

PILOT STUDY OF DISTRACTED DRIVERS

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EXECUTIVE SUMMARY

PILOT STUDY OF DISTRACTED DRIVERS

- ◆ In order to determine the true nature of crashes from distracted and/or inattentive driving and to provide data to the Virginia state legislature, the Transportation and Safety Training Center, Department of Motor Vehicles and Virginia Commonwealth University's Survey and Evaluation Research Laboratory collaborated to conduct a pilot study of crashes involving distracted drivers.
- ◆ All seven state police divisions, four selected counties, and 14 independent cities were requested to participate in the pilot study of distracted drivers. All localities participated in the study with varying degrees of success. State troopers submitted the majority of the surveys received (75%). All counties in Virginia are represented in the pilot study data with the exception of Alleghany County, Cumberland County, and Lunenburg County. Of the crashes reported, 63% occurred in rural areas.
- ◆ Surveys were received on 2,792 crash scenes that involved 4,494 drivers including 2,822 distracted drivers.
- ◆ Half of the crashes that were reported involved only a single driver and of all the crashes reported, 98% involved a single distracted driver.
- ◆ Troopers and officers wrote over 1,400 open-ended responses to indicate the MAIN distraction in each crash. Approximately 250 of the open-ended responses were coded into existing categories. The remaining open-ended responses were classified into new categories.
- ◆ Overall, various distractions inside the vehicle accounted for 62% of the distractions reported, distractions outside the vehicle accounted for 35% of the distractions reported, and 3% of the distractions were unknown or not marked on the survey form.
- ◆ Driver fatigue or a driver that was asleep accounted for 17% of the specific distractions reported. Looking at crashes, other roadside incidents, traffic, or other vehicles accounted for 13% of the distractions reported. Looking at scenery or landmarks accounted for 10% of the distractions reported. A distraction caused by passengers or children in the vehicle accounted for 9% of the distractions reported. No other cause accounted for more than 7% of the distractions reported.

PURPOSE

The purpose of the pilot project was to (a) field-test a form to see if the requested data elements fit what investigating officers need to report on crashes that involve distracted drivers, and (b) provide data to inform state legislation and policy.

According to the Virginia Traffic Crash Facts report from 2000, 256,994 drivers were involved in 141,650 crashes. Of these drivers, 32,131 were inattentive at the time of the crash. In 2001, the report stated 262,327 drivers were involved in 144,585 crashes. Of these drivers, 31,825 were inattentive at the time of the crash.

METHODOLOGY

To ascertain the frequency of specific behaviors that may constitute driver inattention, a survey was developed for troopers and officers to complete at crash scenes that involved driver inattention. Troopers and officers were requested to complete one survey per crash scene and indicate in what type of area the crash occurred, how many drivers and distracted drivers were involved, and the main driver distraction. Surveys were returned to the Richmond, Virginia Department of Motor Vehicles (DMV) with the FR-300P crash reporting forms. Pilot surveys were not linked to the FR-300P forms for those crashes in any way. The pilot study was conducted from June 15, 2002 through November 30, 2002.

SAMPLING PLAN

Because it would not be feasible to test the pilot survey on all crashes, a sample of police agencies was drawn. To fulfill both purposes of the pilot study, it would be best if the results of the pilot study were generalizable to all locations in Virginia. Key variables under consideration that may affect generalizability of the results were:

- type of jurisdiction (county/city)
- type of investigating agency (state police/city police/county police/sheriff/ other)

These factors were thought to control for concerns such as type of road network (e.g., urban vs. rural vs. interstate), population density, different reporting agencies, and – for areas in which combinations of agencies may investigate crashes – provide a framework to create prior expectations of how many crashes occur in each county or independent city.

Crashes in Virginia may be investigated by several police agencies with geographically overlapping jurisdictions. The Virginia State Police investigate crashes on interstate highways, as well as counties without police forces. There are seven counties that have their own police forces and investigate some or all crashes within their jurisdictions. In addition, incorporated towns and certain authorities (such as airport authorities) have police forces that may investigate crashes. Because of a lack of reliable data on their activities and an assumption that they did not investigate a very large portion of the state's crashes, town and authority police forces were excluded from the sampling frame. Finally, although there are data on the number of crashes by county/city, there are no data on the breakdown of what agencies investigated what crashes by county/city.

To provide as representative a sample as possible, the following strategy was applied.

All state police divisions were requested to participate in the pilot project. This implies total coverage of areas with no local police forces, as well as heavy coverage of Virginia's interstate highways. The seven state police divisions were classified into two main state police division groups: the "urban" group contained divisions I, V, and VII. The "rural" group contained divisions II, III, IV, and VI.

After the selection of all state police divisions, local police forces were selected to participate in the study. All 40 independent cities were assumed to have local police forces. The 40 independent cities and seven counties that have local police forces were stratified by state police division group and city/county status. Within those strata, they were sorted in descending order by number of distracted drivers reported for calendar year 2000 and sampled proportionate to size (number of distracted drivers involved in crashes). Approximately one in three jurisdictions was sampled within each stratum. When more than one jurisdiction was to be sampled, the jurisdictions were sampled proportional to the number of distracted drivers reported for the calendar year 2000. Thus, jurisdictions with larger numbers of distracted drivers were more likely to be selected, but were not guaranteed to be selected.

Overall, state police appear to investigate crashes that involved about one-third of all distracted drivers in Virginia (approximately 11,000 drivers out of 32,125). Within the "rural" state police divisions, six cities and two counties were also selected. Within the "urban" police divisions, eight cities and two counties were also selected. These 18 additional selections appear to cover an additional 12,200 distracted drivers. Therefore, the sampling plan should cover approximately two-thirds of all distracted drivers in the state.

Table 1 on the following page shows the sampling scheme in detail.

