

Introduction

With the passage of the Safe, Accountable Flexible and Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU), Congress challenged states by calling for the development of comprehensive Strategic Highway Safety Plans (SHSP's) aimed at reducing deaths and injuries associated with traffic crashes. The goal is to lower the number of traffic fatalities nationwide. The strategy is to bring together the four safety components, engineering, enforcement, education, and emergency medical services ("4 E's") in each state to implement a comprehensive strategic plan.

Georgia's traffic fatality rate has closely resembled the national highway fatality rate for several years. Georgia experienced an increase of 103 highway fatalities in 2005, and the statewide fatality rate increased from 1.46 in 2004 to 1.54 per 100 million vehicle miles traveled in 2005. The national fatality count during the same period is 43,443, up from 42,836 in 2004 - an increase of 607 fatalities. Georgia's increase accounts for 17% of the national increase. This distinction highlights Georgia's need to seriously consider new approaches and comprehensive highway safety initiatives to reduce motor vehicle crashes, injuries, and fatalities.

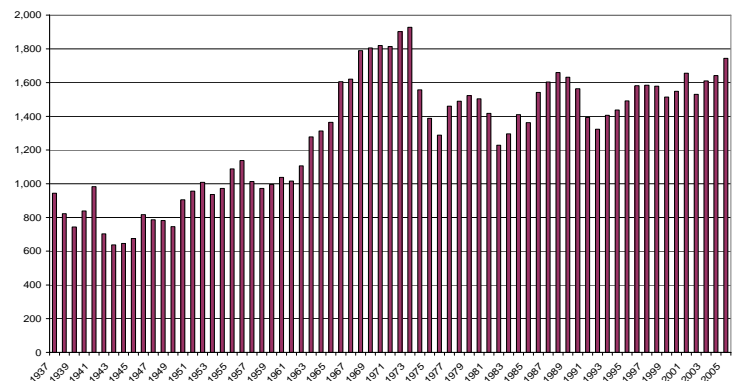
Georgia's highway fatalities peaked in 1973 at 1,928. Specific evaluations are needed to identify which actions are most effective in Georgia. For example, fatalities on state routes only increased by 3% (1102 to 1134) from 2004 to 2005, fatalities on non-state routes increased by 13% (539 to 610). This indicates new strategies are needed to affect the climb in highway fatalities. In 2000 dollars, the costs of traffic crashes, injuries, and deaths exceed \$7.8 billion per year.

In an effort to create and support a strategic highway safety plan, the highway safety

partnerships established a leadership team, working groups, data analysis team and highway safety emphasis area task teams. The teams are charged with timely efforts to identify problems and develop action plans.

Georgia's first Strategic Highway Safety Plan (SHSP) was drafted with a current data analysis report. (2005 and previous trend data.) Some data categories track the number of crashes while others track the number of fatalities. Georgia's SHSP also includes a review of existing highway safety plans in Georgia and incorporates those existing highway safety plans into the SHSP. The action plans within the existing highway safety shall continue to represent the SHSP actions. In addition, important public safety issues were evaluated and prioritized in order to develop Georgia's Key Emphasis Areas (KEA's). Once the Key Emphasis Areas were established, these were then validated based on "four dimensions." The four dimensions are defined under the section designated "Prioritization Using Georgia Crash Data." The SHSP recognizes "Current Strategies." These are current efforts in place for the reduction of crashes. Along with the current strategies, the SHSP lists "Future Opportunities" which are considerations for possible future strategies. The future opportunities also provide ideas for ways to combine strategies and identify new joint countermeasures to reduce the increasing deaths on Georgia's roadways.

Number of Fatalities by Year (1937-2005)



Georgia's Goal

Georgia adopted a goal of 1.0 fatalities per 100 million vehicle miles traveled by 2010. Achieving this goal by 2010 will save 511 lives. Further evaluation of the countermeasures will indicate the most effective actions to decrease highway fatalities. The strategic goal may be refined to reflect the results of the evaluation.

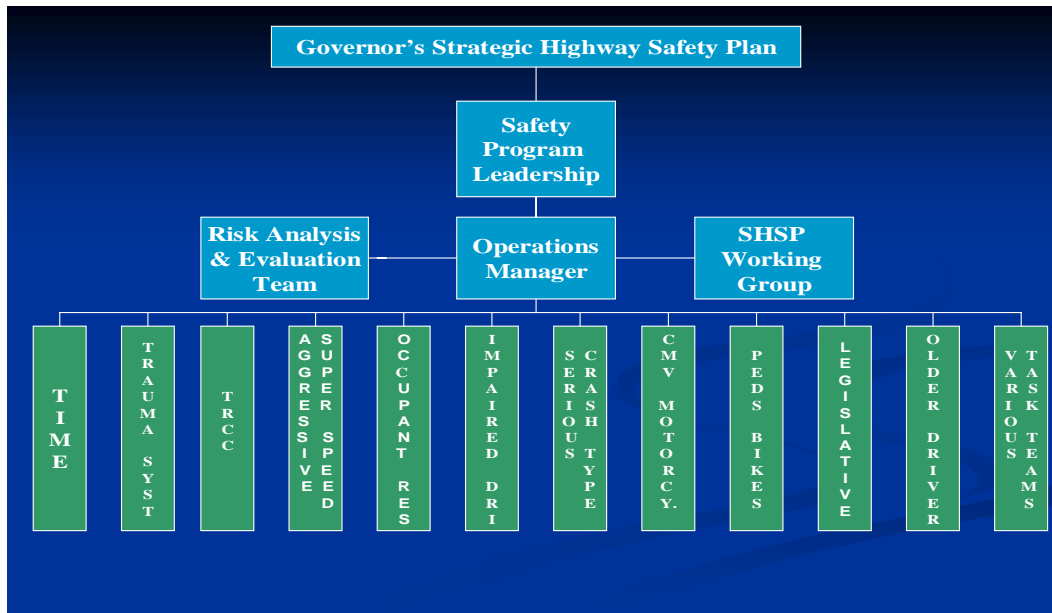
Georgia's SHSP Structure

Georgia's Strategic Highway Safety Plan (SHSP) provides a review of Georgia's highway safety planning as well as existing plans in agencies throughout Georgia. The SHSP followed the Integrated Safety Management Process (ISMP) recommended by the National Cooperative Highway Research Program's (NCHRP) Report 501. Georgia's SHSP was created with the guidance of the American Association of Highway and Transportation Officials (AASHTO) SHSP.

Georgia highway safety leaders launched the comprehensive planning effort by committing

to funding an Operations Manager position and related planning expenses. Georgia created a specialized position and interagency agreement to provide day-to-day oversight of the SHSP.

The early SHSP leaders include Governor Sonny Perdue and his policy advisers, Georgia Department of Transportation (GDOT), Governor's Office of Highway Safety (GOHS), and Department of Public Safety (DPS). In mid-2005, the leaders committed to a formal intergovernmental agreement between the GDOT and the GOHS. This agreement sets out the structure and funding of the planning expenses associated with developing Georgia's SHSP for the next three years. The expenditures flow through GDOT and onto GOHS to cover these costs. Furthermore, the agreement provides that the organizational structure shall be established in accordance with the Integrated Safety Management Process. The Georgia SHSP structure is built from all of Georgia's highway safety stakeholders, leaders, administrations and operations. The structure includes key emphasis areas and corresponding task teams.



Georgia's SHSP "Every Life Counts – Strive for Zero Deaths and Injuries on Georgia Roads."

The Integrated Safety Management Process identifies six steps to follow to progress from the planning phase to action or implementation phases with detailed descriptions of all SHSP participants' responsibilities. These are:

- Review highway safety information.
- Establish emphasis area goals.
- Develop objectives, strategies, and preliminary action plans to address the emphasis areas.
- Determine the appropriate combination of strategies for identified emphasis areas.
- Develop detailed action plans.
- Implement the action plans and evaluate performance.

Georgia highway safety partners are engaged in developing objectives, strategies and preliminary action plans to address KEA's. This includes determining an appropriate combination of criteria for strategies, detailed action plans, implementation of the SHSP, and an evaluation process.

Georgia regularly considers AASHTO's Strategic Highway Safety Plan guidance and direction for planning, deployment, and evaluation of effective countermeasures that have the greatest impact. The AASHTO analyzed highway safety data to determine the "scope of the problem" and to develop Key Emphasis Areas. Additionally, the NCHRP developed Implementation Guides for each of the KEA's. These Guides contain innovative countermeasures that supplement Georgia's current strategies.

The Georgia SHSP Working Group considers the latest highway safety data in order to propose recommendations to the Safety Program Leadership (SPL) for further input

and adoption. All reviews considered at least three years of data through 2005.

The ISMP emphasizes strong leadership and executive level involvement. This is essential to maintain the commitment and momentum to develop, implement, and sustain a comprehensive highway safety plan. Georgia, at the direction of Governor Sonny Perdue, organized its SHSP executive team establishing the Safety Program Leadership. The SPL members represent federal, state, and local agencies as well as private associations. As the ISMP recommends, decision makers accept the responsibility to participate first hand. The Safety Program Leadership is committed to the successful implementation and perpetual development of the SHSP. The SPL shall meet at least quarterly to direct the progress of the SHSP. The SHSP shall be updated annually and submitted to Governor Perdue. The SPL members and respective agencies are listed in **Appendix I**.

The SPL selected an Operations Manager in late 2005. The Operations Manager provides staff support to the SPL as well as directs the efforts of the risk analysis and evaluation team and working group. In early 2006, the Operations Manager organized the Risk Analysis and Evaluation Team (RAE). The RAE team was charged with reviewing Georgia's highway safety data and organizing emphasis area data summaries.

The RAE Team members are experts in data analysis and represent all of the pertinent data owner agencies. Georgia's crash reporting data base is maintained by the GDOT. The driver's license data base is maintained by the Department of Driver Services (DDS). Motor vehicle registration is maintained by the Department of Revenue (DOR). The Department of Human Resources (DHR) maintains EMS run reports, hospital records, and the Crash Outcome Data

Evaluation System (CODES). Commercial motor vehicle data is maintained by the Department of Public Safety (DPS). The RAE Team members also include representatives from the U. S. Department of Transportation and Georgia courts and prosecutors. Member agencies may provide multiple representatives to assure consistent participation and appropriate support. The RAE Team members are listed in **Appendix II**.

An additional data expert is providing a broad view of Georgia's highway safety information. The Georgia Tech Research Corporation is developing Georgia's comprehensive highway safety data analysis. The report is due in January 2007, and will provide an in depth perspective of Georgia's highway safety challenges. The research project includes a review of the current data sources and analyses that have been conducted on the safety record of the state's road network. For those safety areas where data sources are currently not available, the research will seek data and information from other non-traditional sources. These include examining state hospital records or contacting individual police departments. A technical report summarizing the state-of-road-safety in Georgia will include the findings of the data analysis as well as link the types of strategies that might be considered. Finally, the research participants shall provide advice on the development of the SHSP. This will occur throughout the project duration and will include supporting the responsible planning agency activities for successful development of the SHSP.

