

GEORGIA DEPARTMENT OF TRANSPORTATION
Office of Traffic Operations

2009 Highway Safety Improvement Program (HSIP)
Annual Report (Including High Risk Rural Roads Program)

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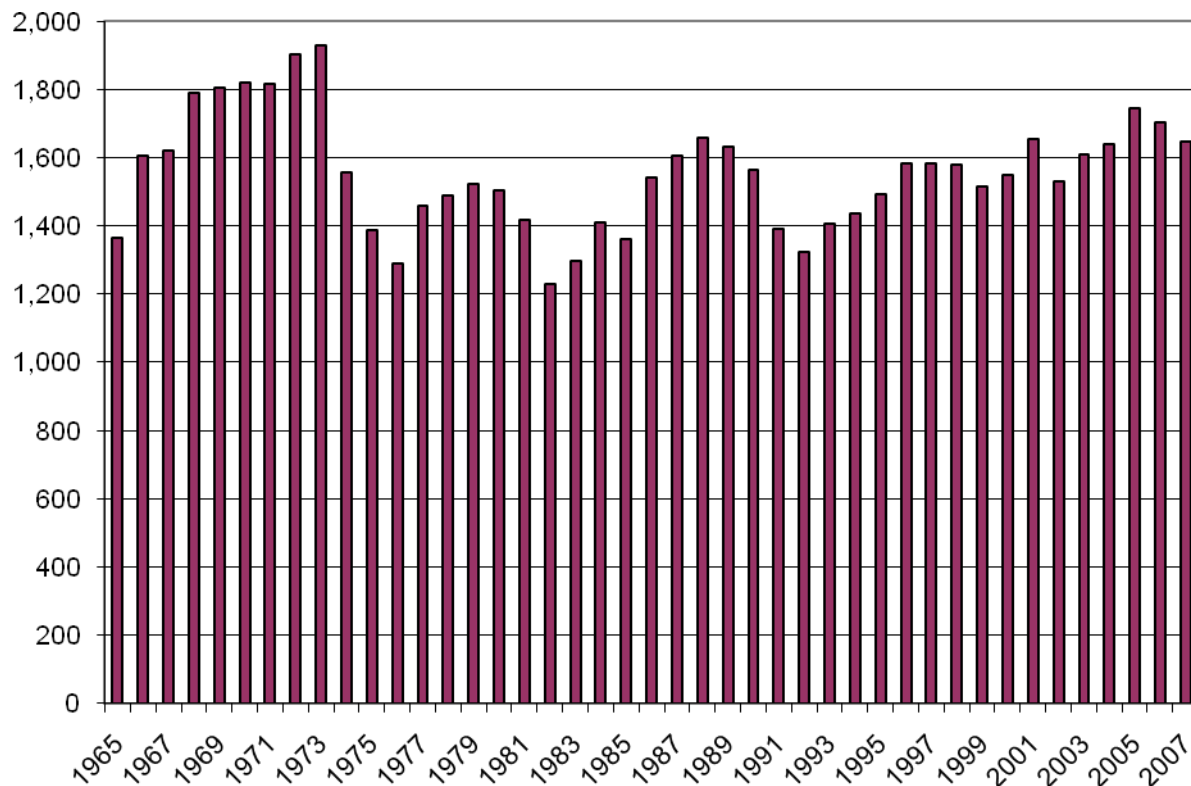
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2009 HSIP Overview

The purpose of the Georgia Highway Safety Improvement Program (HSIP) is to provide for 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 year 2008 represented the third consecutive year of lower fatalities after reaching a 32 year high in 2005 (**Figure 1**). Despite no discernable change in statewide travel Georgia's statewide fatality rate also decreased. These trends are closely monitored by all highway safety professionals in Georgia and remain the focus of the state's Strategic Highway Safety Plan (SHSP). *In 2008, Georgia's total number of fatalities (1,508) decreased approximately 3.2%.* While the total number of fatalities was down slightly the statewide fatality rate (1.39) still remained slightly higher than the national average, but continues to parallel the national rate.

Figure 1: Georgia Fatalities by Year (1966-2008)



*Please note that the number of fatalities listed for Georgia reflect the actual number of fatalities which are slightly higher than the number reported to FARS. This is due to the fact that fetuses and fatalities resulting from pit maneuvers are not collected by FARS.

A. Progress in Implementing HSIP Projects

The GDOT Traffic Operations Office is responsible for implementing the Highway Safety Improvement Program (HSIP). The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) established the Highway Safety Improvement Program (HSIP) in accordance with CFR Title 23, Chapter 1, Section 148. Projects identified by Georgia's Highway Safety Improvement Program follow the Department's normal Plan Development Process. Since safety improvements are by their very nature time sensitive, it is common that they will follow a fast track whenever possible. While most safety projects will be categorically exempt from federal air quality requirements, they will also follow tracks that are appropriate to the size of the improvement. For example, an identified improvement that only requires a signing change, signal phasing change, pavement marking or some other similar sized effort will be sent directly to maintenance for implementation. In such cases, little or no formal approval, documentation or evaluation (other than a follow up to check the crash history) is generated. Moderate sized improvements such as the addition of turn lanes, installation of traffic signals, and other low environmental impact improvements may be accomplished with "safety category funds", and will usually be let to contract.

1. Funds Available

In FY 2009, GDOT received the following funding amounts:

Funding Type	Amount
Section 148	\$32,959,471.87
Section 152	\$0.00
High Risk Rural Roads Program	\$2,603,506.00
Section 157	\$0.00
Section 163	\$0.00
Rail	\$7,116,528.17
Total Funding Received in FY 2009	\$42,679,506.04

2. Number & General Listing of the Types of HSIP Projects Initiated

Table 1: General Types of HSIP Projects

Type Safety Improvement	Estimated Expenditures
Intersection Improvements	\$20,282,096.79
Other Improvements	\$503,530.29
Pedestrian & Bicycle Improvements	\$0.00
Roadside Improvements	\$0.00
Roadway & Structure Improvements	\$11,777,350.79
<i>Approximate Section 152 Projects</i>	\$0.00
<i>Approximate Section 157 Projects</i>	\$0.00
<i>Approximate Section 163 Projects</i>	\$0.00
<i>Approximate Section 154/164 Projects</i>	\$0.00
Total:	\$32,562,977.87

Table 1 contains the general type and funding amounts of safety projects completed in 2009. The general types of projects align with the state safety goals in Section 4 below. Each year, the Department sets aside Lump Sum safety funding to implement safety projects. Safety funding is not unlimited and is intended for the implementation of safety projects that could not be anticipated. It is possible to predict that safety projects will be needed, but it is not possible to predict where a safety project will be needed or when. It is essential that the safety project identification be kept simple in order that these small and moderate sized improvements can move through the required processes as quickly as possible.

Safety projects may also be very large and require funding amounts that exceed the lump sum set-aside amounts. These large safety projects might also include minor capacity increases at critical points along a corridor. Even when addressing a safety need, these must follow the normal plan development process with concept reports, programming, public hearings and formal evaluations as are described elsewhere in the Department’s formal policies. When such a project is identified and recommended for safety reasons, it should be approved as such for special priority handling by the Department’s Project Review Nominating Committee (PRNC).

Highway Safety Improvement Transactions

The Highway Safety Improvement Program allocated approximately \$35,562,977.87 in highway safety funds across the state during Fiscal Year 2009. These projects included intersection improvements, signal upgrades (LEDs), ramp improvements, corridor improvements, turn lanes, signage, corridor improvements and traffic engineering studies (**Table 2**).