Table 1: Sampling Detail

Agency (FIPS code)	State Police Division	# of Distracted Drivers (12 months)	Expected # of Forms to Process
State Police Div. I	I	1,274	483
State Police Div. II	II	1,695	642
State Police Div. III	III	1,251	474
State Police Div. IV	IV	1,300	492
State Police Div. V	V	1,742	660
State Police Div. VI	VI	1,568	594
State Police Div. VII	VII	1,262	478
Subtotal for State Police	--	10,092	3,823
Manassas City (683)	VII	241	91
Falls Church City (610)	VII	94	36
Virginia Beach City (810)	V	1,090	413
Newport News City (700)	V	1,083	410
Norfolk City (710)	V	769	291
Portsmouth City (740)	V	376	142
Richmond City (760)	I	649	246
Colonial Heights City (570)	I	66	25
Fairfax County (059)	VII	4,670	1,769
Chesterfield County (041)	I	893	338
Roanoke City (770)	VI	821	311
Martinsville City (690)	VI	178	67
Salem City (775)	VI	161	61
Bristol City (520)	IV	92	35
Lynchburg City (680)	III	498	189
Harrisonburg City (660)	II	183	69
Roanoke County (161)	VI	310	117
Albemarle County (003)	III	61	23
Total		22,327	8,456

Expected number of forms to process = Number of Distracted Drivers Over 12 Months divided by Estimated Average Number of Distracted Drivers per Crash (1.1) times Portion of Full Year Covered in Pilot Study (5/12). Estimated Average Number of Distracted Drivers per Crash was estimated prior to the pilot study. The observed average from the pilot study was 1.02.

NOTIFICATION OF PILOT PROJECT

The seven division commanders of the state police and the police chiefs of the selected independent cities and counties were notified of the pilot distracted driver survey by fax on June 11, 2002. The fax sent contained a letter from DMV explaining the purpose and procedures for the study. An example survey instrument was also sent at this time. Each police department was informed that all troopers and officers should complete the distracted driver survey (supplemental form No. 5-02/FR-300P) for all crashes where one or more of the drivers were identified as inattentive and/or distracted. Also on June 11, 2002 survey materials and the signed cover letter from DMV were mailed to each selected location. The cover letter from DMV may be found in Appendix D and the notification fax may be found in Appendix E.

On June 28, 2002 a follow-up fax was sent to all participating locations answering questions that had been received by SERL. It was communicated at this time that troopers/officers should only complete the form if the crash was reportable AND at least one driver was inattentive and/or distracted. Indicating only the MAIN distraction of the crash was also emphasized. A copy of the follow-up fax may be found in Appendix F.

At the end of the data collection period a third fax was sent to all participating locations reminding them that the final date for data collection was November 30, 2002. This fax may be found in Appendix G.

DATA ENTRY AND VERIFICATION

Each locality was instructed to send completed distracted driver surveys to DMV. SERL picked up completed distracted driver surveys weekly from the Richmond DMV office. The numbers of surveys were verified by an SERL and DMV employee. Surveys were entered at SERL into a Microsoft Access-97 database. Upon completion of data entry, 10% of the surveys were randomly selected and verified. Mistakes found in the verification process were corrected. The accuracy rate for data entry on this study is 99.962%.

SURVEY INSTRUMENT CONTENT

The survey instrument was designed in collaboration with the Transportation and Safety Training Center, Department of Motor Vehicles, and the Survey and Evaluation Research Laboratory. The survey instrument (supplemental form No. 5-02/FR-300P) was to be completed at traffic crashes that involve driver inattention (a code #23 in either block 17 or 18 on the FR-300P). Troopers and officers were to complete questions regarding the location of the crash, how many drivers were involved in the crash, and to list the MAIN driver distraction. The survey instrument may be found in Appendix C.

RESULTS

NUMBER OF FORMS RECEIVED

SERL received 2,869 distracted driver surveys from DMV. SERL also received eight distracted driver surveys in the mail. Of the 2,877 forms received six were not included in data-entry because the survey was a duplicate of a previously entered survey and one survey was not included in data-entry because it involved a non-reportable crash, therefore, a total of 2,870 forms were entered. After data-entry an additional 78 surveys were excluded from the final analysis because the survey indicated that there were no distracted drivers. Of the 78 excluded surveys, there were 18 instances of the trooper or officer indicating that there were no distracted drivers, but, the trooper or officer marked a specific distraction. Because we are unable to determine the true intent of the survey these surveys were excluded from the data analysis. Therefore, the final number of surveys included in the analysis is 2,792.

Table 2: Number of Forms

	Number of Surveys	Cumulative Total of Surveys
Surveys from DMV	2,869	2,869
Surveys from mail	8	2,877
Duplicates	6	2,871
Non-reportable	1	2,870
No distracted drivers reported on returned survey	60	2,810
No distracted drivers reported on return survey but trooper/officer checked a distraction	18	2,792

REPRESENTATIVENESS OF THE DATA

Not all jurisdictions or agencies that were asked to participate could participate with the same level of effort. In one case, the agency was engaged in a separate data collection initiative when the distracted driver pilot began, and that agency preferred to wait until the local data collection effort was concluded before taking on the distracted driver request. In another case, the agency appeared to lose track of the request after it was initiated, but re-dedicated resources to it near the end of the pilot period, so that the agency contributed data early and late in the period, but not in the middle of the period.

As noted in the section describing the sampling plan (above), SERL had statistics for year 2000 crashes by locality. The number of data forms that SERL received could be compared to the expected number of forms based on the year 2000 statistics, assuming complete reporting of crashes involving distracted driving.