Agency specific working groups were developed to assess their respective highway safety plans. The agencies and the corresponding specialized efforts are representative of one or more of the "4E's;" engineering, education, enforcement, and emergency medical services. For example, a

working group was established relating to the two significant law enforcement units within the Department of Public Safety: the Georgia State Patrol and the Motor Carrier Compliance Division. The two divisions have specialized missions of statewide roadway enforcement for all motorists as well as commercial motor vehicles. The GDOT organized biweekly meetings of the engineering efforts and oversight of the SHSP. Task teams were identified and organized to further develop the related highway safety issues, consider opportunities for new countermeasures and combine strategies to recommend to the SPL.

Various working group representatives were organized into a single SHSP Working Group (WG) to consider the individual highway safety efforts and provide a broader perspective for further implementation and recommendations to the SPL. The Working Group's charter members are listed in **Appendix III**. Additional members are identified and invited to participate in every Working Group meeting. The Working Group adopted recommendations for presentation to the SPL: including, the SHSP vision, mission, guiding principles and key emphasis areas. The SPL considered additional changes and adopted the recommendations.

In its August 2006 meeting, the SPL adopted Georgia's vision, mission, guiding principles and initial KEA's. In further considerations, the SPL established Georgia's strategic highway safety goal and prioritized the KEA's. Georgia's vision establishes that any loss of life is unacceptable. Highway safety lifesaving efforts will continuously strive to eliminate all crashes, injuries and fatalities:

"Every Life Counts – Strive for Zero Deaths and Injuries on Georgia Roads."

Likewise, Georgia's mission is all inclusive of the highway safety stakeholders and road users. It is consistent with Governor Sonny Perdue's priorities to be the best managed State in the nation and to be a safe, educated, healthy and growing Georgia.

"Georgia's mission is to continue to strengthen initiatives in education, engineering, enforcement and emergency medical services to eliminate crashes, injuries, and deaths to have the safest roads in the nation."

Georgia's SHSP Process

Now that Georgia's SHSP structure is established, Georgia continues to develop the ongoing process of organizing task teams for each of the KEA's, implementing the safety action plans, and evaluating progress and corresponding countermeasures. Georgia has existing highway safety plans within the road engineering, State Transportation Improvement Plan, metropolitan planning organizations Transportation Improvement Plan, highway safety education and commercial vehicle enforcement. These plans maintain individual identity in achieving respective federal mandates. The strategies within these existing plans are incorporated into the SHSP. The SHSP develops the complimentary and cooperative aspect that ties the individual plans together.

The AASHTO and NCHRP encourage states to develop their own Strategic Highway Safety Plans based on guiding principles. Georgia has adopted these Guiding Principles:

- Data Driven
- Comprehensive
- Integrated
- Stakeholder Involved

- Substantive
- Proactive
- Inclusive of the Four Safety "E's"
- Systematic
- Addresses Local Roadway System Needs

As reflected in the SHSP, all of Georgia's planning includes an assessment of existing highway safety plans, updated highway safety data analysis, and consideration of the comprehensive 4E's; engineering, education, enforcement and emergency medical services. Georgia's SHSP identifies existing strategies, new initiatives and opportunities of combined strategies and new safety partners.

Existing Georgia Highway Safety Plans

The following is a summary of the existing Georgia highway safety plans. From these existing plans, the "Current Strategies" are incorporated into Georgia's SHSP Key Emphasis Area's.

The Governor's Office of Highway Safety's Safety Plan provides the significant mission to educate the public on traffic safety and facilitate the implementation of programs that reduce crashes, injuries and fatalities on Georgia roadways. The GOHS administers highway safety programs through a granting process. Over 200 grants are distributed on a competitive basis at the state, regional and local levels. The GOHS works closely with the National Highway Traffic Safety Administration and other federal, state and local agencies. Strategies are identified within: 1) Planning and Administration; 2) Alcohol Countermeasures and Young Drivers; 3) Occupant Protection; 4) Traffic Records; 5) Speed and Aggressive Driving; 6) Police Traffic Services; 7) Pedestrian and Bicycle Safety; 8) Community

Traffic Safety Programs; 9) Resource Information Center Clearinghouse; 10) Safe Communities Countermeasures; 11) Motorcycle Safety; and, 12) Paid Media.

The Department of Public Safety's Motor Carrier Compliance Division (MCCD) produces the annual Commercial Vehicle Safety Plan with regular interaction with the Federal Motor Carrier Safety Administration (FMCSA) as well as other federal, state and local agencies. Crashes involving commercial motor vehicles (CMV) accounted for 15% of Georgia highway fatalities in 2004 (247/1641). There are 13 High Crash Corridor enforcement strategies. Other objectives include: 1) commercial vehicle inspections; 2) compliance reviews; 3) traffic enforcement 4) public education/awareness; and, 5) data collection and reporting.

A new initiative is to implement the FMCSA funding program to allow 5% of Motor Carrier Safety Action Plan for non-commercial motor vehicle (CMV) enforcement. Law enforcement personnel conduct "ride along" initiatives. This program consists of an officer riding in a CMV to observe traffic behavior and violations.

The Georgia Department of Transportation's Safety Action Plan (SAP). The Georgia DOT developed the Safety Action Plan (SAP). The goal of the SAP is to reduce the fatality rate in Georgia to 1.0 per 100 million vehicle miles traveled (MVM) by the year 2008 in addition to reducing the total number of crashes in Georgia overall.

Although the SAP has been created and managed by the Office of Traffic Safety and Design, its success depends on cooperation from other offices throughout the Department including Maintenance, Utilities, Road

Design, Urban Design and Bridge Maintenance. The plan relies heavily on an ambitious off-system safety program. Since almost 25% of all fatalities occur off-system each year, it is important that these crashes be addressed in order to meet the goal. An off-system engineer is in place in each of GDOT's seven districts. This person is tasked with working with local governments around the State to put together and manage low-cost off-system safety projects. The initial projects include striping, vegetation removal, raised pavement markings and guardrails.

One aspect of the Safety Action Plan is an off-system safety program. Although a number of State DOT's already have similar programs in place, this is a new approach to safety for GDOT. Work is ongoing with the University of Alabama to implement their CARE (Critical Analysis Reporting Environment) software to help locals quickly identify and prioritize safety improvements in their respective areas. The CARE software is being customized to utilize GDOT's location data and generate prioritized lists of intersections and segments based on rate and/or frequency. The CARE program is available to the MPO's and local jurisdiction. In late 2006, GDOT is sponsoring training programs for metropolitan planners as well as local road engineers.

The SAP also includes several other approaches to safety in Georgia including Cable Barrier Systems, Safety Edge and Centerline Rumble Strips. Once these programs have been fully implemented, Georgia will be able to begin developing its own Crash Reduction Factors (CRF's) and more accurately realize which strategies are the most cost effective overall. Before and after crash analysis as well as cost-benefit analysis will be used to arrive at these numbers.

The Metropolitan Planning

Organizations (MPO's) within Georgia produce Transportation Improvement Programs (TIP's) pursuant to 49 U.S.C. § 5304.

Based on 2000 Census data, the 15 MPO's represent 73% of Georgia's population and 19% of Georgia's total land area. The Atlanta Regional Commission (ARC) is one of Georgia's 15 MPO's. The ARC is comprised of all or parts of 18 counties and over 80 municipalities. The ARC produces a Transportation Improvement Program or TIP on an annual basis.

The current FY 2006-2011 TIP was adopted in February 2006 and was derived from the region's long-range Mobility 2030 Regional Transportation Plan (RTP). Mobility 2030 and its associated TIP's are developed with four goals in mind.

- > **Goal 1** - Improve Accessibility and Mobility Options for all People and Goods.
- > **Goal 2** - Maintain and Improve System Performance and Preservation.
- > **Goal 3** - Protect and Improve the Environment and the Quality of Life.
- > **Goal 4** - Increase the Safety and Security of the Transportation System.

The TIP contains safety program lump sum amounts for programs administered by the Georgia Department of Transportation (GDOT). Specific projects for implementation are identified by GDOT. Aside from this, projects are not categorized or grouped explicitly as "safety" projects in the TIP. Rather, each project fact sheet contains a detailed description of the need and purpose of the project. ARC encourages sponsors to include information in this summary related to any safety issues addressed by the project. The quality of this

information will continue to be improved in future TIP's.

Safety is a consideration used for analyzing and selecting projects for STP Urban funds, the federal funds designated for programming by MPO's with a population over 200,000. Prior to ARC receiving CARE crash data in early 2006, the safety component of the project scoring process was evaluated primarily on anecdotal evidence or data supplied by a sponsoring agency. Plans for future TIP's include an overhaul of the project prioritization process to require actual crash data derived from CARE. The foundation for this capability is well underway and will be implemented in conjunction with development of the FY 2009-2014 TIP, scheduled to be completed by summer 2008.

Georgia's MPO's are reconstituting its professional association. The newly formed association will further coordinate and support the planning issues within all MPO's.

The Highway Safety Improvement

Program (HSIP) is another highway safety program developed by GDOT. The SAFETEA-LU established the HSIP as a core program instead of a set-aside program. The HSIP includes components for analyzing data to determine the most critical safety needs, implementation of safety projects to address the needs, and evaluation to determine the effectiveness of the program. The purpose of the HSIP is to provide a continuous and systematic procedure that identifies and reviews specific traffic safety issues around the state to identify locations with potential for improvement. The ultimate goal of the HSIP process is to reduce the number of crashes, injuries, and fatalities by eliminating certain predominant types of crashes. The individual programs within the HSIP include: Hazardous Elimination Safety, Pedestrian Safety, Off-System Safety, High Risk Rural Roads, and Highway-rail Grade Crossing.

GDOT's Safety Action Plan is a key component of the HSIP. Increasing traffic volumes, an aging population, aggressive driving, speeding and driver attentiveness all create new challenges for transportation engineers. Many of these driver characteristics can be addressed with engineering related solutions, while others involve education and enforcement.

The SHSP must be aligned and implemented consistently within the HSIP.

Summary

The plans outlined above provide safety goals and performance objectives which must be considered. The SHSP will incorporate these many goals and objectives. Conversely, the SHSP will identify and consider the affect of the SHSP on these other plans. Current safety plans and processes will remain stand-alone planning documents for existing safety programs.

Prioritization Using Georgia Crash Data

Using three years of crash records (2003 – 2005), the Working Group reviewed and prioritized all crashes by crash types using “four dimensions.” The four ways to prioritize the data are:

- 1.) The frequency of fatalities.
- 2.) Comparison to the total.
- 3.) A percent change over the three years.
- 4.) The current efforts in place to address the highway safety issue.

