the certification module; upgrading the ADVANCE analytics portal; design planning for a new version of MOVE and eCite and deploying the new full eGIS version of MapClick. These systems improve data quality, timeliness and completeness. These systems also improve efficiency of officers and EMS personnel.

#### Intended Subrecipients

University of Alabama

#### Funding sources

Source Fiscal Year	Funding Source ID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405c Data Program	405c Data Program (FAST)	\$750,000.00	\$187,500.00	

### Planned Activity: Electronic Patient Care Reports Program

Planned activity number: **M3DA-22-HC-M3**

Primary Countermeasure Strategy ID: **Improves accuracy of a core highway safety database**

#### Planned Activity Description

The NHTSA Traffic Records Program Assessment Advisory encourages the implementation of information quality best practices and the use of NHTSA's Model Performance Measures for State Traffic Records Systems found in NHTSA document **DOT HS 811 441**. Data timeliness is one of the core performance attributes. Improved timeliness is therefore a worthy countermeasure

#### Intended Subrecipients

Alabama Department of Public Health

Funding sources

Source Fiscal Year	Funding SourceID	Eligible Use of Funds	Estimated Funding Amount	Match Amount	Local Benefit
2020	FAST Act 405c Data Program	405c Data Program (MAP-21)	\$60,000.00	\$15,000.00	

Evidence-based traffic safety enforcement program (TSEP)

Planned activities that collectively constitute an evidence-based traffic safety enforcement program (TSEP):

Unique Identifier	Planned Activity Name
M1HVE-22-OP-M1	Click It or Ticket High Visibility Enforcement Campaign
M1PEM-22-OP-M1	Click It or Ticket Paid Media Campaign
M5HVE-22-DS-M5	Drive Sober or Get Pulled Over High Visibility Enforcement Campaign
PT-22-FP-PT	Evidence-Based Traffic Safety Enforcement Program
M5HVE-22-ID-M5	Impaired Driving - High Visibility Enforcement Campaign
M5PEM-22-ID-M5	Impaired Driving- Paid Media Campaign

Analysis of crashes, crash fatalities, and injuries in areas of highest risk.

Crash Analysis

Beginning in 2010, it was determined that a tool should be established to enable decision-makers to view the state’s traffic safety issues at the highest possible level. This tool was named “Table 1” and it appears below. It was reasoned that, all other things being equal, traffic safety resource allocations should go to address those issues that cause the greatest number of fatalities. While this is a good default position to start from, all other things are rarely equal, and optimal resource allocations must also take into account the cost of the countermeasures being considered and the proportion of the crashes that can reasonably be reduced by any given countermeasure. Thus, an item with a lower number of fatalities could become optimal to address if a lower cost countermeasure would reduce a larger number of its crashes.

The eCrash system that went into effect June 1, 2009 creates data that meets most of the Model Minimum Uniform Crash Criteria (MMUCC). It provides data that are much timelier, since in many cases these reports are available the same day as the crash. Careful work was done to ensure that no variables or codes that could indicate a particular crash category of Table 1 were missed, and that the search criteria captured all of the crashes for each of the particular categories for this evidence-based analysis.

There are no limitations on the various subjects that may be added for consideration in Table 1, and all SHSP participants are encouraged to add any categories that they feel are appropriate. Distracted Driving (DD) was added most recently for the FY 2018 HSP. The category with the highest number of fatal crashes is listed at the top of Table 1, descending to the crash type category with the lowest number of fatal crashes listed last. The number and percent of crashes by severity are listed for each category (see footnote for the exception of “restraint deficient”). This enables an easy comparison between the various crash types. It is important to realize that the categories of Table 1 are not mutually exclusive. However, since this is true in all of the categories, these numbers serve to give the relative criticality of the particular categories that most often are the targets for funding or other resource allocations.

**Table 1. Top Fatality Causes Alabama CY2020 Data**

	<b>Crash Type (Causal Driver)</b>	<b>Fatal Number</b>	<b>Fatal %</b>	<b>Injuries</b>	<b>Injury %</b>	<b>PDO No.</b>	<b>PDO %</b>	<b>Total</b>
1	Seat Belt Restraint Fault*	392	3.74%	3,834	36.56%	6,260	59.70%	10,486
2	Speed Involved	192	2.14%	2,769	30.89%	6,003	66.97%	8,964
3	ID/DUI All Substances	141	2.72%	1,883	36.27%	3,167	61.01%	5,191
4	Hit Obstacle on Roadside	129	2.33%	1,680	30.29%	3,738	67.39%	5,547
5	Fail to Yield or Ran (All)	128	0.50%	7,265	28.40%	18,187	71.10%	25,580
6	Large Truck Involved	117	1.40%	1,529	18.27%	6,721	80.33%	8,367
7	Ped., Bicycle, School Bus	97	4.30%	674	29.88%	1,485	65.82%	2,256
8	License Deficiency Causal	103	1.56%	2,020	30.55%	4,489	67.89%	6,612
9	Pedestrian Involved	96	14.84%	529	81.76%	22	3.40%	647
10	Wrong Way Items	93	4.89%	613	32.25%	1,195	62.86%	1,901
11	Mature (65 or Older) Causal	83	0.71%	2,453	20.97%	9,162	78.32%	11,698
12	Aggressive Operation	81	3.20%	737	29.15%	1,710	67.64%	2,528
13	Youth (16-20) Causal Driver	73	0.39%	4,040	21.71%	14,495	77.90%	18,608
14	Motorcycle Involved	68	5.00%	943	69.39%	348	25.61%	1,359
15	Distracted Driving	52	0.45%	2,523	21.64%	9,083	77.91%	11,658
16	Utility Pole	28	1.17%	776	32.43%	1,589	66.40%	2,393
17	Drowsy Driving	23	0.84%	1,016	37.12%	1,698	62.04%	2,737
18	Workzone Related	18	0.77%	441	18.85%	1,880	80.38%	2,339
19	Vehicle Defects – All	18	0.41%	929	21.27%	3,420	78.31%	4,367
20	Vision Obscured	8	0.76%	275	25.99%	775	73.25%	1,058
21	Bicycle	8	3.79%	167	79.15%	36	17.06%	211
22	Child Restraint Fault*	5	0.24%	298	14.08%	1,813	85.68%	2,116
23	School Bus Involved	4	1.13%	61	17.18%	290	81.69%	355
24	Railroad Trains	3	5.88%	13	25.49%	35	68.63%	51
25	Roadway Defects – All	1	0.82%	32	26.23%	89	72.95%	122

\*All categories list number of crashes except for the “Seat Belt Restraint Fault” and “Child Restraint Fault” categories. The restraint categories cannot accurately be measured by number of crashes so they list number of unrestrained persons for each severity classification.

The comparison of gross fatality and injury counts is merely a first step in the analytical process to find optimal allocations of resources among programs. Obtaining this first-cut perspective is essential for intelligent decision-making. Once the high-level decisions are made regarding which of the crash types will be addressed, further analyses must be performed to define countermeasures and improve their implementation. The severity classification in Table 1 also helps in this regard. For example, it might be noticed that the relative severity percentage of pedestrian, bicycle, motorcycle and railroad crashes are significantly higher than the other categories, as is true for the top three categories as well. This is an important aspect to be considered when the ultimate goal is reducing deaths.

### Deployment of Resources

The effective allocation of resources will lead to an increased reduction in the number of hotspots within the next year on both a statewide level and within each individual region. That is, given that the total number of crashes remains relatively stable, the concentration of efforts at the hotspots will reduce crashes at those locations so that they may no longer be defined as hotspots in the following year. Ideally, it would be the goal to eliminate hotspots defined by the previous year's criteria altogether. With this goal in mind, funding is determined for each region based on the percentage of hotspots in that region. There is also a consideration of the percentage of alcohol, restraint, and speed crash issues that are present within each region. Federal funds distributed by the AOHS are used to focus completely on the high crash areas within each region.

Law enforcement agencies use saturation patrols, line patrols, checkpoints, and regular patrol in order for the E-BE projects to be effective. The enforcement activities and techniques that are used include:

- Conduct four local hotspot Evidence-Based Enforcement (E-BE) projects, one within each of the CTSP regions.
- Conduct a statewide E-BE project in conjunction with the Alabama Law Enforcement Agency (ALEA).
- Continue to require the CTSP Coordinators to conduct selective enforcement efforts that focus their plans on hotspot locations identified by the data analyses provided for their respective regions.
- Participate in the national "Click It or Ticket" Campaign on the statewide level.
- Conduct a statewide "Drive Sober or Get Pulled Over" Campaign in conjunction with the national campaign.
- Conduct sustained E-BE for impaired driving, speeding, and seat belts throughout the year.

The enforcement efforts are accompanied by a PI&E campaigns that incorporate advertising, bonus spots, website links, and support of government agencies, local coalitions and school officials in an effort that will impact restraint usage. This part of the campaign consists of:

- Development of marketing approach based on Nielsen and Arbitron ratings and targeted primarily towards the 18-34 male age group.
- Placement of paid ads on broadcast television, cable television, digital ads, and radio in addition to public service spots. Paid advertising will be placed primarily in the five largest media markets.
- Management of public relations efforts including press releases and special media events to stimulate media coverage and alert the public to the campaign.
- In addition to the paid and free media, the AOHS website will have updated information including ads, articles and other information pertaining to the seat belt campaigns.
- Each CTSP/LEL Coordinator will be responsible for generating sustained earned media in their area of the state throughout the year. The CTSP/LEL Coordinators are also responsible for developing press releases and conducting press events that are specifically targeted to their regions.

#### Effectiveness Monitoring

Process of Continuous Follow-up and Adjustment of the Plan. AOHS monitors subrecipient activity reports quarterly to determine if adjustments are needed for their plans. When activity reports are received, they are assessed against program goals and expectations. This results in programs being continuously evaluated and the necessary adjustments being made. A follow-up is conducted with agencies to address any lack of performance issues or activities. Adjustments are made to the HSP annually based on the problem identification.



## High-visibility enforcement (HVE) strategies

### Planned HVE strategies to support national mobilizations:

Countermeasure Strategy
High Visibility Enforcement
Short-term, High Visibility Seat Belt Law Enforcement

### HVE planned activities that demonstrate the State's support and participation in the National HVE mobilizations to reduce alcohol-impaired or drug impaired operation of motor vehicles and increase use of seat belts by occupants of motor vehicles:

Unique Identifier	Planned Activity Name
M1HVE-22-OP-M1	Click It or Ticket High Visibility Enforcement Campaign
M5HVE-22-DS-M5	Drive Sober or Get Pulled Over High Visibility Enforcement Campaign
M5HVE-22-ID-M5	Impaired Driving - High Visibility Enforcement Campaign
PT-22-FP-PT	Evidence-Based Traffic Safety Enforcement Program

## 405(b) Occupant protection grant

### Occupant protection plan

**State occupant protection program area plan that identifies the safety problems to be addressed, performance measures and targets, and the countermeasure strategies and planned activities the State will implement to address those problems:**

Program Area Name
Occupant Protection (Adult and Child Passenger Safety)

			BASE YEARS				
Performance measures and targets for Occupant Protection			2015	2016	2017	2018	2019
<b>C-1</b>	Traffic Fatalities	FARS Annual	850	1083	948	953	930
	Curb total fatalities to 961 (2018 - 2022 rolling average) by 2022	5-Year Rolling Avg.	857	894	911	931	953
<b>C-2</b>	Serious Injuries in Traffic Crashes	State Annual	8760	8152	7484	7005	5103
	Reduce serious traffic injuries to 6000 (2018 – 2022 rolling average) by 2022	5-Year Rolling Avg.	8619	8542	8185	7873	7300
<b>C-3</b>	Fatalities/100M VMT	FARS Annual	1.26	1.56	1.34	1.34	1.30
	Curb fatalities/100 MVMT to 1.40 (2018 -2022 rolling average) by 2022.	5-Year Rolling Avg.	1.31	1.35	1.35	1.35	1.36
<b>C-4</b>	Unrestrained Passenger Vehicle Occupant Fatalities, All Seat Positions	FARS Annual	355	423	398	354	352
	Reduce unrestrained passenger vehicle occupant fatalities, all seat positions 1.6 percent from 376 (2015-2019 rolling average) to 370 (2018 – 2022 rolling average) by 2022.	5-Year Rolling Avg.	362	370	379	376	376

Participation in Click-it-or-Ticket (CIOT) national mobilization

**Agencies planning to participate in CIOT:**

ABBEVILLE POLICE DEPT	BALDWIN CO SHERIFFS DEPT	COFFEEVILLE POLICE DEPT	ELBERTA POLICE DEPT	GEORGIANA POLICE DEPT	HEFLIN POLICE DEPT	LAKE VIEW POLICE DEPT	MONTGOMERY CO SHERIFFS DEPT	REPTON POLICE DEPT	ST FLORIAN POLICE DEPT
Alabama Law Enforcement Agency	BAYOU LA BATRE POLICE DEPT	COLUMBIAN A POLICE DEPT	ENTERPRISE POLICE DEPT	GLENCOE POLICE DEPT	HENRY CO SHERIFFS DEPT	LINDEN POLICE DEPT	MONTGOMERY PD COMMUNICATI ONS	ROGERSVILLE POLICE DEPT	TARRANT POLICE DEPT
ALEXANDER CITY POLICE DEPT 911	BESSEMER POLICE DEPT	COVINGTON CO SHERIFFS DEPT	ESCAMBIA CO SHERIFFS DEPT	GREENE CO SHERIFFS DEPT	HILLSBORO POLICE DEPT	LITTLEVILLE POLICE DEPT	MORGAN COUNTY SHERIFF OFFICE	RUSSELL CO SHERIFFS DEPT	THOMASVILL E POLICE DEPT
ANDALUSIA POLICE DEPT	BIRMINGHAM POLICE DEPT	CRENSHAW CO SHERIFFS DEPT	EXCEL POLICE DEPT	GROVE HILL POLICE DEPT	HOUSTON CO SHERIFFS DEPT	LUVERNE POLICE DEPT	MOULTON POLICE DEPT	RUSSELLVILLE POLICE DEPT	TOWN CREEK POLICE DEPT
ARDMORE POLICE DEPT	CALERA POLICE DEPT	CULLMAN POLICE DEPT	FALKVILLE POLICE DEPT	GUIN POLICE DEPT	HUEYTOWN POLICE DEPT	MACON CO SHERIFFS DEPT	MUSCLE SHOALS POLICE DEPT	SARALAND POLICE DEPT	TRINITY POLICE DEPT
ASHFORD POLICE DEPT	CAMDEN POLICE DEPT	DALEVILLE POLICE DEPT	FLOMATON POLICE DEPT	GURLEY POLICE DEPT	HUNTSVILLE POLICE DEPT	MADISON CO SHERIFFS DEPT	NORTHPORT POLICE DEPT	SECTION POLICE DEPT	TROY POLICE DEPT
ASHLAND POLICE DEPT	CENTREVILLE POLICE DEPT	DECATUR POLICE DEPT	FLORALA POLICE DEPT	HALEYVILLE POLICE DEPT	JACKSON CO SHERIFFS DEPT	MOBILE CO SHERIFFS DEPT	OPP POLICE DEPT	SLOCOMB POLICE DEPT	TUSCALOOSA CO SHERIFFS DEPT
ASHVILLE POLICE DEPT	CHICKASAW POLICE DEPT	DEMOPOLIS PD (MARENGO CO E911)	FLORENCE POLICE DEPT	HAMILTON POLICE DEPT	JACKSON POLICE DEPT	MOBILE PD	OZARK POLICE DEPT	SOUTHSIDE POLICE DEPT	WALKER CO SHERIFFS DEPT
ATHENS POLICE DEPT	CHILTON CO SHERIFFS DEPT	DOTHAN POLICE DEPT	FOLEY POLICE DEPT	HARTFORD POLICE DEPT	JEMISON POLICE DEPT	MONROE CO SHERIFFS DEPT	PRATTVILLE POLICE DEPT E911	SPRINGVILLE POLICE DEPT	
AUTAUGA CO SHERIFFS OFFICE	COFFEE CO SHERIFFS DEPT	ELBA POLICE DEPT	GENEVA POLICE DEPT	HEADLAND POLICE DEPT	KILLEN POLICE DEPT	MONTEVALLO POLICE DEPT	RAINBOW CITY POLICE DEPT	ST CLAIR COUNTY SHERIFF OFFICE	

**Description of the State's planned participation in the Click-it-or-Ticket national mobilization:**

**ALABAMA - Planned Participation in Click-it-or-Ticket**

Alabama continues to steadily focus on its seat belt and child restraint use rates after experiencing a major improvement upon passing its Primary Seat Belt Law in 1999. As part of the cooperative process with NHTSA, an Evidence-Based Enforcement (E-BE) project called “Click It or Ticket” (CIOT) is run on an annual basis in April, May and June of each year (see schedule below). As part of the nationwide initiative coordinated by NHTSA to increase seat belt usage, the State will conduct an aggressive “Click It or Ticket” (CIOT) campaign. Because this has been a highly successful program in the past several years, AOHS will continue to lend its full support to the program in the coming year.

In addition to and complementary with a paid media campaign, a statewide CIOT High Visibility Enforcement campaign will be conducted for a two-week period. The enforcement program will involve members from the Municipal Law Enforcement Agencies, County Sheriffs and State Highway Patrol (Alabama Law Enforcement Agency).

Further upkeep of the CIOT effort will be supported by conducting surveys, performing analyses, and verifying certification. As part of this effort:

- The University of Alabama Center for Advanced Public Safety (UA-CAPS) will conduct pre and post surveys for seat belt programs and evaluate several types of survey data regarding seat belt and child restraint usage rates as part of the CIOT campaign.
- The program will consist of waves of surveys, enforcement and media blitzes, carefully scheduled to maximize public understanding of restraint use.
- UA-CAPS’ role will be to: (1) receive and scientifically analyze data obtained (2) collect reports on the other components of the project (3) obtain signed certification page and (4) produce a comprehensive final report covering all aspects of the campaign.
- The evidence-based enforcement part of the CIOT program will involve multiple agencies and organizations that will participate under the leadership of AOHS.
- Waves of public education and enforcement will be conducted, working toward the single goal of increasing proper restraint use for both children and adults to improve highway safety.

*Dates and Activities*

· Weeks 1-2: (April 25-May 8)	Statewide Observational Survey (Baseline)*
· Weeks 3-8:(May 10-June 16)	Earned Media for CIOT
· Weeks 4-6 (May 17- June 5)	Paid media for CIOT
· Weeks 5-6 (May 23-June 5)	Enforcement for CIOT
· Weeks 3-8 (June 5- June 16)	Statewide Observational and Telephone Surveys*

\*Activities that involve data collection and analysis

## *Media Plan for CIOT*

The "Click it or Ticket" statewide multimedia campaign will be aimed at increasing seat belt usage on Alabama's highways in the most effective ways. The campaign will incorporate advertising, bonus spots, website links, and support of government agencies, local coalitions and school officials in an effort that will impact restraint usage.

The campaign will consist of:

- Development of the "Click It or Ticket" marketing approach based on Nielsen and Arbitron ratings and targeted primarily towards the 18-34 male age group.
- Placement of paid "Click It or Ticket" ads on broadcast television, cable television, and radio in addition to public service spots. Paid advertising will be placed primarily in the five largest media markets.
- Management of public relations efforts including press releases and special media events to stimulate media coverage and alert the public to the "Click It or Ticket" campaign.
- In addition to the paid and free media, the Office of Highway Safety website will have updated information including ads, articles and other information pertaining to the seat belt campaigns.
- Each CTSP/LEL Coordinator will be responsible for generating sustained earned media in their area of the state throughout the year. The CTSP/LEL Coordinators are also responsible for developing press releases and conducting press events that are specifically targeted to their regions.

The CIOT Media Campaign will include placement of approved, paid CIOT programming on broadcast and cable TV, and radio spots during the appropriate time frame, and negotiations will be conducted to maximize the earned (free) media as well. These media efforts, including commercials, will supplement law enforcement agencies statewide as they conduct a zero tolerance enforcement of seat belt laws. Further, electronic billboards, digital music streaming websites and other platforms will be employed to reach the target audiences aimed at yielding increases in seat belt and child restraint use. The following summarizes the anticipated paid media campaign that will be performed:

- **Broadcast Television** The broadcast television buys will focus on programming in prime times: early morning (M-F, 7A-9A) and evenings (M-F, 5P-Midnight). Selected weekend day parts, especially sporting events, will also be approved if the media programming would appeal to the target group.
- **Cable Television** The large number of cable networks in Alabama can be effective in building frequency for the male 18-34 target market. The buys will focus on the following day parts: early morning (M-F, 7A-9A) and evenings (M-F, 5P-Midnight) with selected weekend day parts, especially sporting events. Paid scheduling will be placed for networks

that cater to males in our target, such as CNBC, ESPN, Fox News and Fox Sports, CNN, etc. Radio The campaign will target that same key at-risk group, 18-34 year olds, particularly males. The buy will focus on the following day parts: morning drive (M-F, 7A-9A), midday (M-F, 11A-1P), afternoon (M-F, 4P-7P), evenings (M-F, 7P-Midnight). Selected weekend day parts will be considered as well.

- Out of Home Electronic billboards will be leased in major markets where space is available. Several designs will be tagged for Alabama's use to correspond to and reinforce the video commercial. Lamar, Link and Beam electronic billboards were designed and placed in the twenty-six (26) major media market sites providing coverage in Birmingham, Mobile, Montgomery/Wetumpka, Huntsville and Auburn/Opelika. Digital Media:
- Digital media is a rapidly evolving platform in media consumption. For the CIOT campaign, ads will be placed in a variety of digital sites such as Facebook, YouTube and Bleacher Report; ads are also planned for placement on streaming services such as Pandora and Spotify.

### *CIOT Evaluation*

This project will be evaluated using methods and procedures approved by NHTSA. FY 2022 will be the ninth year to use the survey plan that is documented in a report entitled "Alabama Observational Survey Plan for Occupant Restraint Use – 2013," and the details of that plan will not be repeated here. This data collection and estimation plan is based on fatality rates rather than population, as was done previously.

The Uniform Criteria 1340.12 requires states to re-select their observation sites no less than once every five years. AOHS submitted the proposed new sites for surveys in 2018 and received approval from NHTSA. UA-CAPS will manage the process for the observational surveys using the new sites, the phone survey evaluation of the media campaign, and be involved in evaluation and report generation portions of the project.

Coordination between the involved agencies and consultants participating in the project will be the responsibility of UA-CAPS. While data observation, collection and processing will be in accordance with NHTSA-approved techniques, there are still many operational decisions that will require UA-CAPS involvement under the oversight of AOHS. UA-CAPS will:

- stay in close contact during the design of data collection forms and procedures,
- help ensure timely and accurate data collection, and
- help ensure that data are received, and preliminary analyses are performed in a timely manner.

In-depth evaluation will be accomplished by both basic phone and observational surveys. Phone surveys will be conducted throughout the state with the goal of evaluating the media effectiveness and measuring changes in public awareness and attitude. This will be based upon statewide telephone surveys conducted after the media campaign ends. The target of the observational surveys will be the measurement of proper restraint use by drivers and front seat outboard passengers.

There will be both a pre and post observational survey to compare seat belt usage before the campaign and after. For 2022, the surveys will be conducted at a total of 350 sites in Alabama counties : Autauga, Baldwin, Blount, Calhoun, Chambers, Cherokee, Chilton, Clarke, Coffee, Colbert, Conecuh, Covington, Cullman, Dale, Dallas, De Kalb, Elmore, Escambia, Etowah, Houston, Jackson, Jefferson, Lauderdale, Lawrence, Lee, Limestone, Lowndes, Macon, Madison, Marengo, Marshall, Mobile, Montgomery, Morgan, Russell, Shelby, St. Clair, Talladega, Tallapoosa, Tuscaloosa, Walker.

### List of Task for Participants & Organizations

With regard to the observational surveys, UA-CAPS will:

- Contract with a highly qualified vendor who will recruit and train the Observational Surveyors,
- Assign new NHTSA approved observation locations and dates to the Surveyors,
- Work with the survey vendor to cull out any unusable observation sites from the new list and replace with alternates as they visit them,
- Oversee the vendor in the conduct of three observational surveys, and
- Collect and process the raw data produced by the Surveyors.
- Use this data to calculate the official seat belt usage rate for the State based on the NHTSA approved plan.

In conducting the surveys and evaluation, UA-CAPS will require the assistance of other agencies and organizations, as follows:

The Auburn University Media Group will:

- Implement the media portion of the campaign;
- Contract with another professional group to produce and/or place ads if that is found to be most expedient;
- Determine where and when the ads are run; this will include the avenues of TV, cable, radio, internet and electronic billboards;
- Possibly produce educational brochures for the project;
- Submit reports to ADECA/LETS; and
- Submit reports to UA-CAPS for inclusion in the overall final report for the project.

ADECA/LETS will:

- Provide funding for the project;
- Serve as the host agency for the effort, providing ongoing oversight coordination, and guidance as needed;
- Coordinate the enforcement campaign and provide summary reports to UA-CAPS for inclusion in final report; and
- Assist UA-CAPS, if needed, in obtaining data from Surveyor observations, consultant phone polls, and consultant questionnaires.

A highly qualified company will be contracted by UA-CAPS to perform the phone survey to evaluate the media effectiveness of the “Click It or Ticket” program. This part of the project will involve:

- Design and prepare the telephone questionnaire instrument (with guidance from LETS and UA-CAPS);
- Conduct a post survey;
- Encode and analyze the data, and
- Deliver the data and a preliminary analysis of the data to UA-CAPS in a timely manner.

To summarize, restraint use will be evaluated in two primary ways: (1) by direct observation of vehicles, based upon a carefully designed sampling technique, and (2) through a telephone survey. Before and after seat belt usage rates will be recorded by direct observation, and afterwards this data will be analyzed and rates will be calculated from these observations. The self-reported usage rate will be obtained through the telephone surveys. A final report will be produced by UA-CAPS that will describe the results of the current year evaluation efforts and summarize past year’s evaluation efforts to hopefully show continual improvements being made by participating in the campaigns. The Problem Identification Results above, detail the procedures and results obtained from the hotspot analyses. By using actual crash data in which it was found that occupants (including drivers) were not properly restrained, resources can be focused on the best possible place to perform the Evidence-Based Enforcement Programs.



