

**2006
Occupant Protection
Evaluation Report
Covering the Period of Performance:
October 1, 2005, through September 30, 2006**

Submitted to:
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A. Project History

The objective of the “157 Innovative and Discretionary” Projects was to increase seat belt usage for all motor vehicle drivers and front seat passengers. The Louisiana Highway Safety Commission (LHSC) conducted a seat belt program/project from October 2001 to August 2002. The objective of this project was to evaluate whether media and enforcement efforts would cause an increase in seat belt usage and, subsequently, a reduction in traffic injuries and fatalities. Agencies of 11 parishes participated in the seat belt program initiative. The following facts highlight the key findings of the study (see the 2002 Strap-In Evaluation Report covering the period of performance: October 1, 2001, through August 31, 2002); enforcement had been increased by 14%; public awareness of enforcement was increased significantly (by about 5 percentage points); seat belt use was increased by 1.8 percentage points; the injury percentage was reduced by 0.8 percentage points. The telephone survey also revealed some interesting insights into the “perception” of drivers. Twenty percent more drivers claim they wear seat belts than observational studies indicate (90% versus 70%). Only about 3% of all drivers admit that they rarely or never wear a seat belt. Furthermore, more than 30% believe that seat belts could potentially be more harmful than helpful. These findings indicate that more public education is necessary. Overall, the project provided sufficient evidence to conclude that public education combined with significant enforcement increases seat belt usage.

Based on the successful outcome of the Year Two Project, the 3rd Year Project concentrated on determining whether paid media is more effective than earned media (media which is in form of public service announcements, not paid in contrast to paid media) with respect to increasing seat belt use and whether enhanced enforcement is more effective with earned media or with paid media. This project’s objective was to study the effect of enhanced enforcement and media type on seat belt usage. The main findings were (see 2003 Report):

- *Enhanced enforcement by itself increases seat belt usage.*
- *Enhanced enforcement increases the perception that “police write more tickets” more than media messages do.*
- *Earned media is equally as effective as paid media in increasing awareness of seat belt issues.*
- *Enhancing enforcement is more effective when accompanied with paid media than with earned media.*

B. An Overview of the 2006 Program

The LHSC contracted with 42 law enforcement agencies within 33 Problem ID parishes to conduct overtime enforcement during the federal budget year October 1, 2005, thru September 30, 2006, throughout the 12 months. The Louisiana State Police conducted DWI and OP overtime efforts throughout all 12 months of FY 06 throughout the state. This FY06 Analysis and Evaluation Report includes the LHSC efforts in support of NHTSA, South-Central Region and LHSC Occupant Protection Campaigns.

The 33 parishes represent 76% of licensed drivers, 64% of fatal crashes and 78% of injury crashes in Louisiana. These parishes also represent 93% of all drivers killed not wearing a safety belt. Details of the crash statistics for these 33 parishes are presented in Table 1. Column 3 of Table 1 shows the licensed drivers in 2005, columns 4 and 5 depict the fatal crashes and fatalities respectively. The injury crashes and injuries are shown in columns 6 and 7. Column 8 depicts the number of drivers killed wearing a seat belt and column 9 depicts the number of drivers killed who were not wearing a seat belt. The table does not show the number of drivers killed where seat belt use was unknown. Also not shown are passengers killed. The known seat belt use for killed drivers is most indicative of seatbelt use in the parish. For instance, in East Baton Rouge, of the 30 drivers killed for which seat belt use was known, 9 drivers were wearing a seat belt and 21 were not wearing a seat belt (70%). Overall, 73% of the drivers killed in the 33 parishes were not wearing a seat belt.

Table 1: Statistics of Selected Parishes

<i>Parish Code</i>	<i>Parish</i>	<i>Problem ID</i>	<i>Drivers</i>	<i>Ftl Crsh</i>	<i>Fatalities</i>	<i>Inj_Crsh</i>	<i>Injuries</i>	<i>Drivers Killed with Seatbelt</i>	<i>Drivers Killed without Seatbelt</i>
1000	Acadia	Y	37,294	14	17	629	1,195	0	7
2000	Allen	N	13,430	12	13	129	252	2	5
3000	Ascension	Y	57,980	20	23	1,001	1,717	2	8
4000	Assumption	N	12,970	3	3	195	343	1	6
5000	Avoyelles	Y	24,964	17	18	379	687	3	7
6000	Beauregard	Y	23,532	13	14	277	444	3	2
7000	Bienville	N	9,266	4	4	106	176	1	2
8000	Bossier	Y	63,802	13	14	1,293	2,075	2	3
9000	Caddo	Y	140,682	42	46	3,381	4,993	12	18
10000	Calcasieu	Y	123,768	41	47	3,089	5,437	8	13
11000	Caldwell	N	7,460	3	3	66	109	1	1
12000	Cameron	N	5,540	4	4	72	98	0	1
13000	Catahoula	N	7,096	3	3	62	129	0	2
14000	Claiborne	N	8,602	3	3	73	112	2	0
15000	Concordia	N	11,900	4	4	127	217	1	1
16000	De Soto	N	16,314	8	10	153	244	2	3
17000	East Baton Rouge	Y	239,582	52	56	6,378	10,303	9	21
18000	East Carroll	N	3,840	3	3	35	100	0	1
19000	East Feliciana	N	13,892	6	6	48	95	1	4
20000	Evangeline	Y	21,032	9	10	369	689	2	1
21000	Franklin	N	12,340	5	7	30	74	3	4
22000	Grant	N	13,146	7	7	97	148	1	2
23000	Iberia	Y	46,354	17	21	845	1,373	4	5
24000	Iberville	N	18,550	7	7	305	510	1	0
25000	Jackson	N	11,122	6	6	45	68	0	2
26000	Jefferson	Y	292,670	35	39	4,144	6,339	5	7
27000	Jefferson Davis	N	20,102	11	12	419	819	2	7
28000	Lafayette	Y	133,746	32	38	2,548	4,031	7	11
29000	Lafourche	Y	58,526	20	23	989	1,732	5	3
30000	LaSalle	N	9,326	4	4	74	115	1	2
31000	Lincoln	Y	24,594	12	14	419	696	4	2
32000	Livingston	Y	70,320	29	32	1,282	2,130	9	9