The Working Group used AASHTO's 22 Key Emphasis Areas (KEA's) as a starting point to develop Georgia's KEA's. For each KEA, an analysis of Georgia's relevant crash data was performed to identify a comprehensive list. The list represents

Georgia's most important highway safety issues. Each KEA represents a significant contribution to the total number of crashes, fatalities or increasing frequency during the past three years.

Georgia's KEA's provide the foundation to build on both the immediate highway safety concerns as well as the mid to long range planning needs. The SHSP Working Group considered the summary of Georgia's fatal crashes relating to each of the KEA's included within AASHTO's list. A summary of Georgia's fatal crashes and fatalities was compiled for each of the emphasis areas (see **Table 1** below). A KEA is not pursued at this time as indicated by “-NA-.”

Table 1
Summary of Georgia Fatal Crashes by Emphasis Areas

	Emphasis Areas	Georgia Fatal Crashes* Totals Over Three Years	Pct
Part 1: Drivers	1. Instituting Graduated Licensing for Young Drivers.	969 fatalities involved a driver under the age of 21.	19%
	2. Ensuring Drivers are Licensed and Fully Competent.	-- NA --	
	3. Sustaining Proficiency in Older Drivers.	798 fatalities involved a driver over the age of 64.	16%
	4. Curbing Aggressive Driving.	1,042 fatalities involved excessive speed or following too closely as a contributing factor.	21%
	5. Reducing Impaired Driving.	1564 fatalities were alcohol related. (NHTSA FARS data)	31.5%
	6. Keeping Drivers Alert.	About 10% of all crashes are run off the road. There were 2,646 crashes listed inattentive as a contributing factor.	3%
	7. Increasing Driver Safety Awareness.	-- NA --	
	8. Increasing Seat Belt Usage and Improving Airbag Effectiveness.	3,629 passenger vehicle occupant fatalities (out of 4,995 vehicle occupant fatalities) were not using a restraint device.	73%

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Part 2: Special Users	9.	Making Walking and Street Crossing Easier.	473 pedestrian fatalities.	9%
	10.	Ensuring Safer Bicycle Travel.	56 bicyclist fatalities.	1%
Part 3: Vehicles	11.	Improving Motorcycle Safety and Increasing Motorcycle Awareness.	358 motorcyclist fatalities.	7%
	12.	Making Truck Travel Safer.	379 fatalities involving heavy trucks.	8%
	13.	Increasing Safety Enhancements in Vehicles.	-- NA --	
Part 4: Highways	14.	Reducing Vehicle-Train Crashes.	29 fatalities involving a collision with a train 03-05.	<1%
	15.	Keeping Vehicles on the Roadway.	92,307 run-offs the road crashes.	9%
	16.	Minimizing the Consequences of Leaving the Road.	Top 5 fatal run off the road collisions: Tree: 387 Rollover: 183 Ditch: 135 Embankment: 128 Culvert: 108	
	17.	Improving the Design and Operation of Highway Intersections.	472,594 crashes at an intersection.	46%
	18.	Reducing Head-On and Across-Median Crashes.	684 fatal head-on and across-median crashes.	15%
Part 5: EMS	19.	Designing Safer Work Zones.	223 fatal crashes in work zones.	1%
	20.	Enhancing Emergency Medical Capabilities to Increase Survivability.	<u>Death rates in Georgia from trauma are significantly higher than the national average.</u> In Georgia, 62 of every 100,000 people are likely to die of traumatic injury. Nationally, the death rate is lower – 54 people per 100,000. If we did nothing more than improve our system to the level of the national average, we would save approximately 428 additional lives every year. (Source: DHR/Office of EMS/Trauma)	
Part 6: Management	21.	Improving Information and Decision Support Systems.	-- NA --	
	22.	Creating More Effective Processes and Safety Management Systems.	-- NA --	

* Source: GDOT Crash Database (2003 – 2005)

NOTE: During 2003 thru 2005, there were 1,023,293 crashes, 4,530 fatal crashes, and 4,995 traffic fatalities.

Key Emphasis Areas, Problem ID, Strategies and Opportunities

The leadership and working groups considers current highway safety data to select Key Emphasis Areas and focus on the most urgent needs to reduce Georgia highway fatalities. The broad scope of the many emphasis areas challenges Georgia to organize the serious highway safety threats into manageable task efforts. Current highway safety plans' strategies are listed for each of the key emphasis areas. The SHSP is not an endorsement of future opportunities. Future opportunities are listed as potential considerations for Georgia's new or combined strategies. Each KEA has a corresponding Task Team to develop performance goals to reduce highway safety hazards. The Task Teams are being organized in late 2006.

Georgia's Key Emphasis Areas are:

- **Occupant Protection**
 - Seatbelts and Air Bags
- **Serious Crash Type**
 - Intersections
 - Keeping Vehicles on the Road – lane departure
 - Head-on and Cross Median Crashes
 - Minimizing Consequences of Leaving Road
 - Work Zones
- **Aggressive Driving/Super Speeder**
- **Impaired Driver**
- **Age related issues**

- Graduated Driver's Licensing
- Younger Adult Drivers
- Older Drivers
- **Non-motorized User**
 - Pedestrians
 - Bicyclists
- **Vehicle Type**
 - Heavy Trucks
 - Motorcycles
- **Trauma System/Increasing EMS Capabilities**
- **Traffic/Crash Records and Data Analysis**
- **Traffic Incident Management**

By applying the comprehensive "4 E's" to each of the existing highway safety plan strategies, Georgia's SHSP identifies new initiatives and opportunities supported by the latest data analysis. However, the individual plans lack the "systematic" principle to be all inclusive of the "4 E's," usually identifying only one or a part of another "E." The new SHSP systematic approach applies the question: "How does each plan incorporate the "4 E's" and address all of the guiding principles?" Quite often, the "4 E's" do not exist uniformly and consistently in the highway safety plans. An "E" may be engaged only on an as needed basis to address a specific issue. For example, the Georgia commercial vehicle enforcement unit conducts aggressive high crash corridor enforcement efforts. When it was discovered that the highest incident of injury and fatal

crashes involved a newly engineered highway city bypass, the unit engaged the state transportation engineering "E" to address intersection signaling, signage and the complete assessment to improve the safety characteristics of the specific location.

A goal of the SHSP is to evaluate data prior to increased incidents of crashes. Once the systematic "4 E's" assessments are applied to all high crash corridors, proactive measures can prevent future crashes, injuries and fatalities.

Three Key Emphasis Areas were selected for their vital input into Georgia's SHSP. The Trauma System/Increasing EMS Capabilities, Traffic/Crash Records and Data Analysis, and the Traffic Incident Management are existing highway safety programs. The Trauma/EMS effort actually represents one of the "4 E's." The Georgia Traffic/Crash Records Data Analysis effort is progressing through the implementation of Georgia's "Strategic Plan for Traffic Records Improvement." The Traffic Incident Management Enhancement program already provides traffic congestion mitigation in metro Atlanta. The program can be developed for other jurisdictions as well.

An additional task team remains separate from the KEA's. A Legislative Task Team will be activated in anticipation of needed statutory changes to implement highway safety initiatives and strategies. Legislative tasks will be listed within the LEGISLATIVE TASK TEAM roster of needed initiatives. Legislative issues will be considered by the Safety Program Leadership. The SPL will further develop legislative issues in cooperation with the Governor. The appropriate legislative action will be further developed through respective state agency initiatives. Agency members will be selected to provide a legislative action plan and

monitor all progress toward achieving the legislative initiatives.

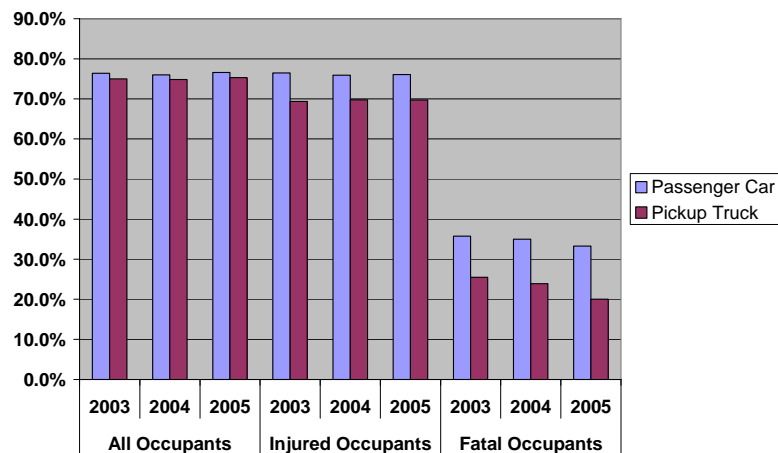
Unless otherwise stated, the Problem ID is based on the total of three years of GDOT data including 2003, 2004, and 2005. Some of the data categories track the number of crashes while other data categories track the number of fatalities.

Occupant Protection Seatbelts and Air Bags

Problem ID

Of all persons excluding motorcyclists or pickup truck occupants, involved in a crash, **76.3%** were reported to be wearing a seatbelt. Of all persons in pickup trucks, **75.0%** were reported to be wearing a seatbelt. Of those injured in a passenger car, **76.1%** were restrained. Of those killed, **34.6%** were restrained. Of those injured in a pickup truck, **69.6%** were restrained. Of those killed, **22.8%** were restrained. According to the 2005 Georgia observational survey, child safety seat use under age 5 was **79.9%** representing a **12.7%** drop from 2004. Non-whites are less likely to buckle up children, only **72.6%** compared to whites at **86.2%** child restraint.

Restraint Use by Vehicle Type



Current Strategies

- Provide funds to the University of Georgia to conduct seventeen (15) Child Passenger Safety Technician Certification Courses (9 at the Conyers facilities and 6 at off-site locations).
- Support DHR Injury Prevention Section Occupant Protection Program.
- Conduct a minimum of 12 Parents Reducing Incidents of Drivers Error (P.R.I.D.E.) Train-the-Trainer courses, resulting in more than 240 new trainers. This training will focus on assisting parents and teens in identifying and learning the consequences of high risk driving behaviors.
- Present the rollover simulator at 120 different sites to demonstrate the outcome of riding unrestrained in a motor vehicle to approximately 10,000 individuals.
- Update and distribute approximately 2000 Law Enforcement Tab Guides to serve as a quick reference item for public safety officers in the field.
- Provide funds to implement public information and education strategies to increase public awareness of the proper use of safety belts and child restraints Statewide through (a) the implementation of a Statewide "Safety Belt, Poster and Essay PSA contest for students, (b) the statewide distribution of approximately 720,000 PI&E materials, and (c) the development of materials targeting at-risk populations.
- Conduct four (4) statewide campaigns to promote occupant safety (Hands Across the Border, Buckle Up America Month, Child Passenger Safety Month and Click It or Ticket).
- Conduct a public information effort to address unrestrained pickup truck occupants. "Pick Up Your Seat Belt – It's Your Safety Belt" or "Buckle Up in your Truck" are possible themes for the sample Op-Ed articles and sample radio on-air script PSA's aimed at the community and rural media.
- Check an average of 10 installations of child safety seats at each of the twenty (20) fitting stations monthly, totaling 2400 checks. Educational materials will also be distributed to parents and caregiver at this time.
- Distribute and properly install an average of 75 child safety seats between the 20 fitting stations.
- Provide occupant and child safety seat education to the community and address occupant safety use among young adults.
- Continue to build collaborative partnerships with community groups, organizations and law enforcement for the purpose of addressing highway safety initiatives at the local level.
- Provide funds to facilitate occupant safety education in 80% of the State health departments along with their safety seats and child safety seat educational programs, facilitating the implementation of newborn injury prevention policy in a minimum of fifteen (15) Georgia hospitals.
- Provide funds to conduct a study of Latinos and their highway safety crash involvement.
- Develop and implement a "Faith-Based Initiative" to encourage involvement of faith-based organizations in promoting occupant safety highway safety programs.
- Implement commercial motor vehicle seat belt enforcement.