Table 2: 2009 HSIP Projects

Safety Total for Districts			
Fund	District	Percent	Total
Highway Safety	1	13.51%	\$ 7,041,900.00
Highway Safety	2	8.11%	\$ 1,908,074.50
Highway Safety	3	13.51%	\$ 3,877,005.29
Highway Safety	4	16.22%	\$ 1,644,703.83
Highway Safety	5	21.62%	\$ 12,913,485.66
Highway Safety	6	10.81%	\$ 459,242.59
Highway Safety	7	13.51%	\$ 6,362,566.00
Highway Safety	All	2.71%	\$ 1,356,000.00
		100.00%	\$35,562,977.87

3. Selection Process

Safety projects may be nominated or identified from a large number of sources. As previously stated, all public roads are included in this program. One of the most common is by an analysis of vehicle crashes. GDOT is fortunate in that all motor vehicles crashes are collected and located. An example of crash analysis is the *Top 150* Sections and Intersections listings. Once the *Top 150* Section and Intersections are identified, the list is distributed to the GDOT District Offices for project selection and implementation. Locations reported by citizens, elected

officials, local governments, city and county engineers, emergency agencies and metropolitan planning organizations are all accepted for analysis. A project may qualify as a safety project because of a positive impact on an existing safety problem because of evidence that it will prevent a hazardous condition, or because it may fall into one of several pre-approved categories of improvements that are known to provide safety benefits. Examples of this last category include guardrail, traffic signals, railroad crossing warning devices, and most intersection improvements. Public pedestrian and bicycle facilities and traffic calming projects may also be eligible for hazard elimination projects. Once a project has been identified, a benefit/cost analysis is performed.

The Metropolitan Planning Organizations (MPO) and local governments are encouraged to develop high crash lists for local roads that can be used to identify hazard elimination projects. City and county engineers and local public agencies should be encouraged annually to examine local road systems and recommend safety projects. These projects will be submitted to the District Traffic Engineer for approval and recommendation for project concept and project programming in the Office of Traffic Operations in exactly the same manner as projects on the State Routes.

GDOT also funds an Off-System Safety Program. Each GDOT District has in place an Off-System Coordinator or designated GDOT staff, who works with cities and counties to identify safety projects on non-state route highways. The program was not fully funded in 2009 as GDOT struggled

4. Program Structure & Alignment with State Safety Goals

Georgia's Strategic Highway Safety Plan (SHSP) was in place during FY 2009 with Task Teams developing plans for the various Emphasis Areas. GDOT's Safety Action Plan to implement engineering solutions to highway safety problems (while severely underfunded) was underway during FY 2009 as well. GDOT's Safety Action Plan is a key component of its HSIP and both are aligned with the goals of the state's newly-developed SHSP and a number of its Emphasis Areas.

Georgia's SHSP Key Emphasis Areas are as follows:

- 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

Georgia’s Safety Action Plan focuses on the following areas:

- Prevent Vehicles from Departing the Roadway or Lane
- Minimizing the Consequences of Leaving the Road
- Improve Design & Operation of Intersections
- Pedestrian Safety
- Reduce Vehicle-Train Crashes
- Off-System Safety

Minimizing Consequences of Leaving the Road:

Approximately one quarter of all fatalities result from vehicles leaving the roadway and hitting some fixed object or overturning. It is important to develop methods to keep vehicles from leaving the roadway, and it is also important to try and minimize the impact for those that inevitably do. A reduction in serious injuries and fatalities would result by reducing the consequences of leaving the roadway. Two-thirds of all fatalities registered in rural settings result from vehicles leaving the roadway. It is important to reduce the opportunity for vehicles to overturn or strike fixed objects when they stray and minimize injuries when they crash with a fixed object in addition to keeping vehicles on the roadway.

- Crash Impact Attenuators
- Cable Barrier Systems
- Utility Relocation Incentives
- Vegetation Removal - Enhanced Recovery Areas
- Corridor Improvements
- Guardrail & Guardrail Delineation
- Bridge Approach & Departure End Treatments
- Elimination of Guardrail
- Safety Edge

Improve Design & Operation of Intersections:

Intersection safety is a national priority for numerous highway-safety organizations. Georgia remains one of FHWA’s focus states for intersection related crashes. Injury and fatality statistics for highway intersections and interchanges are ample evidence that strategies to improve the safety of these crash-prone areas are urgently needed. About one in every four fatal crashes occurs at or near an intersection, one-third of which are signalized. Safety research also indicates that the two most prominent crash scenarios involve left turns and being struck from

the rear. Right-angle collisions are a predominant cause of death at signalized intersections. Despite improved intersection design and more sophisticated applications of traffic engineering measures, the number of fatalities associated with intersections has not changed substantially in 25 years according to national studies.

- Identified Intersection Improvements
- Red Light Running
- LED Transition
- 12" Signal Heads
- Street Naming & Intersection Warning Signs
- Option Zone Detection for High Speed Corridors

While Georgia's SHSP provides insight on broad initiatives in the intersection safety area to support achieving the overall goal, but lacks the detail of countermeasures, actions, deployment characteristics, costs, impacts and key steps that have to be taken to significantly improve intersection safety, a separate intersection Safety Action Plan is needed. The purpose of this plan is to provide the specifics on countermeasures, actions and investments needed to achieve this goal. The intersection portion of this goal is projected to be 10 fewer annual intersection fatalities.

Off-System Program:

Crashes on Off-System Roads account for more than one-third of the fatalities in Georgia. GDOT Traffic Operations realizes that in order to reach its goal of 40 fewer motor vehicle fatalities annually, then safety dollars must be applied Off-System. In 2008, the 25 counties in Georgia with the highest fatality rates were considered rural. GDOT has a target of approximately \$1 million per GDOT District (7 districts) per year as these funds remain available (**Figure 4**). It is anticipated that over time Georgia will reap the benefits of increased spending on its Off-System routes. It is apparent that FHWA is also behind this effort through encouraging spending on more Off-system routes through the High Risk Rural Roads (HRRR) program.

Pedestrian Safety:

Pedestrian vehicle crashes are the most complex of all of the safety efforts to reduce from an engineering perspective. Georgia has approximately 150 pedestrian fatalities each year. Georgia tracks the national trend of approximately 12% of all traffic related fatalities involving pedestrians. The complexity can be further seen when the numbers are evaluated; 91% of pedestrian crashes occur in the roadway, only 5% occur in marked crosswalks; over 50% involve either an impaired driver or pedestrian; a significant number of fatalities occur in limited access facilities where pedestrians are prohibited.

- Pedestrian Countdown Timers
- Pedestrian Accommodations for Signalized Intersections
- High Vehicle/Pedestrian Crash Locations

Prevent Vehicles from Departing the Roadway or Lane:

One quarter of all fatalities result from vehicles leaving the road and hitting some fixed object or overturning. The objectives of this program's initiatives are focused on keeping vehicles in their lane and from departing the roadway. Demonstration projects are being evaluated throughout the country to provide motorists with visual and audible enhancements to the roadway that minimize lane drift, and retain attention of distracted, fatigued and impaired drivers. In 2008, there were a total of 437 Single Vehicle Run-Off-Road (ROR) fatal crashes statewide. There were 29,309 total (ROR) crashes for On-System and Off-System routes combined. The 457 fatal (ROR) crashes accounted for approximately 0.15% of all 2008 crashes. Total ROR crashes accounted for 9.57% of the total number of crashes for 2008.

