

# TARCOG Safety Coalition

## *Regional Safety Action Plan Development Meeting #2*



*presented to*

**Alabama Department  
of Transportation**

*presented by*

**Cambridge Systematics, Inc.  
The University of Alabama**



November 19, 2015

# Agenda

---

- Welcome and Introductions
- Project Purpose and Need
- Emphasis Area - Survey
- Emphasis Area - Crash Data
- Selecting TARCOG Emphasis Areas
- Countermeasure Selection
- Next Steps

# Introductions

---

- ▶ Name
- ▶ Agency/Organization

# PROJECT PURPOSE AND NEED

# SHSP Update Process

## SHSP Update Process

### Phase I Regional Pilots

- Pilot regional safety action plan development in two regions
- Establish regional safety goals, action steps, and evaluation plan

### Phase II Regional Plans

- Develop regional safety action plans in remaining regions
- Build support for SHSP update

### Phase III Statewide SHSP Update

- Overall strategy and implementation plan for state
- Encompasses various elements of regional plans

# Regional Safety Plan Development Process

## Pre-Meeting Planning

- Data analysis
- Logistics
- Recruitment
- Recruitment

## Regional Coalition Meetings

### Meeting #1

High-Level  
Data  
Overview

### Meeting #2

Detailed  
Data  
Overview  
and EA  
Selection

### Regional Emphasis Area Team Action Plan Development

EA Team  
Meeting #1

EA Team  
Meeting #2

EA Team  
Meeting #3

### Meeting #3

Prioritize  
initiatives/  
actions

## Statewide Steering Committee Meeting

- Plan adoption
- Identify resource needs
- Statewide SHSP development
- Discuss policy changes

# EMPHASIS AREA – SURVEY

# Safe Home Alabama Website

The screenshot shows the website [www.safehomealabama.gov](http://www.safehomealabama.gov). The header features the "SAFE HOME ALABAMA" logo with a red arrow pointing to it, a circular map of Alabama, and the tagline "Unifying Alabama's Traffic Safety Efforts Working Together to Save Lives". A "Login" button is in the top right. A search bar is located below the tagline. The navigation menu includes: SHA HOME, SERVICE GROUPS, GOVERNMENT AGENCIES, UNIVERSITIES, SAFETY TOPICS, and PLANS & ANALYSIS. The "PLANS & ANALYSIS" menu is open, listing: Strategic Highway Safety Plan (SHSP), CARE/eCrash, eCite, Crash Facts, Demographics, FARS, Holidays, IHSDM/HSM, Road Improvements, TRCC, and Work Zones. A red arrow points to the "Strategic Highway Safety Plan (SHSP)" item. The main content area features a banner for "Don't Wreck The Holidays" with the subtext "Pre-Holiday Season Drunk Driving Prevention November 28 - December 15, 2015". The banner text reads: "As we prepare for festivities with family and friends, NHTSA wants to remind all drivers that it's dangerous to drive after drinking. You have to choose your role before drinking begins: will you drink or will you drive? Remember Buzed Driving is Drunk Driving. [Click here and get your campaign materials now!](#)". To the right of the text is an image of a snowman. Below the banner are three green circular icons: the state of Alabama, the United States, and a gavel.





# Safe Home Alabama Website

www.safehomealabama.gov/DataAnalysis/StrategicHighwaySafetyPlan(SHSP).aspx

**SAFE  
HOME  
ALABAMA**



Unifying Alabama's Traffic Safety Efforts  
Working Together to Save Lives

Login

Search...



SHA HOME

SERVICE GROUPS

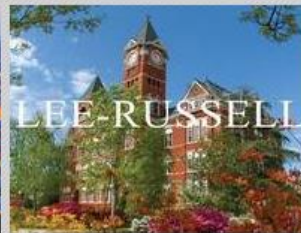
GOVERNMENT AGENCIES

UNIVERSITIES

SAFETY TOPICS

**PLANS & ANALYSIS**

## SHSP REGIONS



### SHSP

#### Strategic Highway Safety Plan

The 4E's of Transportation  
Safety

### SHSP Information

The State of Alabama has an initiative to develop the most recent Strategic Highway Safety Plan.

This task is being conducted by the University of Alabama (UA) for the Alabama Department of Transportation (ALDOT).

ALDOT has decided to use a "bottom up" approach to update the SHSP. This approach involves developing regional





## TARCOG

TARCOG: Top of Alabama Regional Council of Governments

Counties Served:  
DeKalb, Jackson, Limestone, Madison, and Marshall

### Previous Meetings

[April 30, 2015 Pre-Planning Meeting](#)

[Agenda](#)  
[Presentation](#)

[July 17, 2015 Meeting #1](#)

[Agenda](#)  
[Presentation](#)

[TARCOG Next Meeting](#)

Thursday, November 19, 2015  
9:30 AM – 11:30 AM  
TARCOG Building Conference Room  
5075 Research Drive  
Huntsville, AL 35805

TARCOG STAKEHOLDER  
FEEDBACK SURVEY

TAKE SURVEY NOW! >>

## Top of Alabama Regional Council of Governments Regional Safety Action Plan

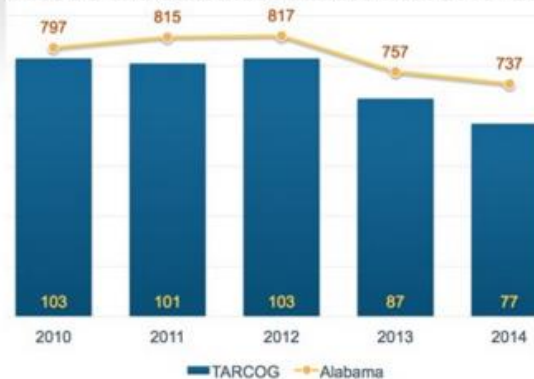
# TARCOG REGIONAL COALITION

## Regional Safety Action Plan



ALDOT and the University of Alabama have teamed up to update the Alabama Strategic Highway Safety Plan (SHSHP). As we update the statewide plan, we are developing individual plans for the various regions around the state and we have identified the TARCOC region as one of our key starting points. In order for the TARCOC regional plan to be meaningful, we need input from people that live and work in the region. We need to know: *What are your safety concerns? Speeding on rural roads? DUI? Motorcycles? Bicycles? Trucks? Younger drivers? Older drivers? etc.* The chart below shows how the TARCOC region compares to the overall state in terms of people killed in crashes.