Future Opportunities

- › Develop occupant restraint outreach programs within African-American and Hispanic populations.

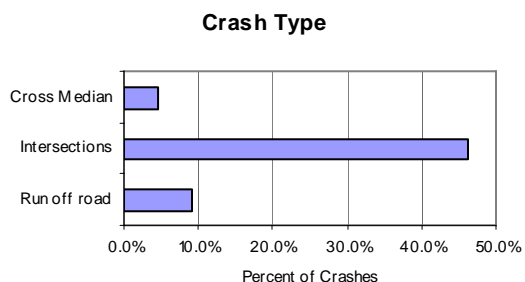
Serious Crash Type

Serious crash types categorize the significantly proportionate common characteristics of fatal crashes. The GDOT leads the effort in addressing the proactive efforts of the following categories. The engineering strategies are included in GDOT's Safety Action Plan. Opportunities are developed according to the other 3 E's considerations.

Intersections

Problem ID

Of all crashes, **46.2%** occurred at an intersection. Of those crashes at an intersection, **.74%** involved a pedestrian. The highest percentage of drivers involved in an intersection crash was aged **18-24**.



Current Strategies

- › Identify intersection improvements:
 - › Top 150 report.
 - › Local government/citizen inquiry.
 - › GDOT initiated evaluations.
- › Red Light Running (RLR) video enforcement.
- › Light Emitting Diode (LED) Transition.

- › 12" Traffic Signal Heads.
- › Street Naming and Intersection Warning Signals.

Future Opportunities

- › Improve management of access near unsignalized intersections.
- › Reduce the frequency and severity of intersection conflicts through geometric design improvements.
- › Improve sight distance at unsignalized intersections.
- › Improve availability of gaps in traffic and assist drivers in judging gap sizes at unsignalized intersections.
- › Improve driver awareness of intersections as viewed from the intersection approach.
- › Choose appropriate intersection traffic control to minimize crash frequency and severity.
- › Improve driver compliance with traffic control devices and traffic laws at intersections.
- › Reduce operating speeds on specific intersection approaches.
- › Guide motorists more effectively through complex intersections.
- › Reduce frequency and severity of intersection conflicts through traffic control and operational improvements.
- › Reduce frequency and severity of intersection conflicts through geometric improvements.
- › Improve sight distance at signalized intersections.
- › Improve driver awareness of intersection and signal control.

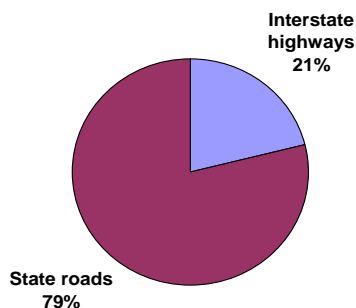
- › Improve driver compliance with traffic control devices.
- › Improve access management near signalized intersections.
- › Improve safety through other infrastructure treatments.

Keeping Vehicles on the Road And Lane Departure

Problem ID

Of all crashes, 9% were run-off-road incidents. Of all run-off-road crashes, 21% occurred on interstate highways and 79% on State roads. Of those drivers that ran off the road, the highest percentage was between the ages of 16-23. Of those drivers that ran off the road, 11.6% were impaired, 2.9% were inattentive and 10.2% were unrestrained.

Run off road crashes for 2005



Current Strategies

- › Shoulder rumble strips.
- › Center line rumble strips.
- › Edge line rumble strips.
- › Wet weather evaluation.
- › Wet weather reflective tape/striping.
- › Sharp curve treatments.

- › Thermoplastic striping.

Future Opportunities

- › Provide improved highway geometry for horizontal curves.
- › Provide skid-resistant pavement surfaces.
- › Eliminate shoulder drop-offs.
- › Widen and/or pave shoulders.
- › Design safer slopes and ditches to prevent rollovers.
- › Remove/relocate objectives in hazardous locations.
- › Delineate trees or utility poles with retro-reflective tape.
- › Improve design of roadside hardware.
- › Improve design and application of barrier and attenuation systems.

Head-on and Cross Median Crashes

Problem ID

Of all crashes, 4.6% involved crossing the median. Of all fatal crashes, 15.1% involved crossing the median.

Current Strategies

- › Cable barrier systems.
- › Install centerline rumble strips for two-lane roads.

Future Opportunities

- › Install profiled thermoplastic strips for centerlines.
- › Provide wider cross sections on two-lane roads.
- › Provide center two-way, left-turn lanes for four-lane and two-lane roads.

- Reallocate total two-lane roadway width to include a narrow "buffer median."
- Use alternating passing lanes or four-lane sections at key locations.

Minimizing Consequences of Leaving Road

Problem ID

Of all run-off-road crashes, **78.2%** struck a fixed object. Of those that struck a fixed object, **3.1%** struck a guardrail and **20.9%** struck a tree.

Current Strategies

- Crash impact attenuators.
- Utility relocation incentives.
- Vegetation removal – enhanced recovery areas.
- Corridor improvements.
- Guardrail and Guardrail delineation.
- Bridge guardrails.
- Elimination of guardrails.
- Safety edge.

Future Opportunities

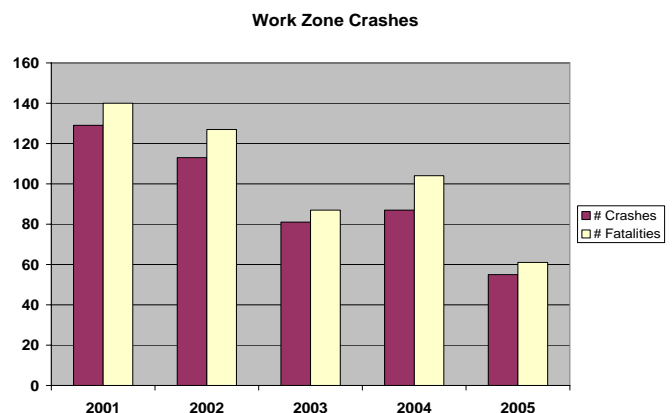
- Develop, revise, and implement planting guidelines to prevent placing trees in hazardous locations.
- Mowing and vegetation control guidelines.
- Remove trees in hazardous locations.
- Shield motorists from striking trees.
- Modify roadside clear zone in the vicinity of trees.
- Delineate trees in hazardous locations.

- Remove poles in high-crash locations.
- Relocate poles in high-crash locations farther from the roadway and/or to less vulnerable locations.
- Use breakaway devices.
- Shield drivers from poles in high-crash locations.
- Improve the drivers; ability to see poles in high-crash locations.
- Apply traffic calming measures to reduce speeds on high-risk sections.
- Develop, revise, and implement policies to prevent placing or replacing poles within the recovery area.
- Place utilities underground.
- Relocate poles along the corridor farther from the roadway and/or to less vulnerable locations.
- Decrease the number of poles along the corridor.

Work Zones

Problem ID

Of all crashes, less than **1%** occurred in a work zone. During 2003 through 2005 there were a total of 223 fatal crashes involving 252 fatalities.



Current Strategies

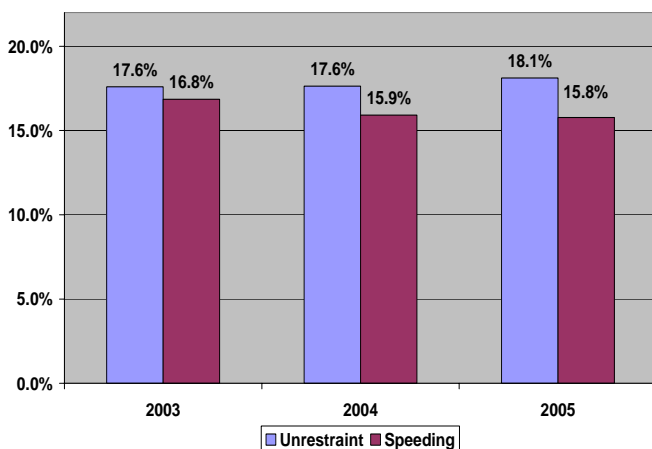
- > Work zone signage.
- > Reduce speed limits.
- > Increased speeding fines.
- > Barrier retainers.

Impaired Driver

Problem ID

There were **31,924** impaired drivers involved in **31,718** crashes (3.0% of all crashes). Drivers ages **20-26** were reported to be impaired more often than other ages. Impaired drivers contributed to **23,936** injuries and **746** fatalities (16.5% of all fatalities). Of all impaired drivers, **17.8%** were unrestrained and **16.2%** were reported to be speeding. According to NHTSA Fatal Accident Reporting System (FARS) data, there were **1564** alcohol-related highway fatalities for 2003 – 2005. These account for **31.5%** of the total fatalities.

Percentage of Impaired Drivers that were Unrestraint or Speeding



Current Strategies (also included in young driver strategies)

- > Offer jurisdictions that have 5 or more impaired driving fatalities funds to

implement a community-wide program of *Operation Zero Tolerance*.

- > Conduct three (3) waves of statewide enforcement with the "Operation Zero Tolerance" campaign.
- > Create a sustained impaired driving enforcement campaign.
- > Conduct concentrated patrol in areas identified for impaired driving violations and high traffic areas.
- > To promote attendance of all task forces in Traffic Enforcement Network meetings and activities.
- > Establish new task forces in local communities where impaired driving problems are identified.
- > Continue to increase statewide training to law enforcement officers in Standardized Field Sobriety Testing and Drug Recognition through the Georgia Public Safety Training Center.
- > Assist with the funding of Young Adult programs (Bacchus and Gamma) at colleges and universities for the training peer leaders.
- > Strengthen partnerships with SADD, local organizations, high school groups, community-based coalitions, and faith-based coalitions to create community-based coalitions to address teen driving issues.
- > Partner with high school resource officers to strengthen their connections to the State Traffic Enforcement Networks.
- > Establish Student Leadership Council and Georgia STAR (Student for Traffic Acting Responsibly) Student of the Year to assist in developing and implementing youth highway safety programs.