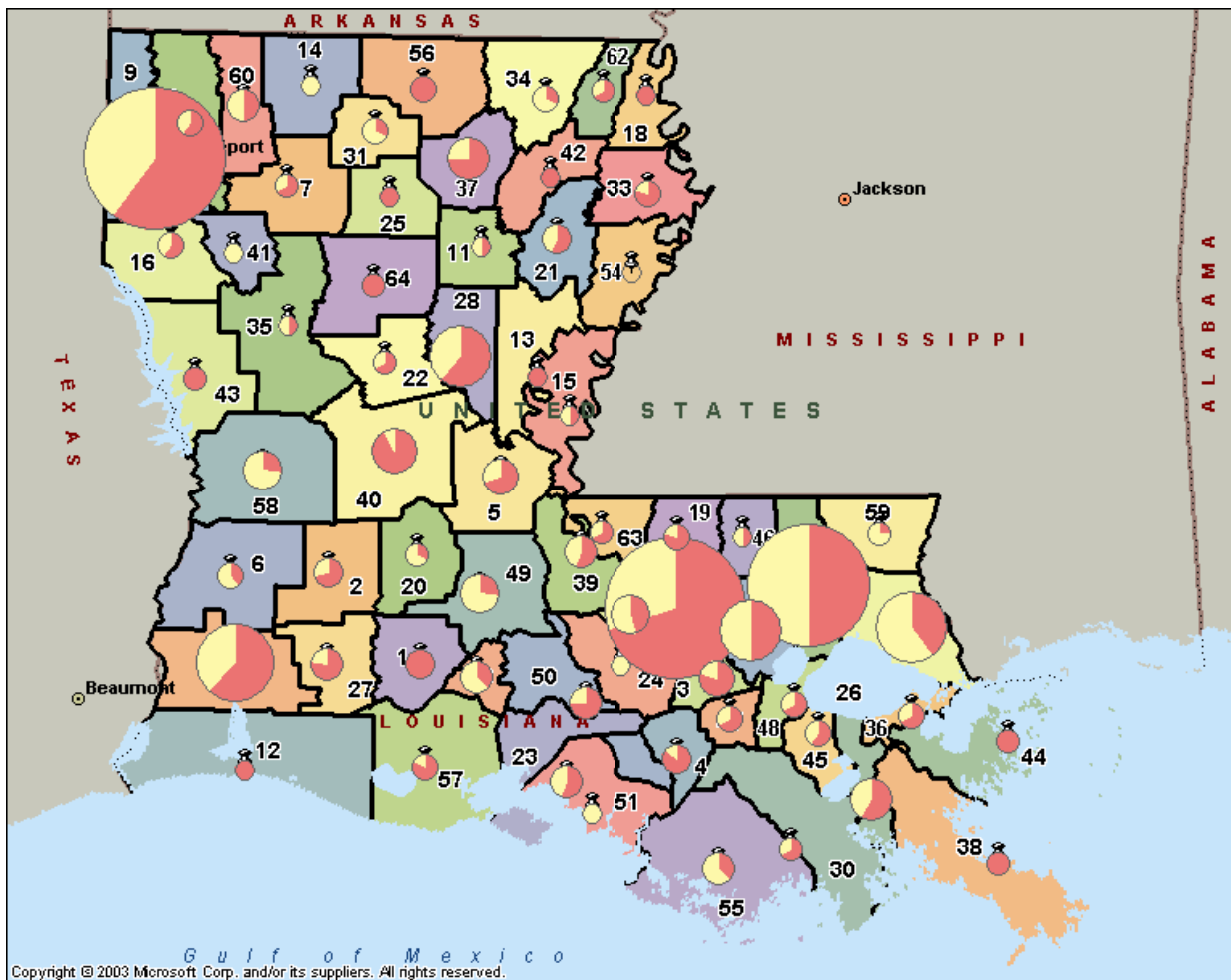
Table 1: Statistics of Selected Parishes (Continued)

<i>Parish Code</i>	<i>Parish</i>	<i>Problem ID</i>	<i>Drivers</i>	<i>Ftl Crsh</i>	<i>Fatalities</i>	<i>Inj_Crsh</i>	<i>Injuries</i>	<i>Drivers Killed with Seatbelt</i>	<i>Drivers Killed without Seatbelt</i>
33000	Madison	N	5,400	11	11	67	143	1	4
34000	Morehouse	N	18268	11	11	297	594	4	2
35000	Natchitoches	Y	22006	6	6	519	914	1	1
36000	Orleans	Y	221136	26	26	4714	8397	2	4
37000	Ouachita	Y	88582	21	24	1544	2511	3	9
38000	Plaquemines	N	18744	8	8	154	232	0	3
39000	Pointe Coupee	N	14356	14	17	225	419	4	5
40000	Rapides	Y	80580	22	24	1673	2859	1	12
41000	Red River	N	5526	1	1	54	105	1	0
42000	Richland	N	12392	13	14	96	174	0	1
43000	Sabine	N	15576	8	8	130	185	0	3
44000	St. Bernard	Y	45128	6	6	369	600	0	4
45000	St. Charles	Y	33636	8	8	528	848	2	3
46000	St. Helena	N	4278	4	4	65	96	1	1
47000	St. James	N	14170	7	7	186	311	2	4
48000	St. John	Y	27332	12	15	656	1218	2	4
49000	St. Landry	Y	56256	21	23	959	1747	8	3
50000	St. Martin	Y	29294	16	19	531	958	2	6
51000	St. Mary	Y	35408	9	9	463	823	2	0
52000	St. Tammany	Y	150384	46	53	1995	3212	12	8
53000	Tangipahoa	Y	65410	44	53	1487	2735	14	14
54000	Tensas	N	3206	1	1	10	18	0	0
55000	Terrebonne	Y	73150	17	19	1038	1811	5	3
56000	Union	N	15654	8	8	149	233	0	6
57000	Vermillion	Y	36482	9	9	594	966	1	5
58000	Vernon	Y	30006	12	13	355	575	8	3
59000	Washington	Y	26894	14	14	389	692	3	1
60000	Webster	Y	27300	7	10	375	585	4	4
61000	West Baton Rouge	N	14324	15	15	389	803	6	5
62000	West Carroll	N	7878	3	3	30	61	1	2
63000	West Feliciana	N	6352	3	3	28	49	1	2
64000	Winn	N	8718	5	5	118	177	0	3
	Louisiana		2767568	867	958	49246	82501	185	285

Figure 1 shows the driver fatalities in the selected parishes with and without a safety belt. The driver fatalities in 2005 were by far the highest in East Baton Rouge Parish with 30 driver fatalities, 21 of which were not restrained by a safety belt, while 9 had been wearing safety belts.

Figure 1: Driver Fatalities with and without Safety Belts

(With safety belts in red, without safety belts in yellow)
 (Size of pie proportional to number of fatalities)
 (Numbers in map refer to parish codes: see Table 1)



C. Enforcement Efforts

Each contracted agency was required to report their overtime hours and the number of OP Violations issued during each month of FY06. Table A1 shows the number of overtime hours worked by each contracted agency, the number of OP citations and average number of OP citations per overtime hours worked. Submitted agency reports show that 17,374 overtime hours were worked and 35,539 OP citations were issued at a rate of 2.0 OP citations per overtime hour worked. However, the ratio varies from a low of 0.50 citations per overtime hour worked to a high of 3.0 citations per overtime hour worked.

The Louisiana State Police overtime enforcement effort overlapped several of the parishes. During the year the State Police wrote 9,001 seat belt citations and reported 4,439 hours of overtime.

D. Media/Public Relations Campaign Implementation

The goal of the media campaign was to reach a statewide audience by purchasing a combination of radio and television advertisements. During the November 2005, May and July 2006 OP campaigns, the LHSC contracted with Kaplan Advertising to coordinate the media buy throughout the state. Overall, the media buy included 38,969 television spots. Details are depicted in Tables 2-3. Overall, the television spots were viewed by individuals over 29 million times. The November TV media buy took place in three media markets: Alexandria, Monroe and Shreveport. The media buy in May included seven media markets: Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans and Shreveport. These seven media markets also included 3,692 radio spots.

Table 2: Radio Media Buys in 2005/2006

Media Market	Radio \$	# Spots
Alexandria Total	\$ 8,562	430
Baton Rouge Total	\$ 55,359	958
Lafayette Total	\$ 38,088	698
Lake Charles Total	\$ 11,300	350
Monroe Total	\$ 7,164	436
New Orleans Total	\$ 30,225	410
Shreveport Total	\$ 27,600	410
Grand Total	\$ 178,298	3692

Table 3: TV Media Buys in November, May and July 2005-2006

Campaign	Media Market	TV \$	TV Spots	Times Viewed
November	Alexandria Total	\$ 9,385	42	84,456
	Monroe Total	\$ 14,850	51	48,276
	Shreveport Total	\$ 25,085	33	43,740
May	Alexandria Total	\$ 34,108	5,910	17,388
	Baton Rouge Total	\$ 105,342	4,372	3,780
	Lafayette Total	\$ 64,416	5,934	423,360
	Lake Charles Total	\$ 27,645	5,099	120,960
	Monroe Total	\$ 53,735	6,229	8,316
	New Orleans Total	\$ 99,714	5,860	383,526
	Shreveport Total	\$ 81,113	5,423	219,582
July	Baton Rouge Total	\$ 2,625	9	176,913
	Lafayette Total	\$ 2,830	7	223,146
	Grand Total	\$ 520,848	38,969	24,156

E. Observational Survey

This survey is based on a new design approved by NHTSA. The basic design for this survey consists of a multi-stage probability sample of 417 road segments. The sampling design used the following principles:

- 35 of the 64 parishes making up 85% of the population were eligible for inclusion in the sample.
- The survey provides results for the individual 8 regions.
- The second stage divides each region into the parishes comprising that region and falling into the group of parishes which make up the 85% of the population.
- Seat belt usage on interstates is significantly higher than seat belt usage on US highways and state roads, and seat belt usage on US highways and state roads is significantly higher than on local roads. Thus, the sample within a parish is stratified for road classes; therefore, samples are taken from each road class proportionally to VMT on these roads.
- Specific locations are selected from a list of highways and local roads. The probability of selection is based on VMT.