### TARCOG and Statewide Fatalities from 2010 - 2014



We want to engage local stakeholders in a process to identify what are the most important safety challenges in your region and what are the most effective ways of solving them (enforcement, education, engineer, emergency response). We want to help you make sure the blue columns showing the number people killed each year in the TARCOC region continues to go down. **And we need you all to help us do it.**

### Who Should Participate?

- Engineers

### Benefits of Participating in the Regional Process

# Survey Responses – 18 Total

4E Concept Related to Field of Work	Percent of Responses
Engineering	56%
Education	22%
Enforcement	17%
Emergency Services	6%

Other 4Es Also Related to Field of Work	Percent of Responses
Engineering	18%
Education	41%
Enforcement	12%
Emergency Services	6%

# Priority Emphasis Areas - Survey Results

Ranking	Emphasis Areas
1	Distracted Drivers
2	Aggressive Drivers
3	Roadway Departure
4	Impaired Driver
5	Speeding
6	Intersection
7	Unrestrained
8	Younger Driver (15-25)
9	Commercial Motor Vehicle (CMV)
10	Motorcycles

# Top 3 Emphasis Areas – 4Es

Ranking	Emphasis Areas
1	Distracted Drivers
2	Aggressive Drivers
3	Roadway Departure

Ranking	Engineering	Education	Enforcement	Emergency Services
1	Distracted Drivers	Distracted Drivers	Aggressive Drivers	Distracted Drivers
2	Roadway Departure	Aggressive Drivers	Impaired Driver	Impaired Driver
3	Aggressive Drivers	Younger Driver (15-25)	Distracted Drivers	Aggressive Drivers

# Survey Results

---

## ► Other:

- » Traffic Records Management
- » Access Management
- » Move over
- » Faded lane markings (especially when raining)
- » Standing water on roads

# EMPHASIS AREA – CRASH DATA

# Priority Emphasis Areas – Crash Data

## Fatalities and Serious Injuries, 2010 to 2014

Emphasis Areas	Total Fatalities	Percentage of Total Fatalities	Total Serious Injuries	Percentage of Total Serious Injuries
Aggressive Drivers	266	52%	1,944	41%
Roadway Departure	241	47%	2,009	42%
Unrestrained	207	41%	887	19%
Younger Driver(15-25)	178	35%	1,924	40%
Intersection	156	31%	2,093	44%
Speeding	156	31%	867	18%
Impaired Driver	127	25%	693	14%
Older Driver (65+)	95	19%	876	18%
Pedestrian	49	10%	144	3%
Motorcycles	48	9%	327	7%



# Priority Emphasis Areas

## Survey Results

Ranking	Emphasis Areas
1	Distracted Drivers
2	Aggressive Drivers
3	Roadway Departure
4	Impaired Driver
5	Speeding

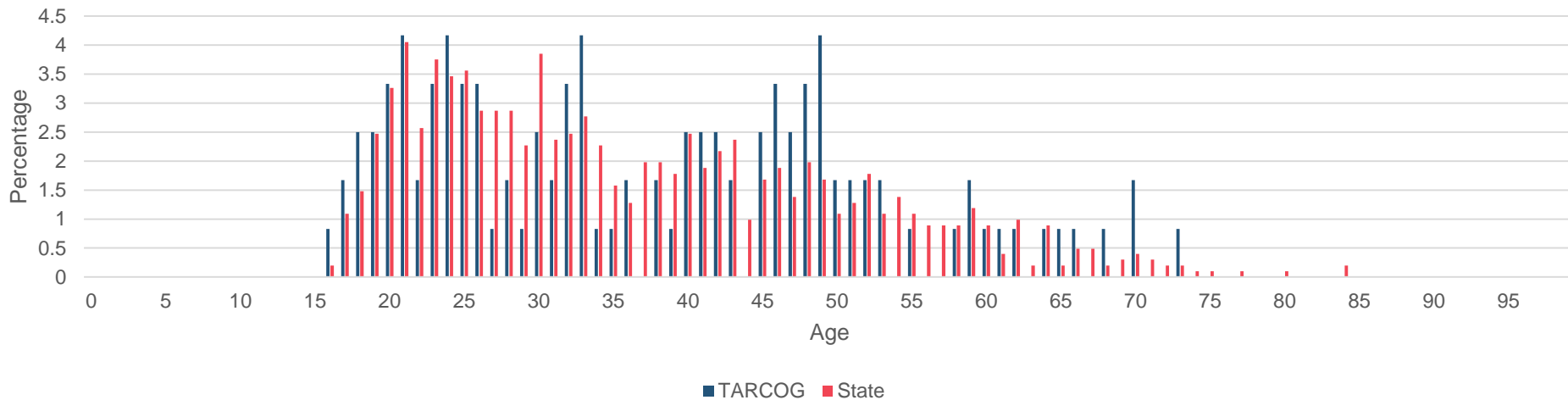
## Crash Data

Ranking	Emphasis Areas
1	Aggressive Drivers
2	Roadway Departure
3	Unrestrained
4	Younger Driver(15-25)
5	Intersection