To provide perspective and highlight the importance of this program, consider that these crashes resulted in an over-represented amount (31%) of total 2008 fatalities. The total number of Single Vehicle Run-Off-Road (ROR) fatal crashes statewide decreased by almost 9% from 2007 to 2008.

- Shoulder Rumble Strips
- Centerline Rumble Strips
- Edge Line Rumble Strips
- Wet Weather Evaluation
- Sharp Curve Treatments
- Wet Weather Reflective Tape/Striping
- Thermoplastic Striping

Reduce Vehicle - Train Crashes:

Each year thousands of collisions resulting in hundreds of injuries and fatalities are sustained across the nation at highway-railroad grade crossings. A majority of these crashes are the direct result of motor vehicle operator behavior. There also exists a declining public awareness regarding the dangers of highway-rail grade crossings. Georgia has made incredible progress in this area, reducing the number of fatalities at crossings from 69 in 1974, 6 fatalities from train/vehicle crashes in 2006, 15 fatalities in 2007, 8 fatalities in 2008 and 8 fatalities year-to-date in 2009. The total number of crossings that can be addressed with the current funding levels is approximately 35 per year. The production could be increased if more funding became available using consultant services.

- RR Crossing Warning Devices
- RR Crossing Hazard Elimination
- High Adjusted Hazard Index with Geometric Deficiencies

5. Flexibility of HSIP Funds

Since Georgia has completed a SHSP, it meets one of the key provisions needed to take advantage of the flexibility of funds provision of SAFETEA-LU in FY 2009. Georgia was not able meet the second key provision and certify that it met all needs in the State relating to railway-highway crossings as well as its infrastructure safety needs relating to highway safety improvement projects. A State may use up to 10% of HSIP funds to carry out other safety projects identified in the SHSP.

B. Program Effectiveness

1. Safety Trends

Table 3: 2004-2008 Georgia Fatality Rates by Rural/Urban

Route Type		2004 Georgia Fatality Rate	2004 Georgia Actual Fatalities	2005 Georgia Fatality Rate	2005 Georgia Actual Fatalities	2006 Georgia Fatality Rate	2006 Georgia Actual Fatalities	2007 Georgia Fatality Rate	2007 Georgia Actual Fatalities	2008 Georgia Fatality Rate	2008 Georgia Actual Fatalities
Non-Interstate Roads	Rural	2.36	795	2.55	780	2.27	712	2.43	756	2.32	671
	Urban	1.22	584	1.43	710	1.43	739	1.29	662	1.19	611
Interstate Roads	Rural	1.39	142	1.17	117	0.98	101	1.10	113	0.96	90
	Urban	0.59	120	0.67	137	0.75	151	0.58	117	0.71	136
Total	All	1.46	1,641	1.58	1,744	1.50	1,703	1.46	1,648	1.39	1,508

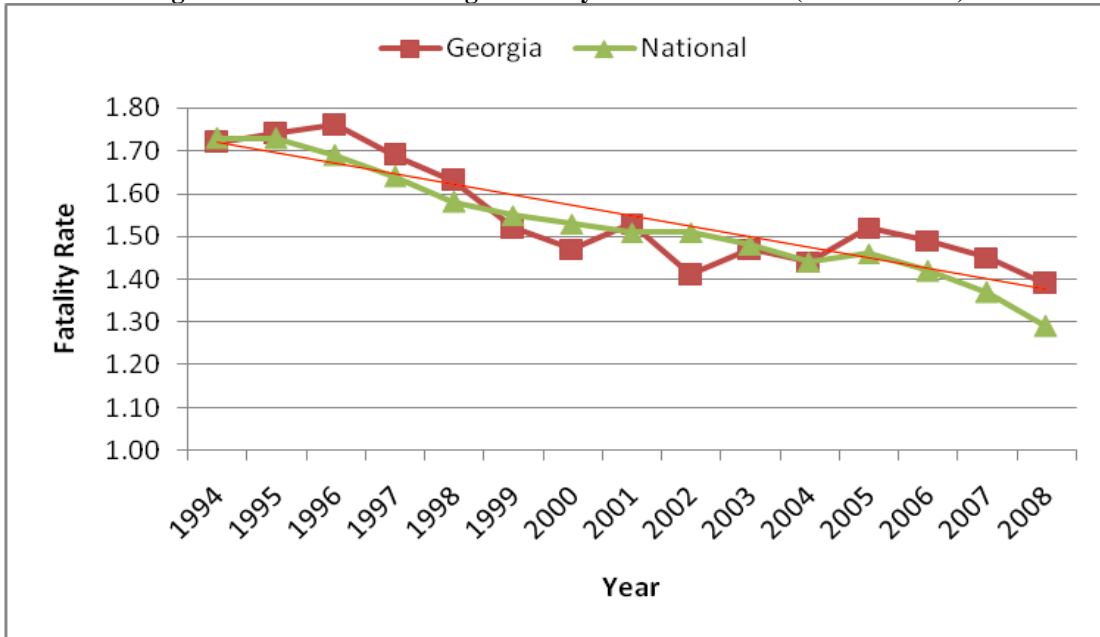
Table 4: 2004-2008 Georgia % VMT by Rural/Urban

Route Type	2004		2005		2006		2007		2008	
	VMT (Millions)	%/Total VMT	VMT (Millions)	%/Total VMT	VMT (Millions)	%/Total VMT	VMT (Millions)	%/Total VMT	VMT (Millions)	%/Total VMT
Rural	43,913	39.1%	40,620	36.7%	41,672	36.7%	41,393	36.7%	38,385	35.30%
Urban	68,436	60.9%	70,084	63.3%	71,859	63.3%	71,859	63.3%	70,460	64.70%
Rural Interstate	10,192	9.1%	10,066	9.1%	10,347	9.1%	10,347	9.1%	9,407	8.60%
Rural Non-Interstate	33,721	30.0%	30,554	27.6%	31,325	27.6%	31,325	27.6%	28,978	26.60%
Urban Interstate	20,388	18.1%	20,371	18.4%	20,240	17.8%	20,240	17.8%	19,065	17.50%
Urban Non-Interstate	48,048	42.8%	49,713	44.9%	51,619	45.5%	51,619	45.5%	51,395	47.30%
Total VMT	112,349		110,704		113,531		113,531		108,845	