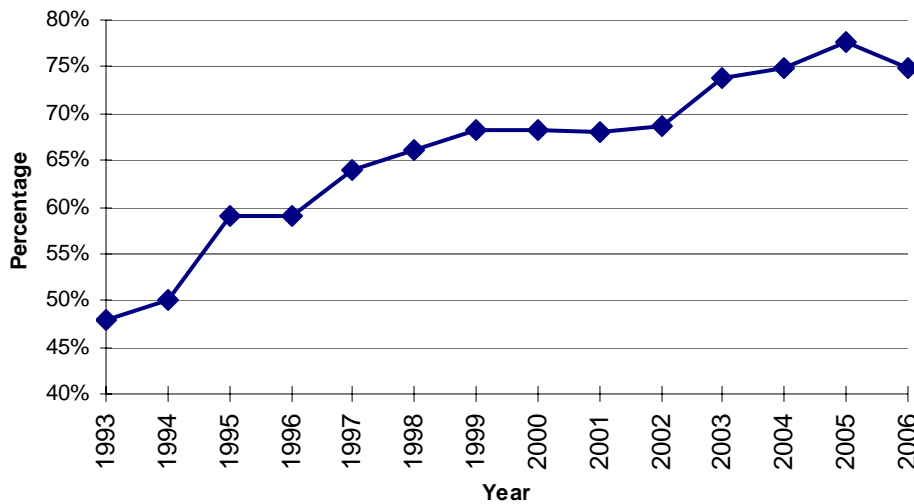
Southern Media and Opinion Research conducted an observational survey in August of 2006. Table 4 depicts the sample size for the design from 2003 to 2006 and the percentages for each vehicle type. While the percentage of autos in the sample declined by three percentage points (46% to 43%) from 2003 to 2006, the percentage of SUV's in the sample increased by 5 percentage points (from 16% to 21%).

Table 4: Sample Sizes of Surveys during 2003-2006

Year	Auto	PKUP	SUV	VAN	TOTAL
2006	38,802	25,321	18,948	7,151	90,222
2005	45,458	24,499	17,959	7,438	95,354
2004	39,967	22,945	14,700	7,245	84,857
2003	31,436	20,012	10,721	6,080	68,249
2006	43%	28%	21%	8%	100%
2005	48%	26%	19%	8%	100%
2004	47%	27%	17%	9%	100%
2003	46%	29%	16%	9%	100%

Figure 3 shows the percentage of seat belt usage from 1993 to 2006. There was an increase of 2.7 percentage points in safety belt usage from 2004 to 2005 but a decline of 2.9 percentage points from 2005 to 2006.

Figure 2: Observational Survey Results



The decline in safety belt usage was consistent for all vehicle types but strongest for autos (-3.7%). The standard error of the estimate was 0.3 percentage points. Hence the 2.9 percentage point decrease was statistically significant at the $\alpha=0.05$ level. Table 5 depicts the estimates by region and vehicle type for 2006 along with the difference between the 2006 and the 2005 estimates. The margin of error based on a 95% confidence intervals for the difference is also given. The significant differences are shaded. There was a decline

in all but one region. However, only the Alexandria region, the New Orleans region, the Lake Charles region and the Baton Rouge region had a significant decline at the alpha=0.05 confidence level, with Baton Rouge having the smallest decline of 1.8 percentage points.

Table 5: 2006 Safety Belt Survey Results

Region	%AUTO	%PKUP	%SUV	%VAN	%Total	Difference (2006-2005)	Margin of error for Difference
1 (NO)	71.9%	66.0%	73.7%	74.8%	71.2%	-5.9%	1.9%
2 (EBR)	74.1%	69.8%	76.0%	79.2%	73.8%	-1.8%	1.7%
3 (Houma)	79.8%	75.1%	81.4%	80.4%	79.0%	-2.2%	3.4%
4 (Lafayette)	80.1%	73.1%	81.7%	86.2%	78.2%	0.4%	1.7%
5 (Lake Charles)	73.5%	69.9%	77.5%	80.5%	73.3%	-6.0%	2.6%
6 (Alexandria)	71.6%	67.7%	76.9%	78.8%	71.5%	-6.3%	2.3%
7 (Shreveport)	78.4%	73.1%	82.5%	80.9%	77.8%	-0.7%	2.4%
8 (Monroe)	74.4%	69.3%	74.3%	72.2%	73.2%	-3.9%	4.3%
Louisiana	75.6%	70.5%	77.9%	79.3%	74.8%	-2.9%	0.9%
Diff (2006-2005)	-3.7%	-1.9%	-1.7%	-1.9%	-2.9%		
Margin of error	1.1%	1.3%	1.4%	2.6%	0.9%		

Note: The margin of error is based on a 95% confidence interval.

There are several factors which may have caused the decrease in seat-belt use.

- Hurricanes Katrina and Rita may have affected the behavior of drivers, specifically in New Orleans and Lake Charles.
- The level of enforcement in the New Orleans and Lake Charles regions declined by over 30% in 2006 compared to 2005 measured in overtime hours and seat belt citations written by city and sheriff's offices. The enforcement efforts of the state police were not available by region.
- There was a 4% decrease in autos in the 2006 sample compared with the 2005 sample. In the New Orleans Region, there was a 6% increase of pickup trucks in the sample from 2005 to 2006. Pickup trucks have a 5% lower seat belt use rate than cars.
- The law of diminishing returns suggests that an increase in seat belt use may not be achieved by the same effort. That means that increasing seat belt use from 75% to 80% requires more effort than increasing seat belt use from 70% to 75%.