# Percent of DUI Crashes Caused By Young Drivers (15-25)

Severity	TARCOG	State
Fatal	28	26
Injury	25	25
Total	25	25

Distribution of Fatal DUI Crashes by Age



# Priority Emphasis Areas

## Survey Results

Ranking	Emphasis Areas
1	Distracted Drivers
2	Aggressive Drivers
3	Roadway Departure
4	Impaired Driver
5	Speeding

## Crash Data

Ranking	Emphasis Areas
1	Aggressive Drivers
2	Roadway Departure
3	Unrestrained
4	Younger Driver(15-25)
5	Intersection

## Birmingham Region

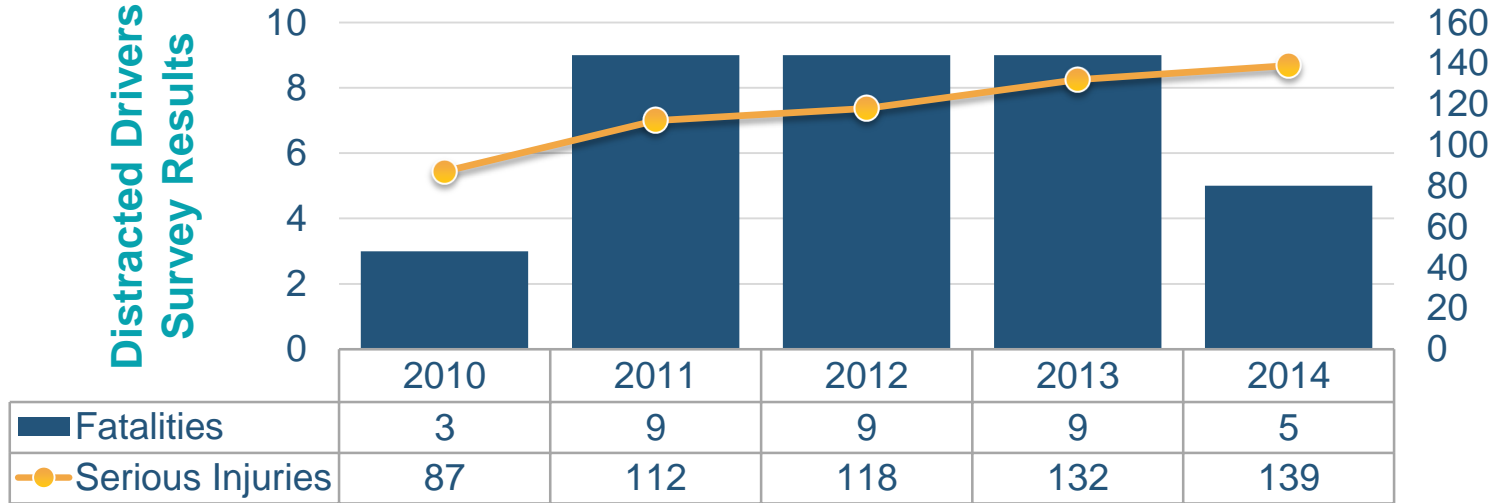
Ranking	Emphasis Areas
1	Distracted Drivers
2	Speeding
3	Aggressive Drivers
4	Impaired Driver
5	Intersection

Ranking	Emphasis Areas
1	Roadway Departure
2	Aggressive Drivers
3	Younger Driver (15-25)
4	Unrestrained
5	Intersection