- Establish a teen court to educate youth in the school system and community on TADRA.
- Provide training courses for prosecutors and police officers to aid in the detection, apprehension and prosecution of impaired drivers.
- Utilize Youth Ambassadors from Georgia SADD in our public education and information campaigns and community coalitions.
- Facilitate Statewide Teens Ride with PRIDE program through the education and awareness of parents and students on proper driving techniques to promote the safety of novice drivers.

Future Opportunities

- Conduct underage sting operations in retail establishments with possible sales to minors.
- Require responsible beverage service Policies for alcohol servers and retailers.
- Conduct well-publicized compliance checks of alcohol retailers to reduce sales to underage persons.
- Employ screening and brief interventions in health care settings.
- Establish stronger penalties for BAC test refusal than for test failure.
- Eliminate diversion programs and plea bargains to non-alcohol offenses.
- Seize vehicles or vehicle license plates administratively upon arrest.
- Require ignition interlocks as a condition for license reinstatement.
- Monitor all convicted DUI offenders closely.

- Incarcerate offenders.
- DUI courts.
- Remove legal obstacles to prosecute DUI.

Age Related Issues

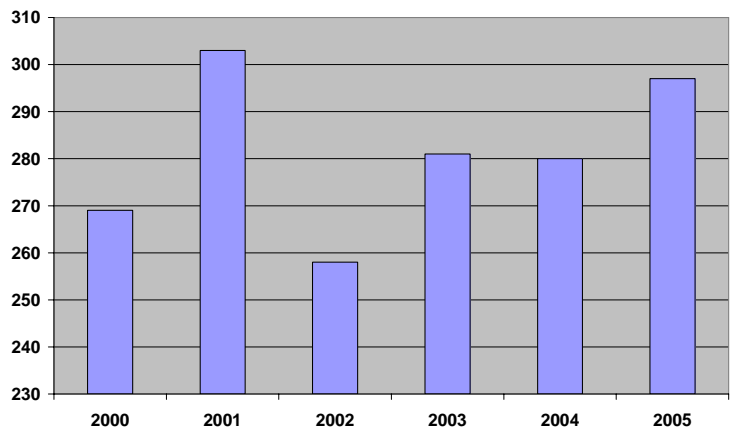
Graduated Driver's Licensing (GDL) Younger/Adult drivers

Problem ID

Georgia's Graduate Drivers' License provides for beginning/learner's permits at age 15, restricted Class D license at age 16 to 17 and a regular Class C license at age 18.

Young drivers are involved in **230,606** crashes resulting in 106,951 injuries and 969 fatalities. Of the **4,530** total fatalities, young drivers account for **21.4%**. In 2005, young drivers (ages 16-20) comprise 6.2% of the population/licensed drivers and **12.8%** of drivers in crashes. High-risk behavior, peer pressure, inexperience, limited use or no use of occupant safety devices, and lack of proper driving information and education are a few of the problems that our youth face while driving on Georgia's roadways.

Fatal Crashes involving Teen Drivers



Current Strategies (also included in impaired driver)

- Students Against Destructive Decisions (SADD) unique approach involves young people delivering education and prevention messages to their peers through school-wide and community-wide activities and campaigns responsive to the needs of their particular locations.
- Implement statutory drivers' education effective January 1, 2007.
- Provide DUI countermeasure funding incentives to jurisdictions that have 5 or more impaired driving fatalities.
- Implement three (3) impaired driving enforcement mobilizations in which 85% of the law enforcement agencies participate.
- Identify and implement a community DUI systems improvement project in three (3) jurisdictions in Georgia.
- Provide funding to 25% of Georgia public high schools.
- Provide public information and education to 100% of Georgia high schools to implement programs to encourage safety belt use and discourage drinking and driving and parent-teen driving agreement.
- Increase awareness of funding offered by GOHS for the Young Adult "peer education" program to 75% of the accredited colleges and universities within Georgia.
- Train a minimum of 1200 law enforcement officers in the proper detection and apprehension of impaired

driving related suspects in accordance to NHTSA/IACP standards.

- Provide statewide training opportunities for prosecutors to increase effective prosecution of highway safety offenses.
- Assist with the funding of Young Adult programs (Bacchus and Gamma) at colleges and universities for training peer leaders.
- Strengthen partnerships with SADD, local organizations, high school groups and community-based coalitions to create community-based coalitions to address teen driving issues.
- Partner with high school resource officers to strengthen their connections to the State Traffic Enforcement Networks and DTEP training.
- Establish Student Leadership Council and Georgia STAR (Student for Traffic Acting Responsibly) Student of the Year to assist in developing and implementing youth highway safety programs.
- Establish a teen court to educate youth in the school system and community on TADRA.
- Provide training courses for prosecutors and police officers to aid in the detection, apprehension and prosecution of impaired drivers.
- Utilize Youth Ambassadors from Georgia SADD in our public education and information campaigns and community coalitions.
- Facilitate Statewide Teens Ride with PRIDE program through the education and awareness of parents and students on proper driving techniques to promote the safety of novice drivers.

Future Opportunities

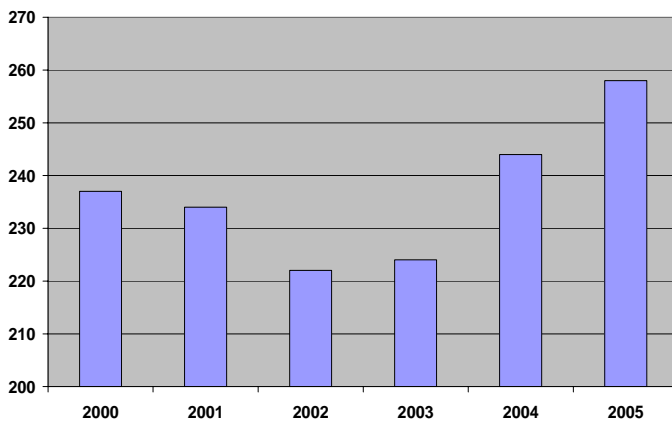
- › Increase enforcement in selected areas.
- › Routinely link citations to driver record.
- › "Stripe" license plate.
- › Immobilize/impound/seize vehicle.
- › Install ignition interlock device (IID)
- › Monitor electronically.
- › Provide alternative transportation service.

Older Drivers

Problem ID

Older drivers (ages 65+) are involved in **104,998** crashes resulting in **48,287** injuries and **798** fatalities. Older drivers are involved in **5.7%** of all crashes while representing about **12%** of total licensed drivers.

Fatal Crashes involving Older Drivers



Current Strategies

- › GOHS provide funding of the Older Driver Safety program.
- › Develop State-level recommendations that address safe mobility for older road users.
- › Identification and implementation of a pilot intervention.

Future Opportunities

- › Implement recommendations of the Older Driver Safety Committee/Task Team.
- › Establish a broad-based coalition to plan for addressing older adults' transportation needs.
- › Provide advance warning signs.
- › Provide advance guide signs and street name signs.
- › Increase size and letter height of roadway signs.
- › Provide all-red clearance intervals at signalized intersections.
- › Provide more protected left-turn signal phases at high-volume intersections
- › Provide offset left-turn lanes at intersections.
- › Improve lighting at intersections, horizontal curves, and railroad grade crossings.
- › Improve roadway delineation.
- › Replace painted channelization with raised channelization.
- › Reduce intersection skew angle.
- › Improve traffic control at work zones.
- › Strengthen the role of medical advisory boards.
- › Update procedures for assessing medical fitness to drive.
- › Encourage external reporting of impaired drivers to licensing authorities.
- › Provide remedial assistance to help functionally impaired older drivers.

- > Establish resource centers within communities to promote safe mobility choices.
- > Provide educational and training opportunities to the general older driver population.
- > Increase seatbelt use by older drivers and passengers.
- > Provide funding for pedestrian safety enforcement and training.
- > Provide funding to PEDS to coordinate pedestrian safety awareness in high-risk locations.
- > GOHS will coordinate with the GDOT Statewide pedestrian/bicycle coordinator to address pedestrian safety issues throughout Georgia.

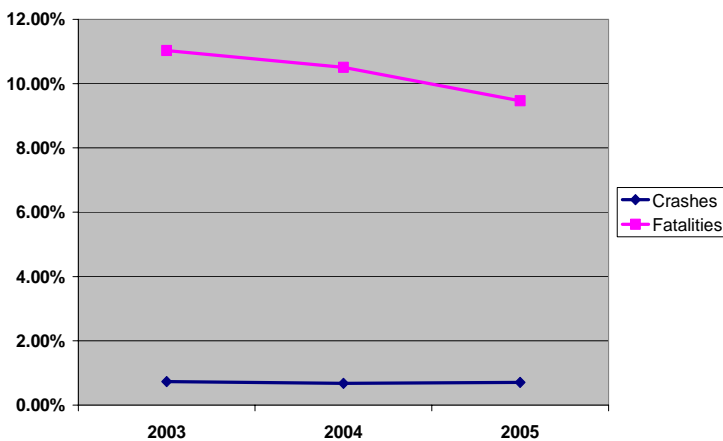
Non-motorized User (Pedestrians and Bicyclists)

Pedestrians

Problem ID

There were **473** pedestrians killed in crashes. There were **7,539** pedestrian involved crashes, of which **6.3%** were killed. Pedestrians were involved in **0.70%** of all crashes, but accounted for **10.3%** of all fatalities.

Percent of Crashes involving a Pedestrian



Current Strategies

- > Provide funding for pedestrian safety educational materials.

Future Opportunities

- > Reduce pedestrian exposure to vehicular traffic.
- > Provide sidewalks/walkways/curb ramps.
- > Upgrade traffic and pedestrian signals.
- > Provide vehicle restriction/diversion measures.
- > Install overpasses/underpasses.
- > Provide crosswalk enhancements.
- > Implement lighting/crosswalk measures.
- > Eliminate screening by physical objects.
- > Signals to alert motorists/ped crossing.
- > Improve reflectorization/conspicuity.
- > Implement road narrowing/calming at road sections and intersections.
- > Provide school route improvements.
- > Implement "Safe Routes to School."
- > Install safety islands.
- > Implement Safety Conscious Planning.

Bicyclists

Problem ID

There were 2845 bicyclists involved in crashes, of which 2134 were injured and 56 were killed. Bicyclists were involved in .28% of all crashes, but 1.24% of fatalities.

Percentage of crashes involving a Pedestrian or Bicyclist			
	Total Crashes 2003-2005	Pedestrian/Bike Crashes	%
Pedestrian	1,023,293	7,212	0.70%
Bike	1,023,293	2,817	0.28%

Percentage of total fatal crashes where a Pedestrian or Bicyclist was killed			
	Total Crashes 2003-2005	Pedestrian/Bike Fatal	%
Pedestrian	4,530	467	10.31%
Bike	4,530	56	1.24%

Current Strategies

- > Increase awareness of motorist and cyclist safe and legal road use through enforcement and education.
- > Provide funding for bicycle helmets as requested.
- > Provide funding to the Fulton County Board of Education to complete "Safety Streets Georgia."
- > GOHS will coordinate with the GDOT Statewide pedestrian/bicycle coordinator to address pedestrian safety issues throughout Georgia.
- > Share the Road Campaign.