Child restraint inspection stations

**Countermeasure strategies demonstrating an active network of child passenger safety inspection stations and/or inspection events:**

Countermeasure Strategy
Child Restraint System Inspection Station(s)

**Planned activities demonstrating an active network of child passenger safety inspection stations and/or inspection events:**

Unique Identifier	Planned Activity Name
M1PE-22-M1	Child Passenger Safety Training Program

**Total number of planned inspection stations and/or events in the State.**

Planned inspection stations and/or events: **30**

**Total number of planned inspection stations and/or events in the State serving each of the following population categories: urban, rural, and at-risk:**

Populations served - urban: **11**  
Populations served - rural: **19**  
Populations served - at risk: **13**

**CERTIFICATION: The inspection stations/events are staffed with at least one current nationally Certified Child Passenger Safety Technician.**

Child passenger safety technicians

**Countermeasure strategies for recruiting, training and maintaining a sufficient number of child passenger safety technicians:**

Countermeasure Strategy
Child Restraint System Inspection Station(s)

**Planned activities for recruiting, training and maintaining a sufficient number of child passenger safety technicians:**

Unique Identifier	Planned Activity Name
M1PE-22-M1	Child Passenger Safety Training Program

**Estimate of the total number of classes and the estimated total number of technicians to be trained in the upcoming fiscal year to ensure coverage of child passenger safety inspection stations and inspection events by nationally Certified Child Passenger Safety Technicians.**

Estimated total number of classes: **1**  
Estimated total number of technicians: **15**

**Maintenance of effort**

**ASSURANCE: The lead State agency responsible for occupant protection programs shall maintain its aggregate expenditures for occupant protection programs at or above the level of such expenditures in fiscal year 2014 and 2015.**

## 405c State traffic safety information system improvements grant

Traffic records coordinating committee (TRCC)

**Meeting dates of the TRCC during the 12 months immediately preceding the application due date:**

Meeting Date
12/09/2020
04/28/2021
06/02/2021

**Name and title of the State's Traffic Records Coordinator:**

Name of State's Traffic Records Coordinator: **Mr. Terry Henderson**

Title of State's Traffic Records Coordinator: **Director of East Central Highway Safety Office**

**TRCC members by name, title, home organization and the core safety database represented:**

<b>NAME</b>	<b>AGENCY</b>	<b>TITLE</b>	<b>FUNCTION</b>
Mr. Terry Henderson	East Central Alabama Highway Safety Office	Director/ TRCC Coordinator	Highway Safety Professional
Mr. Bill Babington	Law Enforcement/Traffic Safety Division Alabama Dept. of Economic and Community Affairs	Division Chief/ Governor's Highway Safety Representative	Highway Safety Professional
Mr. John-Michael Walker,	Alabama Department of Transportation	State Safety Operations Engineer	Highway Safety and Infrastructure Core System: Roadway
Captain Sue Capps	Alabama Law Enforcement Agency	Chief of Highway Patrol	Law Enforcement Core System: Crash
Captain Jon Archer	Alabama Law Enforcement Agency	Driver License Division	Driver Licensing Core System: Driver Licensing
Dr. Scott Harris	Alabama Department of Public Health	State Health Officer	Core System; Emergency medical services/injury surveillance system
Dr. Laura Myers	Center for Advanced Public Safety (CAPS) The University of Alabama	Director	Collectors and Users of Traffic Records
Mr. Jay Starling	Department of Revenue	Director, Motor Vehicle Division	Motor Vehicle Registration Core System: Vehicle
Mr. Fred Lilly	Administrative Office of Courts	Chief Technology Officer	Citation and Adjudication Core System: Citation and Adjudication
Mr. Jamie Gray, BS, AAS, NRP	Alabama Department of Public Health	Acting State EMS Director	Core System : Emergency medical services/injury surveillance system
<b>Invited Guests that regularly attend</b>			
	NHTSA	Regional Program Manager	Highway Safety Professional
Mr. Bill Whatley	Law Enforcement/Traffic Safety Division Alabama Dept. of Economic and Community Affairs	Justice Programs Unit Chief	Highway Safety Professional
Ms. Lynne Wilman	Law Enforcement/Traffic Safety Division Alabama Dept. of Economic and Community Affairs	Highway Safety Unit Chief	Highway Safety Professional
Sam Meriwether	Law Enforcement/Traffic Safety Division Alabama Dept. of Economic and Community Affairs	Highway Safety Program Supervisor	Highway Safety Professional
Dr. Allen Parrish	Alabama Transportation Institute The University of Alabama	Executive Director	Collectors and Users of Traffic Records
Jeremy Baker	Highway Patrol Division Alabama Law Enforcement Agency		Law Enforcement IT Systems

Eric Marable	Alabama Department of Transportation	Design Bureau, Traffic Eng. Division, Safety Section	Highway Safety and Infrastructure
Linda Guin	Federal Highway Administration	Safety Engineer	Highway Infrastructure
Ms. Lian Li	Federal Highway Administration	Community Planner	Highway Infrastructure
<b>NAME</b>	<b>AGENCY</b>	<b>TITLE</b>	<b>FUNCTION</b>
Ms. Keisha Thomas	Administrative Office of Courts	Assistant Director, IT	Citation and Adjudication
Ms. Shonna Harris	Administrative Office of Courts		Citation and Adjudication
Mr. Clinton Seymour	FMCSA	Interim Division Administrator	Motor Carrier Core System: Vehicle (Commercial)
Mr. Jake Davis	FMCSA	Program Specialist	Motor Carrier Core System: Vehicle (Commercial)
Dr. David Brown	Center for Advanced Public Safety (CAPS) The University of Alabama	Research Affiliate	Collectors and Users of Traffic Records
Rhonda Stricklin	Alabama Transportation Institute (ATI) The University of Alabama	Information Management Director	Collectors and Users of Traffic Records
Dr. Randy Smith	The University of Alabama Director of Center for Transportation Operations, Planning and Safety (CTOPS)	Associate Professor	Collectors and Users of Traffic Records
Dr. Jeremy Pate	Alabama Transportation Institute (ATI) The University of Alabama	Director of Digital Innovation	Collectors and Users of Traffic Records
Mr. Jesse Norris	Center for Advanced Public Safety (CAPS) The University of Alabama	Senior Research Analyst	Collectors and Users of Traffic Records
Mr. Todd Tilley	Center for Advanced Public Safety (CAPS) The University of Alabama	Associate Director and Project Manager	Collectors and Users of Traffic Records
Mr. Maury Mitchell	Alabama Law Enforcement Agency	State Crime Information Director	Law Enforcement IT Systems
Mr. Tim Pullin	Alabama Law Enforcement Agency	Grant Administrator	Law Enforcement

Membership annually votes and approves the membership roster of the TRCC, the TRCC coordinator, any change to the State's multi-year Strategic Plan required, 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.

## Traffic Records Assessment Recommendations

### 5.0 Crash Recommendations

**Recommendation:** *Improve the applicable guidelines for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Recommendation:** *Improve the data dictionary for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Recommendation:** *Improve the procedures/process flows for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

### 5.1 Vehicle Recommendations

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

**Recommendation:** *Improve the description and contents of the Vehicle data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

### 5.2 Driver Recommendations

**Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

### 5.3 Roadway Recommendations

**Recommendation:** *Improve the data dictionary for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Recommendation:** *Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Recommendation:** *Improve the procedures/ process flows for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

### 5.4 Citation/Adjudication Recommendations

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

### 5.5 EMS / Injury Surveillance Recommendations

**Recommendation:** *Improve the data quality control program for the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Recommendation:** *Improve the interfaces with the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## Traffic Records for Measurable Progress

### **Traffic Records Assessment (TRA) Responses that will be addressed in FY2021**

These responses were not intended to repeat the content of the Traffic Records Information Systems (TSIS) Strategic Plan (SP). For this reason, a brief response is given here for each recommendation that in all cases refers the reader to the SP. The NHTSA *Traffic Records Program Assessment Advisory* will be referenced in the responses below as *the Advisory*. In each case the recommendation from the TRA will be followed by the State's response.

#### **6.0 Crash Recommendations**

**Recommendation:** *Improve the applicable guidelines for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.2, Project 16 for details. The crash component manager will set up a taskforce to develop and implement improved guidelines for the Crash data system to reflect best practices of the advisory.

**Recommendation:** *Improve the data dictionary for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.2, Project 17 for details. Currently no formal data dictionary exists for the raw crash data. This project calls for the development of a comprehensive data dictionary for raw crash data. It will also include methods for tracking all datasets produced from the crash data, including those that are integrated with data from other modules.

**Recommendation:** *Improve the procedures/process flows for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.2, Project 18 for details. A comprehensive systems analysis will be performed for the Crash data system that will consider all procedures and process flows within this component using the guidelines and data dictionary developments of projects 16 and 17. These will be compared against the recommendations given in the Advisory and remedial action will be taken to correct any deficiencies.

#### **6.1 Vehicle Recommendations**

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated, and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

## 6.2 Driver Recommendations

**Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

## 6.3 Roadway Recommendations

**Recommendation:** *Improve the data dictionary for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.5, Projects 6 and 7 for details. Currently no formal data dictionary exists for the raw roadway data elements. This project calls for the development of a comprehensive data dictionary for these data, including but not limited to the MIRE data elements.

**Recommendation:** *Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**Recommendation:** *Improve the procedures/ process flows for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.5 Project 8 for details. A comprehensive systems analysis will be performed for the roadway data system that will consider all elements within this component using the data dictionary elements that are developed in Projects 6 and 7, including the quality control function. These will be compared against the recommendations given in the Advisory and remedial action will be taken to correct any deficiencies.



#### 6.4 Citation/Adjudication Recommendations

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

#### 6.5 EMS / Injury Surveillance Recommendations

**Recommendation:** *Improve the data quality control program for the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated, and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**Recommendation:** *Improve the interfaces with the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.7, Project 8 for details. A task force will be appointed by the manager of this component with the charge of reviewing the systems interfaces in conjunction with the Advisory. Recommendations will be expected to include the prioritization of the large number of potential interfaces that might exist, with the goal of creating those interfaces that are most productive from a management and research perspective.

## 7.0 Traffic Records Supporting Non-Implemented Recommendations

These responses were not intended to repeat the content of the Traffic Records Information Systems (TSIS) Strategic Plan (SP). For this reason, a brief response is given here for each recommendation that in all cases refers the reader to the SP. The NHTSA *Traffic Records Program Assessment Advisory* will be referenced in the responses below as *the Advisory*. In each case the recommendation from the TRA will be followed by the State's response.

### 7.1 Crash Recommendations

**Recommendation:** *Improve the data quality control program for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated, and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### 7.2 Vehicle Recommendations

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### 7.3 Driver Recommendations

**Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### 7.4 Roadway Recommendations

**Recommendation:** *Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

## 7.5 Citation/Adjudication Recommendations

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

## 7.6 EMS / Injury Surveillance Recommendations

**Recommendation:** *Improve the data quality control program for the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### Reason for not implementing the TRA Quality Control Recommendations for All Modules

In reviewing the resources available to the state, the Traffic Records Coordinating Committee has determined that resources are not currently available for implementing the formal quality control recommendations made in the Traffic Records Assessment report for each and every module. Efforts currently exist to maintain quality by all of the agencies involved in traffic records. These efforts have been ongoing for many years, and the quality of the products produced attest to their effectiveness. However, the Traffic Records Assessment recommendations required that specific personnel be assigned to these functions and that documentation be produced to demonstrate these formal efforts. Efforts will be made during FY2022 to plan for the best methods to address these recommendations, but the TRCC did not feel that resources on any current efforts should be sacrificed to this end.

### Traffic Records for Model Performance Measures

A summary of the TSIS project goals in terms of measurable performance indicators is given below for each of the TSIS components. Each of the projects is listed under the particular TSIS component to which they relate (e.g., crash, vehicle, driver, 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.

#### *4.3.1 Management Component Projects.*

##### 4.3.1.1 Quality Control Management

- Assignment of a quality control coordinator to each operational component.
- Within each component:
  - Selection of items in need of quality improvement.
  - Documentation of improvements made.

#### *4.3.2 Crash Component Projects*

##### 4.3.2.1 ADVANCE Upgrade

- Functioning ADVANCE portal with new technology upgrades in place.
- Stakeholder satisfaction measured by survey above 95%.

##### 4.3.2.2 MapClick project.

- Increase the accuracy and completeness of the crash location entry for on-system (mileposted) locations from its 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 the invalid or unknown cases from its current value of approximately 20% of cases to less than 2% of cases.

##### 4.3.2.3 eCrash upgrades and training

- Modify the eCrash data entry screens so that the data collected is over 90% 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 4.3.2.2.

##### 4.3.2.4 CARE modifications and upgrades

- 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%.

- Increase the number of queries that users will make from an average of 20 queries per user to well over 50 queries per user per year.
- Perform a survey of users to determine usage.

#### 4.3.2.5 CARE scripting and dashboard capabilities.

- Provide greater productivity in enabling users to save complex queries and reuse them, resulting in a 20% increase in the number of reports generated.
- Increase the accuracy of query responses by 30% since they will not have to be re-created periodically.

#### 4.3.2.6 Upgrade CARE dashboard user interface

- Significant recognized improvements in the interface making it easier for users to get available information from the available datasets.
- Results of user survey of stakeholders.

#### 4.3.2.7 Upgrade to the Crash Facts document.

- Increase in the consistency of information presented from year to year (with the introduction of eCrash data this consistency dropped to about 90%).
- Increase consistency to 100%, providing users the capability to compare figures from year to year.

#### 4.3.2.8 Final mandate for use of eCrash.

- This activity has been accomplished.

#### 4.3.2.9 Special location type exception reports.

- 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.

#### 4.3.2.10 Unreported crash incident reporting.

- This project will create new data that do not currently exist since these data will generate information that cannot be derived from any current data source.
- At least 100 reports in the first prototype year.

#### 4.3.2.11 Centralized (Enterprise) CARE

- Functioning CARE system that uses a central server to store all executables and all datasets.

#### 4.3.2.12 Upgrade of the FOCIS system

- This project has been successfully completed.

#### 4.3.2.13 Coordinate-based hotspot capability

- Demonstration of a hotspot capability that is based totally on GIS coordinates and ON road code, independent of any linear reference system.
- Tested and verified system working as good if not better than the LRS hotspot systems.

#### 4.3.2.14 Database Systems Management (DBSM)

- Progress in developing the DBSM will be evident from the ease of generating new reports once it is operational.
- It is not possible to specify other metrics at this point to measure its effectiveness in time savings and eliminating problems when it comes to changing the structure of variables that are used elsewhere in the system.

#### 4.3.2.15 TZD research and education

- Assessment of the effectiveness is best measured by before and after surveys for the educational effort.
- Research is needed to design the PI&E efforts that will be most effective in preparing the general public for the major benefits expected from connected and autonomous vehicles, and to recognize that their flaws are temporary as the technology moves forward.

#### 4.3.2.16 Guideline Improvement

- List of Advisory best practices as they relate to crash records.
- Documented cost and an expected benefit related to the implementation of each of the recommended best practices.
- Implementation and work plan for those projects that will be necessary to implement the most cost-beneficial items.
- Recommendations to the TSIS SP for review and approval by the TRCC.

#### 4.3.2.17 Data Dictionary

- Comprehensive data dictionary for raw crash data that is consistent with industry standards for data dictionaries.
- Documented methods for tracking all datasets produced from the crash data, including those that are integrated with data from other modules.

#### 4.3.2.18 Crash Module Systems Analysis

- Documentation of a complete systems analysis of the current crash module including both internal procedures and process flows as well as the integration with other modules.
- Preliminary list of anticipated current crash module deficiencies.
- Recommended remedial action to correct any deficiencies.
- List of potential projects that can be compared on a cost-benefit basis to recommend updates to the TRCC SP.

#### 4.3.2.19 FARS Data Automation

- Upgraded FARS data entry to include all required FARS data elements.
- Addition of the following to enable ALDOT to meet federal requirements: (1) MPO boundary area, (2) RPO boundary area boundary, (3) FARS Highway Functional Classification, and (4) FARS National Highway System Classification.
- Updated CARE FARS system to process data from the most recent FARS updates.

### 4.3.3 Vehicle Projects

#### 4.3.3.1 Registration file content and access update.

- Current systems upgraded to include the new data being made available by upgrades in the vehicle registration process.

#### 4.3.3.2 ETAPS upgrade to ALTS.

- Conversion of ETAPS to ALTS completed, and the system is working totally under ALTS.
- Implementation verified to be 100% by all designated agents in all counties by the end of FY2021.

#### 4.3.3.3 Integration of ALEA driver license and state identification databases

- Testing is completed to ensure that there is full integration of the two databases such that anything in one is accessible to the other and vice versa, given that the same person exists in both databases.
- Prototype tested to verify the ability to scan the barcode to obtain the vehicle owner's information via a link to the driver's license number and the registration record.

#### 4.3.3.4 Implementation of the state's Online Insurance Verification System (OIVS)

- Full implementation of OIVS measured by the number of agencies using it
- FY2019 progress included working with ALEA to provide access to the DOR online insurance verification system in order to administer the newly created law that allows ALEA to issue assessments to uninsured motorists who are involved in crashes.

#### 4.3.3.5 Modernized IRP/IFTA systems

- Significantly improved user satisfaction with the International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA) interface.
- Ability for users to upload documents and to utilize the applications on a variety of modern electronic devices.
- Progress of this project in FY2019 included the implementation of: (1) a new commercial vehicle licensing system for IRP and IFTA licenses and taxes, and (2) a new commercial vehicle information exchange window (CVIEW) for use by DOR, ALEA, APSC and ALDOT.

#### 4.3.3.6 Update and implementation of MVTRIP

- Upgrading of the MVTRIP system without loss of utility, to include a new upgraded dashboard that displays and performs analytics on the MVTRIP data.
- Compatibility with the most common technologies that are being applied in the field.

#### 4.3.3.7 Print on demand registration receipt

- Final testing completed and complete print on demand registration receipt system fully operational.
- Progress during FY2019 included the implementation of the print on demand process for Alabama special distinctive license plates.

- 4.3.3.8 Electronic vehicle registration receipts
  - Final testing of the system that meets all requirements for producing and transmitting an electronic receipt to registrants' electronic wallets.
- 4.3.3.9 Fraud detection tool design and development
  - Project taken over by ALEA.
- 4.3.3.10 Vehicle registration cards
  - Improved accuracy of person and vehicle validation from its current value of approximately 90% to 98%.
  - Successful prototype of barcodes on registration cards in several target beta test areas.
  - Implement barcodes on registration cards statewide.
- 4.3.3.11 Vehicle data LETS integration
  - Decrease the average time that it takes an officer in the field to obtain vehicle and insurance verification from the current average to less than five seconds.
- 4.3.3.12 Online Insurance Verification System (OVIS) updates
  - Completed.
- 4.3.3.13 Effective TZD infrastructure.
  - Documented interaction with TZD researchers resulting in the use of CARE and other tools and data to support TZD efforts.
- 4.3.3.14 Addition of the DL validation to populate the vehicle owner data in the title record.
  - Fully functional Driver License (DL) number as required part of the title record.
  - Ability to retrieve the registration record from the vehicle owner's driver's license number.
  - Ability to pre-populate the title record with all available information on the drivers' license (e.g., name and address and all other vehicle owner information).
- 4.3.3.15 More frequent county uploads of title records
  - Design and development of a virtual real-time system for updating LETS.
  - Information is available to officers in the field at the point (no more than five minutes after) when the transaction occurs.
- 4.3.3.16 Electronic liens and titles (ELT)
  - Completed requirements gathering phase for the production of current lien and title information electronically.
  - Functioning lien and title information system.
- 4.3.3.17 Automated License Plate Readers (ALPR)
  - Completed requirements gathering for system to support civil enforcement of registration violations through the use of automated license plate readers (ALPRs).
  - Completed preliminary and detailed design.
  - Functioning software to use ALPRs for enforcement of registration laws.



#### 4.3.3.18 Electronic Credentialing (eCredential) program

- Completed requirements gathering for system to support electronic credentialing.
- Completed preliminary and detailed design.
- Functioning software to perform the electronic credentialing functions.

#### 4.3.4. *Driver Component Projects*

##### 4.3.4.1 DUI driver data intake and reporting system

- Law enforcement identification and apprehension of at least ten additional DUI offenders (per month) with outstanding warrants or court obligations.

##### 4.3.4.2 MIDAS offender completion validation

- (Currently this capability does not exist.)
- The ability to identify for any defendant where s/he stands with regard to completing their sentence.
- The identification within the database of an increase of 30% additional existing offenders who have not completed their time of suspension or satisfied their alternative or traditional sanctions.

##### 4.3.4.3 Traffic safety incident (ULTRA) data availability

- 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.
- Documentation of the systems analysis necessary to create additional data requirements.

##### 4.3.4.4 Information mining of the ULTRA data

- Functioning ETL for ULTRA.
- ULTRA datasets being processed by CARE.
- Resulting CARE outputs.

##### 4.3.4.5 LETS upgrades for traffic safety

- (This capability does not currently exist.)
- The capability to detect hundreds of serial traffic violators per month based on an expected 50-100 queries per day

##### 4.3.4.6 Mobile Officer Virtual Environment (MOVE) Upgrades

- 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.
- At least ten new functions added to MOVE over the next five years, on average two per year.

#### 4.3.5 *Roadway Data Systems Projects*

##### 4.3.5.1 Improved data gathering/connectivity through eGIS

- Centerlines developed for at least 80% of county roads and city streets by the end of FY 2021.
- ALDOT-maintained location system (for all public roads) route network incorporated into crash locating tools for at least 95% of crash reports;
- ALDOT’s “all public roads” route network expanded to 80% of all non-State maintained routes.
- Infrastructure and tools provided to 90% of local authorities (e.g., City, County, MPO,RPO).

#### 4.3.5.2 Statewide roadway data inventory

- Accessibility: currently these data are widely distributed and not easily accessible for IHSDM/HSM implementation.
- Add data elements to an 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.

#### 4.3.5.3 IHSDM/HSM implementation project

- 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%, eliminating 50% of the deficiency).
- Improve the optimization process so that an additional benefit of ten lives per year can be saved through roadway improvement projects.

#### 4.3.5.4 Roadway Issue Dispatch (RID) project

- The addition of ten RID reports per month routed to either ALDOT or the appropriate county or city engineer.

#### 4.3.5.5 Roadway Improvement Safety Evaluation (RISE)

- Beta test at least five maintenance project corridors during the second year after project initiation.

#### 4.3.5.6 MIRE creation for state routes

- Ongoing progress of 20% of the data elements functional per year after initiation of the project.
- Comparable progress to incorporate the relevant state-collected MIRE data elements into the crash database and Crash reports.
- MIRE data elements collected for 80% public routes not on the State maintained network.
- Ongoing implemented training on MIRE data collection and reporting tools to local authorities (e.g., City, County, MPO, RPO).

#### 4.3.5.7 Design and develop data dictionary for roadway data elements.

- Comprehensive data dictionary for raw roadway data elements that is consistent with industry standards for data dictionaries as well as federal requirements.
- Documented methods for tracking all datasets produced from the roadway data, including those that are integrated with data from other modules.

#### 4.3.5.8 Systems analysis of roadway data elements.

- Documentation of complete systems analysis of the current roadway module, including both internal procedures and process flows.
- Documentation of the integration with other modules as well as the data elements developed in Project 7 above.
- Recommendations for all remedial actions to correct any deficiencies resulting from a comparison of existing procedures against the recommendations given in the Advisory.
- List of potential projects that can then be compared on a cost-benefit basis to recommend updates to the TRCC SP.

### 4.3.6 Citations and Adjudication Projects

#### 4.3.6.1 Upgrades to eCite

- Reduce the average time of getting citation information into the database from several days to an average of less than one day.
- Increase the proportion of agencies on by at least 2% per year.

#### 4.3.6.2 ALEA Motor Carrier Integration – FMCSA compliance

- From less than 50% current compliance to 100% compliance with Federal standards.

#### 4.3.6.3 Citation adjudication technology

- 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
- Reduce the time spent swearing to tickets to a few minutes per day.

#### 4.3.6.4 Municipal electronic disposition system

- Five beta test municipalities after the first year of the start of development.
- At least 20 municipalities using the system after the second year.

#### 4.3.6.5 Completing of the eCite roll-out

- At least 95% of municipalities using eCite by the end of FY2021.

#### 4.3.6.6 Citation and DUI Tracking System

- Number and percentage of defendants for which data are available; functional portal under MOVE enabling officers to make queries on particular individuals; administrative capability to check the status of citation and defendants.

#### 4.3.6.7 Taskforce to develop and implement improved guidelines

- Documentation of an internal assessment as to which components are in compliance with the provisions of the Advisory and which are most in need of remediation.
- Documentation of a complete systems study of all current components within the citation/adjudication component, i.e., all systems that relate to either transactional or analytical systems and impact traffic safety.
- Documentation of an in-depth analytical study of the most critical modules and the recommendations for additional development of supporting projects to bring the system into closer conformance with the Advisory.
- Recommends to the TRCC any new projects that are required to this effect so that they can be integrated into the SP once approved.

#### 4.3.7. *EMS-Medical Surveillance*

##### 4.3.7.1 Complete and implement RESCUE

- Beta test of the RESCUE system completed by the end of the second year from project initiation. This objective has been accomplished.

##### 4.3.7.2 Supporting software for RESCUE.

- Deployed operational support software; number of vendors who are using the supporting software and the support it is providing to RESCUE for effective operation.

##### 4.3.7.3 Develop EMS version of MOVE

- This project has been cancelled due to deciding to go web-based with RESCUE.

##### 4.3.7.4 Continued development of the First Responder Solution Technique (FIRST)

- All MOVE components developed and deployed in beta tests.
- Reduced transport time for beta areas.
- Reduced number of patients who need to be forwarded to more appropriate facilities in beta test areas.

##### 4.3.7.5 EMS-Trauma data integration through CARE

- ETL developed and pilot datasets generated that contain integrated EMS and Trauma data that support all CARE analytical capabilities.

##### 4.3.7.6 Medical database access/integration

- Documentation of the systems analysis study that contains recommendations as to the initial databases that can be integrated.

##### 4.3.7.7 Model Inventory of Emergency Care Elements (MIECE) Repository

- Beta test of the MIECE data entry system completed by the end of the first year of project initiation.

##### 4.3.7.8 Interface research task force (coordinated closely with item 4.3.8.3 below)

- Existence of an ongoing taskforce.

- Documented review of the systems interfaces in comparison with the Advisory.
- Recommendations for all interfaces that are not in accord with the Advisory.
- Prioritization of the large number of potential interfaces that exist, with the goal of creating or improving those interfaces that are most productive from a management and research perspective.

#### 4.3.8. *Integration Projects*

##### 4.3.8.1 TSIS/TRCC Coordination

- The presence of a coordinator and staff to perform all necessary coordination functions.

##### 4.3.8.2 Development of DELTA

- Documented design of DELTA to take in the practical aspects of a multi-agency approach toward data lifecycle coordination.
- Functioning prototype system for a select subset of the total TSIS in order to initiate its full evolution.

##### 4.3.8.3 Crash-Injury Data Integration (coordinated closely with item 4.3.7.8 above)

- Definition and establishment of two (or more) additional databases needed to prove the concept, e.g., eCrash and RESCUE data.
- Functioning CARE dataset that proves the concept of multiple database information generation using the ETL approach for integration.
- Functional linkage between the Electronic Patient Care Report (ePCR), currently produced by RESCUE, and the crash report, currently produced by eCrash.
- Established use of this integration demonstrated by (for example):
  - Establishing correlations between officer opinion of crash severity and actual EMS severity assessment and medical care given;
  - Roundtrip time of EMS dispatch to delivery to medical facility.
  - Comparison of officer reported medical dispatch and arrival times to EMS-provided dispatch and arrival times;
  - Delayed fatalities to the delay time of receiving medical attention; and
  - Delayed fatalities to type of medical facility initially receiving the patient.

##### 4.3.8.4 Citation-Adjudication Portal

- Functioning web-based portal that satisfies current needs of all stakeholders.
- Specification of improvements for anticipated needs in the future.

##### 4.3.8.5 Mobile Officers' Virtual Environment (MOVE) upgrades to support integration.

- Addition of at least three new functions to MOVE over the 2021 fiscal year.

##### 4.3.8.6 Mobile device technology.

- At least three applications ported over to smart phone or smart tablet technology before the end of the 2021 fiscal year.

#### 4.3.8.7 Data-Driver Approaches to Crime and Traffic Safety (DDACTS)

- Creation of at least one implemented DDACTS system by the end of FY 2021; e.g., the integration of crash, incident and citation data to determine optimal placement of law enforcement assets.

#### 4.3.8.8 CARE multiple database ETL development.

- One application functional every fiscal year of the following: (1) crash-roadway; (2) crash-citation; (3) crash-EMS/injury; (4) crash-vehicle.