# SELECTING TARCOG EMPHASIS AREAS

# #1 Ranked Emphasis Areas

Distracted Drivers  
Survey Results

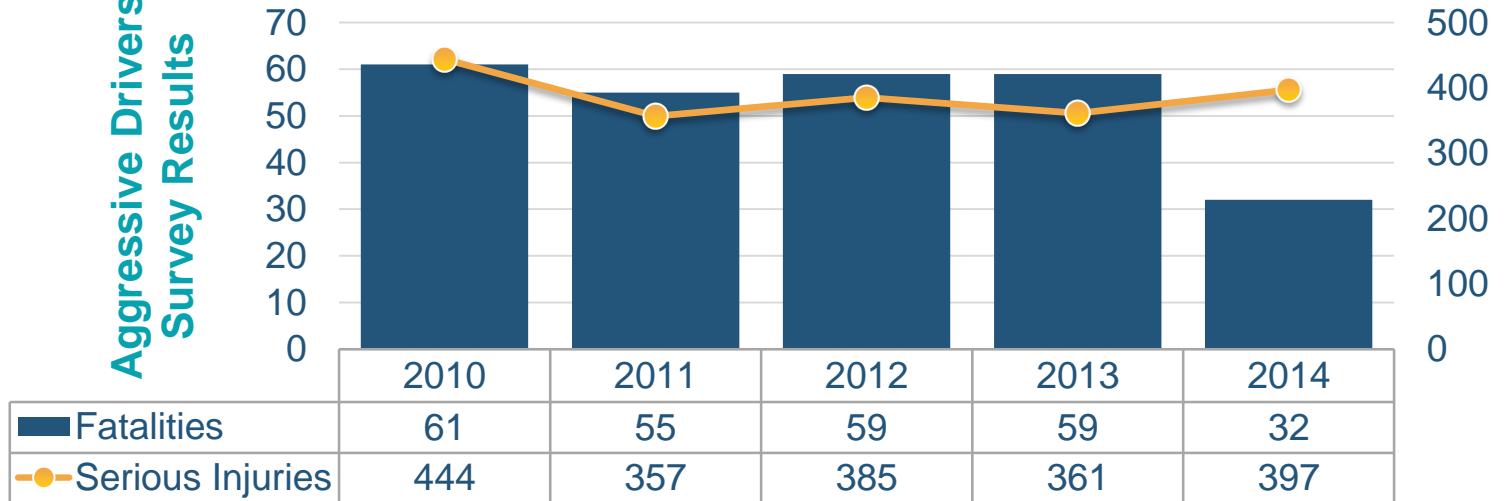


Aggressive Drivers  
Crash Data



# #2 Ranked Emphasis Areas

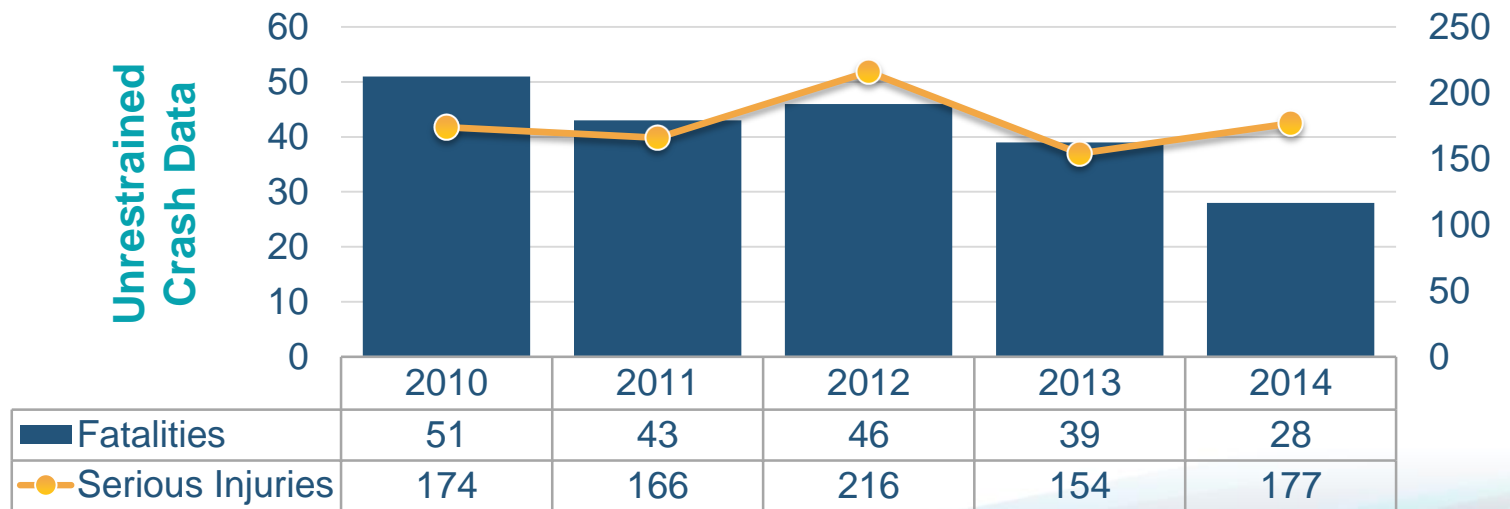
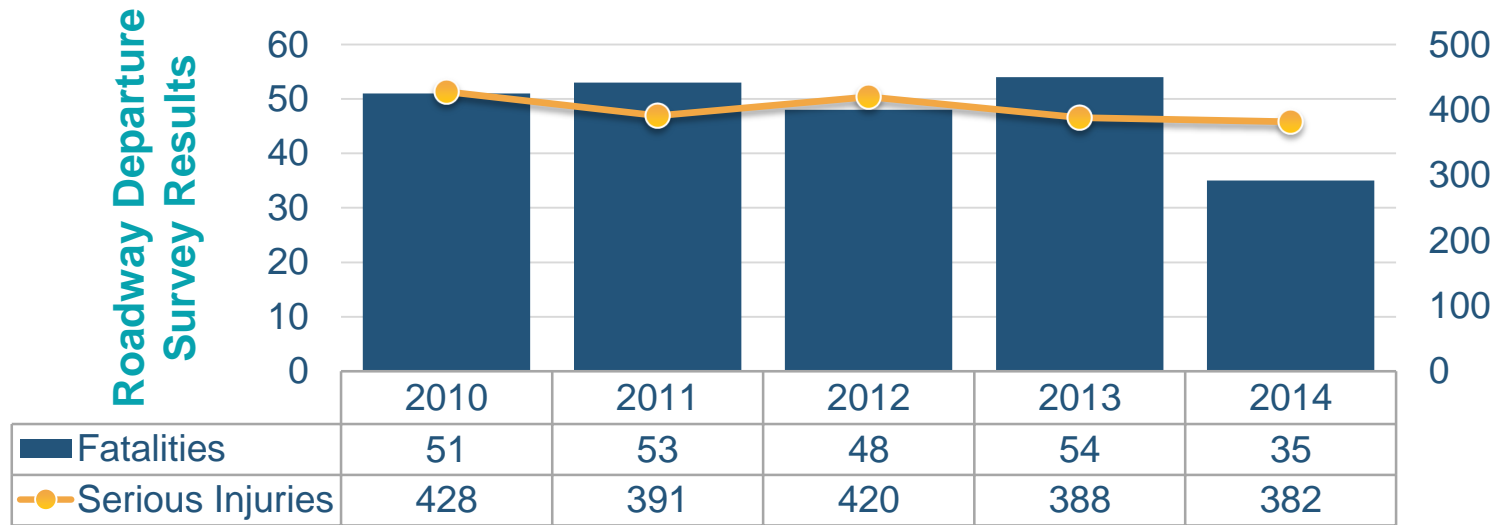
Aggressive Drivers  
Survey Results