Please note that incomplete reporting might not represent any lack of diligence or understanding on the part of troopers and officers in the field. Differences between the expected number of

forms and the actual number of forms could be due to delays in communicating about the project or distributing forms, time taken to incorporate the new procedure into standard field practices, decisions made locally about how much time or how many people could be allocated to the pilot project, or errors in the assumptions that SERL applied to the year 2000 crash data to derive the expectations. SERL is very grateful and appreciative for all the effort that was given across the commonwealth to respond to this request.

In general, the state police agencies reported about 60% of the expected number of crashes, while local agencies reported about 13% of the expected number in aggregate. Some local agencies reported 50%-100% of the expected number, while others reported 10% or fewer. Thus, the raw data reported here overrepresent crashes that would be reported by state police. These crashes would probably tend to be more rural than urban, and more likely to be on interstate highways than surface roads.

An investigation of a weighting scheme to correct for these imbalances showed, however, that the substantive findings regarding mean numbers of drivers per crash, whether driver fatigue was reported on the FR-300P, and types of distractions were not substantially different before and after the adjustment. Obviously, the weighting scheme does create substantial differences in the distribution of crashes by type of reporting agency, urban/rural, and county/city locations because those variables are so closely related to the jurisdiction variable on which the weighting scheme is based.

Because the distributions of the substantive variables regarding types of distractions are very similar across the state police and local agency reports, and the state police reported on about 60% of the crashes we might expect, and SERL received about 29% of the expected number of forms if 100% reporting had occurred, it seems defensible to conclude that the forms that SERL received are representative of the overall sample on the variables regarding type of distraction and counts of drivers. To the extent that the sample is representative of the state as a whole, the results are also representative of all crashes in the state.

For this section, the unweighted results are reported. The information on type of reporting agency, urban/rural, and county/city locations should **not** be taken to be representative of the sample or statewide data. It appears that the information on mean numbers of drivers per crash, whether driver fatigue was reported on the FR-300P, and types of distractions **is** representative of the sample and the statewide data. For a detailed look at weighted and unweighted results, please see Appendix A.

LOCATION OF CRASHES

All localities that were selected to participate in the pilot project did participate in the study with varying levels of success. Implementation problems described previously may have contributed to the low number of urban crashes (37%) because the locations of the agencies reporting implementation difficulties were urban. To examine various types of distractions by urban and rural crash sites please see Appendix B.

Table 3: Site Where Crash Occurred

		Frequency	%	Valid %	Cumulative %
Valid	Urban	1028	36.8	37.2	37.2
	Rural	1732	62.0	62.8	100.0
	Total	2760	98.9	100.0	
Missing	No Response	32	1.1		
Total		2792	100.0		

Unweighted data

State troopers submitted 75% of the surveys, city or county police departments submitted 24% of the surveys, and on 1% of the surveys it was not indicated who conducted the investigation. The state police divisions reported on crashes in all Virginia counties except Alleghany County, Cumberland County, and Lunenburg County. See Table 4 for the number of crashes reported by each state police division.

Table 4: Number of Crashes Reported by State Police Divisions

	Frequency	%	Valid %	Cumulative %
Division I	256	12.2	12.2	12.2
Division II	327	15.5	15.5	27.7
Division III	260	12.3	12.4	40.1
Division IV	339	16.1	16.1	56.2
Division V	358	17.0	17.0	73.2
Division VI	404	19.2	19.2	92.4
Division VII	159	7.5	7.6	100.0
Total	2103	99.9	100.0	
No Response	3	.1		
Total	2106	100.0		

Unweighted data

In Table 5 the number of distracted driver surveys received for every independent city and county is listed by who investigated the crash scene. Independent cities and counties that are highlighted in gray depict localities that were requested to participate in the pilot project.

Table 5: Location of Crash by Investigation Unit

	Crash investigated by			Total
	State Police	City/County	Not Indicated	
Unknown Location	3	1		4
Accomack	35			35
Albemarle	6	33		39
Alexandria City	3			3
Amelia	1			1
Amherst	10			10
Appomattox	19			19
Arlington	1			1
Augusta	88		2	90
Bath	5			5
Bedford	34		1	35
Bland	23			23
Botetourt	38			38
Bristol City	4	14	1	19
Brunswick	14		1	15
Buchanan	26			26
Buckingham	3			3
Campbell	28			28
Caroline	40		1	41
Carroll	38			38
Charles City	5			5
Charlotte	12			12
Chesapeake City	6			6
Chesterfield	9	59		68
Clarke	6			6
Colonial Heights City	2	7		9
Craig	10			10
Culpeper	30		1	31
Dickenson	13			13
Dinwiddie	35			35
Essex	7			7
Fairfax	71	143	5	219
Fairfax City		2		2
Falls Church City		1		1
Fauquier	26			26
Floyd	7			7
Fluvanna	5			5
Franklin	49		1	50
Frederick	9			9
Giles	8			8
Gloucester	25			25
Goochland	8			8

Grayson	18			18
Greene	6			6
Greensville	17			17
Halifax	27			27
Hampton City	24			24
Hanover	17			17
Harrisonburg City	1	9		10
Henrico	15			15
Henry	93			93
Highland	1			1
Isle of Wight	29			29
James City	38			38
King George	19			19
King William	3			3
King and Queen	3			3
Lancaster	3			3
Lee	10			10
Loudoun	3			3
Louisa	16			16
Lynchburg City	8	58	1	67
Madison	4			4
Manassas City		14		14
Martinsville City		20		20
Mathews	4			4
Mecklenburg	23			23
Middlesex	7			7
Montgomery	27			27
Nelson	10			10
New Kent	34			34
Newport News City	15	44		59
Norfolk City	22	32		54
Northampton	13			13
Northumberland	4			4
Nottoway	9			9
Orange	14			14
Page	16			16
Patrick	7			7
Petersburg City	6			6
Pittsylvania	66			66
Portsmouth City	1	6		7
Powhatan	6			6
Prince Edward	15			15
Prince George	2			2
Prince William	81			81
Pulaski	10			10
Radford City	1			1