Future Opportunities

- > Increase awareness for sharing the road that bikes belong on the road (not sidewalk), etc.
- > Train law enforcement officers on laws that apply to bikes, and on basic bicycle safety (for bike cops, also so they can educate cyclists and others).
- > Educate and train cyclists and children on "effective cycling" practices, bike safety.
- > Promote wearing of helmets, using lights at night, and riding on the right side of the road.
- > Construct bike lanes/paved shoulders.
- > Install share the road signage.

Vehicle Type

Heavy Trucks

Problem ID

Heavy truck related crashes: **10.3%** of all fatal crashes involved a heavy truck; **27.6%** of the heavy truck drivers involved in a crash were injured and **10.5%** were killed. Of all other drivers involved in a heavy truck crash, not in the truck, **24%** were injured and **55.1%** were killed. Of those heavy truck drivers in a crash, **2.8%** were reported to be impaired and **14.2%** were determined to be at fault (issued a citation).

Current Strategies

Data Quality

- > Promote computerization of all new local agencies and upload inspections to the SafetyNet Unit.

- › Enhance technological capabilities of officers.
- › Maintain a Commercial Vehicle Analysis Reporting System (CVARS) Advocate and a Program Evaluator.

Passenger Carrier Inspections

- › Conduct concentrated motor coach inspection activity per quarter.
- › Target conditionally-rated motor coaches.

Hazardous Materials Program

- › Remain up to date and proactive with any new Hazardous Materials policy.

Safety Belt Enforcement

- › Concentrated enforcement activity targeting driver behavior, routine stops and inspections.

Electronic Verification of CDL Status

- › Improve communications capabilities to achieve near 100% verification.

High Crash Corridor Enforcement

- › Deploy daily law enforcement personnel to HCC areas.
- › Perform at least 10 "concentrated" enforcement efforts per year.
- › Conduct quarterly joint-agency enforcement.
- › Conduct enforcement activities during both peak and off-peak periods.
- › Conduct generalized enforcement initiatives at fixed sites.

- › Conduct target-specific initiatives at fixed sites.
- › Enhance visibility of marked MCCD patrol units.
- › Provide relative educational outreach documentation (PIE) to each contacted commercial vehicle driver.
- › Properly identify and report "Significant Crashes."
- › Coordinate and ensure effective quarterly crash reduction strategies.
- › Coordinate and implement new strategies with federal counterparts from FMCSA.
- › Continuously foster enhanced communication and information sharing with local and/or State law enforcement agencies.
- › Evaluate HCC areas on a quarterly basis.

Future Opportunities

- › Implement cross discipline training among the "4 E's."
- › CMV speed enforcement on high crash corridors.

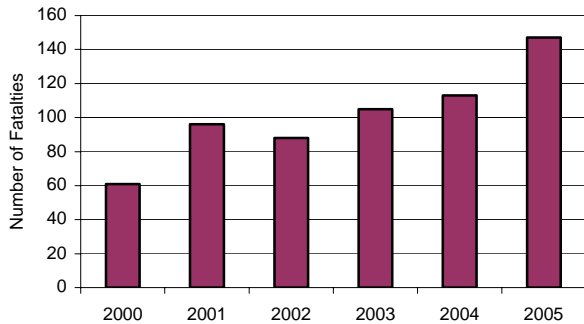
Motorcycles

Problem ID

Of all fatal crashes, 7.7% involved a motorcycle. The number of fatalities increased significantly from 2003 at 103 to 2005 at 141 accounting for 8.8% of the total for the later year. Of the motorcycle operators and passengers involved in a crash, 69.5% were injured and 3.3% were killed. Of the motorcyclists (operators and passengers) injured, 77.3% were reported to be wearing a helmet. Of the motorcyclists (operators and

passengers) killed, **82.4%** were reported to be wearing a helmet.

Motorcycle Fatalities



Current Strategies

- > Provide funding for motorcycle safety education and preventive countermeasures.
- > Provide financial incentives to communities or organizations to promote safe motorcycle operations to include motorcycle helmet use.
- > Implement Riders Helping Riders impaired motorcycle rider program.
- > Retain Georgia's mandatory motorcycle helmet law.

Future Opportunities

- > Provide more instructors and training facilities to meet demand and geographical accessibility.

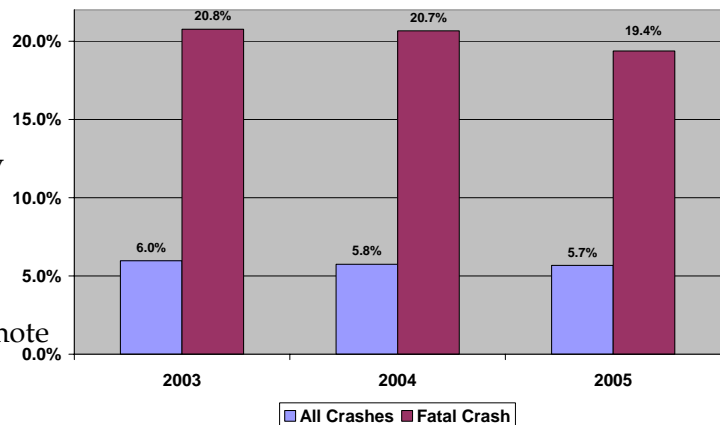
Aggressive Driver/Super Speeder

(Exceeding speed limit or too fast for conditions.)

Problem ID

There were **59,338** aggressive driving related crashes which resulted in **37,688** injuries and **1,042** fatalities. Drivers, ages 16-20, were involved in more aggressive driving crashes than other ages. Aggressive driving comprised **5.8%** of all crashes and **20.2%** of all fatalities.

Percentage of Crashes involving Aggressive Driving



Current Strategies

- > Fund agencies for the purpose of reducing speed related motor vehicle crashes, injuries, and deaths.
- > Continue strategic enforcement in high-risk statewide locations through specialized *Highway Enforcement of Aggressive Traffic Units (H.E.A.T.)*.
- > Conduct educational and public information campaigns.
- > Reduce nonrecurring delays (traffic incident management) and provide better information about these delays.

- › FMCSA funded non-commercial motor vehicle (CMV) enforcement.
- › MCCD conduct "ride along" initiatives.

Future Opportunities

- › Implement enforcement programs aimed at deterring the aggressive driver.
- › Educate and impose sanctions against repeat offenders.
- › Change or mitigate the effects of identified elements "triggers" in the environment, i.e., road rage.
- › Enhance efforts by removing enforcement restrictions and adding new provisions.
- › Increase violator penalties and sanctions.

Trauma System/Increasing EMS

Increasing EMS capabilities

Problem ID

Death rates in Georgia from trauma are significantly higher than the national average. In Georgia, 62 of every 100,000 people are likely to die of traumatic injury. Nationally, the death rate is lower – 54 people per 100,000. If we did nothing more than improve our system to the level of the national average, we would save approximately 428 additional lives every year.

The number of individuals in Georgia affected by trauma can still only be estimated and sized in relative terms. Based upon an analysis of Georgia's 2003 and 2004 NTRACS® data, relative to the total number of acute care hospitals in Georgia, it is probable that the volume and impact of trauma in Georgia has been significantly

underestimated. In 2003, the data presented by the 15 participating trauma centers provided representative data on 9,612 patients, which met the Georgia Trauma Registry criteria. In 2004, the data presented by the 14 participating trauma centers provided representative data on 10,661 patients that met the Georgia Trauma Registry criteria. Based upon an examination of other available data, it is estimated that the total annual volume of patients that meet the strict criteria of the Georgia Trauma Registry is in the vicinity of 43,879 to 52,300 persons. This number could easily be doubled if a less medically specific criterion were applied to all blunt and penetrating injuries that required acute care attention.

Current Strategies

The mission of the Office of Emergency Medical Services/Trauma (OEMS/T) is to save lives and provide the best possible outcomes through improved pre-hospital care regulation. The Office of Emergency Medical Services/Trauma provides statewide coordination and leadership for the planning, development, and implementation of Georgia's pre-hospital care and trauma care systems. OEMS/T's responsibilities include the development and review of statewide standards for pre-hospital care services, trauma care systems, and trauma centers; the provision of technical assistance to local agencies developing, implementing, or evaluating components of a trauma care system; the establishment of regulatory policies and procedures; and the approval, designation, and re-designation of trauma centers to ensure compliance with the minimum standards set by the American College of Surgeons' Committee on Trauma and the State EMS Medical Director. The OEMS/T also secures and administers the on-going funding needed to collect and aggregate Georgia's trauma system data.

In support of this mission and vision, the Georgia Office of Emergency Medical Services/Trauma has implemented the Digital Innovations Incorporated National Trauma Registry American College of Surgeons (NTRACS) at 15 designated trauma centers in Georgia. This implementation began in 2002 and has enabled the State of Georgia to submit data to the National Trauma Data Bank (NTDB) for two consecutive years (2003 and 2004). Data for 2005 will be aggregated and processed in May and June 2006.

The Georgia Trauma Registry needs to "scale up" so that all acute care health facilities that receive injured patients that meet trauma criteria can participate in an optimal system of patient care and provide data. Funding is needed to accomplish this objective.

The years 2006 through 2010 represent a major window of opportunity for the development and utilization of EMS and Trauma data to drive system-wide improvements in State traffic safety systems. For Georgia, the *GEMSIS* plan was the start of that statewide journey – the overall goal is improved public health, prevention, pre-hospital care, and increasing control over shaping the future of EMS in Georgia.

Expanding the trauma data collection system in Georgia offers a tremendous opportunity for protecting the health of every Georgia resident and visitor in our State. Trauma is the number one killer of Americans between the ages of one and 44, and the number three cause of death across all age groups. Trauma survivors, regardless of age, often face intensive rehabilitation, lifelong disabilities, and increasingly expensive long-term care.

Implementation Responsibility

The Department of Human Resources, Division of Public Health, Office of Emergency Medical Services/Trauma will retain the overall administration of the *GEMSIS* implementation process and the

statewide stakeholders group will provide oversight of the project.

OEMS/T will also retain coordination of the funding for the strategic plan implementation that has been awarded by the Health and Human Services Administration, Maternal Child Health-Emergency Medical Services for Children Program.