Table 5: 2001-2008 Georgia Fatalities, Injuries, & Fatality Rate

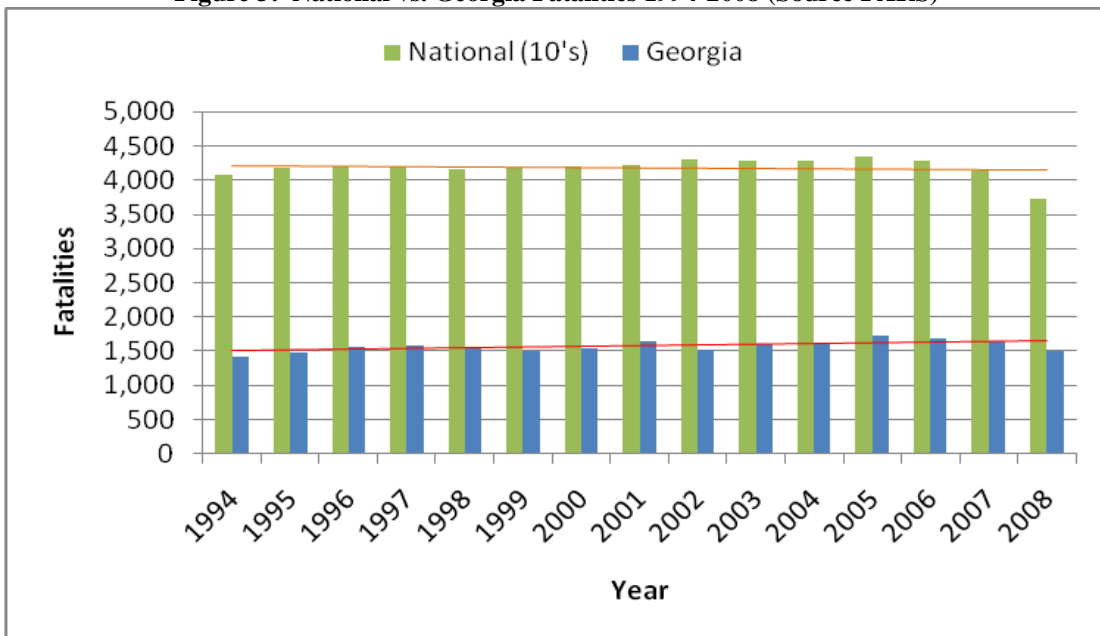
	2001	2002	2003	2004	2005	2006	2007	2008
Fatalities	1,656	1,531	1,610	1,640	1,744	1,703	1,648	1,508
Injuries	129,431	132,913	133,217	137,873	139,262	133,481	131,161	115,576
Fatality Rate	1.53	1.41	1.47	1.45	1.56	1.50	1.46	1.39

Figure 2: National vs. Georgia Fatality Rates 1994-2008 (Source FARS)



Please note that the FARS (Fatality Analysis Reporting System) totals for Georgia listed in **Figure 2** are slightly lower than the actual number of reported fatalities annually. Georgia traditionally reports fetuses and pit maneuvers in its fatality total, but these numbers are excluded by FARS. In order to fairly compare the annual fatality rate in Georgia to the national rates, the FARS numbers must be used. In 2008, Georgia had twelve (12) fetuses killed and two (2) pit maneuver related fatality in motor vehicle crashes. The trend lines for Georgia shown in orange in **Figures 2** and **3** very closely match the national trend lines shown in green.

Figure 3: National vs. Georgia Fatalities 1994-2008 (Source FARS)



2. Narrative of Overall Effectiveness

GDOT continues to work towards implementing a comprehensive Safety Management System (SMS) that will allow the Department to better measure the effectiveness of its safety improvements. While safety improvements are currently data driven, Georgia still uses generic Crash Reduction Factors provided by NCHRP to predict expected outcomes. Eventually GDOT hopes to be able to develop its own reduction factors.

GDOT is aggressively working to improve its crash records systems. A comprehensive system analysis was recently completed by an outside consultant and now GDOT is working with a Project Manager and Business Analyst to move forward with upgrading its current crash system in an effort to improve timeliness and accuracy. Georgia conducted a visit to Michigan in late 2006 to observe its upgraded crash reporting system. Michigan's prior situation closely resembled Georgia's current crash reporting system. Additional trips are tentatively being planned to other states to observe best practices while work is well underway on a requirements document for Georgia's own system. GDOT is working with Georgia's TRCC, FHWA, FMCSA and NHTSA to ensure all Federal reporting requirements are addressed in the effort.

Georgia's HSIP was developed for use in addressing safety related problems for all public roads including interstates, other state routes, municipal streets and county roads where federal funds may be used. However, in practical application, due to the higher volume of traffic carried by the state routes, and since interstate routes are designed to a higher standard, most identified projects are on the surface streets of the state highway system. This is a logical result when it is considered that 60% of the fatal crashes and 58% of the injury crashes occurred on the 15% of the public roads in Georgia designated as the state routes.

The total roadway mileage on the state highway system in Georgia has been fairly stable for the past 20 years. This mileage is approximately 18,000 miles (includes approximately 1,200 miles of interstate highways) and is tabulated and updated every year by the Department's Office of Transportation Data (OTD). All public roads are inventoried. Currently there are more than 117,000 miles of public roads in Georgia. While it is immediately apparent from these figures that the state route system is only about 15.4% of the total road mileage, these routes carry approximately 60% of the miles driven each year in Georgia and approximately 58% of the vehicle crashes happen on state routes. It is noted that 577 of 1,508 fatalities on Georgia roads in 2008 were on non-state roads. This accounted for 38% of all fatalities on Georgia roads a 6.2% decrease versus 2007. 44,325 out of 115,371 or 38% of the persons injured on Georgia roads were injured on non-state routes. These percentages of crashes are distributed over 85% of the public roads in Georgia.

It is important to note that as Georgia moves forward in reducing its fatality rate it is faced with new challenges. In 2008, for the fifth consecutive year, Georgia's percentage of travel on its urban routes again exceeded 60% (actual 64.7%) (Table 4). This has prompted GDOT to re-evaluate its traditional approaches to safety overall. Table 3 shows a breakdown of Georgia's fatalities in 2008 by roadway type.

3. *Narrative of High Risk Rural Roads Program Effectiveness*

Again, part of this past year's Highway Safety Improvement Program was the High Risk Rural Roads Program. According to 23 USC 148(a), the term "high risk rural road" means the following:

Any roadway functionally classified as a rural major or minor collector or a rural local road:

- (A) on which the accident rate for fatalities and incapacitating injuries exceeds the statewide average for those functional classes of roadway; or
- (B) that will likely have increases in traffic volume that are likely to create an accident rate for fatalities and incapacitating injuries that exceeds the statewide average for those functional classes of roadway.

As of July 1st, 2009, there had still not been any projects authorized as part of the HRRR Program, but a number of locations have been identified and programmed. GDOT has been working to identify those projects under its Off-System Safety Program which include HRRR site locations and therefore qualify for these funds. Internally, GDOT has also set up a Lump Sum account for the HRRR Program which will allow projects to be programmed more quickly and easily.

C. Project Evaluation

For the purposes of evaluation in this report, the term "HSIP Funds" includes, but is not limited to projects implemented using new HSIP Funds (Section 148), Optional Safety Funds, Penalty Transfer & Incentive Funds (from Sections 154, 157, 163 & 164) and safety belt performance grant funds (Section 406) that were used to implement eligible highway safety improvement projects.

Before & After Analysis of Safety Projects

In order to measure the effectiveness of the GDOT Safety Program a naïve before and after analysis was performed based on several Highway Safety Improvement Projects authorized during the Fiscal Year 2006 and construction has been completed on. Before and After crash and injury data for these projects is listed in **Table 6**. The naïve before and after analysis involving the comparison of treatment with actual before data versus actual after data, resulted in the appearance that almost all crashes (involving all vehicle types) were eliminated as a result. Additionally, it does not take into account how many vehicles might have struck the cable barrier without incapacitating the vehicle. While it is not totally conclusive that these spot safety improvements directly resulted in the reduction of crashes at these locations, the summary results certainly demonstrate the effectiveness of these types of improvements. In the future, the plan is to include statistical analysis to measure the significance of these results and eventually include Empirical Bayes (EB) methodology. The empirical Bayes (EB) methodology has been applied

for over 20 years now in conducting statistically defensible before-after studies of the safety effect of treatments applied to roadway sites. The appeal of the methodology is that it corrects for regression to the mean and traffic volume and other changes not due to the measure. It is anticipated that *SafetyAnalyst* will be able to help perform these analyses. Georgia is currently working with Clemson University to refine Georgia's Safety Performance Functions (SPF) and build a quality import tool.