#### 4.3.8.9 Tighter eGIS integration

- Documentation of a systems study to determine which component database combinations will produce the most benefit from being integrated by location.
- Prioritized plan for the integration by location.
- Prototype functional integrated map-based information generation.

#### 4.3.8.10 Safety Portal full implementation

- The functioning portal with two major CARE/ADVANCE datasets added per year over the planning horizon.

#### 4.3.8.11 Countermeasure evaluations

- Result of an analysis to determine and prioritize those countermeasures that are most in need of evaluation from the viewpoint of feasibility and the flexibility to make modifications to improve the programs under consideration.
- Intermediate and final evaluation documentation.

#### 4.3.8.12 SafeHomeAlabama.gov

- Add 10 pages to SHA and ensure that information received is posted out on the web site within one hour of receipt by the end of FY 2021.
- Increase the Twitter account that announces all significant updates to SHA to 100 followers.

State traffic records strategic plan

**Strategic Plan, approved by the TRCC, that— (i) Describes specific, quantifiable and measurable improvements that are anticipated in the State's core safety databases (ii) Includes a list of all recommendations from its most recent highway safety data and traffic records system assessment; (iii) Identifies which recommendations the State intends to address in the fiscal year, the countermeasure strategies and planned activities that implement each recommendation, and the performance measures to be used to demonstrate quantifiable and measurable progress; and (iv) Identifies which recommendations the State does not intend to address in the fiscal year and explains the reason for not implementing the recommendations:**

**Planned activities that implement recommendations:**

<b>Unique Identifier</b>	<b>Planned Activity Name</b>
M3DA-22-HC-M3	Electronic Patient Care Reports Program
22-TF-TR-001	Traffic Safety Information Systems
M3DA-22-TR-M3	Traffic Safety Records Improvement Program

Quantitative and Measurable Improvement

**Supporting documentation covering a contiguous 12-month performance period starting no earlier than April 1 of the calendar year prior to the application due date, that demonstrates quantitative improvement when compared to the comparable 12-month baseline period.**

State Highway Safety Data and Traffic Records System Assessment

**Date of the assessment of the State's highway safety data and traffic records system that was conducted or updated within the five years prior to the application due date:**

Date of Assessment: **January 30, 2020**

Requirement for maintenance of effort

**ASSURANCE: The lead State agency responsible for State traffic safety information system improvements programs shall maintain its aggregate expenditures for State traffic safety information system improvements programs at or above the average level of such expenditures in fiscal years 2014 and 2015**

## 405(d) Impaired driving countermeasures grant

Impaired driving assurances

Impaired driving qualification: **Mid-Range State**

**ASSURANCE: The State shall use the funds awarded under 23 U.S.C. 405(d)(1) only for the implementation and enforcement of programs authorized in 23 C.F.R. 1300.23(j).**

**ASSURANCE: The lead State agency responsible for impaired driving programs shall maintain its aggregate expenditures for impaired driving programs at or above the average level of such expenditures in fiscal years 2014 and 2015.**

Authority to operate

**Direct copy of the section of the statewide impaired driving plan that describes the authority and basis for the operation of the statewide impaired driving task force, including the process used to develop and approve the plan and date of approval.**

Authority and Basis of Operation

The authority and basis for the operation of the Alabama Statewide impaired driving task force, as well as the process used to develop and approve the plan can be located in the Charter of the Alabama Impaired Driving Prevention Council (AIDPC), as seen below.

**Charter of the Alabama Impaired Driving Prevention Council (AIDPC) Founded July 2013**

### **PREAMBLE**

The impact that impaired driving has on the families of Alabama and its citizens are both devastating and preventable. It is the preventable nature of impaired driving cases that is at the core of the Alabama Impaired Driving Prevention Council. It is the Council's ambition that its formulation will serve to demonstrate that Alabama is resolute about attacking this issue and achieving the goal of zero fatalities at the hand of impaired drivers.

### **ARTICLE ONE: PURPOSE**

The Alabama Impaired Driving Prevention Council (AIDPC) serves as a Driving Under the Influence (DUI) workgroup. It provides leadership and guidance for citizens seeking to significantly reduce the number of collisions, injuries, and deaths caused by impaired drivers. It provides qualitative input and assistance to the legislature, state agencies, and other organizations combating impaired driving and its consequences.

### **ARTICLE TWO: MEMBERSHIP**

2.1 MEMBERS: The AIDPC shall be comprised of agencies, offices, and organizations from public and private sectors of state leadership, each of whom possess a demonstrated interest in impaired driving prevention. The following agencies, offices, and organizations are members:

- Alabama Department of Economic and Community Affairs/Law Enforcement & Traffic Safety Division (ADECA/LETS)
- Alabama Beverage Control Board (ABC)
- Alabama District Attorneys Association (ADAA)
- Board of Pardons and Paroles
- Court Referral Program



Department of Forensic Sciences • Department of Public Safety • Member(s) of the Alabama Legislature • Mothers Against Drunk Driving (MADD) • State Coordinator for the Drug Recognition Expert (DRE) Program • Students Against Destructive Decisions (SADD) • Traffic Safety Resource Prosecutor (TSRP) • At least one of the following: o Assistant District Attorney o Certified DRE o District Court Judge o Municipal Court Judge • The chairperson may appoint additional members on an as-needed basis. Any additional member(s) shall be confirmed by a two-thirds committee vote.

2.2 TERM: Each member will serve a term of two calendar years and may be reappointed.

2.3 VOTING: Each member will have one vote. For a vote to take place, representatives of at least eleven members must be physically present.

2.4 RESIGNATION: Any member shall have the right to resign his or her position on the AIDPC. Any resignation should be provided to the Chairman with 30 days' notice. The Chairman may request that another designee be appointed to replace a member for poor attendance.

2.5 DESIGNEES: Designees are permitted and shall have full voting power, except that there will be no designees for the two immediate past chairmen and vice chairmen.

### **ARTICLE THREE: MEETINGS**

3.1 REGULAR MEETINGS: The AIDPC shall meet semi-annually at a time and location specified by the chairman.

3.2 SPECIAL MEETINGS: In addition to semi-annual meetings, special meetings for a stated purpose may be called by the chairman.

3.3 NOTICE: Notice of each meeting will be given at least seven calendar days in advance, by mail and/or email.

3.4 LOCATION: Meetings shall be held at a location place chosen by the chairman, with due consideration given to the convenience of all members and staff suitable for the occasions.

3.5 PROCEDURE: AIDPC shall follow parliamentary procedure as set forth in Robert's Rules of Order, newly revised, except when they conflict with this charter.

3.6 MINUTES: AIDPC shall take and maintain meeting minutes, including a record of the members present.

3.7 PLANNING: The Office of Prosecution Services will serve as a resource and provide logistical support for meeting location, preparations, notice, and minutes.

3.8 ATTENDANCE: Member organizations are allowed to have multiple representatives attend meetings. On such occasions the member organization must designate one person as the voting member.

3.9 APPROVAL: Members will develop and approve the Impaired Driving Strategic Plan.

## **ARTICLE FOUR: OFFICERS**

4.1 CHAIRMAN AND VICE CHAIRMAN: There shall be a chairman and vice chairman. The chairman and vice chairman shall serve for a period of two years and may be reelected.

4.2 SECRETARY: The duties of the Secretary shall serve for a period of two years and may be reelected.

4.3 VACANCIES: Should a chairman resign prior to the expiration of his or her term, the vice chairman shall automatically become chairman and shall serve until the predecessor's term would have expired. Should a vice chairman resign prior to the expiration of his or her term, the chairman shall appoint an interim vice chairman to serve until the next regular meeting, at which time the members shall elect a vice chairman to serve until the predecessor's term would have expired.

## **ARTICLE FIVE: COMMITTEES**

5.1 COMMITTEES: The following committees should be organized, chaired, and populated as necessary to accomplish the goals of the AIDPC: • Education/Prevention • Enforcement/Prosecution/Adjudication • Legislation • Treatment/Rehabilitation/Diversion

5.2 SPECIAL COMMITTEES: The chairman shall appoint or disband such special committees as necessary for the efficient operation of the AIDPC.

5.3 EXECUTIVE COMMITTEE: There shall be an Executive Committee, comprised of the following persons, to accomplish the goals of the AIDPC. • Chairman • Vice Chairman • Immediate past chairman • Immediate past vice chairman • Four committee chairmen or designees

5.4 COMMITTEE VOTING: Member organizations may be represented on multiple committees and may have designees attend committee meetings. Each member organization will have one vote per committee.

## **ARTICLE SIX: AMENDMENTS**

6.1 This charter may be altered, amended, or repealed and a new charter may be adopted by a two-thirds vote of the membership representing a quorum thereof at any regular meeting of the AIDPC when a proposed amendment has been distributed with notice of such meeting.

6.2 For purposes of this Article, one-third of the membership plus one member constitute a quorum.

Further information can be found in section 2.1 of the Strategic Plan, as follows:

### 2.1 Alabama Impaired Driving Prevention Council (AIDPC)

The Alabama Impaired Driving Prevention Council (AIDPC) was assembled to develop and approve this plan and to ensure that all aspects of the impaired driving problem were considered and that as many alternative countermeasures as possible could be evaluated. To create a strategic plan that would focus on the problem areas with the greatest opportunity for improvement, and establish a successfully functioning Council, it was essential to have representation from agencies and organizations with a working knowledge and deep understanding of the various parts of Alabama's impaired driving prevention system and how the parts interrelate. The individuals who participated in the AIDPC meetings and assisted in drafting the Impaired Driving Strategic Plan (IDSP) are identified in Table 2.1. AIDPC organizers are deeply grateful for the time and effort members devoted to development of the strategic plan and for the counsel, advice, and expertise they brought to the plan, and that they continue to bring toward implementing it.

The major charge given by the AIDPC in its commission was to foster leadership, commitment, and coordination among all parties interested in impaired driving issues. Further, they were charged with the responsibility to attend regular meetings as established by the Chair, and to generally manage and provide overall control to the program as described in the ID Strategic Plan.

The IDSP is very data-driven. In drafting the IDSP, members of the AIDPC relied on data on impaired driving-related crashes, arrests, suspensions, and convictions data; also used were state-specific studies on youth and adult behavior and attitudes toward alcohol consumption/drug use specifically as they relate to impaired driving.

## Key Stakeholders

NAME	AGENCY	TITLE	FUNCTION
Adair, Bill	Alabama District Attorneys Association	President	Prosecution
Anthony, Terry	Pardon & Parole	Director of Field	Probation
Babington, Bill	Alabama Department of Economic and Community Affairs	Division Chief	SHSO
Brown, Dr. David	University of Alabama	Professor – CAPS	Data/Traffic Records
Brown, Lt. Chris	Alabama Law Enforcement Agency	Motor Carrier Unit	Law Enforcement
Burleson, Richard	Alabama Department of Public Health	Director, Fatality Review	Public Health
Hamilton, Angie	Prosecutor	ADA, Lauderdale Co.	Prosecution
Harper, Dr. Curt	Alabama Department of Forensic Science	Toxicology Discipline Chief	Drug Toxicology
Harris, Jason	Alabama Office of Courts	Court Referral Program Specialist	Treatment & Rehabilitation
Jones, Jay	Lee County Sheriff's Office	Sheriff	Law Enforcement
Jones, Mike	Legislator	State Representative, 92nd District	Communication
King, Bettye	Municipal Clerk's Association	Municipal Clerk - Birmingham	Communication
Lindsey, Bill	Office of Prosecution Services	TSRP	Prosecution/Communication
Medley, Hon. Carole	Judiciary	District Judge, Lauderdale Co.	Adjudication
Morton, Pamela	MADD	State Victim Services Coordinator	Communication
Peacock, David	Alabama Beverage Control	Enforcement Attorney	Communication/Law Enforcement
Penton, Cpl. William	Alabama Law Enforcement Agency	State DRE and SFST Coordinator	Law Enforcement
Robinson, Michael	Alabama Law Enforcement Agency	Chief Counsel	Drivers Licensing
Sparks, Hon. Andra	Judiciary	Municipal Judge – Birmingham	Adjudication
Turner, Dr. Greg	Alabama Department of Forensic Science	Technical Director, Implied Consent Unit	Breath testing/Ignition Interlock

**Date that the Statewide impaired driving plan was approved by the State's task force.**

Date impaired driving plan approved by task force: **March 5, 2020**

Strategic plan details

**State will use a previously submitted Statewide impaired driving plan that was developed and approved within three years prior to the application due date.**

Continue to use previously submitted plan: **Yes**

**ASSURANCE: The State continues to use the previously submitted Statewide impaired driving plan.**

**Appendix A to Part 1300 – Certifications and Assurances for Fiscal Year 2022 Highway Safety Grants (23 U.S.C. Chapter 4; Sec. 1906, Pub. L. 109-59, As Amended By Sec. 4011, Pub. L. 114-94)**

*[Each fiscal year, the Governor's Representative for Highway Safety must sign these Certifications and Assurances affirming that the State complies with all requirements, including applicable Federal statutes and regulations, that are in effect during the grant period. Requirements that also apply to subrecipients are noted under the applicable caption.]*

State: Alabama

Fiscal Year: 2022

**By submitting an application for Federal grant funds under 23 U.S.C. Chapter 4 or Section 1906, the State Highway Safety Office acknowledges and agrees to the following conditions and requirements. In my capacity as the Governor's Representative for Highway Safety, I hereby provide the following Certifications and Assurances:**

**GENERAL REQUIREMENTS**

The State will comply with applicable statutes and regulations, including but not limited to:

- 23 U.S.C. Chapter 4 – Highway Safety Act of 1966, as amended
- Sec. 1906, Pub. L. 109-59, as amended by Sec. 4011, Pub. L. 114-94
- 23 CFR part 1300 – Uniform Procedures for State Highway Safety Grant Programs
- 2 CFR part 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
- 2 CFR part 1201 – Department of Transportation, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

**INTERGOVERNMENTAL REVIEW OF FEDERAL PROGRAMS**

The State has submitted appropriate documentation for review to the single point of contact designated by the Governor to review Federal programs, as required by Executive Order 12372 (Intergovernmental Review of Federal Programs).

**FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA)**

The State will comply with FFATA guidance, OMB Guidance on FFATA Subward and Executive Compensation Reporting, August 27, 2010, ([https://www.fsrs.gov/documents/OMB\\_Guidance\\_on\\_FFATA\\_Subaward\\_and\\_Executive\\_Compensation\\_Reporting\\_08272010.pdf](https://www.fsrs.gov/documents/OMB_Guidance_on_FFATA_Subaward_and_Executive_Compensation_Reporting_08272010.pdf)) by reporting to FSRS.gov for each sub-grant awarded:

- Name of the entity receiving the award;
- Amount of the award;

- Information on the award including transaction type, funding agency, the North American Industry Classification System code or Catalog of Federal Domestic Assistance number (where applicable), program source;
- Location of the entity receiving the award and the primary location of performance under the award, including the city, State, congressional district, and country; and an award title descriptive of the purpose of each funding action;
- A unique identifier (DUNS);
- The names and total compensation of the five most highly compensated officers of the entity if:
  - (i) the entity in the preceding fiscal year received—
    - (I) 80 percent or more of its annual gross revenues in Federal awards;
    - (II) \$25,000,000 or more in annual gross revenues from Federal awards; and
  - (ii) the public does not have access to information about the compensation of the senior executives of the entity through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986;
- Other relevant information specified by OMB guidance.

#### **NONDISCRIMINATION**

**(applies to subrecipients as well as States)**

The State highway safety agency will comply with all Federal statutes and implementing regulations relating to nondiscrimination (“Federal Nondiscrimination Authorities”). These include but are not limited to:

- **Title VI of the Civil Rights Act of 1964** (42 U.S.C. 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin) and 49 CFR part 21;
- **The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970**, (42 U.S.C. 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- **Federal-Aid Highway Act of 1973**, (23 U.S.C. 324 *et seq.*), **and Title IX of the Education Amendments of 1972**, as amended (20 U.S.C. 1681-1683 and 1685-1686) (prohibit discrimination on the basis of sex);
- **Section 504 of the Rehabilitation Act of 1973**, (29 U.S.C. 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability) and 49 CFR part 27;
- **The Age Discrimination Act of 1975**, as amended, (42 U.S.C. 6101 *et seq.*), (prohibits discrimination on the basis of age);
- **The Civil Rights Restoration Act of 1987**, (Pub. L. 100-209), (broadens scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal aid recipients, subrecipients and contractors, whether such programs or activities are Federally-funded or not);
- **Titles II and III of the Americans with Disabilities Act** (42 U.S.C. 12131-12189) (prohibits discrimination on the basis of disability in the operation of public entities,

public and private transportation systems, places of public accommodation, and certain testing) and 49 CFR parts 37 and 38;

- **Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations** (prevents discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations); and
- **Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency** (guards against Title VI national origin discrimination/discrimination because of limited English proficiency (LEP) by ensuring that funding recipients take reasonable steps to ensure that LEP persons have meaningful access to programs (70 FR 74087-74100)).

The State highway safety agency—

- Will take all measures necessary to ensure that no person in the United States shall, on the grounds of race, color, national origin, disability, sex, age, limited English proficiency, or membership in any other class protected by Federal Nondiscrimination Authorities, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any of its programs or activities, so long as any portion of the program is Federally-assisted;
- Will administer the program in a manner that reasonably ensures that any of its subrecipients, contractors, subcontractors, and consultants receiving Federal financial assistance under this program will comply with all requirements of the Non-Discrimination Authorities identified in this Assurance;
- Agrees to comply (and require its subrecipients, contractors, subcontractors, and consultants to comply) with all applicable provisions of law or regulation governing US DOT's or NHTSA's access to records, accounts, documents, information, facilities, and staff, and to cooperate and comply with any program or compliance reviews, and/or complaint investigations conducted by US DOT or NHTSA under any Federal Nondiscrimination Authority;
- Acknowledges that the United States has a right to seek judicial enforcement with regard to any matter arising under these Non-Discrimination Authorities and this Assurance;
- Agrees to insert in all contracts and funding agreements with other State or private entities the following clause:

“During the performance of this contract/funding agreement, the contractor/funding recipient agrees—

- a. To comply with all Federal nondiscrimination laws and regulations, as may be amended from time to time;



- b. Not to participate directly or indirectly in the discrimination prohibited by any Federal non-discrimination law or regulation, as set forth in appendix B of 49 CFR part 21 and herein;
- c. To permit access to its books, records, accounts, other sources of information, and its facilities as required by the State highway safety office, US DOT or NHTSA;
- d. That, in event a contractor/funding recipient fails to comply with any nondiscrimination provisions in this contract/funding agreement, the State highway safety agency will have the right to impose such contract/agreement sanctions as it or NHTSA determine are appropriate, including but not limited to withholding payments to the contractor/funding recipient under the contract/agreement until the contractor/funding recipient complies; and/or cancelling, terminating, or suspending a contract or funding agreement, in whole or in part; and
- e. To insert this clause, including paragraphs (a) through (e), in every subcontract and subagreement and in every solicitation for a subcontract or sub-agreement, that receives Federal funds under this program.

**THE DRUG-FREE WORKPLACE ACT OF 1988 (41 U.S.C. 8103)**

The State will provide a drug-free workplace by:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- b. Establishing a drug-free awareness program to inform employees about:
  - 1. The dangers of drug abuse in the workplace;
  - 2. The grantee's policy of maintaining a drug-free workplace;
  - 3. Any available drug counseling, rehabilitation, and employee assistance programs;
  - 4. The penalties that may be imposed upon employees for drug violations occurring in the workplace;
  - 5. Making it a requirement that each employee engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- c. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will –
  - 1. Abide by the terms of the statement;
  - 2. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- d. Notifying the agency within ten days after receiving notice under subparagraph (c)(2) from an employee or otherwise receiving actual notice of such conviction;

- e. Taking one of the following actions, within 30 days of receiving notice under subparagraph (c)(2), with respect to any employee who is so convicted –
  - 1. Taking appropriate personnel action against such an employee, up to and including termination;
  - 2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
  
- f. Making a good faith effort to continue to maintain a drug-free workplace through implementation of all of the paragraphs above.

**POLITICAL ACTIVITY (HATCH ACT)**  
**(applies to subrecipients as well as States)**

The State will comply with provisions of the Hatch Act (5 U.S.C. 1501-1508), which limits the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

**CERTIFICATION REGARDING FEDERAL LOBBYING**  
**(applies to subrecipients as well as States)**

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

- 1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement;
  
- 2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions;
  
- 3. The undersigned shall require that the language of this certification be included in the award documents for all sub-award at all tiers (including subcontracts, subgrants, and contracts under grant, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

### **RESTRICTION ON STATE LOBBYING**

**(applies to subrecipients as well as States)**

None of the funds under this program will be used for any activity specifically designed to urge or influence a State or local legislator to favor or oppose the adoption of any specific legislative proposal pending before any State or local legislative body. Such activities include both direct and indirect (e.g., "grassroots") lobbying activities, with one exception. This does not preclude a State official whose salary is supported with NHTSA funds from engaging in direct communications with State or local legislative officials, in accordance with customary State practice, even if such communications urge legislative officials to favor or oppose the adoption of a specific pending legislative proposal.

### **CERTIFICATION REGARDING DEBARMENT AND SUSPENSION**

**(applies to subrecipients as well as States)**

#### Instructions for Primary Tier Participant Certification (States)

1. By signing and submitting this proposal, the prospective primary tier participant is providing the certification set out below and agrees to comply with the requirements of 2 CFR parts 180 and 1200.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective primary tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary tier participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default or may pursue suspension or debarment.
4. The prospective primary tier participant shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the prospective primary tier participant learns its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms *covered transaction*, *civil judgment*, *debarment*, *suspension*, *ineligible*, *participant*, *person*, *principal*, and *voluntarily excluded*, as used in this clause, are defined in 2 CFR parts 180 and 1200. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary tier participant further agrees by submitting this proposal that it will include the clause titled "Instructions for Lower Tier Participant Certification" including the "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions and will require lower tier participants to comply with 2 CFR parts 180 and 1200.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any prospective lower tier participants, each participant may, but is not required to, check the System for Award Management Exclusions website (<https://www.sam.gov/>).
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, the department or agency may terminate the transaction for cause or default.

Certification Regarding Debarment, Suspension, and Other Responsibility Matters-Primary Tier Covered Transactions

- (1) The prospective primary tier participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary tier participant is unable to certify to any of the Statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Lower Tier Participant Certification

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below and agrees to comply with the requirements of 2 CFR parts 180 and 1200.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms *covered transaction*, *civil judgment*, *debarment*, *suspension*, *ineligible*, *participant*, *person*, *principal*, and *voluntarily excluded*, as used in this clause, are defined in 2 CFR parts 180 and 1200. You may contact the person to whom this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Instructions for Lower Tier Participant Certification" including the "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions and will require lower tier participants to comply with 2 CFR parts 180 and 1200.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any prospective lower tier participants, each participant may, but is not required to, check the System for Award Management Exclusions website (<https://www.sam.gov/>).

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.

*Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transactions:*

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **BUY AMERICA ACT**

**(applies to subrecipients as well as States)**

The State and each subrecipient will comply with the Buy America requirement (23 U.S.C. 313) when purchasing items using Federal funds. Buy America requires a State, or subrecipient, to purchase with Federal funds only steel, iron and manufactured products produced in the United States, unless the Secretary of Transportation determines that such domestically produced items would be inconsistent with the public interest, that such materials are not reasonably available and of a satisfactory quality, or that inclusion of domestic materials will increase the cost of the overall project contract by more than 25 percent. In order to use Federal funds to purchase foreign produced items, the State must submit a waiver request that provides an adequate basis and justification for approval by the Secretary of Transportation.

### **PROHIBITION ON USING GRANT FUNDS TO CHECK FOR HELMET USAGE**

**(applies to subrecipients as well as States)**

The State and each subrecipient will not use 23 U.S.C. Chapter 4 grant funds for programs to check helmet usage or to create checkpoints that specifically target motorcyclists.

### **POLICY ON SEAT BELT USE**

In accordance with Executive Order 13043, Increasing Seat Belt Use in the United States, dated April 16, 1997, the Grantee is encouraged to adopt and enforce on-the-job seat belt use policies and programs for its employees when operating company-owned, rented, or personally-owned vehicles. The National Highway Traffic Safety Administration (NHTSA) is responsible for providing leadership and guidance in support of this Presidential initiative. For information and resources on traffic safety programs and policies for employers, please contact the Network of Employers for Traffic Safety (NETS), a public-private partnership dedicated to improving the traffic safety practices of employers and employees. You can download information on seat belt programs, costs of motor vehicle crashes to employers, and other traffic safety initiatives at [www.trafficsafety.org](http://www.trafficsafety.org). The NHTSA website ([www.nhtsa.gov](http://www.nhtsa.gov)) also provides information on statistics, campaigns, and program evaluations and references.

### **POLICY ON BANNING TEXT MESSAGING WHILE DRIVING**

In accordance with Executive Order 13513, Federal Leadership On Reducing Text Messaging While Driving, and DOT Order 3902.10, Text Messaging While Driving, States are encouraged to adopt and enforce workplace safety policies to decrease crashes caused by distracted driving, including policies to ban text messaging while driving company-owned or rented vehicles, Government-owned, leased or rented vehicles, or privately-owned vehicles when on official Government business or when performing any work on or behalf of the Government. States are also encouraged to conduct workplace safety initiatives in a manner commensurate with the size of the business, such as establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving, and education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

## **SECTION 402 REQUIREMENTS**

1. To the best of my personal knowledge, the information submitted in the Highway Safety Plan in support of the State's application for a grant under 23 U.S.C. 402 is accurate and complete.
2. The Governor is the responsible official for the administration of the State highway safety program, by appointing a Governor's Representative for Highway Safety who shall be responsible for a State highway safety agency that has adequate powers and is suitably equipped and organized (as evidenced by appropriate oversight procedures governing such areas as procurement, financial administration, and the use, management, and disposition of equipment) to carry out the program. (23 U.S.C. 402(b)(1)(A))
3. The political subdivisions of this State are authorized, as part of the State highway safety program, to carry out within their jurisdictions local highway safety programs which have been approved by the Governor and are in accordance with the uniform guidelines promulgated by the Secretary of Transportation. (23 U.S.C. 402(b)(1)(B))
4. At least 40 percent of all Federal funds apportioned to this State under 23 U.S.C. 402 for this fiscal year will be expended by or for the benefit of political subdivisions of the State in carrying out local highway safety programs (23 U.S.C. 402(b)(1)(C)) or 95 percent by and for the benefit of Indian tribes (23 U.S.C. 402(h)(2)), unless this requirement is waived in writing. (This provision is not applicable to the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.)
5. The State's highway safety program provides adequate and reasonable access for the safe and convenient movement of physically handicapped persons, including those in wheelchairs, across curbs constructed or replaced on or after July 1, 1976, at all pedestrian crosswalks. (23 U.S.C. 402(b)(1)(D))
6. The State will provide for an evidenced-based traffic safety enforcement program to prevent traffic violations, crashes, and crash fatalities and injuries in areas most at risk for such incidents. (23 U.S.C. 402(b)(1)(E))
7. The State will implement activities in support of national highway safety goals to reduce motor vehicle related fatalities that also reflect the primary data-related crash factors within the State, as identified by the State highway safety planning process, including:
  - Participation in the National high-visibility law enforcement mobilizations as identified annually in the NHTSA Communications Calendar, including not less than 3 mobilization campaigns in each fiscal year to –
    - Reduce alcohol-impaired or drug-impaired operation of motor vehicles; and
    - Increase use of seat belts by occupants of motor vehicles;
  - Submission of information regarding mobilization participation into the HVE Database;
  - Sustained enforcement of statutes addressing impaired driving, occupant protection, and driving in excess of posted speed limits;



- An annual Statewide seat belt use survey in accordance with 23 CFR part 1340 for the measurement of State seat belt use rates, except for the Secretary of Interior on behalf of Indian tribes;
- Development of Statewide data systems to provide timely and effective data analysis to support allocation of highway safety resources;
- Coordination of Highway Safety Plan, data collection, and information systems with the State strategic highway safety plan, as defined in 23 U.S.C. 148(a).  
(23 U.S.C. 402(b)(1)(F))

8. The State will actively encourage all relevant law enforcement agencies in the State to follow the guidelines established for vehicular pursuits issued by the International Association of Chiefs of Police that are currently in effect. (23 U.S.C. 402(j))
9. The State will not expend Section 402 funds to carry out a program to purchase, operate, or maintain an automated traffic enforcement system. (23 U.S.C. 402(c)(4))

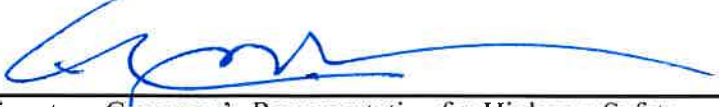
The State: **[CHECK ONLY ONE]**


Certifies that automated traffic enforcement systems are not used on any public road in the States;

OR

Is unable to certify that automated traffic enforcement systems are not use on any public road in the State, and therefore will conduct a survey meeting the requirements of 23 U.S.C. 402(c)(4)(C) AND will submit the survey results to the NHTSA Regional Office no later than March 1, 2022.