Cost/Benefit is Essential

Within Georgia State government, pressures to reduce or eliminate costs are real and require the utmost in careful planning; cost/benefit is an essential consideration. New or innovative ways of providing EMS related governmental services or overcoming organizational limitations must be continuously examined. Greater efficiency, the evolution of services and an expanded role in education and research along with the introduction of better technology to drive the elimination of cost should be seen as the necessary investments for taking a more strategic view of the programs and services the OEMS/T provides to State citizens. These considerations are the heart of the *GEMSIS* strategic goals. Accurate and timely EMS/EMSC information – especially when linked with other public health data sources will be of substantial benefit to the State of Georgia.

Timetable & Risks

GEMSIS is an ambitious plan with clear priorities for infrastructure improvement. Some elements of the *GEMSIS* plan will become tangible in 2004. This includes the publication of baseline data, the ability to share information over the State of Georgia "backbone" computer network and a foundation for web-based information dissemination. The provisions for web-based content, information, applications, and other services will become increasingly visible over a several year time frame. Most elements of the *GEMSIS* plan can be completed within a

three-year period.¹ Continuity of senior management support, organizational stability, funding, and the ability of resources to provide focused attention are all identified potential risk factors potentially limiting the implementation of the GEMSIS plan.

Greater Accuracy with Reduced Costs

A movement away from paper-based data collection methods is needed. It is believed that web-based and other electronic data collection methods will provide greater accuracy and operational efficiency. When employees or the public are able to access services or resolve relatively simple and common problems on their own, using only a standard web browser, a governmental agency can expect to reduce or eliminate transaction costs. The elimination of postage alone often offers an acceptable ROI (return on investment).

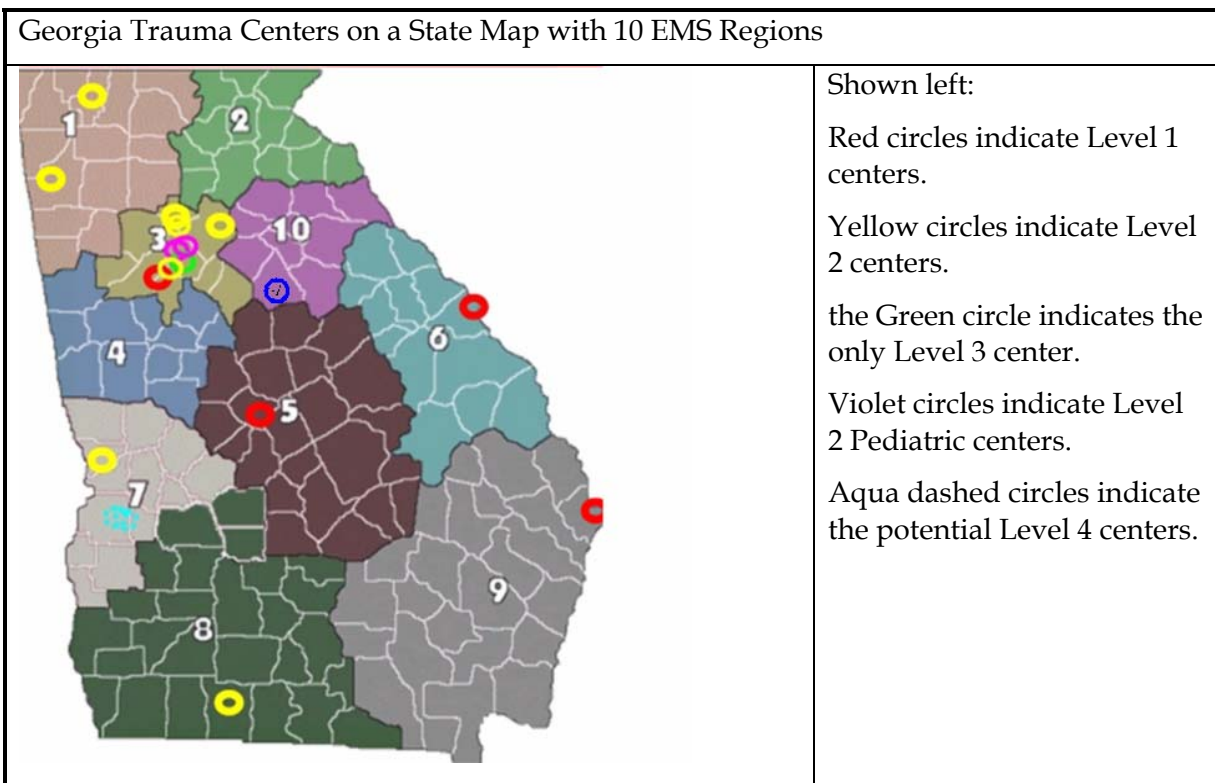
By implementing web-based self-service oriented solutions, the OEMS/T can free their limited technical and subject matter resources to focus on higher-value, more strategic issues. With web self-service supported through a portal, Regional EMS personnel can obtain this information from virtually any location in the State—including a provider's place of business. Rural providers could enter PCR data or transmit aggregated PCR data files. Certain types of information and reports could be made available for general distribution.

¹ Note a separate MS Project document containing the *GEMSIS* Implementation Timetable sets forth the specific timeframes and the milestone guideposts for attaining *GEMSIS* objectives.

Future Opportunities

The OEMS/T believes that there are five interrelated opportunities for improvement:

1. Continued system development of the State trauma system.
2. Expansion of the systematic trauma system data linkages to provide objective information.
3. Implementation of the NEMSIS (National EMS Information System).
4. Systematic study, analysis, characterization, and improvement of EMS system responses based upon regional needs.
5. Systematic development and analysis of trauma system outcome data.



Future Opportunity 1: Continued systematic development of the State trauma system.

According to the Georgia Hospital Association, there were 152 acute care hospitals in Georgia in 2002. As shown on the table below, there were only 14 designated trauma centers in Georgia in 2004. There are currently 15 designated trauma centers ranging from Level I to

Level IV. Many additional trauma centers are needed to insure optimal health care for all seriously injured patients.

A truly "inclusive" trauma system for Georgia would involve all acute care hospitals in some manner. Informed discussions among trauma system stakeholders have suggested that Georgia should have approximately 30 designated trauma centers in strategic locations in

order to address Georgia's trauma care and emergency preparedness needs.

Georgia's total of fifteen designated trauma centers is impressive to be sure, but still alarmingly inadequate for a State the size of Georgia. Of the roughly 32,000-40,000 cases of major trauma occurring each year in Georgia – serious and life-threatening car accidents, burn injuries, household and construction accidents, etc. Only about 10,000 are treated in designated trauma centers.

Data from the Georgia Hospital Association indicates that approximately two-thirds of Georgia's hospitals are operating "in the red." The economic downturn that followed the attacks of 9/11 accentuated a host of already pressing problems for hospitals.

In Georgia, as in other States, some hospitals have closed, while others have made significant reductions in services. It is not surprising that hospitals find it difficult to make the expensive commitment of becoming, or remaining, a designated trauma center. Nor is it difficult to understand why many physicians choose not to work in trauma centers.

Currently, trauma results in \$160-170 million in uncompensated hospital care annually in our State. This uncompensated care is being provided by a healthcare system that is fiscally very fragile, perhaps even in danger of outright collapse. When the pre-hospital and physician components of uncompensated care are added, it is estimated that approximately \$250,000,000 of uncompensated trauma care is being contributed by the provider community annually. The cost of "shoring up" our Statewide trauma system is high, but the potential yield is worth the expenditure – both in dollars and in productive, meaningful lives saved. In fact, improving our trauma care network is one tried-and-

true tactic for improving both fiscal and public health. Consider: In some States, well-designed, integrated statewide trauma systems have shown as much as a 500% return on investment.

Future Opportunity 2: Expansion of the systematic trauma system data linkages to provide objective information.

The OEMS/T seeks to more effectively link EMS pre-hospital care reports (PCR's) to trauma data. Information regarding the pre-hospital care of patients along with trauma registry data can provide important insights into improving patient care. The inclusion of certain information will allow research linkages to be made between the pre-hospital procedures, in-hospital procedures, patient outcomes, prevention, and emergency preparedness. In the future, the Georgia trauma registry will be linked to State crash records, public health syndromic surveillance data, ER admissions, and death records, to enable a more comprehensive understanding of effective public health responses. Data linkage has another important advantage-- costs are greatly reduced by limiting the amount of redundant data entry that is associated with EMS and trauma registry data abstraction and analysis.

Each trauma center uses this data to monitor outcomes and constantly improve the quality of care being delivered to trauma patients. March of 2004, marked the first year of aggregate trauma registry data ever compiled by the State. Formal publication of this data was released in 2004, with a second publication due in the summer of 2006. This work should continue and the data should be tied to NEMSIS (National EMS Information System), CODES (Crash Outcomes), and other data sets to provide objective measures for the identification of specific EMS, public health, prevention, and enforcement opportunities for response.

While the existing trauma systems goals encompass such things as improving the collection, analysis and publication of statewide trauma data, personnel resources are needed to provide the linkage of EMS data with other highway safety and public health data sources. Appropriately summarized EMS and trauma system data can be an important adjunct in the characterization and accomplishment of State traffic safety improvements.

Future Opportunity 3: Adoption and implementation of the NEMIS (National EMS Information System) Data Standard.

The Georgia Office of Emergency Medical Services/Trauma is current in the process of implementing the National EMS Information System data standard. This data standard will enable the collection, analysis and utilization of EMS data. Greater consistency, completeness, accuracy, accessibility, and data integration are needed in order to promote optimization of traffic safety information. While the existing *GEMIS* systems goals encompass such things as the collection, analysis and publication of Statewide EMS/EMSC baseline data, the linkage of EMS data with other public health data sources, using data to drive CQI (Continuous Quality Improvement), EMS/EMSC research, the uniform administration of EMS rules and regulations, and support traffic safety traffic needs are incomplete.

Future Opportunity 4: Characterization, study, and improvement of EMS system response times

As trauma care specialists recognize, the "injury clock" begins ticking the moment a traumatic event occurs – whether that event is a car crash, a household fall, a gunshot wound, or a construction accident. Response to most traumatic events is usually by emergency medical technicians

or first responders. Depending on where the incident occurs in the State, this response may take anywhere from 3 to 45 minutes. An additional 10-60 minutes may elapse before the patient reaches a medical facility – and this destination may not necessarily be the appropriate facility. Contrary to public opinion, not every hospital with an emergency room is capable of rendering optimal care to a seriously injured patient.

Future Opportunity 5: Systematic development and analysis of EMS and trauma system outcome data.

At the current time the systematic study of EMS response and trauma system outcome data is limited. Standardization on the NTRAC system and participation in the NTDB represent major milestones for Georgia. However, there is much work remaining to be accomplished. The trauma data that has been collected to date is largely descriptive as oppose to analytical. If improvements and expansions could be made to Georgia's system of trauma data collection, Georgia would begin to possess an ability to identify risk factors, foster interventions to prevent injuries, improve the capabilities of EMS to respond in a timely and relevant fashion, and understand how the integrated delivery of optimal resources could benefit patient outcomes.