Rappahannock	3			3
Richmond	3			3
Richmond City	2	30		32
Roanoke	15	57		72
Roanoke City	9	64	2	75
Rockbridge	42		1	43
Rockingham	24			24
Russell	21			21
Salem City	1	33		34
Scott	19			19
Shenandoah	50			50
Smyth	33			33
Southampton	29		1	30
Spotsylvania	59			59
Stafford	73			73
Surry	4			4
Sussex	18			18
Tazewell	20			20
Virginia Beach City	9	40	1	50
Warren	12			12
Washington	61			61
Westmoreland	7			7
Wise	17			17
Wythe	17			17
York	48			48
Total	2106	667	18	2792

*Gray shading indicates independent city/county that was requested to participate in pilot study.

NUMBER OF DRIVERS INVOLVED IN CRASHES

Of the 2,792 surveys processed, half of the distracted driver crashes involved a single driver, 42% involved two drivers, and 8% involved three or more drivers (see Table 6). On the surveys processed, a total of 4,494 drivers were involved in a distracted driver crash.

Table 6: Total Drivers Involved in Crash

		Frequency	%	Valid %	Cumulative %
Number of Drivers in Crash	1	1378	49.4	49.4	49.4
	2	1163	41.7	41.7	91.1
	3	210	7.5	7.5	98.6
	4	32	1.1	1.1	99.8
	5	4	.1	.1	99.9
	6	2	.1	.1	100.0
	Total	2789	99.9	100.0	
Missing	No Response	3	.1		
Total		2792	100.0		

Unweighted data

Almost all (98%) of the distracted driver crashes involved a single distracted driver and there were no crashes involving more than two distracted drivers (see Table 7). Of the 2,792 distracted driver crashes at least 2,822 drivers were distracted. (Note: a precise number of distracted drivers can not be determined because for 15 crash scenes the number of distracted drivers was not indicated).

Table 7: Total Distracted Drivers in Crash

		Frequency	%	Valid %	Cumulative %
Number of Distracted Drivers in crash	1	2732	97.9	98.4	98.4
	2	45	1.6	1.6	100.0
	Total	2777	99.5	100.0	
Missing	No Response	15	.5		
Total		2792	100.0		

Unweighted data

SPECIFIC DISTRACTIONS

The survey instrument requested that officers and troopers mark only the MAIN distraction for each distracted driver, therefore, the total number of distractions should equal the total number of distracted drivers (2,822). However, for 85 crashes the trooper or officer indicated more than one distraction per driver. For 13 crashes the trooper or officer indicated that there were two or more distracted drivers, but listed only one driver distraction. For 23 crashes the trooper or officer did not indicate what distracted the driver. For 15 crashes the trooper or officer did not indicate how many distracted drivers were involved in the crash, but did indicate at least one distraction on the form. For these reasons, the total number of distractions does not equal the total number of distracted drivers (see Table 8).

Table 8: Reasons Total Number of Distractions Does Not Equal Total Number of Distracted Drivers

	Frequency	%	Cumulative %
Form completed as instructed	2656	95.1	95.1
Did not list MAIN distraction	85	3.0	98.2
Multiple distracted drivers but only one driver distraction marked	13	.5	98.6
Officer did not indicate what distracted the driver	23	.8	100.0
Unable to determine because missing number of distracted drivers in crash	15	.5	99.2
Total	2792	100.0	

Troopers and officers wrote in over 1,400 responses for distractions not listed on the survey instrument. All open-ended responses were originally coded by one individual. After the individual coded the responses into categories, two other individuals verified that the responses within each category were coded correctly. If discrepancies existed in the classifications, a group decision was made on how to correctly classify the open-ended response. The open-ended responses may be found in Appendix H.

Approximately 250 of the open-ended responses were coded into existing categories. The most common open-ended phrases that were coded into an existing category included “looking at other vehicle” which was coded into “looking at crash, other roadside incident, or traffic,” and “insect in car” or “animal in road” which were coded into “Insect, animal or object entering/striking vehicle.” “Unknown” was written by 66 troopers or officers, thus an “unknown” category was created.

A quarter of the distractions were coded into “other distractions inside the vehicle.” Driver fatigue or a driver who was apparently asleep accounted for 65% of the other distractions inside the vehicle and 17% of the overall distractions. The second most common distraction overall was a driver looking at other crashes, roadside incidents, traffic, or other vehicles (13%). The use of cell phones accounted for 115 distractions (4%).

Table 9: Distractions

	Number	%
INSIDE THE VEHICLE		
Eating or Drinking	123	4.2
Smoking or Smoking Related	61	2.1
Grooming	12	0.4
Passenger/children distraction	253	8.7
Unrestrained pet	17	0.6
Other distraction inside the vehicle (see Table 10)	768	26.3
USING/LOOKING AT/REACHING FOR		
Adjusting radio/changing CD or tape	191	6.5
Adjusting vehicle controls (mirrors, heater/ac, sun visor, etc.)	106	3.6
Cell phone (ringing, dialing, talking, etc.)	115	3.9
Document, book, map, directions, newspaper	54	1.8
Pager	4	0.1
Technology device	10	0.3
Other personal items (see Table 11)	86	2.9
OUTSIDE THE VEHICLE		
Insect, animal or object entering/striking vehicle (insect in vehicle, animal in roadway)	67	2.3
Looking at crash, other roadside incident, or traffic (looking at other vehicle)	383	13.1
Looking at scenery or landmarks	287	9.8
Other distraction outside the vehicle (see Table 12)	292	10.0
UNKNOWN DISTRACTION		
Officer wrote "Unknown Distraction"	67	2.3
Officer did not indicate a distraction	23	0.8
Total	2,919	99.7

Percentages do not sum to 100.0 due to rounding. Unweighted data.