**I understand that my statements in support of the State's application for Federal grant funds are statements upon which the Federal Government will rely in determining qualification for grant funds, and that knowing misstatements may be subject to civil or criminal penalties under 18 U.S.C. 1001. I sign these Certifications and Assurances based on personal knowledge, and after appropriate inquiry.**

  
Signature Governor's Representative for Highway Safety

  
Date

**William M. Babington**

Printed name of Governor's Representative for Highway Safety



**State of Alabama**

# **Traffic Safety Information System (TSIS)**

**Strategic Plan FY2022-2026**

**June 1, 2021**

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**STATE OF ALABAMA**  
**TRAFFIC SAFETY INFORMATION SYSTEMS (TSIS)**  
**STRATEGIC PLAN FY2022-2026**

**Executive Summary**

This document presents the Alabama Traffic Safety Information Systems (TSIS) Strategic Plan for the FY2022-2026 planning horizon. This five-year plan was approved at the virtual Traffic Records Coordinating Committee meeting that took place on June 2, 2021.

The plan begins by providing context in terms of the overall background and history of the planning process over the past decades. 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 creates 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 to generate information, and the distribution of the information that is generated.

Any effective planning process must begin with a *vision* that, in turn, defines the goals that its implementation will attempt to accomplish over the next five years. Because the TSIS itself is quite diverse, the vision of its planned accomplishments are also quite diverse. The vision is *a combination of advancing all TSIS 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 information needs well into the future.

Critical to this planning process is support and participation by the various TSIS stakeholders within the state, which include the Alabama Department of Economic and Community Affairs (ADECA); the Alabama Administrative Office of Courts (AOC); the Alabama Law Enforcement Agency (ALEA); the Alabama Department of Transportation (ALDOT); the Alabama Department of Public Health (ADPH); the Alabama Department of Revenue (ADOR); The University of Alabama including the Center for Advanced Public Safety (CAPS); the Center for Transportation Operations, Planning and Safety (CTOPS); and the Alabama Transportation Institute (ATI); and local law enforcement, departments of transportation, hospitals and emergency services. Federal stakeholders include the National Highway Traffic Safety Administration (NHTSA); the Federal Highway Administration (FHWA); and the Federal Motor Carriers Safety Administration (FMCSA). As members of the Traffic Records Coordinating Committee (TRCC), all of these stakeholders provide input to the plan as well as engaging in discussions for its improvement and final approval. Details on these stakeholders are given in Section 3.

The following gives a summary of the plan according to the administrative (management) component and the seven operational components into which they were organized:

- *General TSIS Management Component* was established for the management and administration of the Traffic Records Coordinating Committee (TRCC), and to provide for administration functions that are common to all other components (such as the development of the TSIS Strategic Plan). Its function is one of communication, and as such, it is not intended to usurp the management authority of any of the agencies that are involved in the support or operation of the TSIS in serving its coordinating purpose.
- *Crash Component* includes such projects as the total 100% roll-out and subsequent upgrades to eCrash, further integration of GIS capabilities into eCrash and CARE, the generation of an updated Crash Facts Book, and the development of the Automated Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE), and other projects to produce a more effective interface to deliver CARE-generated information. This anticipates subsequent versions of eCrash to be developed based on the most recent MMUCC specifications, data requirements of Advanced Driver Assistance Systems (ADAS), the availability of automated location systems, and feedback as to improvements needed to make the eCrash data entry system itself more effective. Examples of longer term plans that have not yet been initiated call for a system to allow the public to report potential crash incidents, the development of a centralized (enterprise) CARE system, and the development of software that will enable the generation of hotspots based on GIS coordinates.
- *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 agencies authorized to access these data in the state, e.g., via the extremely successful Law Enforcement Tactical System (LETS) system. Other projects call for an online insurance verification system (OVIS), and the development of the data infrastructure to support crash avoidance and ultimately driverless vehicles. A number of projects are specified, all of which have the commonality of transforming the current systems to a higher level of technology. Future projects are anticipated to address data needs regarding safety issues of autonomous vehicles (AVs).
- *Driver Component* calls for more effective driver licensing information (including pictures) to be distributed to the field through LETS. This will require a more effective Driver History database, which will be updated automatically by eCrash and eCite, to be available to officers in the field via an upgraded new version of the Mobile Officer's Virtual Environment (MOVE) system, which is the umbrella portal system that encompasses all of the mobile applications available to law enforcement in the field. It will also entail the information support of PI&E projects that will assist drivers transitioning to vehicles with Advanced Driver Assistance Systems (ADAS).
- *Roadway Component* involves a wide diversity of projects in support of the State's Interactive Highway Safety Design Manual (IHSDM), Highway Safety Manual (HSM), and Safety Analyst (SA) initiatives (IHSDM/HSM/SA). A primary focus of plans in this component is to continue to develop and populate a repository of the Model Inventory of Roadway Elements (MIRE) for both state and local routes. Ultimately this database will be used in the

integration of roadway features into CARE, and the integration of Crash Modification Factors (CMFs) into the Cost-benefit Optimization for the Reduction of Roadway Environment Caused Tragedies (CORRECT) system using the facilities of the CMF Clearinghouse. To effectively locate crashes on the roadway, the plan is for ALDOT to complete their various GIS projects so that the results can be integrated into all relevant systems and used by CARE to fully employ its GIS display capabilities.

- *Citation and Adjudication Component* includes the extension and roll out of the electronic citation to all jurisdictions, a proposed improved virtual DUI defendant intake system, methods for moving digital information directly to 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.
- *EMS-Medical Component* includes continued support for the Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE) system, which implements the National Emergency Medical Services Information System (NEMSIS) standards. Other planned projects include an ambulance-stationing research project, 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. Also, a project to develop the First Responder Solution Technique (FIRST) seeks to provide Law Enforcement agencies with quick, accurate, and location-aware inventory of available emergency medical assistance facilities.
- *Integration and Information Distribution Component* considers results produced from all of the projects discussed above, and thus, it transcends them with the goal of integrating their data and results, producing information from these integrations, and distributing this information. A major effort is proposed to populate the current Safe Home Alabama and SAFETY web portals so that they will integrate all of the information generated by all agencies and present it in one unified source to the traffic safety community. The SAFETY Portal is a hub for traffic safety and related data analytics. Considerations for maintaining and upgrading this portal are planned. General innovations of MOVE and the use of mobile platforms for MOVE and its applications are also included. Integration is also necessary for the Data-Driven Approaches to Crime and Traffic Safety (DDACTS) that are now being recommended by various federal agencies. Finally, a number of ETLs will be developed to enable the integration of crash, citation, roadway, EMS/injury and vehicle data so that analytics can be performed on these datasets to generate information that is not currently available. ETLs (Extract-Translate-Load) are middleware that sits between the raw data and the information generator (e.g., CARE or SAFETY) to pre-process the raw data to make it much more understandable and useful to the users who are generating information.

In reviewing the above, it is very important to recognize that the plan under consideration is for the next five fiscal years (FY2022 through FY2026 inclusive). Some of the projects are underway, but others might not be started for a few years. The reason for getting them into the plan is to shape the overall development strategies of all of the development groups that will be involved, many of which have a large proportion of their responsibilities outside of the traffic records arena. Many things can happen over this planning horizon, and we anticipate, for example, that the strides that

will be made in automated vehicle (AV) development will be quite surprising perhaps eclipsing those of the past five years with exponential growth.

This document will continue with a Background and History section to provide context for the plan. This will be followed by the TSIS vision that enables the various projects to be seen as components in a much larger system of a traffic safety system that is striving for the total elimination of traffic fatalities (Toward Zero Deaths, or TZD). The TSIS stakeholders are given in Section 3 along with some details of their participation. The essence of the plan is given in the Project Specification Section (Section 4) of this document, which is the heart of the five-year plan in that it gives a high-level view of the planned projects in each of the TSIS components. The 4.3 subsection in Section 4 contains the TSIS measurable performance indicators for each of the projects given in the project specification, subsection 4.2. Finally, the state's response to its most recent Traffic Records Assessment (TRA) is given in the last three sections, as follow:

- Section 5, Traffic Records Assessment Recommendations,
- Section 6, Traffic Records Assessment (TRA) Responses that will be addressed in FY2022, and
- Section 7, Traffic Records Assessment (TRA) Responses to recommendations that will not be addressed in FY2022.



## 1.0 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. Documenting the definition of these various files, databases and systems alone is an enormous project, and the problems involved in coordinating the inter-agency activities to support traffic safety transactions and decision-making create serious issues within 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 data entry systems have come into the purview of the state's TSIS in addition to the analytics of crash cases. One example of a case management system is 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.

Coordination of these types of projects was initiated 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 for NHTSA to perform a Traffic Records Assessment (TRA) for the state of Alabama. The major result of that TRA was a set of over 50 recommendations for improving the traffic information system, which became the basis for the state's Strategic Plan. Four subsequent TRAs have been conducted for the state, the most recent was completed in January 2020. Subsequent strategic plans have responded to recommendations from these assessments.

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. The TRCC essentially subsumed ATISC and ATRSC into a single entity. Membership includes the data managers, data collectors, and major data users for each of the following system components: Crash, Vehicle, Driver, Roadway, Citation/Adjudication, EMS/Injury Control, and System Integration. The State TRCC, which had its first meeting on March 28, 2006, as prescribed by Section 405c (then Section 402), assumed responsibility for overseeing the planning and improvement of the key safety data systems within the state. The State TRCC must approve the Traffic Safety Information System (TSIS) strategic plan on an annual basis.

- A Traffic Safety Information System (TSIS) five-year plan was developed in 2006 and has been updated with changes every year thereafter. This planning document has provided guidance over the past decade on all TSIS efforts. The plan has been extremely forward looking, and it has served quite well in bringing into existence several new and revolutionary systems, including CARE ADVANCE (dashboard interfaces), RESCUE, eCite and eCrash.
- The five-year plan was updated considerably after the February 2011 Traffic Records Assessment conducted by NHTSA. It reflected their recommendations but went on to specify definitive actions that not only addressed the issues cited but built upon the many commendations that were made in that document.
- The five-year plan was updated to the 2014-2018 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 it has been updated each year to respond to progress and the promise of newer technologies. The most recent one is in file named 405c-TSIS-2022-2026 Strategic Plan vxx, where xx is the most recent version number.
- The most recent Traffic Records Assessment was completed by NHTSA and state representatives of the TRCC in January 2021. The state has responded to that assessment and has addressed all of the recommendations made. This current document is the resulting plan for the FY2022-2026 planning horizon.

## 1.1 Highest Level Optimization (Table 1)

Table 1 is the name given to a critical tool in the Alabama traffic safety decision-making process. It is aptly named in that it is recommended to be the first thing that traffic safety professionals consider when they are allocating budgets at the highest levels. On one page, Table 1 presents a comparison of select types of crashes, which have been chosen by traffic safety professionals in Alabama specifically for the purpose of countermeasure comparisons. Recent modifications demonstrate that Table 1 is not a fixed entity but is one that changes annually as new issues emerge.

The information on each line within Table 1 is labeled as *crash categories*. It is important to recognize that these categories are *not mutually exclusive* – in fact, it would be difficult to find a crash that fell into only one of these categories, while it is easy to imagine crashes that fall into five or more, simultaneously. The categories were originally set up by a group of traffic safety professionals about two decades ago in an attempt to be as comprehensive as possible. These categories have been augmented and combined (some eliminated) over the years to better satisfy the goals of accuracy and optimization.

A document entitled *Table 1, The Highest Level View of Traffic Safety Issues in Alabama* was created to provide an understandable working definition of the crash categories of Table 1, and this document is highly recommended to accomplish this purpose. This report is available on the SafeHomeAlabama.gov Special Studies page: <http://www.safehomealabama.gov/caps-special-studies/>

**Table 1. Top AL Fatality Causes CY2020 Data**

CY19	CY20	Crash Type (Causal Driver)	Fatal Number	Fatal %	Injuries	Injury %	PDO No.	PDO %	Total
1	1	Seat Belt Restraint Fault*	392	3.74%	3,834	36.56%	6,260	59.70%	10,486
3	2	Speed Involved	192	2.14%	2,769	30.89%	6,003	66.97%	8,964
2	3	ID/DUI All Substances	141	2.72%	1,883	36.27%	3,167	61.01%	5,191
4	4	Hit Obstacle on Roadside	129	2.33%	1,680	30.29%	3,738	67.39%	5,547
6	5	Fail to Yield or Ran (All)	128	0.50%	7,265	28.40%	18,187	71.10%	25,580
9	6	Large Truck Involved	117	1.40%	1,529	18.27%	6,721	80.33%	8,367
5	7	Ped., Bicycle, School Bus	97	4.30%	674	29.88%	1,485	65.82%	2,256
8	8	License Deficiency Causal	103	1.56%	2,020	30.55%	4,489	67.89%	6,612
7	9	Pedestrian Involved	96	14.84%	529	81.76%	22	3.40%	647
11	10	Wrong Way Items	93	4.89%	613	32.25%	1,195	62.86%	1,901
10	11	Mature (65 or Older) Causal	83	0.71%	2,453	20.97%	9,162	78.32%	11,698
14	12	Aggressive Operation	81	3.20%	737	29.15%	1,710	67.64%	2,528
13	13	Youth (16-20) Causal Driver	73	0.39%	4,040	21.71%	14,495	77.90%	18,608
12	14	Motorcycle Involved	68	5.00%	943	69.39%	348	25.61%	1,359
15	15	Distracted Driving	52	0.45%	2,523	21.64%	9,083	77.91%	11,658
16	16	Utility Pole	28	1.17%	776	32.43%	1,589	66.40%	2,393
17	17	Drowsy Driving	23	0.84%	1,016	37.12%	1,698	62.04%	2,737
18	18	Workzone Related	18	0.77%	441	18.85%	1,880	80.38%	2,339
19	19	Vehicle Defects – All	18	0.41%	929	21.27%	3,420	78.31%	4,367
20	20	Vision Obscured	8	0.76%	275	25.99%	775	73.25%	1,058
23	21	Bicycle	8	3.79%	167	79.15%	36	17.06%	211
21	22	Child Restraint Fault*	5	0.24%	298	14.08%	1,813	85.68%	2,116
25	23	School Bus Involved	4	1.13%	61	17.18%	290	81.69%	355
24	24	Railroad Trains	3	5.88%	13	25.49%	35	68.63%	51
22	25	Roadway Defects – All	1	0.82%	32	26.23%	89	72.95%	122

\* All categories list the number of crashes except for the “Restraint Deficient” and “Child Restraint Deficient” categories. The restraint categories cannot accurately be measured by number of crashes, so they list number of unrestrained persons for each severity classification.

## **2.0 Traffic Safety Information System (TSIS) Plan Vision**

As indicated above, TSIS coordination activities are required in several areas that impact crash records, driver history, vehicle licensing, roadway characteristics (construction, maintenance, traffic volumes, etc.), citation/adjudication, emergency response/medical, and component integration 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 the safety facet of its transportation systems. Through a series of TRCC meetings, individual efforts, and contacts, information has been submitted and synthesized into this plan.

### **2.1 General 25 Year Backdrop Vision**

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 define the goals that the implementation of this plan will attempt to accomplish over the next five years. However, in its effort to move Toward Zero Deaths (TZD), which has been adopted in both the ADECA/NHTSA Highway Safety Plan (HSP) and the ALDOT/FHWA Strategic Highway Safety Plan (SHSP), the TRCC determined that this five-year vision must fit into a more futuristic view of traffic safety over the next 25 years. In this regard the goal set consistent with TZD was a reduction of traffic fatalities to no more than 50% of its current value from the start date of 2015.

In this regard, the following vision items are looking forward to the year 2040 and the evolution of traffic records that will take place over the next 25 years:

- TRCC members will be the primary movers of the effort to move toward a surface transportation system that will be fully integrated in its automated communications both among vehicles and with the highway system and non-motorized participants (e.g., pedestrians and bicycles).
- Driverless vehicles will become the norm, and those that are not driverless will be heavily automated with safety devices and communications in an attempt to either avoid or prevent traffic collisions.
- A relative minority of vehicles on the road will be owned by the driver. The vehicles will be charged out monthly on a cost per mile basis and such things as speed control and use of restraints will be closely controlled to eliminate fatalities if not crashes in general.
- As self-driving vehicles become ubiquitous, more and more vehicles will be assigned to dedicated routes (e.g., routine commuting, hotel to entertainment, etc.), and these routine routes will inspire confidence in the use of autonomous vehicles (AVs) for more generalized travel.
- It is expected that the driverless transition will be advanced by platooning of participating vehicles that have the minimal technology to support these functions, which will draw upon the necessary roadway data systems innovations.

- The TRCC will work much closer with the auto industry especially from the sociological point of view of leading the traffic safety community in this direction. The feasibility of TZD will be recognized as fatalities are dramatically reduced. Presentations have been made at National meetings to this effect, although at this point there has been no measurable reduction of fatalities, and none is expected as long the driver is the major safety component in the system.
- With this leadership of the TRCC and the traffic safety community in general, the innovations required will be accepted by the general public as part of an accepted and inevitable evolution to TZD along with the recognition that no system will ever be perfect.
- This evolution has already begun in some of the higher-level vehicles, and it is evidenced by their advertising of crash prevention systems, computer controlled braking systems, visualization systems, lane-departure and forward collision warning systems, obstacle detection systems, adaptive cruise control, and electronic stability control.
- Current innovations can be subdivided into: (1) *in-vehicle crash avoidance systems* that provide: (a) warnings to the driver and/or (b) limited automated control of the vehicle; and (2) connected communication technologies, which include: (a) *vehicle-to-vehicle* (V2V), and (b) *vehicle-to-infrastructure* (V2I). Examples of the original AV prototypes include the Google car and Volvo platoons, but at this point it seems that all manufacturers are entering into these areas. We see competition to achieve greater safety to be an assurance that these trends will continue.
- V2I/I2V communications are probably the least developed of the communication systems. Examples of their applications will be to inform drivers and control autonomous vehicle operations in the following devices or conditions: traffic signals, weather conditions, traffic congestion, potential hazards (e.g., potholes), work zones, and many others that will become apparent as these communications mature.
- Data from V2I and V2V systems will provide traffic management centers with detailed, real-time information on traffic flow, speeds, and other vehicle conditions, enabling the anticipation of traffic incidents and improved responses.
- The major commercial airlines have gone through entire years without a single fatality, and the reason quite clearly is technology, and the infrastructure for that is data and analytics. We need to continue this theme: “*TZD success is only possible if we get the driver completely out of the loop.*”
- This cannot be attained without the general acceptance of the driving public. It would seem that a simple way to introduce AVs in a gradual evolutionary way would be to continue to put driver controls in all AVs and give the driver the option to switch to manual control in emergency situations or in local situations where AV operation is not yet supported. *Platooning*, discussed below, could also be a major step toward AV acceptance.
- The next step is using current technology to get vehicles to automatically communicate with each other (without human intervention) and the use of platooning lanes (or entire highways) where these platoons can travel at extremely high speeds and total safety (or something at least comparable to the airline industry where a crash becomes a major news event).
- Safety and increased traffic flow will both be accomplished by these innovations since platooned vehicles can theoretically travel as a unit (like a train) only a few feet apart but at

very high speeds. While the ultimate goal might be automated platooning (perhaps transparent to the occupants of any given vehicle), the immediate use of automated communication will be to promote safety and traffic flow in a subset of the vehicles on the road (perhaps only a few to start with). There has been considerable interest in platooning shown by the trucking industry.

- The increased speed and safety will provide incentives for people to purchase “platoon-ready” vehicles that qualify to use these highways and lanes – much like current HOV lanes. This could provide major acceleration to the evolution because it is really a fairly small step to go from platooning with a designated special lead vehicle to platooning with a volunteer lead vehicle, and then ultimately, no lead vehicle at all. This will evolve as the technology is developed.
- One reason that the sociological aspects of this evolution are so important is that costs will be nominal with economies of scale, much as airbags are not considered a major cost in vehicles today.
- Some recent surveys indicated considerable skepticism about autonomous vehicles on the part of the general public. As traffic records and traffic safety professionals, promotion is the role we must play. We should be able to see both the feasibility of it and its ultimate value. Recent issues with distracted driving have been a major setback to moving things forward safety wise – as have marijuana and recreational drug laws. The general public must be able to perceive that getting the driver out of the critical role of controlling the vehicle is the only hope for TZD.
- This evolution will sneak up on us if we do not see that this is going to cause a major shift in our data efforts. Crash data are going to become less important as the technology produces fewer and fewer crashes, and the emphasis will shift from improving the driver to improving the vehicle technology, with the goal of eliminating the driver altogether.
- We must take preemptive steps to minimize the emergence of an anti-technology culture, since those who do not adapt will have their jobs (and status) threatened. So, we cannot assume that everyone is on board with these innovations, and in fact, we wonder if this entire line of reasoning is being questioned by traffic safety professionals because it would seem that it really has very little to do with traditional traffic records as we know them.
- Other emerging issues, such as the capabilities to hack vehicle computer systems, must be dealt with proactively. This is considered to be one of the major concerns of the general public and the unknown is always quite fearful.
- Population over the next 25 years will increase up to an additional 40 million placing a corresponding increase demand on the roadway system. To some extent this effect will be moderated by a growing demand of millennials to avoid commutes by living in large metropolitan areas, by a dramatic increase in tele-commuting, and by a continued exponential increase in on-line shopping. All of these changes must be anticipated at least five years before they become significant if adequate transitions to them are to be developed.
- The modes of transportation will change with pedestrian and bicycle travel increasing dramatically, and ride-sharing and bicycle sharing becoming much more accepted, as well as

new and innovative transit options. For example, specialized autonomous vehicles are already beginning to replace taxis for high demand shuttle routes. Non-docking bicycle sharing is already available in many large cities.

- The longer life expectancy and the aging of the population will result in a further increased demand for AVs.
- Law enforcement will use drones, advanced GPS, satellite imagery and other advanced technologies as an integral part of their operations to supplement their efforts.
- Some of the major changes in the Traffic Records community to be expected over the next 25 years:
  - A dramatic de-emphasis on crash records since ideally, as TZD is realized, crash records will become rare or non-existent.
  - An increase the more intensive multi-disciplinary crash investigations (MCDI) will become more predominant emulating the aviation establishment. Considerable efforts will be required to make data from such investigations useful, in stark contrast to the MDCIs of the past in which each case tended to be an end in itself. MCDI data elements should be designed to reveal patterns among crashes and not to just reveal what happened in a single or a few closely related crashes.
  - A corresponding de-emphasis on driver behavior will take place as the driver is eliminated from the picture; the emphasis will turn to technological defects in the integrated vehicle-roadway systems.
  - Because of fewer crashes there will have to be increased data sharing throughout the country in order to get a sufficient sample sizes within subsets of the data to do effective analytics. Data analytics will move away from the historical (e.g., crash and citation) approach toward methods that are more predictive in nature (e.g., fault tree analysis), and more proactively addressing emerging safety risks.
  - Technology will be directed toward the vehicle, and so state traffic records specialists will need to form alliances with companies or trade associations within their regions to support the efforts to compare alternative technologies to assure that the evolution away from the driver is being controlled in an optimal manner.
  - Emphasis will dramatically increase to efficient and effective roadway innovations that will be needed to support the driverless effort. As examples, rail-vehicle crashes should become virtually impossible, as should intersection crashes. Few vehicles should ever have to stop at red lights except where the traffic volume is high. Where traffic is fairly sparse, sensors should determine where gaps clearly enable safe cross traffic and direct vehicles accordingly. Vehicles can be directed (perhaps automatically) to slow down while such a gap is being detected so that they will not be required to stop. This will preserve momentum and dramatically improve vehicle fuel mileage.
  - Intelligent roadways will complement and supplement the driverless vehicle, and because roadways have traditionally been managed by government (as opposed to private industry management of vehicle manufacture), there will be a demand for government IT personnel to transition to this growing need. One transition might be from crash records analysis to the analysis of real time data being accumulated from V2V and V2I communications systems.

- The need for additional cyber security will challenge IT personnel to acquire the expertise involved to assure that the hardware and software that they deploy is able to dynamically adapt to these aggressively innovative threats. Redundant back-up systems will make ransomware attacks obsolete.
- Backup redundancy is also essential to the reliability of GPS-dependent systems that can currently be disrupted by weather events, demand overload, jamming and spoofing by hackers, and excess system demand. This could be one of the greatest technological challenges in moving the autonomous vehicle capabilities forward, in that it will require a holistic approach requiring the involvement of expertise across the spectrum of the transportation enterprise.
- Violation types will dramatically change with the driver out of the picture; there will need to be a transitioning of enforcement personnel to testing the various aspects of the technology within the vehicles. Thus, vehicle manufacturers will receive citations as opposed to drivers.
- Similarly, EMS/medical efforts and resources currently consumed on traffic crashes will be allocated to providing the technology to enable EMS to get to other types of emergencies in reduced time through automated routing that dynamically adjusts in real time to changing conditions.
- Integrated traffic safety and land use planning will demand a broader range of expertise on the part of systems analysts and software designers.
- Additional IT resources will be required to support the current emphasis on traffic safety metrics that will continue and will be extremely useful in guiding traffic safety decisions. Quantifiable results will enable traffic safety resources to be allocated to obtain the maximum benefit in saved lives and reduced injury. Enhanced data and analytics will be required on the location and conditions of infrastructure as well as the location and characteristics of crash and near-crash incidents.
- The ubiquitous nature of personal computerized cell phone devices by law enforcement officers and the general public will lead to hundreds of apps that have not yet been conceived. For example, we can see a seamless multi-modal plan dynamically guiding long distance travelers. Law enforcement capabilities will include automated continuous dynamic updating of weather and other potentially disastrous events, complete integration with first responder and recovery enterprises, and most importantly, effective communication linkages with each other and with the general public.
- As the proportion of connected and automated vehicle-roadway systems continue to increase, a major change in the traffic records community will be essential to address the evolving policy requirements, to manage evolving data, and to mitigate privacy and liability concerns. Ideally, these systems will be able to identify, diagnose, and anticipate breakdowns in all aspects of the resulting complex technological systems.
- Finally, adequate resources must be made available for developing preemptive countermeasures that will protect these systems from malicious attacks and the resulting tragedies that would result. Automated systems that detect the attack as well as the attacker, and preemptively disable the attacker's capabilities in anticipate of subsequent follow-up litigation is seen as a possibility.