Table 6: Miscellaneous 2006 Cable Barrier Projects Before (3 Years) & After (3 Years)

County	Description	Work Type	Cost	Before - 3 yrs (Sideswipe Opposite Direction & Head On)			After - 3 yrs (Sideswipe Opposite Direction & Head On)			% Change in Crashes	% Change in Severity
				Crashes	Injuries	Fatalities	Crashes	Injuries	Fatalities		
Warren-McDuffie-Columbia	I-20 from SR 80 to Richmond County Line	Cable Barrier Installation	\$2,993,835	6	17	2	3	7	0	-50.00%	-58.82%
Cherokee	I-575 from Town Lake Pkwy to Pickens County Line	Cable Barrier Installation	\$2,519,455	13	10	1	5	3	0	-61.54%	-70.00%
Franklin-Hart	I-85 in Hart & Franklin Counties	Cable Barrier Installation	\$5,387,898	9	13	3	1	0	0	-88.89%	-100.00%
Forsyth	SR 400 from McFarland Rd to SR 369/Browns Bridge Rd	Cable Barrier Installation	\$2,519,115	6	3	0	0	0	0	100.00%	100.00%
Gwinnett-Hall	I-985 from I-85 to Jesse Jewell Pkwy	Cable Barrier Installation	\$3,856,912	12	5	0	4	9	0	-66.67%	80.00%
Gwinnett-Barrow-Jackson-Banks	I-85 from Sr 20/Gwinnett County to Franklin County Line	Cable Barrier Installation	\$6,194,545	44	46	7	3	5	1	-93.18%	-89.13%
Bibb-Monroe	I-16 & I-75 in Bibb & Monroe Counties	Cable Barrier Installation	\$2,206,961	6	7	0	0	0	0	100.00%	100.00%
Chatham	I-16 & I-516 in Chatham County	Cable Barrier Installation	\$1,999,372	12	11	1	0	0	0	100.00%	100.00%
Bartow	I-75 in Bartow County	Cable Barrier Installation	\$1,385,955	13	22	3	16	13	0	23.08%	-40.91%

Off-System Safety Program

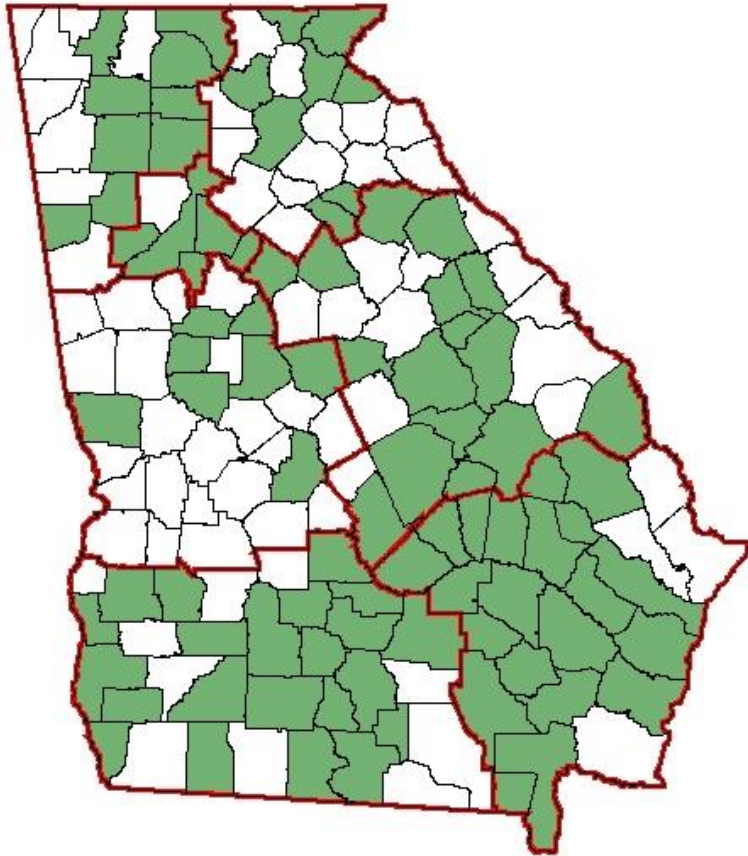
Fiscal Year 2009 represented the fourth full year of the GDOT Off-System Safety Program. Fatalities on non state maintained Georgia roads *decreased 6.2%* versus 2007 compared to a *3.2%* reduction in fatalities overall demonstrates the need for such improvements. This program was originally funded as a pilot using incentive grants, but each year it becomes more apparent that this program would most likely remain as a core component of GDOT's Highway Safety Improvement Program (**Table 7**). This program continues to be very well received by both the local governments and GDOT District Offices. Additional funding was setup to fund Off-System Coordinator positions in each of the GDOT Districts for the next two (2) years. Some of the districts at the discretion of the District Engineer elected not to hire a position for this position, but instead utilize in-house personnel.

Table 7: Off-System Safety Projects

District	Percent	Total
1	25.00%	\$ 604,000.00
2	0.00%	\$ 0.00
3	0.00%	\$ 0.00
4	33.33%	\$ 191,410.25
5	8.33%	\$ 160,611.45
6	16.67%	\$ 210,942.59
7	16.67%	\$ 147,566.00
Total	100.00%	\$ 1,314,530.29

The majority of these projects involved simply signing, striping and raised pavement markings. A few districts included guardrail improvements. It is anticipated that these simple improvements will go a long way to advance safety throughout the state. There were a few details that had to be worked out during the first year of this program following a brief pilot program before that, but it appears that the program is now well on its way.

Figure 4: Georgia Counties with Off-System Safety Projects Funded Since Inception



Electronic Crash Reporting

The Department has been working with one of the largest crash reporting agencies in Georgia to develop a comprehensive electronic crash report. Cobb County, Georgia is currently collecting 100% of its crash data electronically using TraCS (Traffic & Criminal Software). To date, an XML transfer specification has been developed which will allow this electronic data to be transmitted directly to GDOT and eliminate the need for data entry. It is anticipated that Cobb County PD will be able to reliably transmit crash records electronically to GDOT before the end of 2009. To date, several hundred test records have been successfully transferred establishing the proof of concept. Funding is being provided to Cobb County to implement a location tool that will allow reliable location data to be transmitted to GDOT. This should greatly improve the quality and timeliness of crash data in Georgia overall.

In addition to Cobb County, GDOT is working with the Georgia State Patrol (the largest reporting agency with almost 12% of all motor vehicle crashes reported annually). The Georgia State Patrol has been testing its electronic transfer process as well. GDOT is currently in the process of outsourcing the entire crash reporting operation in an effort to speed up the transition to electronic transfer by enabling more support to the agencies wanting to transmit as well as save the state money.

Deer Accident Prevention Measures

In this research project, mitigation technologies for deer-vehicle crashes were evaluated for effectiveness and feasibility of use at select locations around the state. The mitigation technologies evaluated included the following: (1) wild animal highway warning reflectors, or deer reflectors; (2) woven-wire fencing; and (3) a deer detection system. A total of ten test sections were installed via contract under this project. The deer reflectors, fencing, and detection system were acquired and installed via contract under this project. The project was conducted in-house and directed by the Office of Materials and Research. Test sections were maintained by GDOT Maintenance forces and monitored by the Office of Materials and Research (OMR) with some assistance from GDOT Maintenance forces.