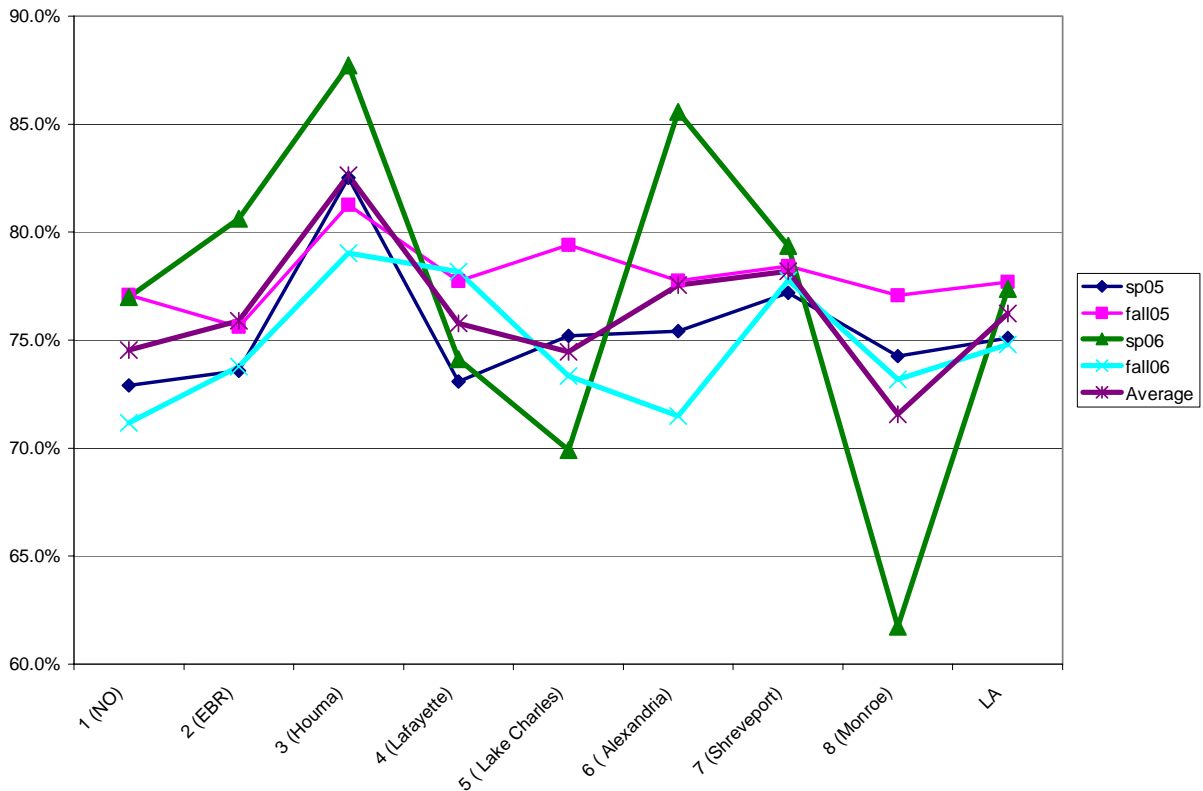
Table 6 and Figure 4 show the percentage seatbelt use by region for the past two years. It includes four surveys, a mini survey in April and a larger survey in the

summer. In some regions the range in seat belt use over the past two years was larger than 14%.

Table 6: 2005-2006 Safety Belt Survey Results

Region	April05	Summer05	April06	Summer06	Average	Range
1 (NO)	72.9%	77.1%	77.0%	71.2%	74.5%	5.9%
2 (EBR)	73.6%	75.6%	80.6%	73.8%	75.9%	7.0%
3 (Houma)	82.5%	81.3%	87.7%	79.0%	82.6%	8.7%
4 (Lafayette)	73.1%	77.7%	74.1%	78.2%	75.8%	5.1%
5 (Lake Charles)	75.2%	79.4%	69.9%	73.3%	74.5%	9.5%
6 (Alexandria)	75.4%	77.7%	85.6%	71.5%	77.6%	14.1%
7 (Shreveport)	77.2%	78.4%	79.4%	77.8%	78.2%	2.2%
8 (Monroe)	74.3%	77.1%	61.7%	73.2%	71.6%	15.3%
LA	75.1%	77.7%	77.4%	74.8%	76.2%	2.9%

Figure 3: Observational Survey Results for 2005-2006



A close inspection of Figure 4 suggests the following trends:

- Region 1: The spring 2006 survey results were very close to the summer 2005 survey result. Thus, the hurricane did not have an effect on the seat belt use in the spring of 2006. However, there was a reduction in enforcement of about 25%-30% in this region which may have contributed to the decline in seat belt use. Crash statistics show the following changes from 2005 to 2006 in involvement in crashes by race: black drivers (-9%), white drivers (+4%), other race drivers (+2%) and unknown race drivers (+3%). This indicates that there was a significant shift in the racial makeup of drivers in New

Orleans. The average seat belt use in this region is about 75%.

- Region 2: The spring 2006 survey results were much higher than the summer 2005 and the summer 2006 survey results. The 2005-2006 change was relative small. Part of the change may be due to sampling error. The average seat belt use in this region is about 75%.
- Region 3: This region has consistently the highest percentage of seat belt use. Thus the region may be used as a benchmark for other regions. It is well known among safety professionals that enforcement is the strongest in this region. There was only a non-significant decline in seat-belt use from 2005 to 2006. The average seat belt use in this region is about 83%; this is about 5 to 8 percentage points higher than in the other 7 regions. This region also had the lowest percentage of death and injury in rollover crashes, another measure used to determine the success of seat-belt use.
- Region 4: There were no significant changes between 2005 and 2006. The average seat belt use in this region was about 78% during the past two years. The spring 2006 sample was much smaller which may account for the larger variation.
- Region 5: This region was hit by Hurricane Rita. The spring and summer samples for 2006 showed a significantly lower percentage of seat belt usage. Enforcement efforts in 2006 were 20%-30% below the level in 2005. The average seat belt use in this region is about 73%.
- Region 6: The estimates for this region are highly volatile. This is partly due to large sampling errors because the sample in this region is much smaller than for the regions 1-5.
- Region 7: This region has very consistent estimates of about 78%.
- Region 8: The estimates for this region are also highly volatile. This is partly due to large sampling errors because the sample in this region is much smaller than for the regions 1-5.
- Louisiana: The estimate for Louisiana is a weighted average of the estimates for the regions. Without the New Orleans and Lake Charles regions, the seat belt usage percentage increases to 75.7%. This is still 2 percentage points below the 2005 estimate.

F. Pre- and Post-Campaign Telephone Survey Results

Two polls were developed and conducted by Southern Media & Opinion Research, Inc., for the Louisiana Highway Safety Commission in order to assess Louisiana licensed motorists' seat belt use practices, their recall of recent seat belt messages, the general public's perception of using seat belts and the enforcement of seat belt laws. More specifically, the objective of the polls was to measure the impact of change attributed to the May campaign. Two statewide polls using the same survey instruments were conducted before and after the Memorial Day 2005 Occupant Protection Media and Enforcement Campaign.

According to the published plan of Southern Media & Opinion Research, Inc. this sample design included interviewing 800 licensed motorists statewide by telephone, 400 each during two different time periods: one before Memorial Day, 2006, and the other after Memorial Day, 2006. During the intervening time, an Occupant Protection Media and Enforcement Campaign was implemented.

Quotas ensuring nominal male participation in the study were imposed. The overall margin of error for the statistics obtained from the survey data in the sample of 400 licensed motorists is not greater than plus or minus 4.9 percentage points at the 95% level of confidence. In other words, there is a 95% certainty that the statistics presented for the results obtained from this survey are not more than 4.9 percentage points above or below the figure that would have been obtained if all of the licensed motorists in the state had been interviewed. The confidence interval used to detect differences in the population proportions before and after Memorial Day is not larger than 7.1%.

The sample error may be larger for subgroup responses, such as those based on respondents by education, age, and other demographic or attitudinal variables. There are other sources of potential error which cannot be calculated including question wording and order of question presentation.

The results of the telephone surveys conducted among licensed drivers in Louisiana indicate that several significant changes occurred during the time leading up to Memorial Day 2006.

- A significant increase (10.3 percentage points) in the recall of having heard or seen anything recently concerning seat belts was recorded from 59.0% to 69.3%. This compares to 28.8%, from 45.8% to 74.6% in 2005.
- The proportion of motorists recalling a seat belt message/slogan increased by 21 percentage points from 23.8% to 44.8%.
- There was a 4.2% increase of respondents saying “very likely” to the question “How likely do you think it is for a driver not wearing a seat belt to be stopped and ticketed?”

In spite of the considerable increase in awareness, the percentage increase of motorists in the post-Memorial-Day survey who said they use their seat belt “all the time” was not significant (84.3% to 86.3%). The percentage increase of drivers who said they would use a seat belt “all the time” or “most of the time” was also not significant (from 94.8% to 95.1%). The increase in awareness of seat belt slogans has not resulted in an increase in self-reported

seat belt use. One should also keep in mind that the observed seat belt use is considerably (about 10%) lower than the self-reported seat belt use.