Some of the above concepts were obtained from: [www.dot.gov/beyondtraffic](http://www.dot.gov/beyondtraffic).

## 2.2 Five-Year Vision

Not all of the above factors will be reflected in the five-year plan, since many are in the out years. The above is intended to provide the *backdrop view* that will follow well after the proposed five-year plan is implemented. However, it is important to have the longer term view when considering the activities planned in the immediate (1-2 years) and intermediate future (3-5 years). The following is the *five-year* vision that was adopted by the TRCC that provides the high level guidance to the planning process; this summarizes what is expected at the end of the five year planning horizon:

- 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 EMS records). A common virtual environment within all of these vehicles will facilitate data entry and use as well as communications of imagery, GIS coordinates and other information to provide complete coordination and interoperability among first responders and subsequent rescue units to address events as traffic, weather and terrorist emergencies.
- Global Positioning System (GPS) and Geographical Information Systems (GIS) technologies will enable officers to automatically enter accurate locations directly into their respective crash, citation, and all other records that require location specification. By clicking the location on automated maps (MapClick) 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 dynamically around congestion. The system will contain artificial intelligence capabilities that will modify alternative routes based on past approved experiences as well as shortest distance/quickest time.
- 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 a full perception of resource availability so that resources can respond to emergency situations in the most effective way possible.
- 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.

- 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 not available on web-based dashboard systems (e.g., IMPACT analyses).
- A centralized index of all available databases will exist that will enable users of these data to understand the availability and content of these databases and to access the data needed for both planning and operational purposes.
- 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 (SA) 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 result in 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.
- A system will be developed and deployed by ALDOT that will totally integrate the maintenance and safety roadway improvement projects so that when assets are deployed for roadway maintenance they can be leveraged to produce roadway improvements over the entire segment being maintained; this has been found to reduce the cost of otherwise pure safety project to the extent that the benefit-cost ratios for such roadway improvements are at least doubled.
- 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.
- An improvement in demographics data will be made available to all uses of technology in the State via *SafeHomeAlabama.gov* to enable them to formulate countermeasure approaches using crash rates by severity in addition to raw frequencies.
- 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*. What is not available are unlimited resources for immediate implementation, and for that reason it is essential that the planning process concentrate on the *most important projects* first for optimal resource allocation. This plan will enable advanced technology to be rolled out throughout Alabama in a systematic way, while taking advantage of the successful pilots in Alabama and throughout the country.

### 3.0 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 total 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), specifically the Law Enforcement Traffic Safety (LETS) Division which houses the Office of Highway Safety (OHS) led by the Governor's Representative for Traffic Safety 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 Law Enforcement Agency (ALEA). This agency became operational in 2014 as an umbrella agency subsuming all of the state law enforcement functions that were previously being performed throughout many state agencies. Two agencies that were commonly referenced individually in previous TRCC five-year plans will now be reference collectively as ALEA; these are:
  - (1) personnel formerly of the Alabama Criminal Justice Information Center (ACJIC) will continue to be a major contributors to TSIS systems within the ALEA Information Technology Division; in the past these contributions include 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; and

- (2) personnel formerly of the Alabama Department of Public Safety (DPS) will continue to be responsible for the collection of violation and crash data, and will continue to be the custodian of the Crash reports, and several safety-related databases in this regard (henceforth referenced as State Trooper Division of ALEA or “State Troopers;”
- 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 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 directly 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 is responsible for vehicle title and registration data;
- The University of Alabama including the Center for Advanced Public Safety (CAPS); the Center for Transportation Operations, Planning and Safety; and the Alabama Transportation Institute which are all collectors and users of the traffic records data. These University of Alabama agencies work with all the other agencies on the TRCC providing software development, data hosting and data analysis, and thus, are involved in coordination for much of the traffic records data;
- Local police, departments of transportation, hospitals and emergency services;
- National Highway Traffic Safety Administration (NHTSA), which has had general responsibility for driver and vehicle countermeasures;
- Federal Highway Administration (FHWA), which is mainly focused on roadway engineering countermeasures; and
- Federal Motor Carrier Safety Administration (FMCSA), 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. Prior to the creation of the Traffic Records Coordinating Committee (TRCC), 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.

## 4.0 Planned Projects

### 4.1 Overview and Organization

It is impossible to make the major changes envisioned over the next five years without significant impacts on current operations. Thus, it is essential that these changes be phased in over the next five years to minimize the potential 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 will 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 the purpose for their inclusion in this plan is to see that these items are brought to completion and in some cases to extend the scope of the projects to include ongoing maintenance.

The following examples illustrate the strategic plan according to the seven operational components plus the administrative component into which they were organized by NHTSA:

- *General TSIS Management Component* was established for the management and administration of the Traffic Records Coordinating Committee (TRCC), and to provide for functions that are common to all other components. It is not intended to usurp the management authority of any of the agencies that are involved in the support of operation of the TSIS in serving its coordinating function.
- *Crash Component* includes the total 100% roll-out and subsequent upgrades to eCrash, further integration of GIS capabilities into eCrash and CARE, the generation of an updated Crash Facts Book, and the development of the Automated Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE) to produce a more effective interface to deliver CARE-generated information.
- *Vehicle Component* plans include the development and roll-out of an electronically readable barcode on the registration receipt 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. Other projects call for improved online insurance verification to support law enforcement civil assessments on uninsured motorists and the development of the data infrastructure to support crash avoidance and ultimately driverless vehicles.
- *Driver Component* calls for more effective driver licensing information (including pictures) to be distributed to the field. This will require a more effective Driver History database, which will be updated automatically by eCrash and eCite, to be available to officers in the field via an upgraded new version of the Mobile Officer's Virtual Environment (MOVE) system, which is the umbrella portal system that encompasses all of the mobile applications available to law enforcement.
- *Roadway Component* involves a wide diversity of projects in support of the State's Interactive Highway Safety Design Manual (IHSDM), Highway Safety Manual (HSM), and Safety Analyst (SA) initiatives (IHSDM/HSM/SA initiatives). A primary focus of plans in this component address continuing to develop and populate a repository of the Model Inventory of Roadway Elements (MIRE) for both state and local routes. Ultimately this database will

be used in the integration of roadway features into CARE and the integration of Crash Modification Factors (CMFs) into the Cost-benefit Optimization for the Reduction of Roadway Environment Caused Tragedies (CORRECT) system using the facilities of the CMF Clearinghouse.

- *Citation and Adjudication Component* includes the extension and roll out of the electronic citation to all jurisdictions, a proposed improved virtual 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.
- *EMS-Medical Component* includes continued support for the completion of the deployment of the Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE) system, which will implement the National Emergency Medical Services Information System (NEMSIS) standards. Other planned projects include 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.
- *Integration and Information Distribution Component* considers results produced from all of the above-planned projects, and thus transcends them with the goal of integrating data and results from the six operational components above, producing information from these integrations, and distributing this information. General innovations of MOVE and the use of mobile platforms for MOVE and its applications are also included. Integration is also necessary for the Data-Driven Approaches to Crime and Traffic Safety (DDACTS) that are now being recommended by various federal agencies. A number of ETLs (Extract-Transition-Load middleware) will be developed to enable the integration of crash, citation, roadway, EMS/injury and vehicle data so that analytics can be performed on these datasets to generate information that is not currently available.

## 4.2 Project Specifications

Projects have been proposed to address the most critical needs identified in the last assessment as well as other issues that have come to light since that time. There are always far more projects proposed than there are resources to accomplish them. The projects detailed in the plan are those that have been determined by the TRCC to have the highest priority, but their sequencing will still need to be resolved. The following procedure is used to prioritize and sequence the proposed projects:

- Projects are solicited within each of the stakeholder agencies to assure that all potential projects are considered.
- Each of these projects are ranked according to the following criteria by all interested parties within the respective agencies:
  - Impact on the understanding and reduction of fatal and severe injury crashes (frequency and severity) over the lifecycle of the use of the results from the project;
  - Relationship of the project to ongoing efforts with regard to cost, project momentum and synergy in advancing ongoing traffic safety projects;
  - Project cost – the downside – what other projects are going to have to be sacrificed if this project is funded? Also, total lifecycle maintenance costs must be considered, e.g., the necessity for users to purchase new equipment in order to implement the results of the project.
- Each of the agency stakeholder representative on the TRCC brings their recommendations to the TRCC meetings. These are discussed in detail and the final implementation plan is determined.

The final set of projects that appear in the plan are those with the highest priority and thus the greatest reductions in fatalities and severe injuries. However, the sequencing of projects is itself an optimization problem, and there is no guarantee that any given project will be fully accomplished within the five-year planning horizon. An exception to this statement involves those projects in Section 5 that were recommended in the most recent Traffic Records Assessment; an attempt will be made to initiate all of these projects in the upcoming fiscal year. Every attempt and commitment will be made, however, to assure that some progress is made to advance all of the projects in the plan.

Acronym coding will be used to preface the projects given in the plan to indicate their sources, as follow:

- If there is no acronym as a preface to the project description, this indicates that these projects are being carried over from the previous plan version without significant changes (i.e., other than minor update modifications).
- **NTRA** – indicating New Traffic Records Assessment, i.e., the project plan was developed in direct response to a recommendation of the Traffic Records Assessment.
- **NTRCC** – indicating New Traffic Records Coordinating Committee indicating that the project plans were originated by recommendations of the TRCC.

The following sections present brief summaries of the projects planned within each of the seven TSIS component areas, with another added component for integration of two or more of the other components, called the Integration and Information Distribution Component.

#### **4.2.1. General TSIS Management Component**

1. NTRA. Quality Control Management (applicable to all components). This is a comprehensive project that covers quality control in all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. The charge of the taskforce within each component will be as follows:
  - Review and become totally familiar with Advisory best practices with regard to quality and perform a check-list level assessment to determine the current inconsistencies between them and current agency procedures. While this will provide a general guide to the taskforce, it will be noted that the taskforce charges below go well beyond these best practices, and thus should not be limited to those given in the Advisory.
  - Identify and then prioritize the most critical data errors in terms of the following: (a) the necessary use of the data element, (b) the degree to which errors in this data element results in harm in either transactional or analytical use, or (c) the cost of improving this data element to a point where this harm will be significantly reduced.
  - Establish the members of the taskforce that will be responsible for evaluation and improvement of each of the most critical data elements (one member may be responsible for several data elements).
  - Explore any improvements that can be made in the ETL to create new data elements from existing data elements that will make data element(s) of greater use (e.g., the conversion of EMS arrival times to delay times).
  - Determine if any new data elements or modifications of data elements would be beneficial and report these recommendations to the appropriate IT management within the agency.
  - Implement the necessary remedial measures on a cost/benefit basis.
  - Report results to the TRCC.

Progress: Not yet initiated due to lack of resources (see Section 7.6 for TRCC decisions with regard to this project.)

2. NTRA. Survey of TRCC members. Prior to the TRCC meeting that is dedicated to the definition of new projects each year, conduct a survey of all agencies involved and use that information in the development of the strategic plan.

Progress: To be initiated for FY2022.

#### **4.2.2. Crash Component**

1. ADVANCE Upgrade. Due to expanded needs of the system and significant improvements technology, The Automated Dashboards for Visualization Analysis and Coordinated Enforcement (ADVANCE) is in dire need of expansion in the form of a refactoring (and in some cases) a rewrite of the core software. There are several known innovations that need to



be incorporated into it, such as portal-based hotspots, improved portal based user created filters and location filtering. Additionally, the technical landscape has changed to a degree that an entirely new underlying framework should be implemented to serve as a firm foundation for ADVANCE in the coming years.

Progress: This project started out with a complete systems analysis and requirements development to assure that the development is optimized. These requirements were converted into preliminary designs, and the major part of the development is completed, and ADVANCE is now a functional product. The aforementioned improvements and re-founding is currently nearing a completion phase of the initial development, which includes a working prototype.

2. **MapClick Implementation.** This project will finalize the infrastructure and provide training to support MapClick for improved crash location capability. The most pressing need is to modify MapClick so that it can use the newly completed ALDOT eGIS line work. This is essential so that officers can 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 the full implementation of a safety location portal for obtaining MapClick data and related information. Reporting officers use their existing GPS (available in most units) to obtain the general location of the crash (or any other event or object) on the map. The map is then expanded so that a precise location can be selected. Clicking on that spot on the map puts all of the data into the record – the recording officer might check this data for general reasonableness but is generally not required to enter any other data into the record. This system is being used by all ALEA officers and about 20% of the local police reporting agencies. It is essential that additional training be performed to get the remainder of agencies aboard. Note: As long as the *same maps* are used to generate GIS outputs as are used in the underlying MapClick data collection perfect accuracy (which is impossible to attain in any event) is not required. Thus, it is not necessary for perfect maps to be generated in order for this system to work very effectively. 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 this will be detrimental to its use becoming universal. Given the longevity of this project, and the feedback received related to its use as an important potential tool in improving locations for items not only related to crashes, this project has the additional goal of investigating the feasibility and possible implementation details of a more comprehensive concept of MapClick to provide even wider record support and an overall better location toolkit for other traffic safety records in Alabama.

Progress: For updates to MapClick, see Section 4.2.5 Roadway Project 1. MapClick is a fully functional product. However, all of the state's roadways are not subject to its benefits because of the lack of data. Efforts will continue as long as there are roads that do not have all of the data necessary for MapClick implementation. For the secondary goal of a possible expansion or re-conceptualization for the targets for MapClick assistance, efforts are in progress to index current and potential uses for accurate location data and are being gathered for a future system design.

3. **NTRCC. Crash (eCrash) upgrades and training.** A new major re-write of eCrash is required to address the following requirements:

- MMUCC standards that have dramatically affected the organization and content of the crash report;
- Enhancement of the recently integrated MapClick capabilities to transition away from the link/node locational system to a statewide ALDOT maintained Linear Reference System (LRS) for all roadways (whether on the state system or not);
- Additional attributes that need to be added to the report, such as modifications of the recently added distracted-driving variable for officers' opinions for impaired driving and the variable that indicates damage to roadway inventory items (state or county property) in order to facilitate their replacements.
- Additional plans for FY 2021-2025:
  - Finalize the new Alabama crash model;
  - Produce functional eCrash client to support data collection for the new Alabama crash model;
  - APIs for ALEA consumption and others for 3rd party vendor submission;
  - Provide training materials for upgraded eCrash system; and
  - Prepare for a subsequent eCrash system update to version 2 on the tentative date of 1/1/2023.

Update: This project was initiated with a stakeholder review of the current system to critique not only the technical content of the eCrash system, but also consistency and accuracy in reporting. Other suggestions were forthcoming from the stakeholder meetings. The following was accomplished in the 2018-2019 fiscal years:

- Built eCrash application framework to support MMUCC 5 guideline data model,
- Completed User Interface screens to collect data under MMUCC 5 guideline,
- Implemented validation rules outlined in MMUCC 5 guideline so data collected will be internally consistent and useful for analysis,
- Implemented business rules to promote user collection efficiency and ease-of-use, and
- Performed internal analysis of current crash data model against MMUCC 5 guideline data mode.

Progress: This project was initiated in FY2019 and it will continue until all of the requirements outlined above are completed. This is expected no later than FY2025.

4. CARE modifications and upgrades. The adoption of Statewide LRS will require updating CARE Location Reporting and its Hot-Spot analysis for local roads. In addition, it will further enable location reporting, mapping, and sliding hotspot analysis on the portals. This ongoing project will also result in a new CARE desktop interface, continual upgrading of the data, and development of an enterprise CARE version prototyped by ALDOT internal use, and user training on these systems. 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. This and the next two projects will share the same stakeholder recommendation and review processes.

Progress: this project is effectively completed, and hotspots are being generated for the state HSP and CHSP accordingly.

5. Upgrade of CARE scripting capabilities. Scripting enables standard reports to be easily designed and then run from CARE. It essentially “captures” a series of CARE commands and saves them into a program. When a user wants to reproduce that functionality, this is available by means of entering a command and parameters to direct the saved script. The capability is quite limited presently. The proposed upgrade will enable scripts to have a number of parameters that can be passed into the scripts by the users. Examples of parameters include logic specifications for subsets, variables and processing specifications.

Progress: Not yet initiated; initiation is expected in FY2023.

6. Upgrade CARE dashboard user interface. The upgraded dashboard 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.

Progress: This project has been completed for the SAFETY portal but it is not fully implemented in ADVANCE. The current ADVANCE dashboard capability is still limited and needs to be expanded considerably to include improved filter generation and storage as well as improved location hot spot features.

7. Upgrade to the Crash Facts document. The Alabama Crash Facts Book (CFB) 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) changing the format and content according to the results of a comprehensive study that will be conducted. 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.

Progress: not initiated. There appears to be little demand from users of the CFBs to want different data elements included, and there is considerable pressure to maintain the current data elements so that year-to-year comparisons can be made. Minor modifications (such as the addition of Distracted Driving as a separate data element) are being made and will continue to be made. This project will remain in the plan as is, and it will be considered annually.

8. Final mandate for use 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. As of March 2015, the proportion submitting paper forms was estimated at about 1.0%. While no additional paper forms were being accepted after January 1, 2018, there was still some work necessary with the local agencies to see that they are properly using eCrash.

Progress: Completed. The use of eCrash is effectively universally throughout the state.

9. Special location exception reports. This capability currently exists and the goal of this project is to promote its use with training and other incentives. This will generate reports similar to those in the Early Warning programs. However, instead of the exception reports being crash-frequency-criteria based, they are based on a location type specification to the system (e.g., all work zones, recently completed improvements, wet-weather crash locations, etc.). Progress: 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 full realized. The project will include training of all users so that they understand the power of this capability.
10. 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. Progress: Not yet initiated. It is expected that this project will probably not be initiated until FY2025.
11. Centralized CARE. Historically, the CARE architecture has functioned as a stand-alone desktop application intended for one user on one machine. The user was responsible for updating the CARE application and the CARE datasets. The Centralized CARE or (CARE Enterprise) system will reduce the burden of effort on the users to maintain the latest versions of the CARE executable and datasets. Progress: This is an on-going effort to change both CARE and the policies allowing access to centralized resources and data. A significant step in that ongoing process is to train users on a new facility for them to know when new executables or data are available. CARE10 is configurable to provide such notifications to users. Efforts to bring about full implementation will continue.
12. Upgrade of the FOCIS system. The Formulated Ordering of Crashes at Intersections and Segments (FOCIS) tool provides a visual summary of crashes at intersections of various types (traditionally referenced as a “collision diagram”). This visual tool is valuable in providing engineers with a quick synopsis of the volume and type of crashes. The determination of correct countermeasures and resources to apply requires a graphical summary report and a detailed report of the crashes at the intersection. The FOCIS tool will be modified and users will be trained to provide improved specification, summary information, back-drops for different intersection types and improved reporting. Progress: Completed and implemented within eCrash.
13. Coordinate-based hotspot capability. This project is concerned with developing new methods for determining hotspots based on the entered coordinates in the crash report. With the implementation of MapClick and more sophisticated GPS techniques, the coordinate values are becoming much more reliable in being able to be used for crash location. We currently know of no algorithms that have been developed to determine hotspots based totally on these coordinates (plus road code), but a comprehensive search for any research or development that has been done in this area will be conducted and this project will start with the best practices currently found to be used in the country. One major problem in using coordinates-only is that many roadways are so close together that there is no way to distinguish

between them as to which roadway the hotspot would be on. We plan to use a combination of the coordinates and the “ON” road to develop new algorithms. While these will only be of partial use in the short term, we feel confident that the completeness and accuracy of the entered coordinates will be of such a quality in the near future (e.g., over the next five years) that these new methods will be clearly superior to those currently requiring translation to linear reference systems (LRS), which themselves are not perfectly accurate. It is expected that this innovation will require considerable user training.

Progress: Not yet initiated. Expected to be initiated in FY2025.

14. Database Systems Management (DBSM) project. DBSM is a proposed meta-data system for more effectively managing all aspects of traffic safety information systems. It will formalize many of the steps in optimization that have been used in Alabama for some time, but it also adds some components that are currently lacking in the current informal systems approach. It will start by elaborating on the crash categories given in “Table 1” that is used in the HSP and several other planning documents. To this will be added a temporal and geographical component for each of the crash types for which countermeasures will be considered. Within the temporal component provisions will be made for documenting the effects of various countermeasures over time. The goal will be to use the system not only for operational management, but also for data collection of those data elements that can be used to optimize traffic safety investments in non-roadway countermeasures much as the roadway countermeasures are optimized within the CORRECT system.

Progress: Not yet initiated. Expected start date is in FY2023.

15. TZD research and education. 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 educating the general public but for motivating manufacturers 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. Special variables and codes need to be developed now to deal with driverless vehicles.

Progress: Not yet initiated. This is a futuristic project that might not get initiated until near then end of the 2026 planning horizon.

16. NTRA. Guideline improvement to meet Advisory best practices. The crash component manager will set up a taskforce to develop and implement improved guidelines for the Crash data system to reflect best practices of the advisory. This will include the following activities:

- Create a list of Advisory best practices as they relate to crash records.
- Assign a cost and an expected benefit related to the implementation of each of the recommended best practices.
- Determine how far down the list that implementation is feasible and revise the feasible items with increased research.
- Develop a work plan for those projects that will be necessary to implement the most cost-beneficial items.
- Propose recommendations to the TSIS SP for review and approval by the TRCC.

Progress: Not yet initiated. It is expected to be initiated in the 2024 time frame.

17. NTRA. Develop comprehensive data dictionary for raw crash data. Currently no formal data dictionary exists for the raw crash data, although there is a manual that describes each data element in detail, and Excel datasets listing the data elements for each dataset produced by the various crash data ETLs. This project calls for the development of a comprehensive data dictionary for the raw crash data. It will also include methods for tracking all datasets produced from the crash data, including those that are integrated with data from other modules.

Progress: It is expected that, generally, this project will be deferred until after the next major upgrade of the eCrash system that is expected in the FY2023 time-frame. At that time a list of included data elements (and potential values) will be produced by the system itself. These will be given attributes according to standard data dictionary development procedures. The data dictionary will be made available in the most readable and usable forms on the various crash records web portals.

18. NTRA. Crash module systems analysis. A task force will be established that will accomplish the following activities:
  - Conduct a complete systems analysis of the current crash module including both internal procedures and process flows as well as the integration with other modules.
  - Become totally proficient with the recommendations given in the Advisory.
  - Create a preliminary list of anticipated current crash module deficiencies.
  - Compare deficiencies against the recommendations given in the Advisory.
  - Recommend remedial action to correct any deficiencies.
  - Create a list of potential projects that can then be compared on a cost-benefit basis to recommend updates to the TRCC SP.

Progress: Not yet initiated. Expected start time will be in the FY2023-2024 time frame.

19. NTRCC. Automation of the FARS data. The data entry process of the Alabama FARS data needs to be upgraded to include all required FARS data elements plus the following to enable ALDOT to meet federal requirements: (1) MPO boundary area, (2) RPO boundary area boundary, (3) FARS Highway Functional Classification, and (4) FARS National Highway System Classification. The current CARE FARS system also needs upgrade to process data from the most recent FARS updates.

Progress: This is an important project that will be initiated as soon as funding becomes available for it.

### ***4.2.3. Vehicle Component***

1. Registration file content and access update. This project will upgrade current systems in order to facilitate the inclusion of vehicle tax data (sales and property) and other necessary vehicle data fields into the registration file that is uploaded by the county licensing offices to the state registration database on a daily basis. Validation error reports will be provided to county license plate issuing officials electronically to allow them to correct erroneous vehicle registration data. The registration data will be available, in a system called

DISCOVERY, for use by the DOR, county license plate issuing officials, ALDOT and other agencies in order to create reports and perform analytics. Previous registration file upload projects provided process for county licensing offices to upload registration data on a daily basis; instead of once a month. Eventually, the goal is for counties to provide real time registration data using web services so that vehicle registration data is available to law enforcement in a timelier manner.

Progress: This project largely completed, except for county licensing offices providing real time registration data using web services. A web service is available; however, most county registration system vendors utilize older technology, and some counties do not have enough bandwidth to support this service. It has been suggested that the state should provide a centralized registration system; similar to the state title system, to address this and many other issues.

2. NTRCC. ETAPS upgrade to ALTS. Development of a modernized Alabama Title System (ALTS) to replace the Electronic Title Application Processing System (ETAPS). The new system includes a better user interface, integrated title database, platform that allows application to be used with tablets, smartphones, etc., electronic liens and titles (ELT), and national motor vehicle title information system (NMVTIS) interface. NMVTIS includes a NICB (National Insurance Crime Bureau) stolen vehicle verification that will replace NCIC; NICB has more complete data for verification on the vehicle prior to the issuance of a certificate of title. A major goal of this system is to make all titles issued electronically. Development of this system has been completed and it is in the process of being implemented.

Progress: NMVTIS will be completed by the end of 2021. ALTS is expected to be completed by the end of 2022.

3. Integration of ALEA driver license and state identification databases. This will enable license plate issuing officials and designated agents of the state (car dealers and financial institutions) to collect the legal name and address of the vehicle owner when completing an application for certificate of title. Users may also scan the barcode on the back of the DL/ID in order to populate the vehicle owner's name/address in the title application. The DL/ID number and expiration date will also be collected in the registration record. This is important because the title record is used to populate the registration record, which is used by law enforcement at traffic stops and crashes. This will insure that the accurate driver record is available to law enforcement during a traffic stop or crash. The DL/ID verification process will also be used to verify the identity of customers for other DOR applications (i.e. dealer license, records requests, surety bond applications, etc.).

Progress: This project is completed except for the ability of users to scan the barcode on the back of the driver's license or identification card to populate the name/address fields.

4. Implementation of OVIS. The state Online Insurance Verification System (OIVS) allows licensing officials and law enforcement to electronically verify insurance at the time of registration or during traffic stops and crashes. The DOR also re-verifies insurance on every vehicle registration on a monthly basis using the OIVS web service. The OIVS web service provides a direct connection to insurance carriers for real time insurance verification. The OIVS web service is also used by ALEA to verify insurance for uninsured motorists involved in crashes and eliminates the need for SR13 forms. A training video was produced

and distributed to all Alabama law enforcement agencies regarding the use of OIVS within the LETSgo system. This project will assure the full implementation of OIVS to all appropriate agencies throughout the state. FY2018 through FY2019 progress includes working with ALEA to provide access to the DOR online insurance verification system in order to administer the newly created law that allows ALEA to issue assessments to uninsured motorists who are involved in crashes.

Progress: this project is completed.

5. Development of modernized IRP/IFTA systems. The International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA) systems are for interstate commercial vehicle registration and licensing. The upgrade to these systems will include a better user interface, ability for users to upload documents, and the ability to utilize the applications on a variety of platforms and with any electronic device (smartphone, tablet, computer, etc.). The IRP/IFTA systems directly interface with the state's commercial vehicle information exchange window (CVIEW) that is used by Alabama for commercial vehicle enforcement and screening. The IRP/IFTA system data is uploaded to the federal motor carrier administration's (FMCSA) SAFER database, the national law enforcement telecommunications system (Nlets), and the IRP and IFTA clearinghouses for use by commercial vehicle law enforcement and administrators in the US and Canada. Progress of this project in FY2018 and FY2019 included the implementation of: (1) a new commercial vehicle licensing system for IRP and IFTA licenses and taxes, and (2) a new commercial vehicle information exchange window (CVIEW) for use by DOR, ALEA, APSC and ALDOT.

Progress: this project is completed.