Responses for distractions “inside the vehicle” include driver fatigue or a driver who was apparently asleep, alcohol, not paying attention or daydreaming, medical or emotional impairment, and an “other” category. Medical and/or emotional impairment includes responses such as “driver went into labor,” “driver passed out,” “item in driver’s eye” and “driver emotionally upset.” “Other” distractions inside the car include a wide range of actions including praying, writing, and doing the mail.

Table 10: Other Distractions Inside The Vehicle

Distraction	N	% of other distractions	% of all distractions
Driver fatigue/asleep	495	64.45	16.96
Alcohol	63	8.20	2.16
Alcohol and Fatigue/Asleep	10	1.30	0.34
Not paying attention/Day dreaming	125	16.28	4.28
Medical/Emotional Impairment	50	6.51	1.71
Other	25	3.26	0.86
Total	768	100	26.32

Unweighted data

Responses for “Using/Looking At/Reaching For” were coded into purse/wallet/money, reaching for an item in the glove compartment, reaching for an unknown or unspecified item, reaching for some other specified item, or an item fell and distracted the driver. In the category reaching for some other specified item, no item was frequently mentioned. Items included pens, laundry, oil, glasses, and meat.

Table 11: Using/Looking At/Reaching For Other Personal Item

Distraction	N	% of other distractions	% of all distractions
Purse/Wallet/Money	24	27.91	0.82
Reaching in Glove Compartment	3	3.49	0.10
Reaching for Unknown Item	12	13.95	0.41
Something Fell	8	9.3	0.27
Reaching for Other Item	39	45.35	1.34
Total	86	100	2.95

Unweighted data

Open-ended responses for “outside the vehicle” were coded into looking at other people, eyes not on road, objects in road, weather conditions, looking at signs, driver error, mechanical problem, lost driver, and some other distraction outside the vehicle. The category “looking at other people” includes looking at other drivers, looking at pedestrians, and looking at work crews. The eyes not on road category includes looking in the driver’s blind spot, not seeing other vehicles, looking down, or looking away from the road. Weather conditions include

inclement weather such as heavy rain, the glare from the sun, and fog on the windows. Looking at signs includes road signs and traffic lights. Driver error includes misjudgments by the driver or driver inexperience. This category includes responses such as “lost control of vehicle,” “foot slipped” and “ran off road.” Other distractions outside the vehicle include “bridge lift in progress,” “dust being made by their vehicle,” “fireworks” and “yard sale.”

Table 12: Other Distractions Outside The Vehicle

Distraction	N	% of other distractions	% of all distractions
Looking at other people	29	9.93	0.99
Eyes not on road	101	34.59	3.46
Objects in road	7	2.40	0.24
Weather Conditions	56	19.18	1.92
Looking at signs	25	8.56	0.86
Driver error (misjudgment/inexperience)	40	13.70	1.37
Automobile Mechanical Problem	7	2.40	0.24
Lost/Unfamiliar with roads	9	3.08	0.31
Other	18	6.16	0.62
Total	292	100	10.01

Unweighted data

On the survey instrument, troopers and officers were asked if driver fatigue was checked on the FR-300P (question seven). For this item, 393 troopers and officers indicated that driver fatigue was checked on the FR-300P, however, 505 troopers and officers indicated that the driver distraction was driver fatigue or an apparently asleep driver. We believe this demonstrates the distinction that troopers and officers make between a fatigued driver and an apparently sleeping driver. The FR-300P may also have a separate item for sleeping driver.

Of the 85 crash scenes where multiple distractions were indicated instead of a main distraction, driver fatigue or a sleeping driver was one of the contributing distractions for 33 crashes (39%). Driver fatigue or a sleeping driver were also involved in 10 crash scenes where alcohol was listed as a distraction. Of the 2,792 crash scenes, driver fatigue or a sleeping driver was the MAIN and ONLY distraction in 457 crashes (16%).

RECOMMENDATIONS

Collect information at the driver level rather than the crash level. The original survey form required the troopers and officers to indicate the number of drivers experiencing particular distractions. Therefore, the numbers of drivers indicated on the form needed to sum to the total number of distracted drivers in the crash. In about 5% of the forms, there was a discrepancy between the total number of distracted drivers in the crash and the sum of the number of drivers in each distraction (see Table 8). In a small number of these cases, it appeared that troopers and officers may have been writing down the vehicle number involved in the crash (as they do when diagramming the accident report) instead of the number of drivers distracted by each distraction. For example, the trooper or officer may have indicated that there was only one distracted driver but on the line listing the specific distraction the numeral “2” was written in. Because almost 50% of the crashes involved a single driver, 98% of the crashes involved a single distracted driver, and no crash in the pilot test involved more than two distracted drivers, it would be beneficial to modify the distracted driver survey so that one form is completed for every distracted driver instead of one crash scene. An alternate approach might modify the existing form so that it could collect information on two or three drivers in separate columns of check boxes on the same form. With this modification the directions for completing the form can be simplified because only check marks would be needed instead of numerals that add to a specified total.

Revise the categories for coding types of distractions based on the pilot project data. The original survey instrument should be modified to incorporate the open-ended responses into pre-existing categories. Approximately 40% of all the distractions had to be coded into new categories from the original open-ended responses. The most common open-ended responses that should be considered in a revised form are driver fatigue or sleeping driver, not paying attention/day dreaming, medical problem, looking at other people, eyes not on road, and weather conditions. Note that the pilot form asked if “driver fatigue” had been checked on the FR-300P (but this may not have covered “driver asleep,” which is apparently a separate category on the FR-300P). It also appears that some categories could be eliminated from the form because they were checked very few times. The categories that should be considered for elimination are personal grooming, unrestrained pet, and using a pager.