G. Crash Analysis

The reduction of injuries and fatalities is the overall goal of the seat belt campaigns. Overtime for police officers which is designated exclusively for seat belt enforcement should lead to an overall increase in seat belt enforcement. Public information and education combined with the seat belt enforcement efforts should yield a higher propensity for drivers and passengers to wear seat belts while traveling. Although these efforts do not affect the number of observed crashes, they do affect the percentages of injuries and fatalities in these crashes.

Several factors make the analysis of traffic crash data difficult:

1. Louisiana law does not require adult passengers in the back seat of vehicles to wear seat belts; therefore, observational surveys only observed front seat usage. Consequently, using all occupant injuries and fatality data may not be directly related to the observed safety belt usage because back-seat occupants may or may not be wearing a seat belt. Another confounding factor is the number of occupants which varies from vehicle to vehicle. Hence, we expect a more significant relationship between safety belt usage and injuries/fatalities when only the driver of a vehicle is taken into consideration, because the number of occupants who are not injured are not entered into the database. From 2005 on, however, all occupant data are available.
2. In most cases, we usually know the seat belt usage for fatality occupants in motor vehicle crashes; the seat belt usage in injury and property-damage-only crashes remains unknown to a large extent because it is most often self reported. The number of fatalities and severe injuries are likely to be a more accurate indicator of seat belt usage because the investigating officer is able to determine if a safety belt was used.
3. Although we may expect an increase in observed seat belt usage in fatal crashes as seat belt usage by all drivers increases, other factors, such as alcohol and speed, may confound this correlation. Changes in these risk factors will affect the observed percentage of seat belt use in fatal crashes. An analysis of Louisiana crash data shows that if seat belt usage were to increase by 1%, assuming that other factors remain unchanged, we would expect a yearly reduction of eight driver fatalities for Louisiana as a whole. This calculation assumes that wearing a seat belt and getting in a fatal crash are

independent events. However, there are well-known risk factors in fatal crashes such as alcohol, age and gender, which may also be correlated with not wearing a seat belt. Louisiana crash data analyses show, for instance, that seat belt usage increases with age and many drivers who have been drinking do not wear a seat belt. For this reason, an increase in seat belt use in the general population does not necessarily lead to the expected reduction in fatalities.

4. It is impossible to calculate the percentage of injured occupants in Louisiana crashes because the total number of occupants in property-damage-only crashes is not available.

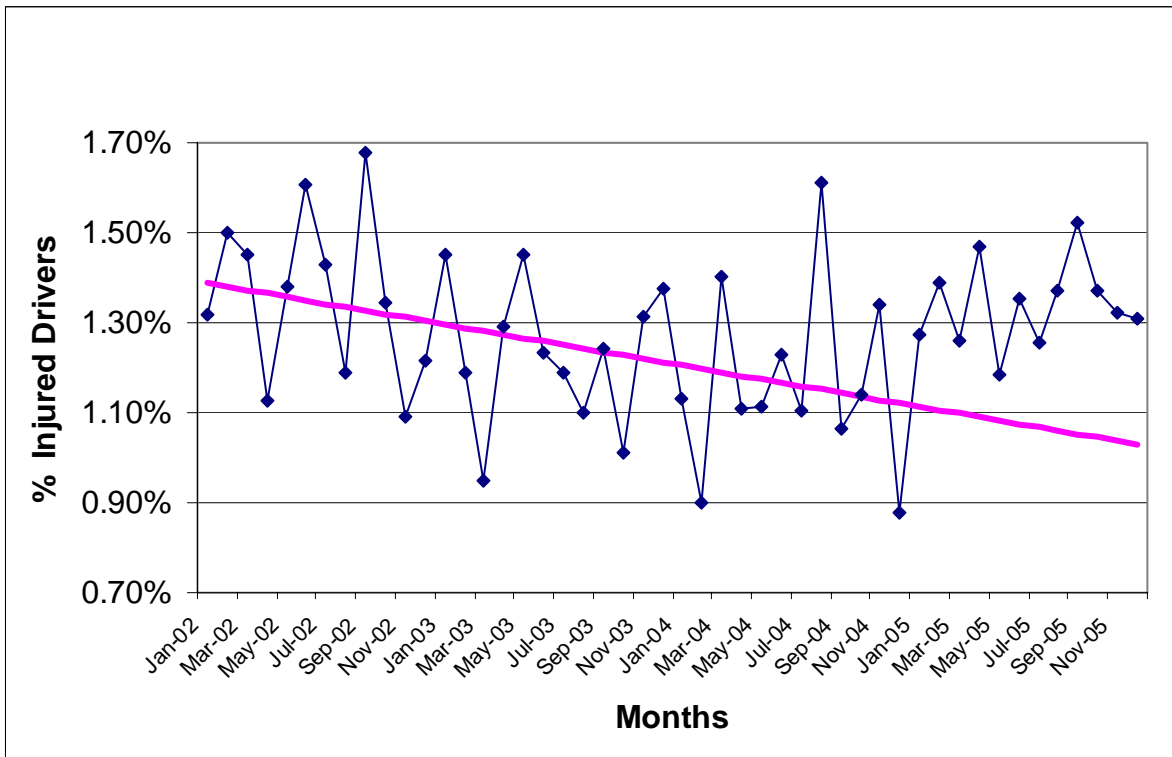
5. Observational surveys are conducted during daytime hours. However, an increase in safety belt use during daytime hours may not reflect the same increase during nighttime hours when most fatal crashes occur.

Because of the described difficulties in modeling the relationship between safety belt usage and injury/fatality rate, we will provide various approaches to analyzing the crash data.

Trend in Injuries

Louisiana's crash report uses the following injury severity codes: fatal, incapacitating/severe, non-incapacitating/moderate and possible/complaint. Figure 4 displays the percentages of fatal or critically injured drivers in all daytime (6am-6pm) crashes by month. The injury percentage declined from an average of 1.4% in 2002 to 1.2% in 2004, but has increased in 2005.

Figure 4: Percentage of Fatal, Severely Injured Drivers in all Daytime (6am-6pm) Crashes by Month



Trend in Driver Injuries and Driver Fatalities in Rollover Crashes

One particularly important type of crash in which safety belt usage has proven to be an important factor in injury severity will be studied to detect trends. Our hypothesis is that since the observed safety-belt usage increased by 6% from 2002 to 2005, there should be an increase in observed safety belt usage in rollover crashes and thus a reduction in fatalities and severe injuries. Table 7 depicts the number of rollover crashes from 2000 to 2005. Since the observational survey indicates that the seat belt usage rate remained constant during 2000-2002, the average for these three years will serve as a baseline. We will compare the 2003-2005 results with this baseline. Results for 2006 are not available at this time.

The average number of vehicles rolling over during the 2000-2002 period was 3,071 compared with 3,570 in 2003-2005, an increase of 499 in the number of drivers at risk of injury. The seat belt usage was not known in many cases. For those cases where seat belt usage for the driver was known, there was an increase of 820 for “seat belt used” and an increase of 28 for “seat belt not used”. The observed percentage of seat belt-use use during rollover crashes had increased by 8.3% from an average of 74% in 2000-2002 to an average of 82.3% in 2003-2005. One should keep in mind that this includes only known seat belt use. Unknown seat belt use was excluded. Thus the seat belt use reported in the crash report differs from the observational survey result.