6. Upgrade and implementation of MVTRIP. The motor vehicle title, registration and insurance portal (MVTRIP) is used by DOR and its partners (ALEA, ADECA, ALDOT, county licensing officials, designated agents, etc.) to access DOR applications. MVTRIP provides user authentication (via CAPSlock) with a single userid and password which controls organization, group and user access to DOR applications under the MVTRIP suite of applications (e.g., registration, titles, insurance, inventory management, plate ordering system, unclaimed vehicles, IRP/IFTA, CVIEW, DISCOVERY, dealer licensing, etc.).

Progress: this project is completed.

7. Print on demand registration receipt. This project consists of the development and implementation of a print on demand registration receipt process that includes the validation decal that is affixed to the license plate. The new process includes a receipt/decal that can be printed by county licensing offices; either at the customer service counters or back offices (online and mailed renewals), and the ability for customers to utilize kiosks to renew vehicle registrations. This process has been developed to work with the various system vendors and equipment currently utilized by county license plate issuing officials. The project also includes the ability for county license plate issuing officials and designated agents to print temporary tags on demand using existing systems and equipment. The issuance of the temporary tag will be controlled by DOR, which includes a durable temporary tag material that can be attached to the rear of the vehicle. Temporary tag data will be available to law enforcement. The print on demand process for registration receipts and validation decals is now being implemented. Progress during FY2018 and FY 2019 included the



implementation of the print on demand process for Alabama license plates.

Progress: this project is completed.

8. e-Credentials/e-Registration Receipts. This project will result in the automatic generation of the registration receipt and its transmission to the registrant's electronic wallet on an electronic mobile device, similar to a boarding pass. The registrant could then provide this to law enforcement at the roadside instead of providing the paper registration receipt, similar to that they can already do this with insurance cards. An image of the receipt will also be provided (i.e. picture, PDF, email, text, etc.). An e-Credential project is also underway that will allow CMV credentials (IRP and IFTA) to be sent to a driver's electronic wallet on a mobile electronic device. Completion was anticipated by the end of FY2018. This functionality will also be available to passenger vehicle registrations in the near future, similar to electronic driver's licenses and insurance cards. Law enforcement will need to be able to verify this electronic information with their mobile electronic devices, or with license plate readers. Eventually, the goal is to eliminate the paper registration receipt and validation decal.

Progress: This Project will be completed in FY2021. Electronic credentials are being provided as a PDF to motor carriers with International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA) licenses. Law enforcement officers across North America are required to accept electronic credentials for IRP and IFTA. Electronic credentials are not available for passenger or non-interstate commercial vehicles; however, Alabama law was amended to allow for electronic credentials.

9. Barcodes on vehicle registration receipts. 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.

Progress: This project will be completed by the end of 2021.

10. 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.

Progress: Registration data is currently available within the LETS system. However, continuous evaluation of the data sources and their timeliness is ongoing. Known areas of improvement have been identified and discussions are ongoing as to which and how to implement particular improvements, particularly with record accuracy and timeliness.

11. Online Insurance Verification System (OIVS). OIVS is an online system to determine conformance with the State mandatory insurance law. It is integrated with LETS (within MOVE) so that officers can be trained to 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.

Progress: This project was part of Project 4 above, and thus, it has been completed.

12. Effective vehicle 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. 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.

Progress: No progress per se, but the current efforts to make eCrash totally MMUCC5 compliant will provide a base to launch this project.

13. NTRCC. Addition of the Driver License (DL) number on the title record. The vehicle owner's driver's license number is not required in order to obtain the title record. However, ALTS and many other MVTRIP systems have a service (ALVerify) that allows the user to enter a DL# and expiration date/month and the licensee's name and address will be populated in the title application. This enables the agency issuing titles to pre-populate the title record with all available information on the drivers' license (e.g., name and address and all other vehicle owner information). This will also enable the driver license validation service to populate the title record.

Progress: Completed.

14. NTRCC. More frequent county uploads of title records. Data are updated nightly now, but someone at ALEA has to manually make it integrate into LETS. What is needed is the design and development of a virtual real-time system for updating LETS so that information is available to officers in the field at the point when the transaction occurs. NLETS integration needs to be considered simultaneously with this, since it needs to have a timelier upload as well. This should be considered in recognition of legislation expected to be proposed shortly to allow offices to issue an electronic receipt for registration. This is not a DOR project but appears here because of its close association with vehicles and titles.

Progress: Initiated; CAPS is working with ALEA on this continuous improvement.

15. NTRCC. Electronic liens and titles (eTitling). The Department of Revenue is in the final stages of the development of an eTitling system. This component of the project will extend this effort to evaluate the systems developed with the goal of continuous improvement throughout its lifetime.

Progress: Ongoing improvement. This year we began allowing designated agents (county licensing offices, dealers, financial institutions, insurers, etc. to begin uploading supporting title documents to the state title system (ALTS).

*[Qualifying note for Project 16 below. There will be no attempt to initiate this project before obtaining the total concurrence of the appropriate officials within ALDOT to assure that they are in total agreement with its goals.]*

16. NTRCC. Multi-Agency Task Force for a Common License Plate Readers (LPR) System. This project is being suggested in order to determine if there is general support for a cooperative effort among several agencies to coordinate their efforts with regard to LPR. If so, a task force (called the LPRTF) is suggested that will consist of representatives from all agencies that might want to share in the use of these cameras for a wide variety of purposes. The task force will need to become aware of the needs of the various interested agencies. This will lead to a plan for the development of LPR requirements, funding, and strong consideration to the wide variety of legal and judicial issues associated with such a system. The product of the LPRTF will be a plan that can be signed-off by all of the involved agencies.

Progress: This component is expected to be effective in FY2022 and its implementation will be continuous and ongoing. Improvements have been made to Alabama license plate design to allow better LPR readability. Stacked characters have been removed and license plate numbering scheme has been simplified.

17. NTRCC. Electronic Credentialing (eCredential) program. When this project is completed it will eliminate annual validation decal for vehicle registration. This project is in the early stages of requirements collection, and the development phase is expected to be initiated in FY2021.

Progress: The annual validation decal has not been eliminated; however, the decal has been changed from a 3-color rotation (red, yellow & green) to a single color (yellow). In addition, a disability access parking decal may now be displayed on the license plate for qualifying individuals. This allows any license plate to display disability access parking decals.

18. NTRA. Improve vehicle data system. Perform a general systems analysis over the entire Vehicle data system and use the results to improve the description and contents of the Vehicle data system. (New project)

Progress: To be initiated in FY2022.

#### ***4.2.4. 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 be trained to 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 up to 40% of fatalities in the state of Alabama, and this is seen as an information tool that will be a major deterrent to DUI.

[*Update on MIDAS.* It was determined during FY2016 that the MIDAS database was almost exclusively text entries, and very little of it was coded information. This made it impossible to initiate many of the projects that involved MIDAS. The judgment of the TRCC, however, is that the interactions with MIDAS should remain in the plan with the goal of sometime over the next five years, updating MIDAS to be driven by drop-down menu categories that will serve to provide the data necessary for the integration required by the proposed projects. These projects will be found both in the Driver and the Citation/Adjudication components. Any additions or modifications of these projects will require discussion and approved by AOC leadership.]

Progress: Awaiting decision as to if or when to implement this project.

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.

Progress: This project will need to be discussed and approved by AOC leadership. [See *Update on MIDAS* above.]

3. Traffic safety incident (ULTRA) 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. It is expected that ULTRA will need to be adapted to traffic safety incidents by the addition of several variables to be determined by a systems analysis performed with this objective in mind.

Progress: Awaiting decision as to if or when to implement this project.

4. Information mining of the ULTRA data. In order for the maximum amount of information to be extracted from the ULTRA database, routinely updated ETL programs need to be put in place and the resulting datasets made available to all authorized users.

Progress: Awaiting initiation; expected to be initiated in FY2022.

5. 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 two decades. Under the direction of ACJIC (now housed in ALEA), 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 if 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 application users are trained to obtain full use of the system.

Progress: Awaiting decision as to if or when to implement this project.

6. 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. ALEA officers have 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). Overall, between the feature requests and progress in the software development space, a newer, improved version of MOVE is required to meet the needs of the modern law enforcement officer. To that end, a design and prototyping process is needed to implement this system.

Progress: Significant progress has been made in the design of the improved MOVE system, and this effort is expected to continue through FY2022 and be completed in FY2023.

#### ***4.2.5. Roadway Data Systems Component***

1. Improved data gathering/connectivity through eGIS. The ALDOT (eGIS) effort is initiating

several parallel efforts to implement the most technologically advanced infrastructure for all of its efforts that require location specification, including crashes, roadway features, citations and other related applications. This project has been initiated by stakeholders' meetings in which the primary goals of the systems were established and documented (e.g., goals of traffic safety and smooth traffic operations). These goals will be the basis for an eGIS five-year plan with tasks that can be implemented immediately, recognizing the value of the current on-going efforts. The immediate plans for this project include the following:

- Incorporate the ALDOT-maintained location system (for all public roads) route network into crash locating tools (MapClick and post-processing data improvements);
- Expand ALDOT's efforts in updating the "all public roads" route network for non-State maintained routes; and
- Augment ALDOT's efforts to provide infrastructure and tools to local authorities (e.g., City, County, MPO, RPO) to update and maintain the "all public roads" route network for non-State maintained routes.
- New immediate plans
  - Formally integrate new eGIS data with MapClick
  - Release new version of MapClick with new eGIS data

Progress: Most work for this project is being done by the eGIS team, and it is important to recognize that the processing systems are basically in place with MapClick. The problem is the tremendous amount of data preparation necessary to support all roadways in the state. All significant MapClick functions will be available once the dataset is finalized. See also the MapClick Implementation (Project 2) within the Crash Component plan (Section 4.2.2).

2. 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 Interactive Highway Safety Design Manual/Highway Safety Manual (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.

Progress: In process of creating a task force to initiate and oversee this documentation process.

3. IHSDM/HSM implementation project.

Progress: 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.

4. 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 gives police 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 consideration. The project will determine and implement the most effective disposition of forms completed and electronically submitted by local law enforcement.  
Progress: The form is available to ALEA but there needs to be training to assure that the systems rolled out will be implemented by local law enforcement agencies.
5. Roadway Improvement Safety Evaluation (RISE). The goal of this project is to create economies of scale and safety uniformity within the roadway system. This can be accomplished by leveraging funds already dedicated (required) to be spent for roadway maintenance to also serve traffic 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, in that we know of no other state using. It is estimated to double the safety value being obtained over those that are independent and strictly traffic safety.  
Progress: Ongoing. This project is underway but needs further efforts in its implementation.
6. NTRA – Model Inventory of Roadway Elements (MIRE). Continue to develop and populate a repository for both state and local routes. Over the course of this plan complete and validate 100% of the elements for all state routes. Develop a detailed plan for the population of MIRE data elements for all public routes at the rate of 20% per year until 95% of all local routes are covered. 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. The following provides additional details for this plan in response to the TRA:
  - Assure that all data elements that exist in the current roadway data system in use comply with general published MIRE requirements, and specifically, those detailed in the Memorandum dated 20-March-2017 from Scott T. Johnson, Acting Director, Office of Safety Technologies; SUBJECT: Reporting Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements Improvements in State Traffic Records Strategies Plan Due July, 2017.
  - Seek opportunities through committee meetings and develop detailed plans to expand the collection of FDEs onto more non-system roadways with the goal of using these data elements for safety analysis programs that incorporate roadway and crash data that can benefit users of all public roadways. This can readily be done by using the CARE ETL to integrate MIRE and MMUCC data elements so that various roadway geometrics and other characteristics can be evaluated from a crash avoidance point of view.
  - Complete the development of the roadway enterprise system that is currently being developed and assure that all data elements in this system conform to MIRE.
  - Establish plans for and initiate development of the ALDOT eGIS Geodatabase data dictionary.

- Perform studies to determine the value of Non-Fundamental MIRE Data Elements and develop a plan to incorporate them into the data dictionary and subsequent analytics.
- Establish a process for adding new data elements to the data dictionary and the analytics processes as their value is established.
- Incorporate the State collected MIRE data elements into the crash database so that the relevant MIRE data elements are included in the Crash reports.
- Enlarge ALDOT efforts in collecting the MIRE data elements for all public routes not on the State maintained network.
- Provide assistance to the State in providing MIRE data collection, reporting tools and training to local authorities (e.g., City, County, MPO, RPO).
- There are a number of analyses that have been performed using roadway characteristics data that were available prior to MIRE. This component of the project will demonstrate how the MIRE data elements will be able to drive analyses that are currently available via the Safety Portal.

Progress: Ongoing; initiated in FY2020. Completion is expected to take five years.

7. NTRA. Design and develop data dictionary for roadway data elements. Currently no formal data dictionary exists for the raw roadway data elements. This project calls for the development of a comprehensive data dictionary for these data, including but not limited to the MIRE data elements that are to be collected in Project 6 above. The data dictionary will conform to standard currently accepted IT practices. In addition to data elements, it will also include methods for tracking all datasets produced from the roadway data, including those that are integrated with data from other modules, e.g., ADT. It is expected that this project will be deferred until after the next major upgrade of the MIRE system that is expected in the FY2021 time-frame. At that time a list of included data elements (and their potential values) will be produced by the system itself. These will be given attributes according to standard data dictionary development procedures. The data dictionary will be made available in the most readable and usable forms on the various ALDOT records web portals.

Progress: In organizational phase of establishing a task force to generate this documentation.

8. NTRA. Systems analysis of roadway data elements. A task force will be established that will:
  - Become totally proficient with the recommendations given in the Advisory and will create a preliminary list of anticipated current roadway module deficiencies.
  - Conduct a complete systems analysis of the current roadway module including both internal procedures and process flows.
  - Explore quality control procedures and recommend a lead analyst for this continuous task.
  - Extend this analysis to the integration with other modules as well as the data elements developed in Projects 6 and 7 above.
  - As the analysis of each element of the system continues, compare existing procedures against the recommendations given in the Advisory.
  - Recommend remedial action to correct any deficiencies to improve the roadway data system to reflect the best practices of the Advisory.

- Create a list of potential projects that can then be compared on a cost-benefit basis to recommend updates to the TRCC SP.

Progress: None; the task force has yet to be established.

*[Qualifying note for Projects 9 and 10 below. There will be no attempt to initiate these projects before obtaining the total concurrence of the appropriate officials within ALDOT to assure that they are in total agreement with the goals of these projects.]*

9. NTRCC – Establishment of Construction Relief-Route Task Force (CRRTF). Initially, the purpose of this project will be to establish the CRRTF, which will consist of representatives from ALDOT, FMCSA, FHWA, CAPS and other selected stakeholders for the purpose of developing the plans for “Relief Routes.” Relief Routes are one or more alternative routes that vehicles can take in order to avoid the delays (and other potential hazards) associated with construction of new routes or significant modifications of existing routes. The plan is for stakeholder representatives to meet at a convenient time with the agenda of planning the structure, organization and activities of the CRRTF. Once it is organized, it is envisioned that new plans will be shared with the CRRTF to enable them to ultimately develop and implement Relief Routes by creating the appropriate signage along these routes and by adequately publicizing them as suggestions to appropriate organizations (such as the Alabama Trucking Association) as well as social media, ALGo, and the news media.  
Progress: None at this time. Initiation will require the highest levels of the involved agencies to come to an agreement.
10. NTRCC – Development of Requirements for Construction Relief Route Software. [New project for FY2022.] This will be a project that will heavily involve the CRRTF defined above. The software could either be an add on to ALGo, and independent app, or both. The requirements will specify the users, who will be involved as stakeholders in enlarging and rounding out the requirements so that they serve the intended purpose of guiding interested motorists onto optimal alternative Relieve Routes.  
Progress: None at this time. Initiation will require the highest levels of the involved agencies to come to an agreement.

#### **4.2.6. Citation/Adjudication Component**

1. NTRCC. Upgrades to eCite. There are a number of current issues in addition to advances in technology that call for some major upgrades to the eCite system. A stakeholders meeting will be organized including representatives from the various agencies that are involved with both issuance and adjudication. That will result in a list of requirements that will form 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 as well as facilitating the adjudication process. These should include considerations for making eCite device agnostic to the extent possible within current resource constraints. The immediate plan is to gather new business requirements for MOVE and eCite from ALEA, and to start development of the MOVE and eCite applications with our newly developed



frameworks (see also Section 4.2.8, Project 5).

Progress. The following progress was made during the 2018-2019 fiscal years:

- Brainstormed and documented possible improvements to eCite;
  - Created Alabama eCite Validation Reference List document to assist in future development; and
  - Performed research and development on frameworks allowing for efficient creation of data forms and application communication.
  - Currently systems analysis and planning for continued improvement are underway.
2. ALEA Motor Carrier-National FMCSA compliance. This project will support the ALEA 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 and respective training as given in the FMCSA documentation.

Progress: Systems analysis and design are underway.

3. NTRCC. Citation adjudication technology. This project involves the development of the technology infrastructure necessary to support the full implementation of the proposed 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 and training to support electronic swearing (eSwear). Legislation is expected to be passed during the term of this plan. This upgrading in technology will also consider improvements in the current electronic search (eSearch) of these records. This project will be initiated by a meeting of all stakeholders who might be affected. This will lead to a requirements document, which, in turn will lead to a design and development of these upgrades. In their deliberations stakeholders should consider the possibility of eliminating altogether the need for swearing to citations.

Progress: Remote eSwearing has been initiated and completed, and it is available to any agency that wants to use it. The other aspects of this project are in the early requirements development phase.

4. Municipal electronic disposition system. This project is complementary to the citation adjudication technology project.

Progress: Ongoing. This project has been prototyped by some preliminary work that 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. Completion of the eCite roll-out. The goal of this project is a total roll-out of eCite and elimination of all paper citations statewide. In the interim, methods have been developed 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. However, the goal is to eliminate paper submissions in the near future by getting all agencies to submit directly into eCite.

Progress: The process for accomplishing the goal of this project is complete, but it must always be considered ongoing as new agencies adopt eCite. We do not have 100% eCite adoption at this time. About 80% of citations are electronic.

6. Citation and DUI Tracking System. This system will display information on the current status of every citation that has been issued to date. It will be able to respond to queries to determine if any given citation is (a) still in the electronic possession of the officer; (b) submitted but not adjudicated; (c) fully adjudicated or (d) reported to the driver history record. A portal will be created, and training conducted to enable officers in the field and judicial officials to see relevant MIDAS information on a given defendant so that (among other reasons) a repeat offense in another part of the state is not treated as a first offense. It will also enable law enforcement to know whether a given individual is: (1) still on probation, (2) within the court referral program, or (3) in some other alternative treatment program.

Progress: Not yet initiated; this project will need to be discussed and approved by AOC leadership.

7. NTRA. Creation of a taskforce to develop and implement improved guidelines based on the Advisory. This will also cover interfaces as well as data. This taskforce will:
  - Become proficient with the relevant recommendations of the advisory.
  - Perform an internal assessment as to which components are in compliance with these provisions and which are most in need of remediation.
  - Conduct a complete systems study of all current components within the citation/adjudication component, i.e., all systems that relate to either transactional or analytical systems and impact traffic safety. This review will be at a very high level so that the most critical components can be identified for further development or remediation.
  - Once this is established, a deeper analytical study will be performed on the most critical modules that will result in recommendations for additional development or supporting projects to bring the system into closer conformance with the Advisory.
  - Recommend to the TRCC any new projects that are required to this effect so that they can be integrated into the SP once approved.

Progress: Not initiated. Expected initiation in CY2022.

#### ***4.2.7. EMS-Medical Surveillance Component***

1. NTRCC. Complete the implementation of RESCUE. This project will complete the implementation of the Electronic EMS run system, Recording of Emergency Services Calls and Urgent-Care Environment (RESCUE) system. RESCUE is a National Emergency Medical Services Information System (NEMSIS) compliant data entry for emergency medical units (ambulance and other EMS units). As part of the NEMSIS effort, and to assure more consistency and completeness of reporting, a web-based data entry system was developed, at the request of ADPH, to replace the current fragmented data entry system. RESCUE has been completed, and it is in process of being deployed. Ambulances and other EMS units statewide may choose to use RESCUE or not for data collection, but all agencies must now submit NEMSIS-3 compliant data to the RESCUE data aggregator for submission to the national database. The following are short-term plans for FY2021:
  - Support newly released RESCUE ePCR Exchange system;
  - Provide continual technical support for RESCUE;

- Release new version of RESCUE with upgraded web technologies; and
- Prepare for release of NEMSIS v3.5.0.

Progress: The following progress was made during the 2018-2020 fiscal years:

- Provided continual RESCUE technical support to ADPH EMS;
- Completed updates to RESCUE website to improve user experience based on user feedback;
- Released Schematron updates with direction from ADPH EMS to promote better PCR reporting and data quality;
- Developed system to send weekly submission statistic emails to EMS providers and ADPH EMS;
- Developed system and process to allow EMS providers using 3rd party submission software to submit any backlog of PCRs;
- Performed research and development of new web technologies in preparation for new RESCUE ePCR Exchange system.
- Collaborated with ADPH EMS to generate business requirements for new RESCUE ePCR Exchange system.

This effort is expected to continue into a maintenance phase in that RESCUE is currently deployed and implemented.

2. Analytics of RESCUE data by CARE. Once the RESCUE database is created, tools will be developed within CARE to perform the search and analyses necessary for its effective implementation. Training on the RESCUE system will also assure that the data elements gathered are compliant with the most recently released version of NEMSIS.

Progress: Not yet initiated.

3. Supporting training for 3<sup>rd</sup> party vendors. It is essential to get all third-party vendors completely compatible with the data formatting and content requirements so that all data collected can go into a single database. Once established, each of the vendors' compatibility with the system will need to be validated.

Progress: Ongoing. Time and effort have been spent assisting various vendors test their submission process and working through issues to get agencies submitting NEMSIS 3.4 compliant records. NEMSIS Version 3.4 officially became the Alabama standard on 1/1/2018. There is also a general need for continued support of Alabama EMS by providing tools, data, and validation rules needed to ensure submissions are complete and accurate. Supporting software for RESCUE and RESCUE portal. A number of supporting software modules are 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. There is also a portal that has been released as a prototyped in FY2018.

Progress: Ongoing. Since the release in FY2018, a number of enhancements have been recommended by users. This project will continue to translate these recommendations into design modifications and then to re-develop the portal to meet all user needs.

4. Supporting software for RESCUE and RESCUE portal. A number of supporting software modules are 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. There is also a portal that has been released as a prototyped in FY2018. Since

that release, a number of enhancements have been recommended by users. This project will translate these recommendations into design modifications and then to re-develop the portal to meet all user needs.

5. Develop an EMS version of MOVE.

Progress: This project was cancelled in favor of the web-based data entry system that was developed at the request of ADPH (see Project 1 above).

6. First Responder Solution Technique (FIRST) seeks to provide Law Enforcement (LE) agencies with quick, accurate, and location-aware inventory of available emergency medical assistance facilities. A primary goal of the FIRST project is to provide this inventory to LE in the case of mass-casualties in rural areas of Alabama. The project has collected a set of geo-located data providing medical facilities in the state from which a compact shape-file was developed for deployment in MOVE), which provides the MapClick interface. The integration of a geo-located emergency medical facilities layer in MapClick provides LE the ability to visually determine the nearest appropriate facility. This project also evaluated the available Alabama emergency medical assistance facilities inventory to the Model Inventory of Emergency Care Elements (MIECE) data standard developed by the National Association of State EMS Officials (NASEMSO) in March 2011. The FIRST project will also evaluate the feasibility of providing LE with routing information from their current location to a selected facility.

Progress: Not yet initiated; this project is still in the pre-data-collection stage. Plans are to continue to develop this capability so that it can reach its full potential over the next five years.

7. 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 use of ETL techniques to integrate these datasets into a third dataset using key variables for case matching. Consideration for the best match methods in Phase 2 and user training will be integral parts of the first phase.

Progress: Awaiting higher-level decision to initiate.

8. Medical database access/integration.

Progress: Pre-requirements. 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.

9. 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.

Progress: Pre-requirements. This project will require the highest level supportive decisions before it can be implemented.

10. Real-time ePCR retrieval system. This will replace the past use of paper ePCR forms for this purpose, which were handed off to the hospital when the patient was admitted. The new technique for the ePCR generation process will be Internet-based so that this basic function of authorized retrieving of relevant ePCRs can be performed similar to the operation of other portals that are maintained by CAPS.

Progress This system, called RESCUE Exchange, is complete and is referenced in #1 of Section 4.2.7.

11. NTRA. Interface research task force. A taskforce will be appointed by the manager of this component, which will be as comprehensive as possible with individuals who are familiar with past CODES projects as well as those who have specialized expertise in at least one of the medical/EMS data systems, with the following charge:

- To become totally familiar with all aspects of the Advisory as they relate to the EMS/Medical component.
- To review the systems interfaces in comparison with the Advisory.
- To make recommendations for all interfaces that may not be in accord with the Advisory.
- To prioritize the large number of potential interfaces that exist, with the goal of creating or improving those interfaces that are most productive from a management and research perspective.

Progress: While it is not expected that complete integration can be achieved because of the legal issue and the autonomous aspects of the various medical systems (e.g., per hospital) making up this component, the study should develop a plan that sets forth those interface developments first that are considered of the greatest combination of benefit and feasibility. It is only when this is completed and presented to higher-level decision-makers that approval for this effort can proceed.

12. TRCC – Replacement of AlaCert with a new EMS licensing system [New for FY2021].

The current ADPH system for maintaining EMS licensure records, AlaCert, will be replaced through a multi-step process to gather information on the current process, evaluate the expected deliverable components, and work to implement those components. This system will include components that maintain all of the user information, license information for each user, and prints licensure cards. This process will focus on tight integration with the current RESCUE ePCR system, as this system uses AlaCert as its primary identity provider. This project will develop requirements for an improved EMS licensure system to replace the current AlaCert system.

Progress: In discussions with stakeholders to determine scope and applicability of this system within the traffic safety sphere of applications and data. Initial indications are that this system is more complex than initially assumed and may require more planning and discussion than was previously thought.

#### ***4.2.8. Integration and Information Distribution Component***

1. TSIS/TRCC 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.

Progress: On hold until resourced become available.

2. Development of DELTA. The Data Evaluation Lifecycle Tracking and Analysis (DELTA) system development is a meta-data project to establish a system for tracking data elements within large multi-database integrated data systems that could be distributed over several agencies. Its purpose is to determine all of the ramifications of making a change in any data element so that the negative effects of such changes can be evaluated and minimized. This considers not only the technical component of the change but also the business processes for all of the involved agencies. While DELTA could be applied to any combination of data systems, it will be prototyped using crash data as the first example.

Progress: Not yet initiated; awaiting higher-level support.

3. Crash-Injury Data Integration. The goal of this project will be the integration of pre-response, crash, EMS, trauma registry and hospital data so that the injury ramifications of a crash event can be mapped through its lifecycle. This data will also be useful in the evaluation of countermeasures, especially those that related to crash injury severity. This integration has been problematic in most states and the project will be initiated by several stakeholders' meetings to determine: (1) the support for such an integration; (2) the anticipated use of the data by the various stakeholders; (3) the issues in accessing available data; and (4) a prioritization of the anticipated tasks so that a plan can be developed. It is expected that a detailed systems analysis in conjunction with these meetings in order to provide a technical underpinning for the decisions that are made. This project will be coordinated closely with that discussed in Section 4.2.7, Project 5. The primary emphasis of the initial phases of this total integration will be in the linkage between the Electronic Patient Care Report (ePCR), currently produced by RESCUE, and the crash report, currently produced by eCrash. With the adoption rate of RESCUE for ePCR data, the opportunities for linking patient care data to crash reports has become quite feasible. Specific opportunities include, but are not limited to, the following:

- Researching correlations between officer opinion of crash severity and actual EMS severity assessment and medical care given;
- Roundtrip time of EMS dispatch to delivery to medical facility.
- Comparison of officer reported medical dispatch and arrival times to EMS-provided dispatch and arrival times;

- Delayed fatalities to the delay time of receiving medical attention; and
- Delayed fatalities to type of medical facility initially receiving the patient.