Roadway Departure  
Crash Data

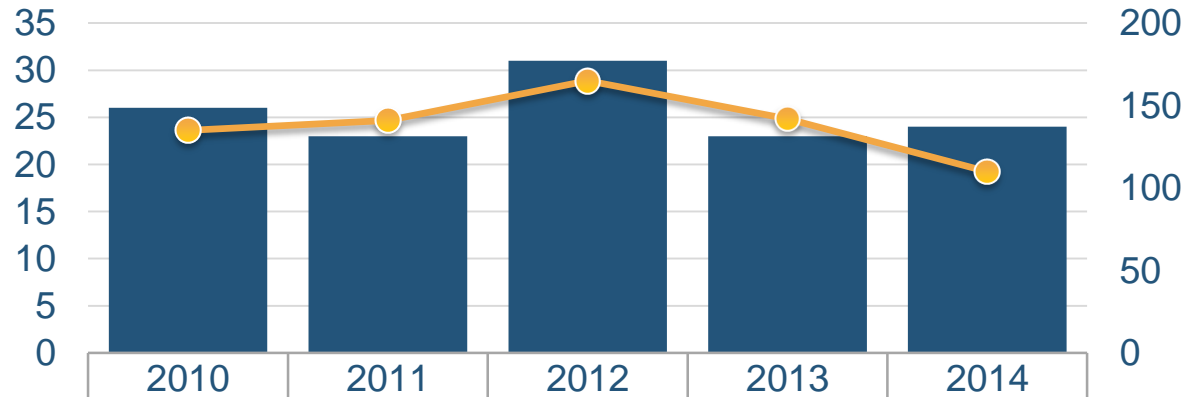


# #3 Ranked Emphasis Areas



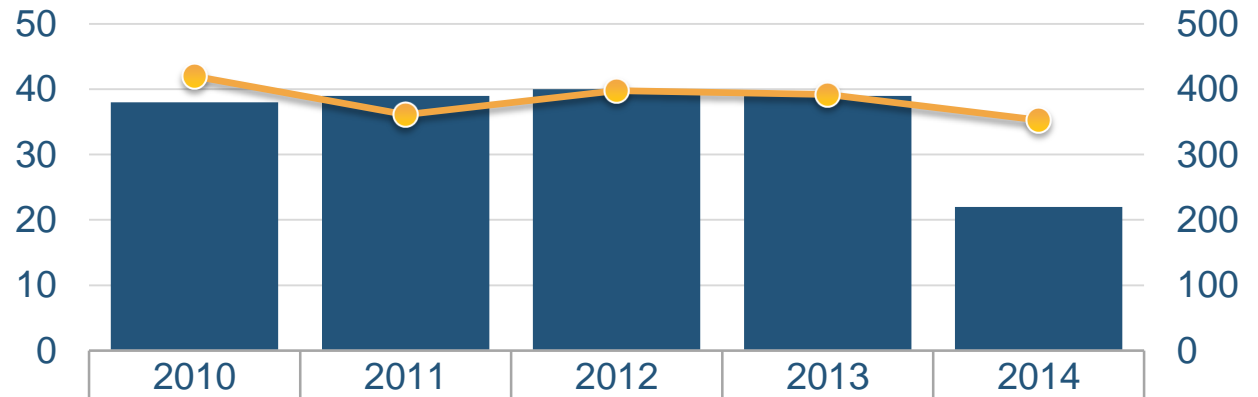
# #4 Ranked Emphasis Areas

Impaired Driver  
Survey Results



■ Fatalities	26	23	31	23	24
● Serious Injuries	135	141	165	142	110

Younger Driver  
(15-25)  
Crash Data

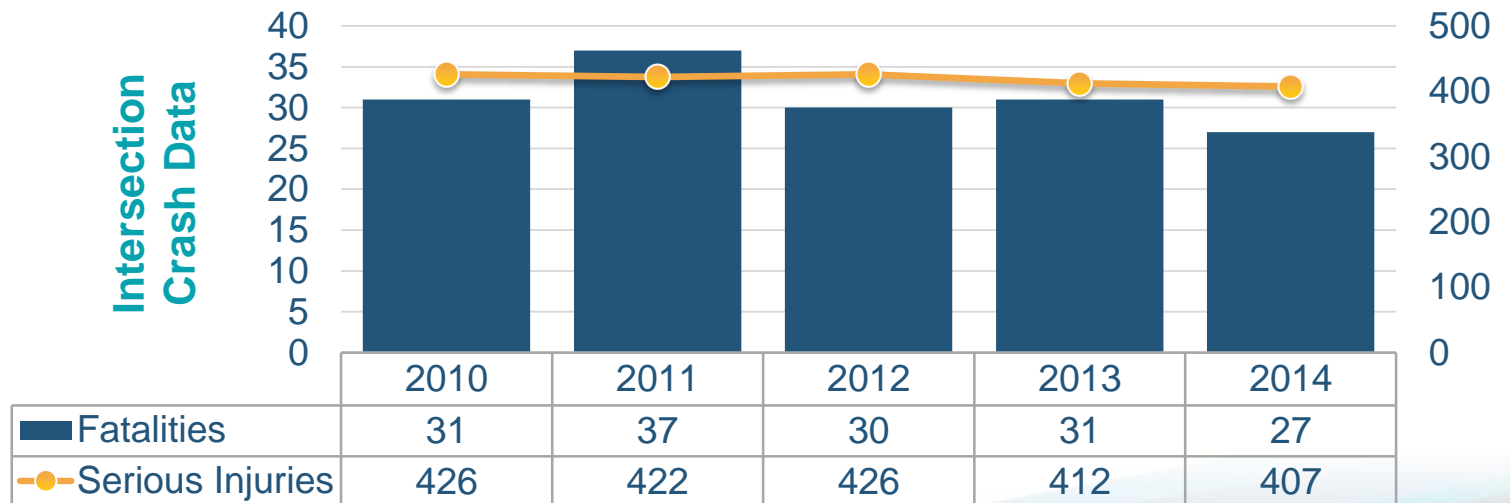
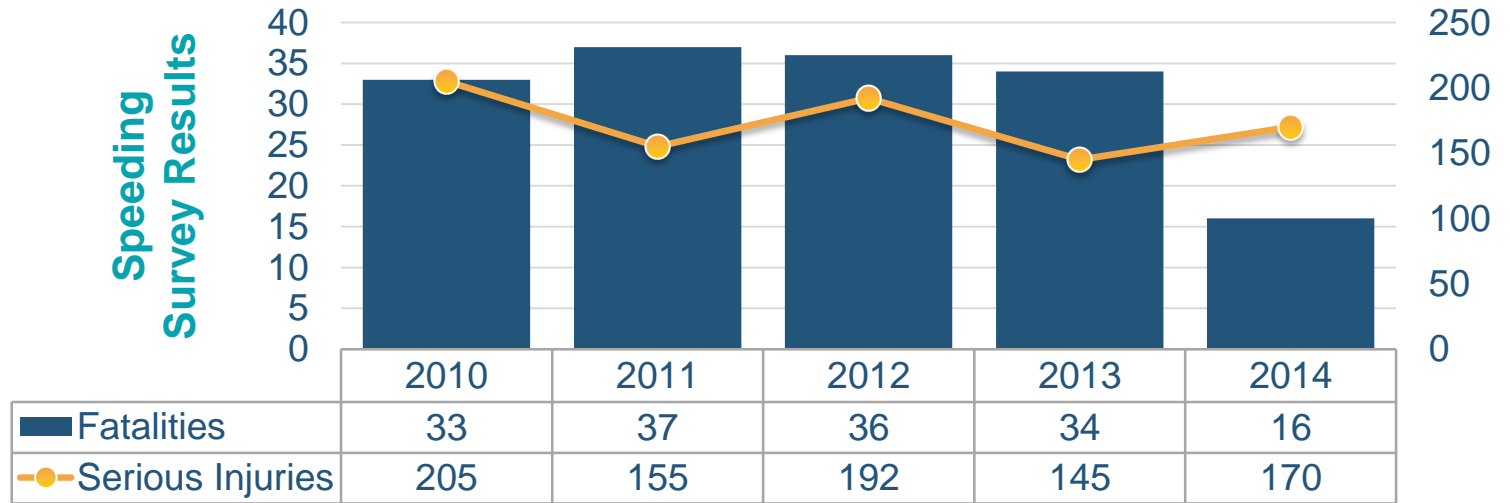


■ Fatalities	38	39	40	39	22
● Serious Injuries	420	361	398	392	353





# #5 Ranked Emphasis Areas



# COUNTERMEASURE SELECTION

# Countermeasure Selection Considerations

---

- ▶ History
- ▶ Feasibility
  - » Policies
  - » Resources
  - » Knowledge
- ▶ Effectiveness
- ▶ Sponsorship

# Current Practice

---

- Enforcement
- Engineering
- Education
- Emergency Services

# Resources

---

- ▶ NCHRP 500 Series
- ▶ Countermeasures that Work
- ▶ CMF Clearinghouse
- ▶ Research Literature

# ROUNDTABLE DISCUSSION

# Aggressive Drivers - #1 from Crash Data and #2 from Survey

## EXHIBIT V-1

### Objectives and Strategies for Addressing Aggressive Driving

---

#### Objectives

#### Strategies

4.1 A—Deter aggressive driving in specific populations, including those with a history of such behavior, and at specific locations