Table 7: Driver Fatalities and Severe Injuries in Rollover Crashes

Fatal & Severe Injuries										
Year	None used			Used			All Rollover Vehicles	All Injured or Killed	All % injured or Killed	% Seat Belt Usage
	%	Injured or Killed	Total	%	Injured or Killed	Total				
2000	24%	120	500	1.8%	26	1421	3041	179	5.9%	74.0%
2001	20%	104	508	2.1%	29	1412	2944	155	5.3%	73.5%
2002	17%	88	514	2.7%	41	1497	3229	146	4.5%	74.4%
Average 2000-2002	20%	104	507	2.2%	32	1443	3071	160	5.2%	74.0%
2003	28%	132	478	2.3%	39	1686	3275	190	5.8%	77.9%
2004	23%	104	459	1.6%	37	2262	3670	152	4.1%	83.1%
2005	26%	134	521	1.4%	40	2842	3764	197	5.2%	84.5%
Average 2003-2005	25%	123	486	1.7%	39	2263	3570	180	5.0%	82.3%

Table 8: Driver Fatalities in Rollover Crashes

Year	None used			Used			All	Killed	All	% Killed	% Seat Belt Usage
	%	Killed	Total	%	Killed	Total					
2000	15%	72	500	0.3%	6	1421	3041	86	2.8%	74.0%	
2001	12%	63	508	0.5%	10	1412	2944	79	2.7%	73.5%	
2002	11%	59	514	0.7%	10	1497	3229	74	2.3%	74.4%	
Average 2000-2002	13%	65	507	0.6%	9	1443	3071	80	2.6%	74.0%	
2003	19%	91	478	0.8%	14	1686	3275	112	3.4%	77.9%	
2004	16%	72	459	0.5%	11	2262	3670	86	2.3%	83.1%	
2005	17%	86	521	0.7%	20	2842	3764	115	3.1%	84.5%	
Average 2003-2005	17%	83	486	0.7%	15	2263	3570	104	2.9%	82.3%	

Table 7 also shows the risk of being injured or killed in rollover crashes when not wearing a seat belt and Table 8 shows the number of drivers killed. For instance, of those drivers not wearing a seat belt, 25% were killed or severely injured in rollover crashes from 2003-2005. This percentage was 1.7% for drivers wearing a seat belt. Also, 17% of drivers not wearing a seat belt were killed compared to 0.7% for drivers wearing a seat belt from 2003-2005. Hence, if the number of drivers in rollover crashes and the percentage of drivers killed or injured had been constant at 20%, we should have seen a reduction of driver fatalities in rollover crashes of about 8 and driver injuries of about 5. Unfortunately, as Table 7 shows, the total number of drivers killed and severely injured in rollover crashes actually increased in 2003-2005 compared to the average of 2000-2002. This is partially because the number of drivers in rollover crashes increased by 499 and the percentage of drivers killed who were not wearing a seat belt increased from 20% to 25%. The increase in the number of rollover crashes may be related to the increase in the number of SUV and pick-up trucks on Louisiana roads.

Nighttime versus Daytime Rollover Crashes

We return to the above-mentioned risk factors contributing to a lower than expected decline in fatalities and injuries. Tables 9 and 10 depict the rollover statistics for nighttime crashes and Tables 11 and 12 depicts the rollover crashes for daytime crashes. There are two important conclusions which can be drawn from the comparison of the crashes for the two different 12 hour periods. First, seat belt use is much less frequent in nighttime rollover crashes than in daytime rollover crashes. In 2003-2005, during the night, on the average, 78.5% of the drivers in rollover crashes were reported to have used a seat belt. During the day, this percentage was 86.6% during the same time period. Second, if we compare the

2000-2002 statistics with the 2003-2005 statistics, we detect a significant increase during day and night in seat belt usage in rollover crashes. These reported seatbelt usage is higher than the survey results show. This is likely due to the “unknown” seat belt use in crashes actually falling into the “no seat belt” use category. One should also keep in mind that some of the seat belt use in crashes may be self reported.

Table 9: Driver Injuries and Fatalities Rollover Crashes at Night (6pm-6am)

	None used			Used			All	All Injured or Killed	All	% Seat Belt Usage
	%	Injured or Killed	Total	%	Injured or Killed	Total				
2000	27%	86	317	2.0%	16	779	1753	128	7.3%	71.1%
2001	23%	72	309	2.0%	16	672	1566	101	6.4%	68.5%
2002	18%	59	321	2.0%	19	692	1698	91	5.4%	68.3%
Average 2000-2002	23%	72	316	2.4%	17	714	1672	107	6.4%	69.4%
2003	31%	97	313	2.0%	16	844	1663	123	7.4%	72.9%
2004	23%	65	280	2.0%	23	1108	1927	93	4.8%	79.8%
2005	28%	91	323	2.0%	20	1386	1973	125	6.3%	81.1%
Average 2003-2005	28%	84	305	1.8%	20	1113	1854	114	6.1%	78.5%

Table 10: Driver Fatalities Rollover Crashes at Night (6pm-6am)

	None used			Used			All	All Killed	All	% Seat Belt Usage
	%	Killed	Total	%	Killed	Total				
2000	18%	56	317	2.0%	5	779	1753	67	3.8%	71.1%
2001	13%	40	309	2.0%	7	672	1566	50	3.2%	68.5%
2002	12%	37	321	2.0%	3	692	1698	43	2.5%	68.3%
Average 2000-2002	14%	44	316	0.7%	5	714	1672	53	3.2%	69.4%
2003	20%	64	313	2.0%	7	844	1663	79	4.8%	72.9%
2004	16%	45	280	2.0%	6	1108	1927	52	2.7%	79.8%
2005	19%	61	323	2.0%	11	1386	1973	75	3.8%	81.1%
Average 2003-2005	19%	57	305	0.7%	8	1113	1854	69	3.7%	78.5%

It is also evident from the comparison of day and nighttime rollover crashes that the risk of being killed or severely injured when NOT wearing a seat belt in a rollover crash is considerably higher during the night than during the day (28% during the night versus 19% during the day for 2003-2005). It is interesting to note that the risk of being killed or severely injured in a rollover crash when wearing a seat belt is not much different between night and day time crashes.

Table 11: Driver Injuries and Fatalities Rollover Crashes during the Day (6am-6pm)

	None used			Used			All	All Injured or Killed	All	% injured or Killed	% Seat Belt Usage
	%	Injured or Killed	Total	%	Injured or Killed	Total					
2000	19%	34	183	1.0%	10	642	1288	51	4.0%	77.8%	
2001	16%	32	199	2.0%	13	740	1378	54	3.9%	78.8%	
2002	14%	29	193	3.0%	22	805	1531	55	3.6%	80.7%	
Average 2000-2002	17%	32	192	2.1%	15	729	1399	53	3.8%	79.2%	
2003	14%	35	165	1.0%	23	842	1612	67	4.2%	83.6%	
2004	22%	39	179	1.2%	14	1154	1743	59	3.4%	86.6%	
2005	22%	43	198	1.4%	20	1456	1791	72	4.0%	88.0%	
Average 2003-2005	22%	39	181	1.7%	19	1151	1715	66	3.8%	86.4%	

Table 12: Driver Fatalities Rollover Crashes during the Day (6am-6pm)

	None used			Used			All	All Killed	All	% Killed	% Seat Belt Usage
	%	Killed	Total	%	Killed	Total					
2000	9%	16	183	0.6%	1	642	1288	19	1.5%	77.8%	
2001	11%	23	199	0.5%	3	740	1378	29	2.1%	78.8%	
2002	11%	22	193	0.3%	7	805	1531	31	2.0%	80.7%	
Average 2000-2002	11%	20	192	0.5%	4	729	1399	26	1.9%	79.2%	
2003	14%	27	165	0.9%	7	842	1612	33	2.0%	83.6%	
2004	15%	27	179	0.4%	5	1154	1743	34	2.0%	86.6%	
2005	13%	25	198	0.6%	9	1456	1791	40	2.2%	88.0%	
Average 2003-2005	15%	26	181	0.6%	7	1151	1715	36	2.1%	86.4%	

Multi-Car Crashes

In multiple-car crashes as well, drivers without seat belts have a higher risk of being killed. Table 13 depicts the percentage of drivers killed in multiple fatal crashes. Over 60 percent of drivers without a seat belt in fatal crashes were killed, while only about 25-30% of drivers wearing a seat belt in a fatal crash were killed. It is difficult to assess the effect of an increase in seat belt use in multiple car crashes because the data in Table 9 are based on fatal crashes only.