A second longer-term focus will be on the linkage of these (ePCR and eCrash data) to the Alabama Trauma Registry (ATR). While this is a much longer term project the ultimate goal is to consider these data elements through the complete lifecycle of the event. i.e. eCrash > ePCR > ATR, and ultimately discharge data.

Progress: While this project could provide extremely valuable data, it appears to be infeasible within Alabama at this point.

4. Citation-Adjudication Portal. This will involve (1) the integration of citation and adjudication data from potentially several levels or police and court agencies; (2) the design of an data retrieval and presentation system; and (3) a web portal that will be accessible by all authorized personnel to track any given citation from issuance to final disposition. Since this will involve city, county and state agencies, the integration will be of fair complexity, and prioritization and sequencing of activities will be essential to first prototype and then to develop a system that will serve both the law enforcement and the judicial needs of all stakeholders.

Progress: On hold awaiting higher level support.

5. 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 ALEA and local agencies. MOVE will be upgraded to apply to several more applications and to operate more effectively with current applications. The immediate plan is to gather new business requirements for MOVE and eCite from ALEA, and to start development of the MOVE and eCite applications with our newly developed frameworks (see Section 4.2.6, Project 1).

Progress. The following progress has been made or is anticipated:

- Brainstormed and documented possible improvements to MOVE;
  - Created Alabama MOVE Validation Reference List document to assist in future development; and
  - Performed research and development on frameworks allowing for efficient creation of data forms and application communication.
  - See Section 4.2.4, project 6.
6. Mobile device technology implementation. 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.  
Progress: Not initiated; awaiting funding for this purpose.
  7. 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.

Progress: Not initiated; awaiting funding for this purpose.

8. CARE multiple database analytics 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 purposes other 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.

Progress: Not initiated; awaiting funding for this purpose.

9. NTRCC. Tighter eGIS integration. Most of the TSIS components have a GIS element that enable them to be integrated with most of the other components. A simple example of this that has been accomplished is the current ability to show crashes and citations on the same map, and the corresponding ability to optimize the re-deployment of law enforcement resources to address crash hotspots. Similar optimizations could be performed with EMS resources as a second example. This project will be initiated by a meeting of stakeholders to brainstorm consideration of the various components and to determine the costs and benefits of each integration so that a priority can be established for moving ahead with eGIS-based integration.

Progress: Not initiated – awaiting a meeting of stakeholders for this purpose to get the project kicked off.

10. NTRCC. Safety Portal full implementation. The goal of this project 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 more effective information for decision-making. 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 re-



quired 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.

Progress: Completed and in the maintenance stage.

11. NTRCC. Countermeasure evaluations. A wide range of countermeasure evaluations are needed to translate crash, citation, demographic and other raw data into useful information for decision-making. Countermeasures will be prioritized in terms of their criticality to fatality reduction, the flexibility to modify related countermeasures and the expectation of the evaluation to modify policy. Currently the following are seen to have the highest potentials: speed related, impaired driving (worst offenders and ignition interlocks), restraints, distracted driving and distracted walking (including observational surveys).

Progress: These evaluations have been, and will be, performed as they are requested by authorized personnel and agencies. This will result in a series of smaller projects than the typical projects discussed in Section 4.2.

12. SafeHomeAlabama.gov web site. 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.

Progress: While the site is currently operational, it 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 the "Safety Portal," discussed above.

13. NTRCC – New vehicle safety feature data analytics. With the completion of several software development projects, new eCrash and other data elements are now available to create valuable information. Examples from the MMUCC eCrash update include data on AVs and EVs by VIN. From these, crash frequency and severity can be estimated as a function of new vehicle ADAS features. The primary goal of the analytics process will be to determine the extent of crash frequency and severity increases or decreases of these various new features. In turn, this will provide the data to drive various optimization approaches to address these potential issues in decision-making. The process will be heavily driven by creative Data Integration Extract-Translate-Load (ETL) techniques that will be developed. For example, MIRE and Crash data can be integrated by location to provide estimates of the effects of roadway modifications on crashes.

Progress: This project has been successfully completed with 8 ADAS features being evaluated – see <http://www.safehomealabama.gov/caps-special-studies/> under Vehicle-Related for studies that have titles starting with ADAS. These studies were forced to be suspended since there were so few vehicles that could be used for control (i.e., which did not have the ADAS feature of interest). These studies are being continued by insurance companies and IIHS.

### 4.3 TSIS Measurable Performance Indicators

A summary of the TSIS project goals in terms of measurable performance indicators is given below for each of the TSIS components. Each of the projects is listed under the particular TSIS component to which they relate (e.g., crash, vehicle, driver, 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.

#### 4.3.1 Management Component Project Metrics

##### 4.3.1.1 Quality Control Management Metrics

- Assignment of a quality control coordinator to each operational component.
- Within each component:
  - Selection of items in need of quality improvement.
  - Documentation of improvements made.

#### 4.3.2 Crash Component Project Metrics

##### 4.3.2.1 ADVANCE Upgrade

- Functioning ADVANCE portal with new technology upgrades in place.
- Stakeholder satisfaction measured by survey above 95%.

##### 4.3.2.2 MapClick project.

- Increase the accuracy and completeness of the crash location entry for on-system (mile-posted) locations from its 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 the invalid or unknown cases from its current value of approximately 20% of cases to less than 2% of cases.

#### 4.3.2.3 eCrash upgrades and training

- Modify the eCrash data entry screens so that the data collected is over 90% 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 4.3.2.2.

#### 4.3.2.4 CARE modifications and upgrades

- 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%.
- Increase the number of queries that users will make from an average of 20 queries per user to well over 50 queries per user per year.

#### 4.3.2.5 CARE scripting and dashboard capabilities.

- Provide greater productivity in enabling users to save complex queries and reuse them, resulting in a 20% increase in the number of reports generated.
- Increase the accuracy of query responses by 30% since they will not have to be re-created periodically.

#### 4.3.2.6 Upgrade CARE dashboard user interface

- Significant recognized improvements in the interface making it easier for users to get available information from the available datasets.
- Results of user survey of stakeholders.

#### 4.3.2.7 Upgrade to the Crash Facts document.

- Increase in the consistency of information presented from year to year (with the introduction of eCrash data this consistency dropped to about 90%).
- Increase consistency to 100%, providing users the capability to compare figures from year to year.

#### 4.3.2.8 Final mandate for use of eCrash.

- MMUCC compliance increase from 85% to over 95%.
- Increased consistency among all data elements through a systematic series of cross-tabulation checks; reduction of inconsistent data elements by 90%.
- Timeliness improvement from an average of about six weeks for current paper forms to be entered for the remaining paper forms to the eCrash delay of an average of less than 18 hours.

#### 4.3.2.9 Special location type exception reports.

- 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.

#### 4.3.2.10 Unreported crash incident reporting.

- This project will create new data that do not currently exist since these data will generate information that cannot be derived from any current data source.
- At least 100 reports in the first prototype year.

#### 4.3.2.11 Centralized (Enterprise) CARE

- Functioning CARE system that uses a central server to store all executables and all datasets.

#### 4.3.2.12 Upgrade of the FOCIS system

- Demonstration of a functional advanced collision-diagram generation system that is more advanced than any currently in existence.

#### 4.3.2.13 Coordinate-based hotspot capability

- Demonstration of a hotspot capability that is based totally on GIS coordinates and ON road code, independent of any linear reference system.
- Tested and verified system working as good if not better than the LRS hotspot systems.

#### 4.3.2.14 Database Systems Management (DBSM)

- Progress in developing the DBSM will be evident from the ease of generating new reports once it is operational.
- It is not possible to specify other metrics at this point to measure its effectiveness in time savings and eliminating problems when it comes to changing the structure of variables that are used elsewhere in the system.

#### 4.3.2.15 TZD research and education

- Assessment of the effectiveness is best measured by before and after surveys for the educational effort.
- Research is needed to design the PI&E efforts that will be most effective in preparing the general public for the major benefits expected from connected and autonomous vehicles, and to recognize that their flaws are temporary as the technology moves forward.

#### 4.3.2.16 Guideline Improvement

- List of Advisory best practices as they relate to crash records.
- Documented cost and an expected benefit related to the implementation of each of the recommended best practices.
- Implementation and work plan for those projects that will be necessary to implement the most cost-beneficial items.
- Recommendations to the TSIS SP for review and approval by the TRCC.

#### 4.3.2.17 Data Dictionary

- Comprehensive data dictionary for raw crash data that is consistent with industry standards for data dictionaries.
- Documented methods for tracking all datasets produced from the crash data, including those that are integrated with data from other modules.

#### 4.3.2.18 Crash Module Systems Analysis

- Documentation of a complete systems analysis of the current crash module including both internal procedures and process flows as well as the integration with other modules.
- Preliminary list of anticipated current crash module deficiencies.
- Recommended remedial action to correct any deficiencies.
- List of potential projects that can be compared on a cost-benefit basis to recommend updates to the TRCC SP.

#### 4.3.2.19 FARS Data Automation

- Upgraded FARS data entry to include all required FARS data elements.
- Addition of the following to enable ALDOT to meet federal requirements: (1) MPO boundary area, (2) RPO boundary area boundary, (3) FARS Highway Functional Classification, and (4) FARS National Highway System Classification.
- Updated CARE FARS system to process data from the most recent FARS updates.

### ***4.3.3 Vehicle Projects***

#### 4.3.3.1 Registration file content and access update.

- Current systems upgraded to include the new data being made available by upgrades in the vehicle registration process.

#### 4.3.3.2 ETAPS upgrade to ALTS.

- Conversion of ETAPS to ALTS completed, and the system is working totally under ALTS.
- Implementation verified to be 100% by all designated agents in all counties by the end of FY2021.

#### 4.3.3.3 Integration of ALEA driver license and state identification databases

- Testing is completed to assure that there is full integration of the two databases such that anything in one is accessible to the other and vice versa, given that the same person exists in both databases.
- Prototype tested to verify the ability to scan the barcode to obtain the vehicle owner's information via a link to the driver's license number and the registration record.

#### 4.3.3.4 Implementation of OVIS

- Full implementation of OVIS measured by the number of agencies using it with the goal of this being over 95% by the end of FY 2017.
- FY2019 progress included working with ALEA to provide access to the DOR online

insurance verification system in order to administer the newly created law that allows ALEA to issue assessments to uninsured motorists who are involved in crashes.

#### 4.3.3.5 Modernized IRP/IFTA systems

- Significantly improved user satisfaction with the interface.
- Ability for users to upload documents and to utilize the applications on a variety of modern electronic devices.
- Progress of this project in FY2019 included the implementation of: (1) a new commercial vehicle licensing system for IRP and IFTA licenses and taxes, and (2) a new commercial vehicle information exchange window (CVIEW) for use by DOR, ALEA, APSC and ALDOT.

#### 4.3.3.6 Update and implementation of MVTRIP

- Upgrading of the MVTRIP system without loss of utility, to include a new upgraded dashboard that displays and performs analytics on the MVTRIP data.
- Compatibility with the most common technologies that are being applied in the field.

#### 4.3.3.7 Print on demand registration receipt

- Final testing completed and complete print on demand registration receipt system fully operational.
- The print on demand process for registration receipts and validation decals is now being implemented; 100% implementation by the end of FY2019.
- Progress during FY2019 included the implementation of the print on demand process for Alabama special distinctive license plates.

#### 4.3.3.8 Electronic vehicle registration receipts

- Final testing of the system that meets all requirements for producing and transmitting an electronic receipt to registrants' electronic wallets.

#### 4.3.3.10 Vehicle registration cards

- Improved accuracy of person and vehicle validation from its current value of approximately 90% to 98%.
- Successful prototype of barcodes on registration cards in several target beta test areas.
- Implement barcodes on registration cards statewide.

#### 4.3.3.11 Vehicle data LETS integration

- Decrease the average time that it takes an officer in the field to obtain vehicle and insurance verification from the current average to less than five seconds.

#### 4.3.3.12 Online Insurance Verification System (OVIS) updates

- Detect at least five areas where improvements can be made and develop them during the first year after project initiation.
- Regression tested improvements.

#### 4.3.3.13 Effective TZD infrastructure.

- Documented interaction with TZD researchers resulting in the use of CARE and other tools and data to support TZD efforts.

#### 4.3.3.14 Addition of the DL validation to populate the vehicle owner data in the title record.

- Fully functional Driver License (DL) number as required part of the title record.
- Ability to retrieve the registration record from the vehicle owner's driver's license number.
- Ability to pre-populate the title record with all available information on the drivers' license (e.g., name and address and all other vehicle owner information).

#### 4.3.3.15 More frequent county uploads of title records

- Design and development of a virtual real-time system for updating LETS.
- Information is available to officers in the field at the point (no more than five minutes after) when the transaction occurs.

#### 4.3.3.16 Electronic liens and titles (ELT)

- Completed requirements gathering phase for the production of current lien and title information electronically.
- Functioning lien and title information system.

#### 4.3.3.17 Automated License Plate Readers (ALPR)

- Completed requirements gathering for system to support civil enforcement of registration violations through the use of automated license plate readers (ALPRs).
- Completed preliminary and detailed design.
- Functioning software to use ALPRs for enforcement of registration laws.

#### 4.3.3.18 Electronic Credentialing (eCredential) program

- Completed requirements gathering for system to support electronic credentialing.
- Completed preliminary and detailed design.
- Functioning software to perform the electronic credentialing functions.

#### 4.3.3.19 Improve Vehicle Data System

- Assign responsibility to agency
- Establish project team for analysis
- Publish project team report

### ***4.3.4. Driver Component Projects***

#### 4.3.4.1 DUI driver data intake and reporting system

- Law enforcement identification and apprehension of at least ten additional DUI offenders (per month) with outstanding warrants or court obligations.

#### 4.3.4.2 MIDAS offender completion validation

- (Currently this capability does not exist.)
- The ability to identify for any defendant where s/he stands with regard to completing their sentence.
- The identification within the database of an increase of 30% additional existing offenders who have not completed their time of suspension or satisfied their alternative or traditional sanctions.

#### 4.3.4.3 Traffic safety incident (ULTRA) data availability

- 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.
- Documentation of the systems analysis necessary to create additional data requirements.

#### 4.3.4.4 Information mining of the ULTRA data

- Functioning ETL for ULTRA.
- ULTRA datasets being processed by CARE.
- Resulting CARE outputs.

#### 4.3.4.5 LETS upgrades for traffic safety

- (This capability does not currently exist.)
- The capability to detect hundreds of serial traffic violators per month based on an expected 50-100 queries per day

#### 4.3.4.6 Mobile Officer Virtual Environment (MOVE) Upgrades

- 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.
- At least ten new functions added to MOVE over the next five years, on average two per year.

### ***4.3.5 Roadway Data Systems Projects***

#### 4.3.5.1 Improved data gathering/connectivity through eGIS

- Centerlines developed for all state roads completed by end of FY2017.
- Centerlines developed for at least 80% of county roads and city streets by the end of FY 2021.
- ALDOT-maintained location system (for all public roads) route network incorporated into crash locating tools for at least 95% of crash reports;
- ALDOT's "all public roads" route network expanded to 80% of all non-State maintained routes.
- Infrastructure and tools provided to 90% of local authorities (e.g., City, County, MPO, RPO).



#### 4.3.5.2 Statewide roadway data inventory

- Accessibility: currently these data are widely distributed and not easily accessible for IHSDM/HSM implementation.
- Add data elements to an 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.

#### 4.3.5.3 IHSDM/HSM implementation project

- 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%, eliminating 50% of the deficiency).
- Improve the optimization process so that an additional benefit of ten lives per year can be saved through roadway improvement projects.

#### 4.3.5.4 Roadway Issue Dispatch (RID) project

- The addition of ten RID reports per month routed to either ALDOT or the appropriate county or city engineer.

#### 4.3.5.5 Roadway Improvement Safety Evaluation (RISE)

- Beta test at least five maintenance project corridors during the second year after project initiation.

#### 4.3.5.6 MIRE creation for state routes

- Ongoing progress of 20% of the data elements functional per year after initiation of the project.
- Comparable progress to incorporate the relevant state-collected MIRE data elements into the crash database and Crash reports.
- MIRE data elements collected for 80% public routes not on the State maintained network.
- Ongoing implemented training on MIRE data collection and reporting tools to local authorities (e.g., City, County, MPO, RPO).

#### 4.3.5.7 Design and develop data dictionary for roadway data elements.

- Comprehensive data dictionary for raw roadway data elements that is consistent with industry standards for data dictionaries as well as federal requirements.
- Documented methods for tracking all datasets produced from the roadway data, including those that are integrated with data from other modules.

#### 4.3.5.8 Systems analysis of roadway data elements.

- Documentation of complete systems analysis of the current roadway module, including both internal procedures and process flows.
- Documentation of the integration with other modules as well as the data elements developed in Project 7 above.

- Recommendations for all remedial actions to correct any deficiencies resulting from a comparison of existing procedures against the recommendations given in the Advisory.
- List of potential projects that can then be compared on a cost-benefit basis to recommend updates to the TRCC SP.

#### ***4.3.6 Citations and Adjudication Projects***

##### **4.3.6.1 Upgrades to eCite**

- Reduce the average time of getting citation information into the database from several days to an average of less than one day.
- Increase the proportion of agencies on by at least 2% per year.

##### **4.3.6.2 ALEA Motor Carrier Integration – FMCSA compliance**

- From less than 50% current compliance to 100% compliance with Federal standards.

##### **4.3.6.3 Citation adjudication technology**

- 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
- Reduce the time spent swearing to tickets to a few minutes per day.

##### **4.3.6.4 Municipal electronic disposition system**

- Five beta test municipalities after the first year of the start of development.
- At least 20 municipalities using the system after the second year.

##### **4.3.6.5 Completing of the eCite roll-out**

- At least 95% of municipalities using eCite by the end of FY2021.

##### **4.3.6.6 Citation and DUI Tracking System**

- Number and percentage of defendants for which data are available; functional portal under MOVE enabling officers to make queries on particular individuals; administrative capability to check the status of citation and defendants.

##### **4.3.6.7 Taskforce to develop and implement improved guidelines**

- Documentation of an internal assessment as to which components are in compliance with the provisions of the Advisory and which are most in need of remediation.
- Documentation of a complete systems study of all current components within the citation/adjudication component, i.e., all systems that relate to either transactional or analytical systems and impact traffic safety.
- Documentation of an in-depth analytical study of the most critical modules and the recommendations for additional development of supporting projects to bring the system into closer conformance with the Advisory.

- Recommends to the TRCC any new projects that are required to this effect so that they can be integrated into the SP once approved.

#### **4.3.7. EMS-Medical Surveillance**

##### 4.3.7.1 Complete and implement RESCUE

- Beta test of the RESCUE system completed by the end of the second year from project initiation. This objective has been accomplished.

##### 4.3.7.2 Supporting software for RESCUE.

- Deployed operational support software; number of vendors who are using the supporting software and the support it is providing to RESCUE for effective operation.

##### 4.3.7.3 Develop EMS version of MOVE

- This project has been cancelled due to deciding to go web-based with RESCUE.

##### 4.3.7.4 Continued development of the First Responder Solution Technique (FIRST)

- All MOVE components developed and deployed in beta tests.
- Reduced transport time for beta areas.
- Reduced number of patients who need to be forwarded to more appropriate facilities in beta test areas.

##### 4.3.7.5 EMS-Trauma data integration through CARE

- ETL developed and pilot datasets generated that contain integrated EMS and Trauma data that support all CARE analytical capabilities.

##### 4.3.7.6 Medical database access/integration

- Documentation of the systems analysis study that contains recommendations as to the initial databases that can be integrated.

##### 4.3.7.7 Model Inventory of Emergency Care Elements (MIECE) Repository

- Beta test of the MIECE data entry system completed by the end of the first year of project initiation.

##### 4.3.7.8 Interface research task force (coordinated closely with item 4.3.8.3 below)

- Existence of an ongoing taskforce.
- Documented review of the systems interfaces in comparison with the Advisory.
- Recommendations for all interfaces that are not in accord with the Advisory.
- Prioritization of the large number of potential interfaces that exist, with the goal of creating or improving those interfaces that are most productive from a management and research perspective.

### **4.3.8. Integration Projects**

#### **4.3.8.1 TSIS/TRCC Coordination**

- The presence of a coordinator and staff to perform all necessary coordination functions.

#### **4.3.8.2 Development of DELTA**

- Documented design of DELTA to take in the practical aspects of a multi-agency approach toward data lifecycle coordination.
- Functioning prototype system for a select subset of the total TSIS in order to initiate its full evolution.

#### **4.3.8.3 Crash-Injury Data Integration (coordinated closely with item 4.3.7.8 above)**

- Definition and establishment of two (or more) additional databases needed to prove the concept, e.g., eCrash and RESCUE data.
- Functioning CARE dataset that proves the concept of multiple database information generation using the ETL approach for integration.
- Functional linkage between the Electronic Patient Care Report (ePCR), currently produced by RESCUE, and the crash report, currently produced by eCrash.
- Established use of this integration demonstrated by (for example):
  - Establishing correlations between officer opinion of crash severity and actual EMS severity assessment and medical care given;
  - Roundtrip time of EMS dispatch to delivery to medical facility.
  - Comparison of officer reported medical dispatch and arrival times to EMS-provided dispatch and arrival times;
  - Delayed fatalities to the delay time of receiving medical attention; and
  - Delayed fatalities to type of medical facility initially receiving the patient.

#### **4.3.8.4 Citation-Adjudication Portal**

- Functioning web-based portal that satisfies current needs of all stakeholders.
- Specification of improvements for anticipated needs in the future.

#### **4.3.8.5 Mobile Officers' Virtual Environment (MOVE) upgrades to support integration.**

- Addition of at least three new functions to MOVE over the 2021 fiscal year.

#### **4.3.8.6 Mobile device technology.**

- At least three applications ported over to smart phone or smart tablet technology before the end of the 2021 fiscal year.

#### **4.3.8.7 Data-Driver Approaches to Crime and Traffic Safety (DDACTS)**

- Creation of at least one implemented DDACTS system by the end of FY 2017; e.g., the integration of crash, incident and citation data to determine optimal placement of law enforcement assets.

#### 4.3.8.8 CARE multiple database ETL development.

- One application functional every fiscal year of the following: (1) crash-roadway; (2) crash-citation; (3) crash-EMS/injury; (4) crash-vehicle.

#### 4.3.8.9 Tighter eGIS integration

- Documentation of a systems study to determine which component database combinations will produce the most benefit from being integrated by location.
- Prioritized plan for the integration by location.
- Prototype functional integrated map-based information generation.

#### 4.3.8.10 Safety Portal full implementation

- The functioning portal with two major CARE/ADVANCE datasets added per year over the planning horizon.

#### 4.3.8.11 Countermeasure evaluations

- Result of an analysis to determine and prioritize those countermeasures that are most in need of evaluation from the viewpoint of feasibility and the flexibility to make modifications to improve the programs under consideration.
- Intermediate and final evaluation documentation.

#### 4.3.8.12 SafeHomeAlabama.gov

- Add 10 pages to SHA and assure that information received is posted out on the web site within one hour of receipt by the end of FY 2021.
- Increase the Twitter account that announces all significant updates to SHA to 100 followers.

## 5.0 Traffic Records Assessment Recommendations

See the responses to recommendations in Section 6.

There were no TRCC recommendations. However, the following recommendations were given for Strategic Planning (SP):

**SP1. Recommendation:** *Include a survey of local organizations and tribes to obtain their help in directing future planning.*

**SP2. Recommendation:** *Add considerations to each project that address: (1) The performance attributes being addressed, (2) The organization responsible for the project, and (3) a general timeline.*

## 5.1 Crash Recommendations

**1. Recommendation:** *Improve the applicable guidelines for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**2. Recommendation:** *Improve the data quality control program for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**3. Recommendation:** *Improve the procedures/process flows for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## 5.2 Vehicle Recommendations

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

**5. Recommendation:** *Improve the description and contents of the Vehicle data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## 5.3 Driver Recommendations

**6. Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## 5.4 Roadway Recommendations

**7. Recommendation:** *Improve the data dictionary for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**8. Recommendation:** *Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**9. Recommendation:** *Improve the procedures/ process flows for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## 5.5 Citation/Adjudication Recommendations

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

## 5.6 EMS / Injury Surveillance Recommendations

**11. Recommendation:** *Improve the data quality control program for the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**12. Recommendation:** *Improve the interfaces with the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

## 5.7 Data Use and Integration Recommendations

No recommendations.

## 6.0 Traffic Records Assessment (TRA) Responses to be addressed in FY2022

These responses were not intended to repeat the content of the Traffic Records Information Systems (TSIS) Strategic Plan (SP). For this reason a brief response is given here for each recommendation that in all cases refers the reader to other sections of the SP. The NHTSA *Traffic Records Program Assessment Advisory* will be referenced in the responses below as *the Advisory*. In each case the recommendation from the TRA will be followed by the State's response.

**SP1. Recommendation:** *Include a survey of local organizations and tribes to obtain their help in directing future planning.*

**Strategic Plan Response:** See Section 4.2.1 project #2.

**SP2. Recommendation:** *Add considerations to each project that address: (1) The performance attributes being addressed, (2) The organization responsible for the project, and (3) a general timeline.*

**Strategic Plan Response:** This is being addressed throughout this Strategic Plan.

## **6.1 Crash Recommendation Actions**

**1. Recommendation:** *Improve the applicable guidelines for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.2, Project 16 for details. The crash component manager will set up a taskforce to develop and implement improved guidelines for the Crash data system to reflect best practices of the advisory.

**2. Recommendation:** *Improve the data quality control program for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**3. Recommendation:** *Improve the procedures/process flows for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.2, Project 18 for details. A comprehensive systems analysis will be performed for the Crash data system that will consider all procedures and process flows within this component using the guidelines and data dictionary developments of projects 16 and 17. These will be compared against the recommendations given in the Advisory and remedial action will be taken to correct any deficiencies.

## **6.2 Vehicle Recommendation Actions**

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



**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**5. Recommendation:** *Improve the description and contents of the Vehicle data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.3, Project 19 for details. A comprehensive systems analysis will be performed for the Crash data system that will consider all procedures and process flows within this component using the guidelines and data dictionary developed. These will be compared against the recommendations given in the Advisory and remedial action will be taken to correct any deficiencies.

### **6.3 Driver Recommendation Actions**

**6. Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### **6.4 Roadway Recommendation Actions**

**7. Recommendation:** *Improve the data dictionary for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.5, Projects 6 and 7 for details. Currently no formal data dictionary exists for the raw roadway data elements. This project calls for the development of a comprehensive data dictionary for these data, including but not limited to the MIRE data elements.

**8. Recommendation:** *Improve the data quality control program for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**9. Recommendation:** *Improve the procedures/ process flows for the Roadway data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.5, Project 8 for details. A comprehensive systems analysis will be performed for the Roadway data system that will consider all procedures and process flows within this component using the guidelines and the recommendations given in the Advisory, and remedial action will be taken to correct any deficiencies.