4.1 A1—Target enforcement

4.1 A2—Conduct educational and public information campaigns

4.1 A3—Educate and impose sanctions against repeat offenders

4.1 B—Improve the driving environment to eliminate or minimize the external "triggers" of aggressive driving

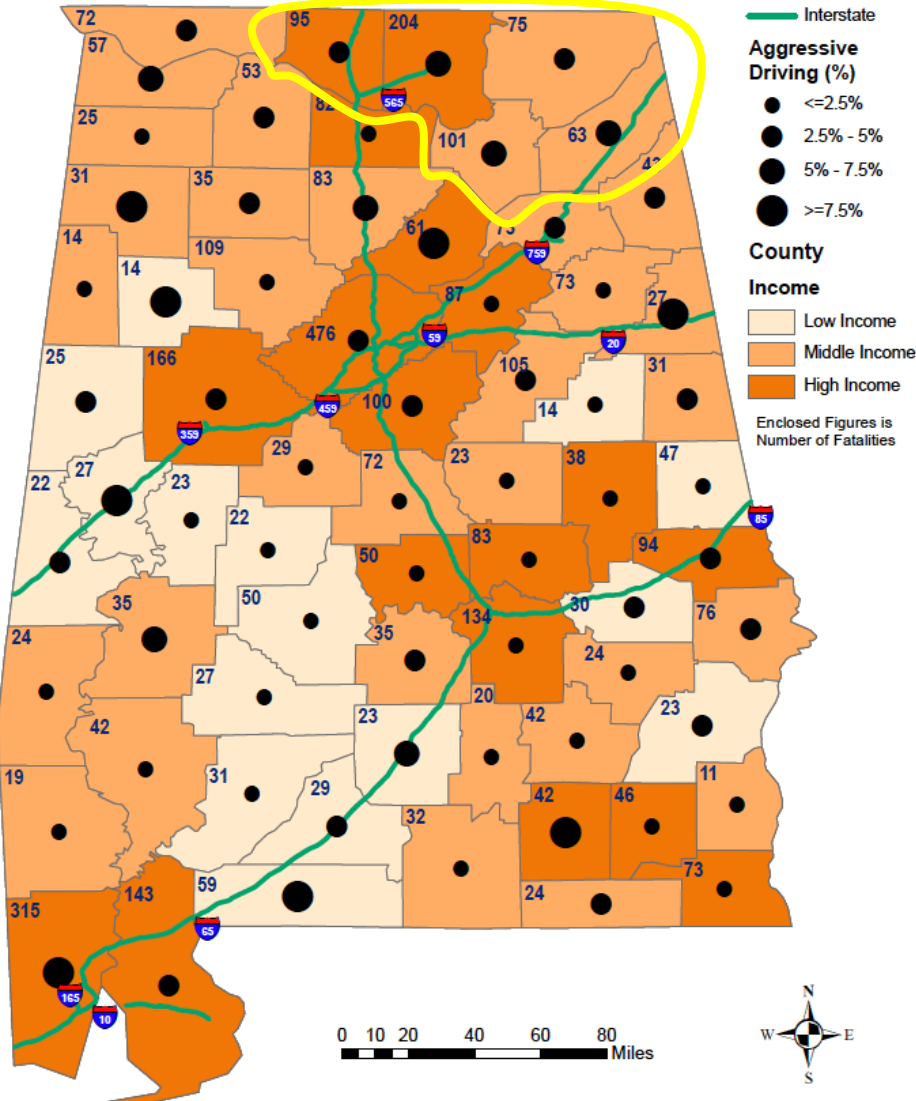
4.1 B1—Change or mitigate the effects of identified elements in the environment