The Georgia Wildlife Resources Division is forming an Urban Deer Management Plan Committee to develop a comprehensive management plan which will guide Georgia in dealing with the issue of urban deer management. GDOT is a major stakeholder in urban deer management and is participating on the committee. Georgia currently experiences more than 10,000 reported deer-vehicle crashes each year. GDOT's role as a committee member will be to provide insight and input into the Urban Deer Management Plan from an engineering perspective. The committee is comprised of 16 to 18 members from a variety of stakeholders in the urban deer issue.

Deer crash prevention research is ongoing.

Red Light Running Technology

GDOT originally allocated funds to provide red light running for approximately ten (10) intersections in the state. This program consists of using cameras to monitor, identify and issue warnings or citations to red light violators. The purpose of this program is to improve safety on public streets at intersections.

In the 2007-2008 Legislative Session, Georgia's Red Light Running Law was changed so as to require that GDOT review all future permits for cameras to insure that they are being properly utilized. A set of specific guidelines was drafted by the Traffic Operations Office for approval requests. GDOT is utilizing its crash data to determine whether these cameras are warranted at specific locations i.e. is it anticipated that any safety benefit will be achieved.

Crash Record Analysis

One of the most frequent sources of safety projects is the Department's crash record analysis process. Georgia State Law requires all law enforcement agencies to submit, to the Georgia Department of Transportation, a standard police report for any vehicle crash on a public road in which an injury, or \$500 or more in property damage is involved. A police officer must accurately complete the crash report so that the site of the incident can be accurately recorded. Georgia's present crash referencing system was first implemented in 1968 and was a mile log system only on interstates and state routes. County roads and city street crashes were added to the mile log system in 1988.

The mile log location system utilizes intersections and county lines as reference points. A mile log location is assigned to each reference point based on an inventory maintained by the Office of Transportation Data (OTD) called the Roadway Characteristics File (RC File). In the investigation of a crash, the police officer accurately measures the distance from the point of the crash to the nearest reference point and identifies the reference point on the report with a direction of measurement. From this information, an accurate location of each crash can be determined. Electronic data files are kept for each crash. Location data associated with the crash location includes county, route number (when two or more routes run concurrently, the crash is coded to the lowest route number), and mile log. Mileposts are placed on all state routes every mile by the GDOT to assist enforcement officers.

GDOT receives all official police reports as indicated above. These reports are coded by GDOT to create electronic records of crash reports so that they can be maintained, screened and easily transported to other agencies and users. As of July 1st, 2008, these crash records are stored and maintained by GDOT on a distributed network. These records are transported electronically at the beginning of each month to the GDOT FTP server via the internet. The locations of the crashes are coded to the Department's linear referencing system for all the public roads in Georgia so that analysis of crash frequency, severity and rate may take place. Currently, the location coding of the crashes has been outsourced through the end of 2009, but work is underway to refine this process and hopefully bring it back in-house.

Each year the Department of Transportation generates a listing of intersections and sections of roadways that have a higher than average number of vehicle crashes. This is a listing of intersections and sections with "improvement potential" referred to at the *Top 150*. In order to provide a reasonable comparison, roadways are grouped by type and character. For example, interstates are compared with interstates and four lane urban roads are compared to other urban four lane roads. These listings are sent to the District Offices for field inspections, and analysis as candidate locations for safety projects.

Safety problems may also be identified by abnormal distribution of crash types. For example, a much higher than average number of crashes in wet weather may indicate a need. Likewise, very high frequency of night crashes may suggest a need for improvements. Roadside obstacle crashes, fatal crashes, head-on, right angle crashes, and other types of crashes may suggest corrective actions. With the introduction of new databases systems for analysis, these evaluations will be possible.

Safety problems that are identified from sources other than crash analysis data, i.e. citizens, local governments, elected officials, Metropolitan Planning Organizations (MPOs), are also directed to the appropriate district office for field inspections and analysis. Every location sent to the districts is checked to see if improvements are already scheduled. Obviously, not every request will generate a project, nor will it be possible for all projects to be funded due to low priority or low benefits. When a location has been examined but a project is not generated, a new request can be considered by the Department annually.

Other information technology initiatives that will complement the resurgence of crash data in Georgia for the upcoming year are a re-tooled Fatal Crash Reporting System (FCRS) and *SafetyAnalyst* (formerly CHSIM). The FCRS will be most helpful in continuing to report fatal crash data to FARS in an accurate and timely fashion. Georgia is an active participant in the *SafetyAnalyst* pooled fund study with a number of other state transportation departments and FHWA.

D. High Risk Rural Roads Program

1. Program Implementation

a. Funds Available:

Funds available in FY 2006 for the HRRRP were \$2,861,534.

Funds available in FY 2007 for the HRRRP were \$3,008,959.

Funds available in FY 2009 for the HRRRP were \$3,000,000.

b. The number and Type of HRRRP projects initiated:

Twenty-four (24) projects in the amount of \$2,603,506.00 were let or authorized under the HRRRP in FY 2009 (Appendix B).

c. Existing HRRR projects.

The proposed project consists of Geometric corrections and realignment to CR 1300/Union Church Road near Mulberry Creek (MP 0.89) in Hall County. Design work will be performed by GDOT district designers and ROW purchased by the locals.

Estimated Cost: PE - \$200,000.00
ROW - Local (Hall County to fund the right-of-way acquisition)
CST - \$2,000,000.00

The intersection of SR 18 and SR 87 in Monroe County.

Estimated Cost: PE - \$200,000.00
CST - \$1,200,000.00

The table in Appendix B, 2009 High Risk Rural Roads (HRRR) Projects provides a detailed description and location of all HRRR projects authorized in 2009.

2. Methodology Used to Identify HRRRP Locations

The listing of Georgia's High Risk Rural Roads was developed using a *Severity Rate* method. Intersection crashes were eliminated and all one (1) mile segments were evaluated for mainline *Fatal and Serious Injury* crashes on those routes functionally classified as Rural-Major

Collector, Rural Minor Collector and Rural-Local. The years 2006-2008 were examined in one (1) mile segments with at least five (5) crashes per year over the three-year period. This method is a combination of traditional Rate Quality Control and EPDO (Equivalent Property Damage Only) methods. The EPDO method gives higher priority to locations that experience greater severity. The EPDO crash rate was determined by comparing the number of serious crashes to the number of vehicles passing through a segment in the case of highway. The Rate Quality Control Method was applied to the EPDO crash rate, or Severity Rate as it will be referred to throughout the remainder of this document. For the Rate Quality Control method, a *critical rate* was calculated for each section of roadway. This method applies a statistical test to determine whether the Severity Rate for a segment of roadway is higher than expected due to normal variations in crashes from year to year. This statistical test assumes the number of crashes at a location will vary according to a Poisson distribution. If the actual Severity Rate at each location was greater than the critical rate for that particular Functional Classification (**Table 9**), then it can be said that the high Severity Rate at the location cannot be explained by a random variation in crashes and therefore must be due to a hazardous condition at the location. If the actual Severity Rate was greater than the critical rate, then that location was identified as having high potential for safety improvements. The resulting list of highway segments consisted primarily of Off-System routes given the Functional Classifications specified in the guidance.