## **6.5 Citation/Adjudication Recommendation Actions**

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

## **6.6 EMS / Injury Surveillance Recommendation Actions**

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

**12. Recommendation:** *Improve the interfaces with the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.7, Project 8 for details. A task force will be appointed by the manager of this component with the charge of reviewing the systems interfaces in conjunction with the Advisory. Recommendations will be expected to include the prioritization of the large number of potential interfaces that might exist, with the goal of creating those interfaces that are most productive from a management and research perspective.

## **6.7 Data Use and Integration Recommendation Actions**

No recommendations.

## **7.0 Responses for Recommendations that will Not Be Addressed in FY2022**

### **7.1 Crash Recommendations**

**2. Recommendation:** *Improve the data quality control program for the Crash data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. See Section 7.6 below for reason.

### **7.2 Vehicle Recommendations**

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. See Section 7.6 below for reason.

### **7.3 Driver Recommendations**

**6. Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. See Section 7.6 below for reason.

### **7.4 Roadway Recommendations**

**8. Recommendation:** *Improve the data quality control program for the Driver data system to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. See Section 7.6 below for reason.

## **7.5 Citation/Adjudication Recommendations**

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

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities. See Section 7.6 below for reason.

## **7.6 EMS / Injury Surveillance Recommendations**

**11. Recommendation:** *Improve the data quality control program for the Injury Surveillance systems to reflect best practices identified in the Traffic Records Program Assessment Advisory.*

**Strategic Plan Response:** See Section 4.2.1, Project 1 for details. This is a comprehensive project that covers all of the TSIS components. Each component coordinator will appoint a quality control manager to evaluate the quality of all data being received, generated and distributed by that component. In the absence of such an appointment, the component coordinator will assume the responsibilities.

### **Reason for not implementing the TRA Quality Control Recommendations for All Modules:**

In reviewing the resources available to the state, the Traffic Records Coordinating Committee has determined that resources are not currently available for implementing the formal quality control recommendations made in the Traffic Records Assessment report for each and every module. This is not to say that there are not current efforts to maintain quality by all of the agencies involved in traffic records. These efforts have been ongoing for many years, and the quality of the products produced attest to their effectiveness. However, the Traffic Records Assessment recommendations required that specific personnel be assigned to these functions and that documentation be produced to demonstrate these formal efforts. Efforts will be made during FY2022 to plan for the best methods to address these recommendations, but the TRCC did not feel that resources on any current efforts should be sacrificed to this end.

Interim TSIS Progress Report EMS RESCUE Patient Care Report (PCR) supportive data

**April 1, 2019 - March 31, 2020**

<b>Variable Earliest Submission Lag</b>		
Value	Frequency	Percentage
Less than 24 hours	619699	67.28%
24 to 72 hours	99940	10.85%
Greater than 72 hours	175301	19.03%
Before reported Unit Back In Service time	4072	0.44%
No valid record	22011	2.39%
Total	921023	100.00%

**April 1, 2020 - March 31, 2021**

<b>Variable Earliest Submission Lag</b>		
Value	Frequency	Percentage
Less than 24 hours	642014	71.20%
24 to 72 hours	83780	9.29%
Greater than 72 hours	152208	16.88%
Before reported Unit Back In Service time	3768	0.42%
No valid record	19900	2.21%
Total	901670	100.00%

Increase in Less than 24 hours Values per Record	Increase
0.0392	5.8%

**State Traffic Safety Information System Improvements Grant  
Interim Progress Report**

State: Alabama Report Date: 6/3/2021 Submitted by: \_\_\_\_\_

Regional Reviewer:

<b>System to be Impacted</b>	<input type="checkbox"/> CRASH <input type="checkbox"/> DRIVER <input type="checkbox"/> VEHICLE <input type="checkbox"/> ROADWAY <input type="checkbox"/> CITATION/ADJUDICATION <input checked="" type="checkbox"/> EMS/INJURY <b>OTHER specify:</b>									
<b>Performance Area(s) to be Impacted</b>	<input type="checkbox"/> ACCURACY <input checked="" type="checkbox"/> TIMELINESS <input type="checkbox"/> COMPLETENESS <input type="checkbox"/> ACCESSIBILITY <input type="checkbox"/> UNIFORMITY <input type="checkbox"/> INTEGRATION <b>OTHER specify:</b>									
<b>Performance Measure used to track Improvement(s)</b>	<b>Narrative Description of the Measure</b> The “Submission Lag” variable in the EMS patient care report (PCR) <b>database</b> was studied. This variable refers to the submission lag time for the first submission of the EMS data. A PCR may be submitted multiple times for a variety of reasons. It may have Schematron errors that need to be corrected. Or it could have data that needs to be updated/corrected. So, the earliest submission time is the first time that patient care report is submitted. A comparison was made in the two study periods of the number of “Less than 24 hours” values in the records.									
<b>Relevant Project(s) in the State’s Strategic Plan</b>	<b>Title, number and strategic Plan page reference for each Traffic Records System improvement project to which this performance measure relates</b> EMS-Medical Surveillance Component, Item 4.2.7.1 Complete the implementation of RESCUE, Pages 40 - 41, TSIS Strategic Plan 2022-2026, June 1, 2021.									
<b>Improvement(s) Achieved or Anticipated</b>	<b>Narrative of the Improvement(s)</b> During the April 1, 2019 – March 31, 2020 study period, the percentage of “Less than 24 hours” values in the “Earliest Submission Lag” variable in the <b>EMS (RESCUE patient care reports) database</b> was 67.28%. During the April 1, 2020 – March 31, 2021 study period, the percentage of “Less than 24 hours” values in the “Earliest Submission Lag” variable increased to 71.20%. This is a 3.92% increase in “Less than 24 hours” values per record which equates to a relative proportional improvement of 5.8% (3.92/67.28) in <b>data timeliness</b> between the two study periods for this variable in the <b>EMS database</b> .									
<b>Specification of how the Measure is calculated / estimated</b>	<b>Narrative Description of Calculation / Estimation Method</b> The percentage of “Less than 24 hours” values in the “Earliest Submission Lag” variable was compared during the two study time periods. Using the percentage of values takes into account the number of records as opposed to comparing the raw frequency. Then, simply divide the difference by the percentage in the earlier timeframe to calculate the percent increase in records with “Less than 24 hours” values which equates to an increase in data timeliness. (See attached detailed data.)									
<b>Date and Baseline Value for the Measure</b>	April 1, 2019 through March 31, 2020 (see attached detailed data) <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Value</th> <th style="text-align: right;">Frequency</th> <th style="text-align: right;">Percentage</th> </tr> </thead> <tbody> <tr> <td>Less than 24 hours value</td> <td style="text-align: right;">619699</td> <td style="text-align: right;">67.28%</td> </tr> <tr> <td>Total EMS Records</td> <td style="text-align: right;">921023</td> <td style="text-align: right;">100%</td> </tr> </tbody> </table>	Value	Frequency	Percentage	Less than 24 hours value	619699	67.28%	Total EMS Records	921023	100%
Value	Frequency	Percentage								
Less than 24 hours value	619699	67.28%								
Total EMS Records	921023	100%								
<b>Date and Current Value for the Measure</b>	April 1, 2020 through March 31, 2021 (see attached detailed data) <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Value</th> <th style="text-align: right;">Frequency</th> <th style="text-align: right;">Percentage</th> </tr> </thead> <tbody> <tr> <td>Less than 24 hours value</td> <td style="text-align: right;">642014</td> <td style="text-align: right;">71.20%</td> </tr> <tr> <td>Total EMS Records</td> <td style="text-align: right;">901670</td> <td style="text-align: right;">100%</td> </tr> </tbody> </table>	Value	Frequency	Percentage	Less than 24 hours value	642014	71.20%	Total EMS Records	901670	100%
Value	Frequency	Percentage								
Less than 24 hours value	642014	71.20%								
Total EMS Records	901670	100%								
<b>Regional Reviewer’s Conclusion</b>	<b>Check one</b> <input type="checkbox"/> Quantitative performance improvement <i>has</i> been documented <input type="checkbox"/> Quantitative performance improvement has <i>not</i> been documented <input type="checkbox"/> Not sure									
<b>If “has not” or “not sure”: What remedial guidance have you given the State?</b>										
<b>Comments</b>										

**Appendix B to Part 1300 – Application Requirements for Section 405 and Section 1906 Grants**

*[Each fiscal year, to apply for a grant under 23 U.S.C. 405 or Section 1906, Pub. L. 109-59, as amended by Section 4011, Pub. L. 114-94, the State must complete and submit all required information in this appendix, and the Governor's Representative for Highway Safety must sign the Certifications and Assurances.]*

State: Alabama

Fiscal Year: 2022

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**Instructions:** Check the box for each part for which the State is applying for a grant, fill in relevant blanks, and identify the attachment number or page numbers where the requested information appears in the HSP. Attachments may be submitted electronically.

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**■ PART 1: OCCUPANT PROTECTION GRANTS (23 CFR 1300.21)**

[Check the box above *only* if applying for this grant.]

**All States:**

[Fill in all blanks below.]

- The lead State agency responsible for occupant protection programs will maintain its aggregate expenditures for occupant protection programs at or above the average level of such expenditures in fiscal years 2014 and 2015. (23 U.S.C. 405(a)(9))
- The State's occupant protection program area plan for the upcoming fiscal year is provided in the HSP at Page 76- Program Area: Occupant Protection (location).
- The State will participate in the Click it or Ticket national mobilization in the fiscal year of the grant. The description of the State's planned participation is provided in the HSP at Page 131- Participation in Click-it-or-Ticket (CIOT) national mobilization (location).
- Countermeasure strategies and planned activities demonstrating the State's active network of child restraint inspection stations are provided in the HSP at Page 84- Child Restraint Inspection Stations (location). Such description includes estimates for: (1) the total number of planned inspection stations and events during the upcoming fiscal year; and (2) within that total, the number of planned inspection stations and events serving each of the following population categories: urban, rural, and at-risk. The planned inspection stations/events provided in the HSP are staffed with at least one current nationally Certified Child Passenger Safety Technician.



- Countermeasure strategies and planned activities, as provided in the HSP at \_\_\_\_\_ (location), that include estimates of the total number of classes and total number of technicians to be trained in the upcoming fiscal year to ensure coverage of child passenger safety inspection stations and inspection events by nationally Certified Child Passenger Safety Technicians.

**Lower Seat Belt Use States Only:**

*[Check at least 3 boxes below and fill in all blanks under those checked boxes.]*

- The State's **primary seat belt use law**, requiring all occupants riding in a passenger motor vehicle to be restrained in a seat belt or a child restraint, was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.  
**Legal citation(s):** \_\_\_\_\_.

- The State's **occupant protection law**, requiring occupants to be secured in a seat belt or age-appropriate child restraint while in a passenger motor vehicle and a minimum fine of \$25, was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citations:**

- \_\_\_\_\_ Requirement for all occupants to be secured in seat belt or age appropriate child restraint;
- \_\_\_\_\_ Coverage of all passenger motor vehicles;
- \_\_\_\_\_ Minimum fine of at least \$25;
- \_\_\_\_\_ Exemptions from restraint requirements.
- The countermeasure strategies and planned activities demonstrating the State's **seat belt enforcement plan** are provided in the HSP at \_\_\_\_\_ (location).
- The countermeasure strategies and planned activities demonstrating the State's **high risk population countermeasure program** are provided in the HSP at \_\_\_\_\_ (location).

- The State's **comprehensive occupant protection program** is provided as follows:
    - Date of NHTSA-facilitated program assessment conducted within 5 years prior to the application date \_\_\_\_\_ (date);
    - Multi-year strategic plan: HSP at \_\_\_\_\_ (location);
    - The name and title of the State's designated occupant protection coordinator is \_\_\_\_\_.
    - List that contains the names, titles and organizations of the Statewide occupant protection task force membership: HSP at \_\_\_\_\_ (location).
  
  - The State's NHTSA-facilitated **occupant protection program assessment** of all elements of its occupant protection program was conducted on \_\_\_\_\_ (date) (within 3 years of the application due date);
-

**■ PART 2: STATE TRAFFIC SAFETY INFORMATION SYSTEM IMPROVEMENTS GRANTS (23 CFR 1300.22)**

*[Check the box above **only** if applying for this grant.]*

**All States:**

- The lead State agency responsible for traffic safety information system improvement programs will maintain its aggregate expenditures for traffic safety information system improvements programs at or above the average level of such expenditures in fiscal years 2014 and 2015. (23 U.S.C. 405(a)(9))

*[Fill in **all** blank for each bullet below.]*

- A list of at least 3 TRCC meeting dates during the 12 months preceding the application due date is provided in the HSP at Page 139- 405(C) State Traffic Safety Information Systems (location).
- The name and title of the State's Traffic Records Coordinator is  
Mr. Terry Henderson, Director of the East Central Highway Safety Office
- A list of the TRCC members by name, title, home organization and the core safety database represented is provided in the HSP at Page 140-141- List of TRCC Members (location).
- The State Strategic Plan is provided as follows:
  - Description of specific, quantifiable and measurable improvements at  
Traffic Records for Model Performance Measures -page 147 (location);
  - List of all recommendations from most recent assessment at:  
5.0 Traffic Records Assessment Recommendations- Page 142 (location);
  - Recommendations to be addressed, including countermeasure strategies and planned activities and performance measures at  
6.0 Traffic Records Assessment (TRA) Responses that will be addressed-Page 143 (location);
  - Recommendations not to be addressed, including reasons for not implementing:  
HSP at  
7.0 Traffic Records Supporting Non-Implemented Recommendations - Page 146 (location).
- Written description of the performance measures, and all supporting data, that the State is relying on to demonstrate achievement of the quantitative improvement in the preceding 12 months of the application due date in relation to one or more of the significant data program attributes is provided in the HSP at AL\_FY22\_405c\_Interim report (location).
- The State's most recent assessment or update of its highway safety data and traffic records system was completed on January 20, 2020 (date).

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**■ PART 3: IMPAIRED DRIVING COUNTERMEASURES  
(23 CFR 1300.23(D)-(F))**

*[Check the box above **only** if applying for this grant.]*

**All States:**

- The lead State agency responsible for impaired driving programs will maintain its aggregate expenditures for impaired driving programs at or above the average level of such expenditures in fiscal years 2014 and 2015.
- The State will use the funds awarded under 23 U.S.C. 405(d) only for the implementation of programs as provided in 23 CFR 1300.23(j).

**Mid-Range State Only:**

*[Check **one** box below and fill in **all** blanks under that checked box.]*

The State submits its Statewide impaired driving plan approved by a Statewide impaired driving task force on \_\_\_\_\_ (date).

Specifically –

- HSP at \_\_\_\_\_ (location) describes the authority and basis for operation of the Statewide impaired driving task force;
- HSP at \_\_\_\_\_ (location) contains the list of names, titles and organizations of all task force members;
- HSP at \_\_\_\_\_ (location) contains the strategic plan based on Highway Safety Guideline No. 8 – Impaired Driving.

The State has previously submitted a Statewide impaired driving plan approved by a Statewide impaired driving task force on March 5, 2020 (date) and continues to use this plan.

**High-Range State Only:**

[Check one box below and fill in all blanks under that checked box.]

The State submits its Statewide impaired driving plan approved by a Statewide impaired driving task force on \_\_\_\_\_ (date) that includes a review of a NHTSA-facilitated assessment of the State's impaired driving program conducted on \_\_\_\_\_ (date). Specifically, –

- HSP at \_\_\_\_\_ (location) describes the authority and basis for operation of the Statewide impaired driving task force;
- HSP at \_\_\_\_\_ (location) contains the list of names, titles and organizations of all task force members;
- HSP at \_\_\_\_\_ (location) contains the strategic plan based on Highway Safety Guideline No. 8 – Impaired Driving;
- HSP at \_\_\_\_\_ (location) addresses any related recommendations from the assessment of the State's impaired driving program;
- HSP at \_\_\_\_\_ (location) contains the planned activities, in detail, for spending grant funds;
- HSP at \_\_\_\_\_ (location) describes how the spending supports the State's impaired driving program and achievement of its performance targets.

The State submits an updated Statewide impaired driving plan approved by a Statewide impaired driving task force on \_\_\_\_\_ (date) and updates its assessment review and spending plan provided in the HSP at \_\_\_\_\_ (location).

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**PART 4: ALCOHOL-IGNITION INTERLOCK LAWS (23 CFR 1300.23(G))**

*[Check the box above **only** if applying for this grant.]*

*[Fill in **all** blanks.]*

The State provides citations to a law that requires all individuals convicted of driving under the influence or of driving while intoxicated to drive only motor vehicles with alcohol-ignition interlocks for a period of 6 months that was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citation(s):**

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**PART 5: 24-7 SOBRIETY PROGRAMS (23 CFR 1300.23(H))**

*[Check the box above **only** if applying for this grant.]*

*[Fill in **all** blanks.]*

The State provides citations to a law that requires all individuals convicted of driving under the influence or of driving while intoxicated to receive a restriction on driving privileges that was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citation(s):**

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*[Check **at least one of the boxes** below and fill in **all** blanks under that checked box.]*

*Law citation.* The State provides citations to a law that authorizes a Statewide 24-7 sobriety program that was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citation(s):**

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*Program information.* The State provides program information that authorizes a Statewide 24-7 sobriety program. The program information is provided in the HSP at \_\_\_\_\_ (location).

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□ **PART 6: DISTRACTED DRIVING GRANTS (23 CFR 1300.24)**

[Check the box above *only* if applying for this grant and fill in all blanks.]

**Comprehensive Distracted Driving Grant**

- The State provides sample distracted driving questions from the State's driver's license examination in the HSP at \_\_\_\_\_ (location).

- **Prohibition on Texting While Driving**

The State's texting ban statute, prohibiting texting while driving and requiring a minimum fine of at least \$25, was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citations:**

- \_\_\_\_\_ Prohibition on texting while driving;
- \_\_\_\_\_ Definition of covered wireless communication devices;
- \_\_\_\_\_ Minimum fine of at least \$25 for an offense;
- \_\_\_\_\_ Exemptions from texting ban.

- **Prohibition on Youth Cell Phone Use While Driving**

The State's youth cell phone use ban statute, prohibiting youth cell phone use while driving, driver license testing of distracted driving issues and requiring a minimum fine of at least \$25, was enacted on \_\_\_\_\_ (date) and last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Legal citations:**

- \_\_\_\_\_ Prohibition on youth cell phone use while driving;
- \_\_\_\_\_ Definition of covered wireless communication devices;
- \_\_\_\_\_ Minimum fine of at least \$25 for an offense;
- \_\_\_\_\_ Exemptions from youth cell phone use ban.

- The State has conformed its distracted driving data to the most recent Model Minimum Uniform Crash Criteria (MMUCC) and will provide supporting data (i.e., NHTSA-developed MMUCC Mapping spreadsheet) within 30 days after notification of award.

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**PART 7: MOTORCYCLIST SAFETY GRANTS (23 CFR 1300.25)**

*[Check the box above **only** if applying for this grant.]*

*[Check at least 2 boxes below and fill in **all** blanks under those checked boxes **only**.]*

**Motorcycle riding training course:**

- The name and organization of the head of the designated State authority over motorcyclist safety issues is \_\_\_\_\_.
- The head of the designated State authority over motorcyclist safety issues has approved and the State has adopted one of the following introductory rider curricula:  
*[Check at least one of the following boxes below and fill in any blanks.]*
  - Motorcycle Safety Foundation Basic Rider Course;
  - TEAM OREGON Basic Rider Training;
  - Idaho STAR Basic I;
  - California Motorcyclist Safety Program Motorcyclist Training Course;
  - Other curriculum that meets NHTSA's Model National Standards for Entry-Level Motorcycle Rider Training and that has been approved by NHTSA.
- In the HSP at \_\_\_\_\_ (location), a list of counties or political subdivisions in the State where motorcycle rider training courses will be conducted during the fiscal year of the grant AND number of registered motorcycles in each such county or political subdivision according to official State motor vehicle records.

**Motorcyclist awareness program:**

- The name and organization of the head of the designated State authority over motorcyclist safety issues is \_\_\_\_\_.
- The State's motorcyclist awareness program was developed by or in coordination with the designated State authority having jurisdiction over motorcyclist safety issues.
- In the HSP at \_\_\_\_\_ (location), performance measures and corresponding performance targets developed for motorcycle awareness that identify, using State crash data, the counties or political subdivisions within the State with the highest number of motorcycle crashes involving a motorcycle and another motor vehicle.
- In the HSP at \_\_\_\_\_ (location), the countermeasure strategies and planned activities demonstrating that the State will implement data-driven programs in a majority of counties or political subdivisions



where the incidence of crashes involving a motorcycle and another motor vehicle is highest, and a list that identifies, using State crash data, the counties or political subdivisions within the State ranked in order of the highest to lowest number of crashes involving a motorcycle and another motor vehicle per county or political subdivision.

**Reduction of fatalities and crashes involving motorcycles:**

- Data showing the total number of motor vehicle crashes involving motorcycles is provided in the HSP at \_\_\_\_\_ (location).
- Description of the State's methods for collecting and analyzing data is provided in the HSP at \_\_\_\_\_ (location).

**Impaired driving program:**

- In the HSP at \_\_\_\_\_ (location), performance measures and corresponding performance targets developed to reduce impaired motorcycle operation.
- In the HSP at \_\_\_\_\_ (location), countermeasure strategies and planned activities demonstrating that the State will implement data-driven programs designed to reach motorcyclists and motorists in those jurisdictions where the incidence of motorcycle crashes involving an impaired operator is highest (i.e., the majority of counties or political subdivisions in the State with the highest numbers of motorcycle crashes involving an impaired operator) based upon State data.

**Reduction of fatalities and accidents involving impaired motorcyclists:**

- Data showing the total number of reported crashes involving alcohol-impaired and drug-impaired motorcycle operators is provided in the HSP at \_\_\_\_\_ (location).
- Description of the State's methods for collecting and analyzing data is provided in the HSP at \_\_\_\_\_ (location).

**Use of fees collected from motorcyclists for motorcycle programs:**

*[Check one box only below and fill in all blanks under the checked box only.]*

Applying as a Law State –

- The State law or regulation requires all fees collected by the State from motorcyclists for the purpose of funding motorcycle training and safety programs are to be used for motorcycle training and safety programs. **AND**
- The State's law appropriating funds for FY \_\_\_\_ demonstrates that all fees collected by the State from motorcyclists for the purpose of funding motorcycle training and safety programs are spent on motorcycle training and safety programs.

**Legal citation(s):** \_\_\_\_\_  
\_\_\_\_\_

Applying as a Data State –

- Data and/or documentation from official State records from the previous fiscal year showing that **all** fees collected by the State from motorcyclists for the purpose of funding motorcycle training and safety programs were used for motorcycle training and safety programs is provided in the HSP at \_\_\_\_\_ (location).

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**□ PART 8: STATE GRADUATED DRIVER LICENSING INCENTIVE GRANTS (23 CFR 1300.26)**

*[Check the box above **only** if applying for this grant.]*

*[Fill in all applicable blanks below.]*

The State's graduated driver's licensing statute, requiring both a learner's permit stage and intermediate stage prior to receiving an unrestricted driver's license, was last amended on \_\_\_\_\_ (date), is in effect, and will be enforced during the fiscal year of the grant.

**Learner's Permit Stage –**

**Legal citations:**

- \_\_\_\_\_ Applies prior to receipt of any other permit, license, or endorsement by the State if applicant is younger than 18 years of age and has not been issued an intermediate license or unrestricted driver's license by any State;
- \_\_\_\_\_ Applicant must pass vision test and knowledge assessment;
- \_\_\_\_\_ In effect for at least 6 months;
- \_\_\_\_\_ In effect until driver is at least 16 years of age;
- \_\_\_\_\_ Must be accompanied and supervised at all times;
- \_\_\_\_\_ Requires completion of State-certified driver education or training course or at least 50 hours of behind-the-wheel training, with at least 10 of those hours at night;
- \_\_\_\_\_ Prohibits use of personal wireless communications device;
- \_\_\_\_\_ Extension of learner's permit stage if convicted of a driving-related offense;
- \_\_\_\_\_ Exemptions from learner's permit stage.

**Intermediate Stage –**

**Legal citations:**

- \_\_\_\_\_ Commences after applicant younger than 18 years of age successfully completes the learner's permit stage, but prior to receipt of any other permit, license, or endorsement by the State;
- \_\_\_\_\_ Applicant must pass behind-the-wheel driving skills assessment;

- \_\_\_\_\_ In effect for at least 6 months;
  - \_\_\_\_\_ In effect until driver is at least 17 years of age;
  - \_\_\_\_\_ Must be accompanied and supervised between hours of 10:00 p.m. and 5:00 a.m. during first 6 months of stage, except when operating a motor vehicle for the purposes of work, school, religious activities, or emergencies;
  - \_\_\_\_\_ No more than 1 nonfamilial passenger younger than 21 years of age allowed;
  - \_\_\_\_\_ Prohibits use of personal wireless communications device;
  - \_\_\_\_\_ Extension of intermediate stage if convicted of a driving-related offense;
  - \_\_\_\_\_ Exemptions from intermediate stage.
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**PART 9: NONMOTORIZED SAFETY GRANTS (23 CFR 1300.27)**

[Check the box above *only* applying for this grant AND *only* if NHTSA has identified the State as eligible because the State annual combined pedestrian and bicyclist fatalities exceed 15 percent of the State's total annual crash fatalities based on the most recent calendar year final FARS data.]

The State affirms that it will use the funds awarded under 23 U.S.C. 405(h) only for the implementation of programs as provided in 23 CFR 1300.27(d).

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**PART 10: RACIAL PROFILING DATA COLLECTION GRANTS (23 CFR 1300.28)**

*[Check the box above **only** if applying for this grant.]*

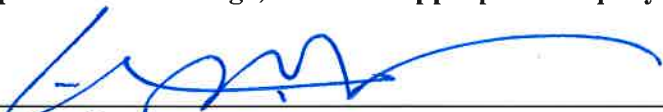
*[Check one box **only** below and fill in **all** blanks under the checked box **only**.]*

- In the HSP at \_\_\_\_\_ (location), the official document(s) (i.e., a law, regulation, binding policy directive, letter from the Governor or court order) demonstrates that the State maintains and allows public inspection of statistical information on the race and ethnicity of the driver for each motor vehicle stop made by a law enforcement officer on all public roads except those classified as local or minor rural roads.
- In the HSP at \_\_\_\_\_ (location), the State will undertake countermeasure strategies and planned activities during the fiscal year of the grant to maintain and allow public inspection of statistical information on the race and ethnicity of the driver for each motor vehicle stop made by a law enforcement officer on all public roads except those classified as local or minor rural roads. (A State may not receive a racial profiling data collection grant by checking this box for more than 2 fiscal years.)
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**In my capacity as the Governor's Representative for Highway Safety, I hereby provide the following certifications and assurances –**

- I have reviewed the above information in support of the State's application for 23 U.S.C. 405 and Section 1906 grants, and based on my review, the information is accurate and complete to the best of my personal knowledge.
- As condition of each grant awarded, the State will use these grant funds in accordance with the specific statutory and regulatory requirements of that grant, and will comply with all applicable laws, regulations, and financial and programmatic requirements for Federal grants.
- I understand and accept that incorrect, incomplete, or untimely information submitted in support of the State's application may result in the denial of a grant award.

**I understand that my statements in support of the State's application for Federal grant funds are statements upon which the Federal Government will rely in determining qualification for grant funds, and that knowing misstatements may be subject to civil or criminal penalties under 18 U.S.C. 1001. I sign these Certifications and Assurances based on personal knowledge, and after appropriate inquiry.**

  
\_\_\_\_\_  
Signature Governor's Representative for Highway Safety

  
\_\_\_\_\_  
Date

**William M. Babington**

\_\_\_\_\_  
Printed name of Governor's Representative for Highway Safety