4.1 B2—Reduce nonrecurring delays and provide better information about these delays

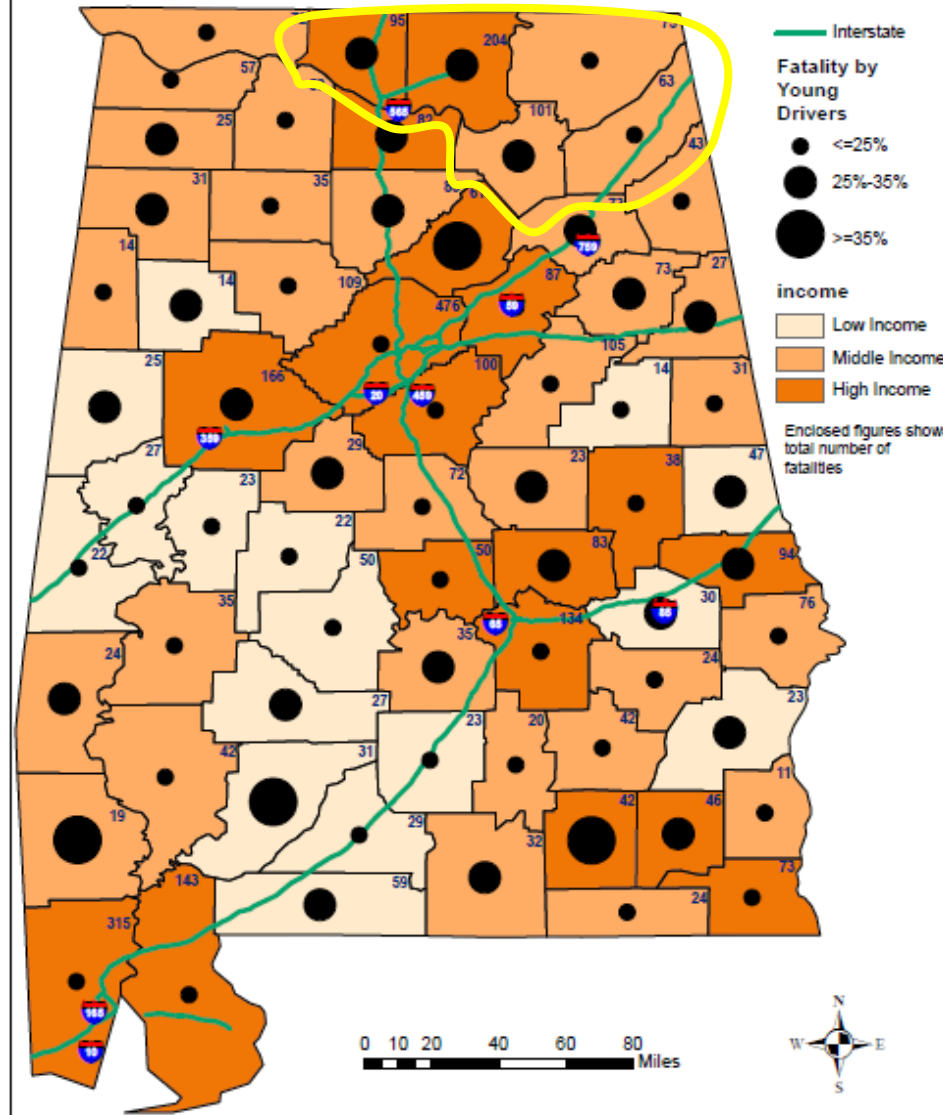
---

# Socio-Economic Aspects of Aggressive Driving Crashes

**Fatal Crashes Caused by Aggressive Drivers in Alabama (2009-2013)**



**Fatal Crashes Caused by Young (15-25yrs old) in Alabama Counties (2009 - 2013)**





# Roadway Departure - #2 from Crash Data

## EXHIBIT I-1 Emphasis Area Objectives and Strategies

Objectives	Strategies
<p>15.1 A—Keep vehicles from encroaching on the roadside</p>	<p>15.1 A1—Install shoulder rumble strips</p> <p>15.1 A2—Install edgeline “profile marking,” edgeline rumble strips or modified shoulder rumble strips on section with narrow or no paved shoulders</p> <p>15.1 A3—Install midlane rumble strips</p> <p>15.1 A4—Provide enhanced shoulder or in-lane delineation and marking for sharp curves</p> <p>15.1 A5—Provide improved highway geometry for horizontal curves</p> <p>15.1 A6—Provide enhanced pavement markings</p> <p>15.1 A7—Provide skid-resistant pavement surfaces</p> <p>15.1 A8—Apply shoulder treatments</p> <ul style="list-style-type: none"> <li>• Eliminate shoulder drop-offs (E)*</li> <li>• Widen and/or pave shoulders (P)*</li> </ul>
<p>15.1 B—Minimize the likelihood of crashing into an object or overturning if the vehicle travels off the shoulder</p>	<p>15.1 B1—Design safer slopes and ditches to prevent rollovers (see “Improving Roadsides,” page V-36)</p> <p>15.1 B2—Remove/relocate objects in hazardous locations (see “Improving Roadsides,” page V-36)</p> <p>15.1 B3—Delineate trees or utility poles with retroreflective tape</p>
<p>15.1.C—Reduce the severity of the crash</p>	<p>15.1 C1—Improve design of roadside hardware (e.g., light poles, signs, bridge rails) (see “Improving Roadsides,” page V-36)</p> <p>15.1 C2—Improve design and application of barrier and attenuation systems (see “Improving Roadsides,” page V-36)</p>

\* An explanation of (E) and (P) appears on page V-3.



# NEXT STEPS

# Next Steps

---

- Identify date/location for Coalition Meeting #3
- Convene task force for each emphasis area
  - » Web Conferences
  - » Draft Countermeasure Plans
- Conduct meeting #3 to finalize emphasis area action plans
- Finalize Regional Safety Action Plan



TARCOG Regional Safety Coalition  
Impaired Driving Emphasis Area Action Plan

**Goal:** The goal of the TARCOG Regional Safety Action Plan is to reduce fatal and serious injury crash by at least 50% by 2035.

**Objective 1:** Reduce vehicle operation under the influence of alcohol or other drugs.

**Strategy 1.1:** Develop regional impaired driving coalition.

Action Step #	Action Step Leader	Description	Output Measure	Timeline	Status
1.1.1	Jane Doe (Huntsville Hospital), Deputy John Smith (Marshall County Sheriff's Office),	Select a coalition executive committee	Select 5 individuals to serve as the coalitions executive committee.	6 months	
1.1.2	Deputy John Smith (Marshall County Sheriff's Office), Lt. Sam Johnson ( <u>ALEA</u> , Region F)	Recruit local police agencies and regional sheriff offices to join the coalition as law enforcement representatives.	Contact all 5 regional sheriff offices and all local law enforcement agencies in the region.	12 months	

# Contacts

---

**Steven L. Jones, Jr., Ph.D.**

Associate Professor

Department of Civil, Construction,  
and Environmental Engineering

Telephone: 205.348.3137

Email: [sjones@eng.ua.edu](mailto:sjones@eng.ua.edu)

**Danena Gaines, Ph.D.**

Senior Associate

Cambridge Systematics, Inc.

Telephone: 404.460.2605

Email: [dgaines@camsys.com](mailto:dgaines@camsys.com)



## Investigation of a supplementary tool to assist in the prioritization of emphasis areas in North American strategic highway safety plans<sup>☆</sup>

Peter Y. Park<sup>\*</sup>, Jason Young<sup>1</sup>

*Department of Civil and Geological Engineering, University of Saskatchewan, 57 Campus Drive, Saskatoon, SK S7N 5A9, Canada*

### ARTICLE INFO

#### *Article history:*

Received 30 April 2011

Received in revised form 5 July 2011

Accepted 16 August 2011

#### *Keywords:*

Strategic highway safety plan

Beta-binomial model

Emphasis areas

Collision diagnosis, Traffic safety policy

### ABSTRACT

An important potential benefit of a jurisdiction developing an upper-level traffic safety policy statement, such as a strategic highway safety plan (SHSP) or a traffic safety action plan, is the creation of a manageable number of focus areas, known as emphasis areas. The responsible agencies in the jurisdiction can then direct their finite resources in a systematic and strategic way designed to maximize the effort to reduce the number and severity of roadway collisions. In the United States, the federal government through AASHTO has suggested 22 potential emphasis areas. In Canada, CCMTA's 10 potential emphasis areas have been listed for consideration. This study reviewed the SHSP and traffic safety action plan of 53 jurisdictions in North America, and conducted descriptive data analyses to clarify the issues that currently affect the selection and prioritization process of jurisdiction-specific emphasis areas. We found that the current process relies heavily on high-level collision data analysis and communication among the SHSP stakeholders, but may not be the most efficient and effective way of selecting and prioritizing the emphasis areas and allocating safety improvement resources. This study then formulated a formal collision diagnosis test, known as the beta-binomial test, to clarify and illuminate the selection and the prioritization of jurisdiction-specific emphasis areas. We developed numerical examples to demonstrate how engineers can apply the proposed diagnosis test to improve the selection and prioritization of individual jurisdictions' emphasis areas.