Re-word existing categories more broadly to reduce the number of write-in responses. It may also be helpful to reword the existing categories into more general categories. It appeared that if the distraction did not fit directly into one of the specific categories the trooper or officer wrote in a response for other distractions. For example, instead of marking the category “looking at crash, other roadside incident, or traffic” many troopers and officers wrote in “looking at other vehicle.” We do not know whether troopers and officers made a clear distinction between “traffic” and “vehicle,” or there were too many descriptors in the closed category, but re-wording the closed category could reduce the number of write-in responses. (The write-in responses of “looking at other vehicle” were recoded into the closed category of “looking at crash, other roadside incident, or traffic” in the data processing for this report.)

Reconsider the major groupings of distractions. The headings Inside and Outside the Vehicle and Using/Looking at/Reaching For should be reconsidered. The distraction “insect, animal, or object entering/striking the vehicle” listed under Outside the Vehicle technically does not include insects inside the vehicle or swerving to try and miss animals on the roadway but not actually striking the animals. Similarly, the category “adjusting radio/changing CD or tape” does not explicitly address being distracted by listening to radio, tape or CD content. In addition, there were several forms on which troopers and officers indicated “other distraction – cell phone” under “Inside the Vehicle,” then wrote in a number of drivers being distracted by a cell phone under “Using/Looking At/Reaching For.” This seemed to indicate that the order and/or grouping in which the distractions were presented may have hindered the troopers and officers in a few cases. For the pilot study, open-ended responses similar to the ones listed above were coded into the corresponding closed categories.

The second heading is “Using/Looking At/Reaching For,” but under the first two items the word “adjusting” also appears. This may have caused individuals to believe “Using/Looking At/Reaching For” did not apply to the first two items. Adding the word “adjusting” to the heading may be helpful and changing the category to “radio/tape or CD player” and “vehicle controls, gauges, instruments, and/or mirrors” should help troopers and officers to avoid writing in responses when they are not needed.

Consider reviewing the definition of driver inattention. What is driver inattention and/or distraction? Based on the variety of responses it appears that troopers and officers have a very broad definition of what constitutes driver inattention and/or distraction. One could argue that some of the surveys received may not be considered driver inattention and/or distraction such as the crashes involving alcohol or driver errors. It appears driver inattention and/or distraction can be a catch-all category for crashes. Some examples of this catch-all category include “just ran off road,” “driver stopped in roadway improperly,” “too close to the edge of roadway” and “could not get cruise control off.” Also, the question of whether driver fatigue and sleeping drivers constitute distracted driving may bear attention.

Obtain feedback about the pilot study from troopers and officers. It would be very beneficial to hold focus groups with the various participating localities to find out why some localities were more successful than others in implementing the study and to ask troopers and officers what was confusing about the form, how difficult it was to complete the form, and solicit ideas for other distraction categories.

Further develop information and training for the new form. Finally, although this may be an obvious point, if a new form on driver distractions is introduced, the process should include significant attention to training, close monitoring of data quality for the first several months, and frequent follow-up contact with the designated contact people at law enforcement agencies. Any significant modifications to the pilot form described in this report would require a new – though probably much smaller – pre-test or pilot phase before implementing the new form across the state.

Appendix A

Representativeness of the Data and Weighting the Data

Not all jurisdictions or agencies that were asked to participate could participate with the same level of effort. SERL had statistics for year 2000 crashes by locality. The number of data forms that SERL received could be compared to the expected number of forms based on the year 2000 statistics, assuming complete reporting of crashes involving distracted driving.

Please note that incomplete reporting might not represent any lack of diligence or understanding on the part of troopers and officers in the field. Differences between the expected number of forms and the actual number of forms could be due to delays in communicating about the project or distributing forms, time taken to incorporate the new procedure into standard field practices, decisions made locally about how much time or how many people could be allocated to the pilot project, or errors in the assumptions that SERL applied to the year 2000 crash data to derive the expectations. SERL is very grateful and appreciative for all the effort that was given across the commonwealth to respond to this request.

A weighting scheme can be used to compensate for the difference between the expected and actual numbers of forms by jurisdiction. Basically, the number of expected forms for each jurisdiction can be divided by the actual number of forms, and the result is the weight for all forms in that jurisdiction. Assuming that the “missing” forms do not differ substantially on variables not directly related to the weighting variables, the weighted data should look like the data that would have been obtained from the expected number of forms.

Table 13 (below) shows for each jurisdiction the number of crashes involving distracted driving in year 2000, the expected number of forms we would receive, the actual number of forms received, and the weight for each jurisdiction.

Due to some missing data, the total weighted number of forms is slightly different from the target number. While this weighting approach is somewhat crude and does not address extreme weighting values, it seems to show that the substantive findings regarding mean numbers of drivers per crash, whether driver fatigue was reported on the FR-300P, and types of distractions were not substantially different before and after the adjustment. Obviously, the weighting scheme does create substantial differences in the distribution of crashes by type of reporting agency, urban/rural, and county/city locations because those variables are so closely related to the jurisdiction variable on which the weighting scheme is based.