Table 9: 2004-2008 Statewide Severity Rate by Classification

Functional Classification	Fatal Crash	Serious Injury Crash	Total Fatal & Serious Injury Crashes	VMT	Statewide Severity Rate (100 MVMT)
07-Rural-Major Collector	772	1,558	7,332	12,460,000,000	136.98
08-Rural-NFA Minor Collector	193	431	1,755	65,505,000,000	6.89
09-Rural-Local	467	1,224	6,146	36,736,000,000	32.70

3. *Assessment of HRRRP Effectiveness*

Twenty-four (24) projects were funded with HRRRP funds in **FY 2009**. GDOT now has a clear methodology in place for identifying and programming HRRR projects. GDOT fully intends on utilizing its current and future HRRR funds moving forward.

Appendix A

2009 Highway Safety Improvement Projects

Appendix A: 2009 Highway Safety Improvement Projects

PROJECT ID	DISTRICT	PRIMARY COUNTY	DESCRIPTION	WORK TYPE	HSIP CATEGORY	TOTAL	PROJECT NUMBER
0004166	7	FULTON	SR 3/NORTHSIDE DRIVE @ CS 53/COLLIER RD;CS364; 38; 6; 135	Intersection Improvement	Intersection Improvements	\$5,540,000.00	STP00-0004-00(166)
0004587	3	SPALDING	SR 155/US 19/41BU @ CR 43/AIRPORT ROAD	Intersection Improvement	Intersection Improvements	\$637,543.71	STP00-0004-00(587)
0007075	4	THOMAS	SR 3/US 19 @ SR 202/CR 247/COUNTY LINE ROAD	Intersection Improvement	Intersection Improvements	\$1,253,293.58	CSSTP-0007-00(075)
0007257	1,2	DISTRICT 1&2	GUARDRAIL REPLACEMENT PROJECT	Miscellaneous Improvements	Roadway & Structure Improvements	\$1,356,000.00	CSSTP-0007-00(257)
0007339	3	NEWTON	SR 162/SALEM ROAD @ CR 20/SMITH STORE ROAD	Intersection Improvement	Intersection Improvements	\$775,415.00	CSSTP-0007-00(339)
0007464	3	BIBB / MONROE	I-16 & I-75 CABLE BARRIER INSTALLATION IN BIBB & MONROE CO	Miscellaneous Improvements	Roadway & Structure Improvements	\$337,636.58	CSMSL-0007-00(464)
0007466	5	CHATHAM	I-16 & I-516 CABLE BARRIER INSTALLATION IN CHATHAM COUNTY	Miscellaneous Improvements	Roadway & Structure Improvements	\$3,595,334.21	CSMSL-0007-00(466)
0008288	7	DEKALB	SR 12/US 278 FM DEKALB MEDICAL PKWY TO CR 6313/CRAGSTONE CT	Pavement Markings	Roadway & Structure Improvements	\$25,000.00	PESFT-0008-00(288)
0008718	5	MONTGOMERY	CR 166; CR 169 & CR 170 - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	Roadway & Structure Improvements	\$160,611.45	CSSFT-0008-00(718)
0008855	5	BRANTLEY	SR 520/US 82 @ SR 110/CR 223	Pavement Markings	Roadway & Structure Improvements	\$250,000.00	PESFT-0008-00(855)
0008874	1	FRANKLIN	OFF-SYSTEM SAFETY IMPROVEMENTS @ 28 CR LOCS IN FRANKLIN	Pavement Markings	Roadway & Structure Improvements	\$100,000.00	CSSFT-0008-00(874)
0008875	7	CLAYTON	CR 1351/REX ROAD @ I-675 - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	Roadway & Structure Improvements	\$25,000.00	CSSFT-0008-00(875)
0008893	4	GRADY	SR 35/US 319 @ SR 93/JACKIE ROBINSON	Intersection Improvement	Intersection Improvements	\$200,000.00	PESFT-0008-00(893)
0008907	7	FULTON	OFF-SYSTEM SAFETY IMPROVEMENTS @ 9 CR LOCS IN JOHNS CREEK	Pavement Markings	Roadway & Structure Improvements	\$122,566.00	CSSFT-0008-00(907)
0008910	4	EARLY	OFF-SYSTEM SAFETY IMPROVEMENTS @ 7 CR LOCS IN EARLY COUNTY	Pavement Markings	Roadway & Structure Improvements	\$62,132.50	CSSFT-0008-00(910)
0008921	4	COLQUITT	OFF-SYSTEM SAFETY IMPROVEMENTS @ 5 CR LOC IN COLQUITT COUNTY	Pavement Markings	Roadway & Structure Improvements	\$59,478.00	CSSFT-0008-00(921)
0008926	4	CLAY	OFF-SYSTEM SAFETY IMPROVEMENTS @ 7 CR LOCS IN CLAY COUNTY	Pavement Markings	Roadway & Structure Improvements	\$18,204.50	CSSFT-0008-00(926)
0008928	6	FLOYD	OFF-SYSTEM SAFETY IMPROVEMENTS @ 15 LOCS IN ROME	Pavement Markings	Roadway & Structure Improvements	\$83,140.55	CSSFT-0008-00(928)
0008929	1	ELBERT	OFF-SYSTEM SAFETY IMPROV @ 67 LOCS IN ELBERTON - PHASE II	Pavement Markings	Roadway & Structure Improvements	\$79,000.00	CSSFT-0008-00(929)
0008940	5	GLYNN	TORRAS CAUSEWAY MEDIAN BARRIER	Miscellaneous Improvements	Roadway & Structure Improvements	\$498,000.00	PESFT-0008-00(940)
0008940	5	GLYNN	TORRAS CAUSEWAY MEDIAN BARRIER	Miscellaneous Improvements	Roadway & Structure Improvements	\$3,700,000.00	CSSTP-0008-00(940)
0008967	6	CARROLL	OFF-SYSTEM SAFETY IMPROVEMENTS @ 49 LOCS IN CARROLL COUNTY	Pavement Markings	Roadway & Structure Improvements	\$127,802.04	CSSFT-0008-00(967)
0008970	4	DOUGHERTY	OFF-SYSTEM SAFETY IMPROVEMENTS @6 CR LOC IN DOUGHERTY COUNTY	Pavement Markings	Roadway & Structure Improvements	\$51,595.25	CSSFT-0008-00(970)
0009155	1	CLARKE	OFF-SYSTEM SAFETY IMPROVEMENTS @ 13 CR LOCS IN CLARKE COUNTY	Pavement Markings	Roadway & Structure Improvements	\$425,000.00	CSSFT-0009-00(155)
0008400	6	WALKER	SR 193 @ CR 835/HAPPY VALLEY ROAD	Intersection Improvement	Intersection Improvements	\$91,500.00	RWSFT-0008-00(400)
0007258	5	DISTRICT 5	EDGE LINE RUMBLE STRIPS @ SEVERAL SR LOCATIONS IN DISTRICT 5	Miscellaneous Improvements	Roadway & Structure Improvements	\$2,290,380.00	CSSTP-0007-00(258)
0006077	5	BULLOCH	SR 46 @ SR 67	Intersection Improvement	Intersection Improvements	\$104,160.00	RWSTP-0006-00(077)
0007081	6	WALKER	SR 1/US 27 @ CR 587/BICENTENNIAL TRAIL	Intersection Improvement	Intersection Improvements	\$156,800.00	RWSTP-0007-00(081)
0005958	1	FORSYTH	SR 9 @ MARY ALICE PARK/BALDRIDGE/MEADOW RD	Intersection Improvement	Intersection Improvements	\$5,610,000.00	CSSTP-0005-00(958)
0002041	2	COLUMBIA	SR 104 @ CR 16/HALALI ROAD IN COLUMBIA COUNTY	Intersection Improvement	Intersection Improvements	\$940,225.10	CSSTP-0002-00(041)
0007143	5	CANDLER	SR 23/SR 121 FROM I-16 TO CS 610/LYTELL STREET	Intersection Improvement	Intersection Improvements	\$2,315,000.00	CSSTP-0007-00(143)
0001933	1	JACKSON	SR 98 @ CR 286/B WILSON & CR 536/KING ROAD	Intersection Improvement	Intersection Improvements	\$827,900.00	CSSTP-0001-00(933)