Greater timeliness, consistency, completeness, accuracy, accessibility, and data integration are needed not only to optimize trauma care but also to support meaningful linkages with other data sets to improve traffic safety information. The data collected to date is primarily descriptive. The data needs to be expanded and linked to other data sets in order to make them more meaningful. An agenda for strategic research needs to be developed which can provide improvements to trauma system data utilization.

Traffic/Crash Records and Data Analysis

Problem ID

Georgia's crash report database is statutorily assigned to the GDOT. The system consists of: paper creation in the law enforcement field, submission to the GDOT, microfilm storage and labeled identification, manual data entry. Companion traffic records systems are maintained within the; DDS/driver's, DOR/vehicle, DHR/medical/CODES and Administrative Office of the Courts (AOC)/citations.

The combined data systems automation and linkages is addressed in Georgia's efforts documented in the "Strategic Plan for Traffic Records Improvement" included within the "State Traffic Safety Information System Improvement Grant." The plan identified over \$7 million of needed system improvements. Georgia will receive \$1,067,897 in NHTSA Section 408 grants. The traffic/crash records system will use these funds to launch the strategies spelled out in the plan.

Current Strategies

- Implement the "Strategic Plan for Traffic Records Improvement" included within the "State Traffic Safety Information System Improvement Grant."
- Georgia Traffic Records Coordinating Committee continued synchronization and cooperation among various governmental and law enforcement entities.
- Support a Georgia Traffic Records Coordinator to provide leadership in the implementation of the Traffic Records Coordinating Committee Strategic Plan.

- Promote and support research initiatives related to highway safety in Georgia.
- Support the Crash Outcome Data Evaluation System (CODES).

Future Opportunities

- Implement TRCC Strategic Plan.

Traffic Incident Management

Problem ID

Nearly **40%** of law enforcement officers killed in the line of duty was killed in traffic related incidents of some sort. More than **50%** of the congestion in metro Atlanta is caused by non-recurring incidents such as vehicular collisions. The average delay per peak road traveler is 70 hours. The cost of that congestion for delay time to motorists is estimated at \$2.3 billion per year in metro Atlanta.

Current Strategies

- Develop and sustain a region-wide incident management program to facilitate the safest and fastest roadway clearance, lessening the impact on emergency responders and the motoring public.
- Continue the dialogue of inter-agency coordination and cooperation, to create an opportunity for multi-agency training which promotes teamwork.
- Serve as a platform for participants to develop common operation strategies and a better understanding of other agencies' roles and responsibilities.

Future Opportunities

- Local and Statewide Open Roads and Quick Clearance Policies supporting 90 minute clearance goals.
- TIM Teams throughout that Atlanta Regional Commission's 13-County Metro Atlanta Region.
- Certification and Training for Towing and Recovery Operators.
- Recovery Incentive Program.
- Multi-Agency Training for Responders.
- Memorandum of Understanding for Coroners and Medical Examiners.
- Abandoned Vehicle Polices.
- Improved Accident Investigation Technology.
- Memorandums of understanding for clearing Motor Vehicle Fluids.
- Continue generating additional support of Traffic Incident Management Enhancement.
- Promote the use of NIMS and unified command at traffic incidents.

Implementation of the SHSP

The next steps are outlined within the implementation process. The implementation process maintains the momentum needed to progress from the planning phase to results driven action plans. Georgia will implement the SHSP through the development of action plans in each of the key emphasis areas. The KEA's are discussed in the section on Key Emphasis Areas, Problem ID, Strategies and Opportunities. The task teams are

supported by an organized risk analysis and evaluation team. Introductory data and problem identification has already provided the ground work to encourage innovative planning considerations. The innovative considerations create optimal action plans.

The Key Emphasis Areas were established with three years of data analysis. Further data analysis will be developed in the report produced by the Georgia Tech Research Corporation, due January 2007. The research effort requires participation in the SHSP development process. The effort supports each task team's data requests.

Each Key Emphasis Area will have a corresponding task team. The task teams will be organized systematically during the last quarter of 2006 and into 2007. Additional participants will be recruited. The task team organizational effort is based on the Working Group's review of the most effective efforts that can produce the best outcomes during the next six months. The review will identify anticipated data needs. The data needs will be considered for prompt support of the Risk Analysis and Evaluation Team's ability to respond to the requests. Each task team is organized with recommended planning guidance from the NCHRP Report 500 series. Furthermore, the task teams set out to identify and define the problem beyond currently existing terms. The task teams will develop performance measures for each recommended strategy. Performance based goals are shorter-term goals that contribute toward achieving the strategic goal.

The teams set crash reduction goals. The goals and recommendations develop program policies and alternative approaches with detailed evaluations. For example, the Aggressive Driver/Super Speeder Task Team was organized in

August 2006. This Task Team was charged with supporting the efforts of Georgia's SHSP. Furthermore, the Task Team was charged with developing initial recommendations by December 2006. The timely recommendations are needed should any legislative actions be addressed in the 2007 Georgia General Assembly. The "super speeder" aspect is being considered for appropriate introduction into Georgia's highway speeding issues. For example, the Task Team will seek to define "super speeder." A "super speeder" could be a multiple violator at excessive speeds over the posted speed limit or a one time violator over an established speed.

Finally the task teams will submit recommendations and action plans through the Working Group. The Safety Program Leadership will consider and carry out the action plans with future monitoring and evaluation.

The Task Team actions plans will begin implementation in early 2007. The new action plans will develop new partnerships to incorporate initiatives involving the "4 E's." A key component includes performance objectives identifying established benchmarks. The benchmarks are included in projected lives saved that correspond to each Key Emphasis Area. New initiatives will evaluate performance compared to previous data.

In the second and third quarters of 2007, the Working Group will begin updating the progress toward implementing the SHSP. The documented progress will be included in the annual update of the SHSP to be completed by September 2007.

Georgia has accomplished the "planning the plan" phase to bring together the highway safety stakeholders, partners and leaders for its SHSP. The SHSP establishes

the ground work by which data-driven decisions may direct Georgia's future life saving strategies. The implementation involves the statutory provisions necessary to comply with federal highway requirements.

As required by the SHSP structure, the leadership, administration, risk analysis and evaluation, working group and KEA task teams are well defined. Georgia recognizes it is critical for the collaborative process to be sustained and expanded in the implementation phase. Georgia's SHSP provides a directional guide for all of the state's safety partners to address key highway safety issues and align highway safety efforts. However, attention to the SHSP does not end after the initial development phase. The SHSP is an evolving plan responding to the implementation process. As the implementation process of the SHSP evolves and collaborative efforts of the working groups become institutionalized, the recommendations from the SHSP will influence the priorities in the state's federally mandated highway safety plans. More safety partners involved in the SHSP should agree that the emphasis areas and strategies outlined in the SHSP are the best way to collectively reduce fatalities and serious injuries. Highway safety planning is not new to Georgia. However, combining our plans and strategies into a collaborative effort is new. Aligning the plans will guide the safety related activities in individual safety partners' plans to achieve a more effective result – saving more lives.

As safety partners move forward with the implementation process and determine funding priorities, the importance of the activity shall be weighed in relation to what the data shows. More and more decisions will be data driven to achieve accurate

results. Funding will be appropriate for the level of need. The activity will be assessed to determine the consequences of scaling down or eliminating the activity to avoid creating a safety problem.

Georgia's SHSP shares the similar goals with the transportation planning process: to increase state and local decision makers' awareness of safety needs; to improve the effectiveness of planning and programming through the use of accurate and timely data; and to expand the participation of the major state and local stakeholders. Incorporating the appropriate elements of the SHSP throughout the stages of the transportation planning process gives the SHSP's higher visibility and greater understanding among the stakeholders, elected and appointed officials, and the public.

Proposed Funding

Existing highway safety strategies depend on continued funding. Flexible funding provisions under SAFETEA-LU will allow decision makers to coordinate resources to implement combined highway safety strategies. The SHSP represents the new commitment to collaborate and create new safety partnerships. The coordinated funding from many agencies will leverage the individual resources to launch a comprehensive safety initiative and realize life saving results.

Many funding sources are considered to implement the infrastructure as well as the behavioral strategies and programs needed in the SHSP. The Federal Motor Carrier Safety Administration, National Highway Traffic Safety Administration, and Federal Highway Administration provide the guidance and administer the funding programs to assist in implementing the SHSP. Georgia further recognizes that the

SHSP goes beyond federal grant programs and planning processes. An ever increasing partnership dedicated to funding initiatives is needed to protect Georgia's greatest resource, its citizens.

Evaluation

Georgia's SHSP will be evaluated annually through both impact and process evaluation. The performance measure will be the reduction in the number of fatal and serious injuries as well as reaching the 2010 statewide fatality rate of 1.0 fatality per 100 million vehicle miles traveled.

Additionally, the process issues to be monitored and measured include the:

- Increase in safety belt use.
- Increase in the number of sobriety checkpoints.
- Increase in the number of law enforcement officers and/or agencies participating in enhanced enforcement efforts.
- Increase of enforcement of high-risk driving behaviors.
- Decrease in the amount of time it takes to make and process a DUI arrest and complete the required paperwork.
- Improvement in the DUI conviction rate.
- Implementation of new motorcycle safety program availability.
- Decrease in the number of fatalities and serious injuries to individuals under the age of 21.
- Congestion delay and rear-end crash improvement.
- Changes in law enforcement agencies traffic enforcement.

The evaluation will determine the effectiveness of existing countermeasures and allow refinement of the SHS to address program gaps and deficiencies.

Georgia and the FHWA Guidance Checklist

In the development of the SHSP, Georgia utilized the Federal Highway Administration's "STRATEGIC HIGHWAY SAFETY PLAN PROCESS CHECKLIST." The "Checklist" itemizes the statutory requirements found in the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy to Users (SAFETEA-LU).

- The "SAFETEA-LU Requirements" are statutory requirements set forth primarily in 23 U.S.C. Section 148 and additional Title 23 Sections.
- The "Items to Consider" provide examples to generate ideas relating to the corresponding requirement.
- The "Assessment" provides Georgia's progress toward satisfying the requirements.
- The "Comments" section provides a notation as to the status and any suggestions, strengths or shortcomings.

Georgia's SHSP satisfies the statutory requirements as set forth in SAFETEA-LU. (See **Appendix IV.**)

Conclusion

Highway safety partners are realizing the benefits of combining their efforts and resources. Responsible safety partners and stakeholders recognize the urgency to work together. New approaches such as combining our current strategies can effectively minimize the continuing highway fatality increases. Further development of these partnerships and the SHSP will further reduce highway fatalities and injuries. Georgia can achieve its highway safety goal and save hundreds of lives -- demonstrating that in Georgia every life counts.

Note: Crash data was produced by the Georgia Department of Transportation and the National Highway Traffic Administration. Corresponding tables, charts and graphs were produced by Georgia Department of Transportation and the Georgia Department of Human Resources, CODES office.