Table 13: Expected Number of Crashes With Distracted Drivers and Weighting Data

Agency (FIPS code)	State Police Division	Distracted Drivers (12 months)	Expected # of Forms to Receive	Actual # received	Weight
State Police Div. I	I	1,274	520	256	2.07357
State Police Div. II	II	1,695	692	327	2.15979
State Police Div. III	III	1,251	511	260	2.00481
State Police Div. IV	IV	1,300	531	339	1.59784
State Police Div. V	V	1,742	712	358	2.02747
State Police Div. VI	VI	1,568	641	404	1.61716
State Police Div. VII	VII	1,262	516	159	3.30713
Subtotal for State Police	--	10,092	4,123	2,103	1.99952
Manassas City (683)	VII	241	98	14	7.17262
Falls Church City (610)	VII	94	38	1	39.16667
Virginia Beach City (810)	V	1,090	445	40	11.35417
Newport News City (700)	V	1,083	442	44	10.25568
Norfolk City (710)	V	769	314	32	10.01302
Portsmouth City (740)	V	376	154	6	26.11111
Richmond City (760)	I	649	265	30	9.01389
Colonial Heights City (570)	I	66	27	7	3.92857
Fairfax County (059)	VII	4,670	1,908	143	13.60723
Roanoke City (770)	VI	821	335	73	4.68607
Martinsville City (690)	VI	178	73	20	3.70833
Salem City (775)	VI	161	66	33	2.03283
Bristol City (520)	IV	92	38	14	2.73810
Lynchburg City (680)	III	498	203	58	3.57759
Harrisonburg City (660)	II	183	75	9	8.47222
Roanoke County (161)	VI	310	127	57	2.26608
Albemarle County (003)	III	61	25	33	0.77020
Chesterfield	I	893	338	59	6.30650
Sub-total: all non-SP		12,235	4,971	673	7.57491
TOTAL		22,327	9,094	2,776	3.35119

Expected number of forms to process = Number of Distracted Drivers Over 12 Months divided by Observed Average Number of Distracted Drivers per Crash (from the pilot data -- 1.02) times Portion of Full Year Covered in Pilot Study (5/12).

Table 14 (below) shows that the distributions of the substantive variables regarding types of distractions at the statewide level are very similar before and after weighting. Because the weighting was based on the distribution of reports by agency, this implies the distributions of the substantive variables regarding types of distractions are very similar across various types of reporting agencies. Because of this, and because the state police reported on about 60% of the crashes we might expect, and SERL received about 29% of the expected number of forms, it seems defensible to conclude that the forms that SERL received are representative at the statewide level of for variables regarding type of distraction and counts of drivers. To the extent that the sample is representative of the state as a whole, the unweighted results are also representative of all crashes in the state involving distracted drivers.

There are a few types of distractions, however, that varied by type of location. While these differences do not appear to be large at the statewide level in table 14, for more detailed analysis of how different distractions are distributed by type of location and reporting agency, it is advisable to use the weighted data in order to obtain less biased estimates. This is because state police contributed proportionally more forms than did local agencies and they were more likely to report on crashes in rural areas; the weighting adjusts for those differences. See Appendix B for further analysis of these data.

To estimate the precision of the data, we can consider the following information. The sample was selected proportionate to size (number of distracted drivers involved in crashes). Because almost all crashes that involved distracted driving had only one distracted driver, the measure of size was also a close approximation of the number of crashes that involved distracted driving. The sample design involves stratification, which introduces some departures from calculations of sampling error that would be based on an assumption of simple random sampling (SRS). But because stratification normally enhances statistical precision, and because the sampling proportion is a relatively large 29% (larger sampling proportions also enhance statistical precision), it does not seem unreasonable to use a sampling error calculation based on the simpler SRS model. In this case, this is likely to be a conservative estimate (that is, the actual sampling error is likely to be smaller if the stratification and sampling proportion were taken into account). For data on the full sample of 2,792 forms, the sampling error would be +/- 1.9% at the 95% level of confidence. That is, assuming no other sources of error, the results from this pilot project would be +/- 1.9% from the results that would have been obtained had distracted driver forms been completed for all crashes involving distracted driving.

Please note, however, that surveys are subject to errors other than sampling error. Because these errors are difficult or impossible to measure, the extent to which the survey results depart from the true population values may be unknown. Survey results should be interpreted with caution. Also note that because the pilot project ran from June through November, any seasonal variations may be unmeasured in this project.

Table 14: Comparisons of Weighted and Unweighted Data

		Wtd n	Unwtd n	Wtd %	Unwtd %
Location	City	2801	487	30.4%	17.6%
	County	6414	2279	69.6%	82.4%
Total		9215	2766	100.0%	100.0%
Site where crash occurred	Urban	5416	1028	59.2%	37.2%
	Rural	3738	1732	40.8%	62.8%
Total		9154	2760	100.0%	100.0%
Crash investigated by	State Police	4208	2106	45.4%	75.9%
	City or County Police Department	5059	667	54.6%	24.1%
Total		9267	2773	100.0%	100.0%
Was driver fatigue checked on FR-300P?	Yes	1037	393	11.6%	14.6%
	No	7932	2308	88.4%	85.4%
Total		8970	2701	100.0%	100.0%

	Wtd sum	Unwtd sum	Wtd mean	Unwtd mean
Total drivers involved in crash	16632	4494	1.792	1.611
Total distracted drivers in crash	9434	2822	1.023	1.016

Table 14 presents data at the crash level. Tables 9-12 present data at the distraction level. Data in Table 13 may vary slightly from data in Tables 9-12 when there are multiple distracted drivers or multiple drivers experiencing the same distraction in a crash. These variations do not affect the purpose of Table 14, which is to compare like variables across weighted and unweighted calculations at the statewide level.

Table 14: Comparisons of Weighted and Unweighted Data (continued)

	Number of Drivers	Wtd n	Unwtd n	Wtd %	Unwtd %
Eating or drinking	0	8919	2669	96.1%	95.6%
	1	367	123	3.9%	4.4%
Smoking or smoking related	0	9137	2732	98.4%	97.9%
	1	138	59	1.5%	2.1%
	2	10	1	.1%	.0%
Grooming	0	9238	2780	99.5%	99.6%
	1	48	12	.5%	.4%
Passenger/children distraction	0	8410	2539	90.6%	90.9%
	1	876	253	9.4%	9.1%
Unrestrained pet inside car	0	9239	2775	99.5%	99.4%
	1	46	17	.5%	.6%
Other distraction inside vehicle	0	7219	2031	77.7%	72.7%
	1	2040	754	22.0%	27.0%
	2	27	7	.3%	.3%

Table 14 presents data at the crash level. Tables 9-12 present data at the distraction level. Data in Table 13 may vary slightly from data in Tables 9-12 when there are multiple distracted drivers or multiple drivers experiencing the same distraction in a crash. These variations do not affect the purpose of Table 14, which is to compare like variables across weighted and unweighted calculations at the statewide level.