PROJECT ID	DISTRICT	PRIMARY COUNTY	DESCRIPTION	WORK TYPE	HSIP CATEGORY	TOTAL	PROJECT NUMBER
0000399	3	FAYETTE	SR 92 @ CR 204/HILO RD & CR 375/KINGWOOD DRIVE - TURN LANE	Intersection Improvement	Intersection Improvements	\$911,100.00	STP00-0000-00(399)
0007125	3	HOUSTON	SR 11/US 41 FM S OF SR 49 TO N OF CR 535/HOUSTON LAKE RD	Pavement Markings	Roadway & Structure Improvements	\$1,914,000.00	CSSTP-0007-00(125)
332975-	3	HENRY	SR 81 @ CR 376/RACETRACK RD	Intersection Improvement	Intersection Improvements	\$76,725.00	STP-0163-1(22)
0001239	7	COBB	SR 360 @ CR 809/CORNER RD; CR 2083 AND CR 811/BULLARD RD	Intersection Improvement	Intersection Improvements	\$650,000.00	STP00-0001-00(239)
0004527	2	BALDWIN	SR 243/US 441 @ CR 466/SWINT & CS 670/CARAKER/MILLEDGEVILLE	Intersection Improvement	Intersection Improvements	\$192,434.40	STP00-0004-00(527)
						\$35,562,977.87	

Appendix B

2009 High Risk Rural Roads Projects Listing

Appendix B: 2009 High Risk Rural Roads (HRRR) Projects

PROJECT ID	DISTRICT	PRIMARY COUNTY	DESCRIPTION	WORK TYPE	HSIP CATEGORY	TOTAL	PROJECT NUMBER
0007994	3	TALBOT	OFF-SYSTEM SAFETY IMPROVEMENTS @ SEV CR LOCATIONS IN TALBOT	Pavement Markings	High Risk Rural Roads	\$110,139	CSSFT-0007-00(994)
0008496	3	LAMAR	OFF-SYSTEM SAFETY IMPROVEMENTS @ SEV CR LOCS IN LAMAR COUNTY	Pavement Markings	High Risk Rural Roads	\$106,422	CSSFT-0008-00(496)
0008568	3	MERIWETHER	OFF-SYSTEM SAFETY IMPROVEMENTS AT SEV 12 LOCS IN MERIWETHER	Pavement Markings	High Risk Rural Roads	\$123,023	CSSFT-0008-00(568)
0008627	1	HALL	CR 1300/UNION CHURCH ROAD @ MULBERRY CREEK - HRRR	Pavement Markings	High Risk Rural Roads	\$200,000	CSSFT-0008-00(627)
0008774	6	MURRAY	OFF-SYSTEM SAFETY IMPROVEMENTS @ 28 LOCS IN MURRAY COUNTY	Pavement Markings	High Risk Rural Roads	\$78,460	CSSFT-0008-00(774)
0008768	7	CLAYTON	CR 1331 FM FAYETTE TO HENRY - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$300,000	CSSFT-0008-00(768)
0008884	3	MONROE	SR 18 @ SR 87	Intersection Improvement	High Risk Rural Roads	\$250,000	CSSFT-0008-00(884)
0008897	5	LOWNDES	CR 16; CR 57; CR 106 & CR 782-OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$60,098	CSSFT-0008-00(897)
0008898	4	BERRIEN	CR 16; CR 57; CR 106 & CR 782-OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$52,416	CSSFT-0008-00(898)
0008899	6	BARTOW	OFF-SYSTEM SAFETY IMPROVEMENTS @ 5 CR LOCS IN BARTOW COUNTY	Pavement Markings	High Risk Rural Roads	\$220,674	CSSFT-0008-00(899)
0008908	4	TURNER	OFF-SYSTEM SAFETY IMPROVEMENTS @ 5 CR LOCS IN TURNER COUNTY	Pavement Markings	High Risk Rural Roads	\$59,516	CSSFT-0008-00(908)
0008909	5	TATTNALL	CR 359; CR 369 & CR 508 OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$120,973	CSSFT-0008-00(909)
0008930	4	IRWIN	CR 14; CR 20 & CR 40 - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$29,904	CSSFT-0008-00(930)
0008931	4	COOK	CR 15; CR 22; CR 23/84 & CR 241-OFF-SYSTEM SAFETY IMPROVEMENT	Pavement Markings	High Risk Rural Roads	\$43,488	CSSFT-0008-00(931)
0008932	4	ECHOLS	CR 35; CR 83/CR85 & CR 120 - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$42,126	CSSFT-0008-00(932)
0008933	1	ELBERT	OFF-SYSTEM SAFETY IMPROVEMENTS @ 26 CR LOCS IN ELBERT COUNTY	Pavement Markings	High Risk Rural Roads	\$150,000	CSSFT-0008-00(933)
0008935	4	MILLER	OFF-SYSTEM SAFETY IMPROVEMENTS @ 7 CR LOCS IN MILLER COUNTY	Pavement Markings	High Risk Rural Roads	\$58,662	CSSFT-0008-00(935)
0008956	4	COFFEE-ATKINSON	OFF-SYSTEM SAFETY IMPROVEMENTS @ 6 CR LOCS IN COFFEE COUNTY	Pavement Markings	High Risk Rural Roads	\$69,988	CSSFT-0008-00(956)
0008957	4	CRISP	OFF-SYSTEM SAFETY IMPROVEMENTS @ 5 CR LOCS IN CRISP COUNTY	Pavement Markings	High Risk Rural Roads	\$65,807	CSSFT-0008-00(957)
0008958	4	BAKER	OFF-SYSTEM SAFETY IMPROVEMENTS @ 8 CR LOCS IN BAKER COUNTY	Pavement Markings	High Risk Rural Roads	\$52,416	CSSFT-0008-00(958)
0008971	4	BROOKS	CR 91; CR 177; CR 272 & CR 276-OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$39,264	CSSFT-0008-00(971)
0008974	4	PIERCE	CR 33; CR 45 & CR 302 - OFF-SYSTEM SAFETY IMPROVEMENTS	Pavement Markings	High Risk Rural Roads	\$143,269	CSSFT-0008-00(974)
0008975	5	APPLING	OFF-SYSTEM SAFETY IMPROVEMENTS @ 14 LOCS IN APPLING COUNTY	Pavement Markings	High Risk Rural Roads	\$49,925	CSSFT-0008-00(975)
0009162	5	CAMDEN	OFF-SYSTEM SAFETY IMPROVEMENTS @ 7 CR LOCS IN CAMDEN COUNTY	Pavement Markings	High Risk Rural Roads	\$176,935	CSSFT-0009-00(162)