Table 13: Seat Belt Use in Fatal Multiple Car Crashes

(includes only crashes with cars, suvs, light trucks and vans)

Year	All			Killed		Killed	
	All vehicles	No Seat Belt	With Seat Belt	No Seat Belt	With Seat Belt	No Seat Belt	With Seat Belt
2000	489	146	248	88	55	60%	22%
2001	479	122	273	73	82	60%	30%
2002	509	136	291	79	78	58%	27%
2003	434	102	281	65	70	64%	25%
2004	610	139	401	91	105	65%	26%
2005	676	160	421	105	97	66%	23%
2006	421	91	278	61	79	67%	28%

H. Conclusions

As demonstrated in earlier projects, enhanced enforcement with appropriate media coverage leads to a reduction in fatalities and injuries. The FY06 efforts crash analysis results are summarized below:

- The paid-media campaigns increased the awareness of ongoing enforcement efforts.
- Although the media campaign changes the attitude toward seat belt use slightly, it does not significantly increase the percentage of people who say that they wear a seat belt “all the time” or “most of the time” (94.8 pre versus 95.1% post).
- The observed seat belt usage declined by 2.9% from 77.7% to 74.8%. This decline may be partly due to decreased enforcement efforts in the hurricane-affected regions 1 and 3 and to the increased number of pickup trucks on Louisiana roads.
- There is a 10-20 percent difference between people saying they wear seat belts and those who are actually observed wearing seat belts. More research is needed to determine the cause for this discrepancy.
- Although the overall enforcement level in terms of overtime hours and seat belt citations written were higher in 2006 than in 2005, the enforcement level in the two regions affected by hurricanes Rita and Katrina was down about 30% compared to 2005. These two regions, New Orleans and Lake Charles, also had the steepest decline in seat belt use.

- The reported seat belt use in roll-over crashes increased from 74.0% in 2000 to 84.5% in 2005; however, the number of drivers killed in rollover crashes has increased from 2000 to 2005 due to a 16% increase in overturned vehicles in crashes.
- The percentage of persons killed not wearing a seat belt continues to be high (60%) and the percentage of drivers fatally or critically injured not wearing a seat belt has increased in 2005-2006 compared with 2004.

I. Appendix – Tables

Table A1: All Programs by Parish and Agency

Region	Parish	Agency	OP Hours	OP Citations	OP Ratio [cit/hr]
1	Jefferson	Jefferson Parish Sheriff's Office	34	99	2.9
1	Jefferson	Kenner Police Dept.	416	1164	2.8
1	Orleans	New Orleans Police Department	223	513	2.3
1	St. Bernard	St. Bernard Sheriff Department	NR	NR	
1	St. Tammany	Slidell Police Department	NR	NR	
1	St. Tammany	St. Tammany Sheriff's Office	356.75	674	1.9
2	Ascension	Ascension Parish Sheriff's Office	246	536	2.2
2	Ascension	Gonzales Police Department	154.5	387	2.5
2	EBR	Baton Rouge Police Department	314	889	2.8
2	EBR	East Baton Rouge Sheriff's Office	53	133	2.5
2	EBR	Zachery Police Department	440	414	0.9
2	Livingston	Denham Springs Police Department	269	448	1.7
2	Livingston	Livingston Sheriff's Office	NR	NR	
2	Tangipahoa	Hammond Police Department	382	833	2.2
2	Tangipahoa	Tangipahoa Sheriff's Office	96	191	2.0
2	Washington	Bogalusa Police Dept.	680	1068	1.6
3	Lafourche	Lafourche Parish Sheriff's Office	NR	NR	
3	St. Charles	St Charles Sheriff's Office	107.25	274	2.6
3	St. John	St. John the Baptist Parish Sheriff's Office	180	406	2.3
3	Terrebonne	Houma Police Department	437	744	1.7
3	Terrebonne	Terrebonne Parish Sheriff's Office	405	199	0.5
4	Lafayette	Lafayette Parish Sheriff's Office	299	607	2.0
4	Lafayette	Lafayette Police Department	954	2338	2.5
4	St. Landry	St Landry Parish Sheriff's Office	324	635	2.0
4	Vermillion	Abbeville Police Department	49	73	1.5
5	Beauregard	DeRidder Police Department	50	91	1.8
5	Beauregard	Beauregard Sheriff's Office	126	125	1.0
5	Calcasieu	Lake Charles Police Department	323.5	981	3.0
5	Calcasieu	Calcasieu Sheriff's Office	135	323	2.4
6	Rapides	Alexandria Police Department	348	762	2.2
6	Rapides	Pineville Police Department	527.5	1256	2.4
6	Rapides	Rapides Sheriff's Office	NR	NR	
6	Vernon	Rosepine Police Department	345	605	1.8
7	Bossier	Bossier City Police Department	777.5	1689	2.2
7	Caddo	Caddo Parish Sheriff's Office	314	589	1.9
7	Caddo	Shreveport PD	982	2274	2.3
7	Lincoln	Ruston Police Dept.	514.25	989	1.9
7	Natchitoches	Natchitoches Police Dept.	803	2021	2.5
7	Webster	Webster Parish Sheriff's Office	63	71	1.1
8	Quachita	Monroe Police Department	567.5	1010	1.8
8	Quachita	West Monroe Police Department	639	1127	1.8
	Statewide	Louisiana State Police	4439	9001	2.0
	Total	Louisiana	17374	35539	2.0

Note: NR= Not Yet Reported

**COMPARISON OF FREQUENCY RESPONSES
PRE/POST MEMORIAL DAY SURVEY
Pre (n=400), Post (n=400)**

LHSC 2006-Pre Memorial Day ID
5.10.06/6.5.06
INTERVIEWER

Hello, this is **(interviewer's name)** with southern Media and Opinion Research. We are conducting a study of driving practices and attitudes about current driving laws.

PARISH

1.	Are you a licensed Louisiana driver? (Do you have a valid Louisiana driver's license?)	YES	100.0		
2.	What kind of vehicle do you drive most often; is it a car, a pickup truck, an SUV or a van?	CAR PICKUP TRUCK SUV VAN (MOTORCYCLE/OTHER) (DNK/WS)		(PRE) 47.8 25.5 18.8 8.0 TERMINATE TERMINATE	(POST) 48.3 23.0 20.5 8.3
3.	When driving, would you say you wear your seat belt: all of the time, most of the time, some of the time, rarely or never?	ALL OF THE TIME MOST OF THE TIME SOME OF THE TIME RARELY NEVER (DNK/WS)		(PRE) 84.3 10.5 3.0 1.0 1.3 0.0	(POST) 86.3 8.8 3.0 1.3 0.8 0.0
4.	Do you recall having heard or seen anything recently about seat belts?	YES NO (SKIP TO Q6) (DNK/WS) (SKIP TO Q6)		(PRE) 59.0 40.3 0.8	(POST) 69.3 30.0 0.8
5.	What do you recall having heard or seen? (PROBE FOR CONTENT: What did you hear or see?) (RECORD UP TO TWO RESPONSES--PROBE: Anything else?)			(PRE) (n=236)	(POST) (n=277)
	TELEVISION			47.9	47.7
	ADVERTISEMENT/SLOGAN/CLICK OR TICKET/SEAT BELT SAVES LIVES			40.3	64.6
	NEWS STORY OF ACCIDENTS			11.0	2.9
	LAW REQUIRES SEAT BELT USAGE			10.6	6.5
	STRICT ENFORCEMENT/TICKETS ISSUED			9.3	12.6
	CHECK POINT/ROAD BLOCKS			7.6	4.7
	RADIO			7.6	2.5
	METAL SIGNS ON HIGHWAY "BUCKLE UP"/SIGNS AT GAS STATION			5.1	4.7
	NEWSPAPER ARTICLE/MAGAZINE			5.1	3.2
	NEWS			4.2	0.4
	BILLBOARDS			4.2	3.6
	STATISTICS ON SEAT BELT USAGE/STUDY ON SEAT BELTS			3.0	1.8
	DON'T KNOW/WON'T SAY			2.1	0.4
	SAFETY ISSUES/WEAR SEAT BELT SAVES LIVES/ALWAYS BUCKLE UP			1.7	2.5
	PSA			1.3	0.4
	DRIVING CLASS/SAFETY CLASS/SAFETY DRIVE			1.3	0.0
	PROPER RESTRAINT FOR CHILDREN/PROPER INSTALLATION			0.8	0.4
	MORE BELT PATROL FUNDS			0.4	0.7
	FAMILY, FRIEND REMINDS/REMINDE SELF			0.4	0.0
	BUMPER STICKERS			0.4	0.0
	NATIONAL SEAT BELT CAMPAIGN/COAST TO COAST/MAY 19 th			0.4	0.0
	PICKUP TRUCK SEAT BELT AD			0.4	0.7
	SEAT BELT USE REQUIRED IN BACK SEAT			0.4	0.0
	WORD OF MOUTH/POLICE			0.0	0.7
	MANDATORY USE VIOLATES RIGHTS			0.0	0.4

5. What do you recall having heard or seen? **(PROBE FOR CONTENT: What did you hear or see?)**
(RECORD UP TO TWO RESPONSES--PROBE: Anything else?)

	(PRE) (Percent of all)	(POST)
DON'T KNOW/WON'T SAY	42.3	31.0
TELEVISION	28.3	33.0
ADVERTISEMENT/SLOGAN/CLICK OR TICKET/SEAT BELT SAVES LIVES	23.8	44.8
NEWS STORY OF ACCIDENTS	6.5	2.0
LAW REQUIRES SEAT BELT USAGE	6.3	4.5
STRICT ENFORCEMENT/TICKETS ISSUED	5.5	8.8
CHECK POINT/ROAD BLOCKS	4.5	3.3
RADIO	4.5	1.8
METAL SIGNS ON HIGHWAY "BUCKLE UP"/SIGNS AT GAS STATION	3.0	3.3
NEWSPAPER ARTICLE/MAGAZINE	3.0	2.3
NEWS	2.5	0.3
BILLBOARDS	2.5	2.5
STATISTICS ON SEAT BELT USAGE/STUDY ON SEAT BELTS	1.8	1.3
SAFETY ISSUES/WEAR SEAT BELT SAVES LIVES/ALWAYS BUCKLE UP	1.0	1.8
PSA	0.8	0.3
DRIVING CLASS/SAFETY CLASS/SAFETY DRIVE	0.8	0.0
PROPER RESTRAINT FOR CHILDREN/PROPER INSTALLATION	0.5	0.3
MORE BELT PATROL FUNDS	0.3	0.5
FAMILY, FRIEND REMINDS/REMIND SELF	0.3	0.0
BUMPER STICKERS	0.3	0.0
NATIONAL SEAT BELT CAMPAIGN/COAST TO COAST/MAY 19 th	0.3	0.0
PICKUP TRUCK SEAT BELT AD	0.3	0.5
SEAT BELT USE REQUIRED IN BACK SEAT	0.3	0.0
WORD OF MOUTH/POLICE	0.0	0.5
MANDATORY USE VIOLATES RIGHTS	0.0	0.3

6. Please tell me if you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statements:

(ROTATE)	STRONGLY SOMEWHAT SOMEWAHT STRONGLY (DNK				
	<u>AGREE</u>	<u>AGREE</u>	<u>DISAGREE</u>	<u>DISAGREE</u>	<u>/WS</u>
a. seat belts are not needed on short trips	(PRE) ... 5.3	... 4.5	... 5.0	... 83.3	... 2.0
	(POST) ... 2.5	... 1.5	... 4.8	... 90.0	... 1.3
b. seat belts are just as likely to harm you as to help you	(PRE) ... 10.5	... 16.3	... 17.8	... 49.5	... 6.0
	(POST) ... 7.5	... 16.3	... 13.3	... 54.8	... 8.3
c. seat belts are uncomfortable	(PRE) ... 20.3	... 24.8	... 16.8	... 37.3	... 1.0
	(POST) ... 21.5	... 29.0	... 17.0	... 31.3	... 1.3
d. people should be free to choose if they want to wear a seat belt or not	(PRE) ... 21.5	... 17.3	... 11.5	... 47.5	... 2.3
	(POST) ... 17.5	... 14.5	... 11.3	... 52.0	... 4.8
e. seat belts aren't needed when in a pickup truck because it is a safer vehicle due to its sheer size	(PRE) ... 4.3	... 3.0	... 8.5	... 81.0	... 3.3
	(POST) ... 4.3	... 1.3	... 7.5	... 83.3	... 3.8
f. police in my community are writing more seat belt tickets now than they were a few months ago	(PRE) ... 26.5	... 16.5	... 5.3	... 6.8	... 45.0
	(POST) ... 31.0	... 15.5	... 3.8	... 4.3	... 45.5

7.	How likely do you think it is for a driver not wearing a seat belt to be stopped and ticketed: very likely, somewhat likely, Sheriff's somewhat unlikely or very unlikely?	VERY LIKELY SOMEWHAT LIKELY SOMEWHAT UNLIKELY VERY UNLIKELY (DNK/WS)	<u>(PRE)</u> 22.8 39.3 21.3 10.3 6.5	<u>(POST)</u> 27.0 37.5 20.0 8.8 6.8
8.	If you were in a crash (wreck), would you want to be wearing a seat belt or not wearing a seat belt?	WEARING A SEAT BELT NOT WEARING A SEAT BELT (DNK/WS)	<u>(PRE)</u> 93.5 2.3 4.3	<u>(POST)</u> 93.5 1.8 4.8
9.	What is your age? (Are you:)		<u>(PRE)</u>	<u>(POST)</u>
	UNDER 25	3.3	6.3	
	25 - 34	10.3	10.3	
	35 - 44	17.3	12.8	
	45 - 54	20.8	23.8	
	55 - 64	20.5	24.0	
	65 OR OVER	27.3	21.8	
	(WS)	0.8	1.3	
10.	What is the highest grade or year of school you completed?		<u>(PRE)</u>	<u>(POST)</u>
	(READ CHOICES if necessary)			
	did not graduate from high school		14.0	11.0
	graduated high school or got GED, but did not attend college		32.5	33.5
	attended college or university		20.5	27.8
	graduated from a four year college or university		31.8	26.8
	(DNK/WS) 1.3 1.0			
11.	Are you male or female?	MALE FEMALE	<u>(PRE)</u> 41.0 59.0	<u>(POST)</u> 43.5 56.5
12.	How you describe your race or ethnic background?	WHITE AFRICAN-AMERICAN HISPANIC NATIVE AMERICAN ASIAN OTHER (WON'T SAY)	<u>(PRE)</u> 77.5 19.3 1.8 0.5 0.3 0.8 0.0	<u>(POST)</u> 76.5 21.3 1.0 0.8 0.3 0.3 0.0