Table 14: Comparisons of Weighted and Unweighted Data (continued)

	Number of Drivers	Wtd n	Unwtd n	Wtd %	Unwtd %
Adjusting radio/changing CD or tape	0	8631	2601	92.9%	93.2%
	1	655	191	7.1%	6.8%
Adjusting vehicle controls	0	8925	2686	96.1%	96.2%
	1	360	106	3.9%	3.8%
Cell phone	0	8779	2677	94.5%	95.9%
	1	507	115	5.5%	4.1%
Document, book, map, directions, newspaper	0	9098	2738	98.0%	98.1%
	1	188	54	2.0%	1.9%
Pager	0	9263	2788	99.8%	99.9%
	1	22	4	.2%	.1%
Technology device	0	9263	2782	99.8%	99.6%
	1	22	10	.2%	.4%
Personal items not listed above	0	8980	2706	96.7%	96.9%
	1	306	86	3.3%	3.1%

Table 14 presents data at the crash level. Tables 9-12 present data at the distraction level. Data in Table 13 may vary slightly from data in Tables 9-12 when there are multiple distracted drivers or multiple drivers experiencing the same distraction in a crash. These variations do not affect the purpose of Table 14, which is to compare like variables across weighted and unweighted calculations at the statewide level.

Table 14: Comparisons of Weighted and Unweighted Data (continued)

	Number of Drivers	Wtd n	Unwtd n	Wtd %	Unwtd %
Insect, animal, or object entering/striking vehicle	0	9093	2726	97.9%	97.6%
	1	191	65	2.1%	2.3%
	2	2	1	.0%	.0%
Looking at crash, other roadside incident, or traffic	0	7734	2417	83.3%	86.6%
	1	1518	367	16.3%	13.1%
	2	33	8	.4%	.3%
Looking at scenery or landmarks	0	8317	2507	89.6%	89.8%
	1	953	283	10.3%	10.1%
	2	15	2	.2%	.1%
Other distraction outside vehicle	0	8208	2506	88.4%	89.8%
	1	1040	280	11.2%	10.0%
	2	38	6	.4%	.2%

Table 14 presents data at the crash level. Tables 9-12 present data at the distraction level. Data in Table 13 may vary slightly from data in Tables 9-12 when there are multiple distracted drivers or multiple drivers experiencing the same distraction in a crash. These variations do not affect the purpose of Table 14, which is to compare like variables across weighted and unweighted calculations at the statewide level.

Table 14: Comparisons of Weighted and Unweighted Data (continued)

		Wtd n	Unwtd n	Wtd %	Unwtd %
Unknown distraction	Officer stated unknown distraction	204	66	68.6%	74.2%
	Officer did not indicate a specific distraction	93	23	31.4%	25.8%

Table 14 presents data at the crash level. Tables 9-12 present data at the distraction level. Data in Table 13 may vary slightly from data in Tables 9-12 when there are multiple distracted drivers or multiple drivers experiencing the same distraction in a crash. These variations do not affect the purpose of Table 14, which is to compare like variables across weighted and unweighted calculations at the statewide level.

Appendix B
Additional Analysis

As discussed in Appendix A, the weighted data are best to use when analyzing crosstabulation tables of distractions by reporting agency, urban/rural, and county/city locations. An analysis was performed to determine which types of distractions varied by these three variables. Similar results were found for the three variables because they are highly correlated with each other (see Table 15 below). A test of significance was performed on the unweighted data to identify what specific distractions varied by type of location or by reporting agency. Unweighted data were used so that the proper number of cases were analyzed by the SPSS software for the test of significance. The percentages reported in Table 16 below are based on the weighted data in order to present the most accurate descriptive estimates.

Table 15: Correlation Among Location Variables

		Correlations		
		Urban/Rural	City/County	Reporting Agency
Location of crash (Urban versus Rural)	Pearson Correlation	1	.536**	-.546**
	Sig. (2-tailed)	.	.000	.000
	N	2760	2738	2742
Location of crash (City versus County)	Pearson Correlation	.536**	1	-.574**
	Sig. (2-tailed)	.000	.	.000
	N	2738	2766	2747
Reporting Agency (State Police versus County/City Police)	Pearson Correlation	-.546**	-.574**	1
	Sig. (2-tailed)	.000	.000	.
	N	2742	2747	2773

** . Correlation is significant at the 0.01 level (2-tailed).

Presented below are only the distractions that varied by location type or reporting agency at the .01 level of significance. Most interestingly, of all reported crashes that involved driver fatigue (question seven on the survey instrument), the majority occurred in rural and county locations and were reported by the state police. Crashes involving insects or animals and unrestrained pets also mainly occurred in rural and county areas and were reported by the state police. Cell phone distractions and looking at other crashes, traffic, or vehicles were more likely to occur in urban areas and be reported by the local city or county police departments.

Table 16. Distractions That Varied by Location

Distraction	Site where crash occurred		Site where crash occurred		Reporting Agency	
	Urban	Rural	City	County	State Police	City/ County Police
Was Driver Fatigue checked on FR-300P?	36%	64%	18%	82%	70%	30%
Smoking	*	*	11%	89%	70%	30%
Unrestrained Pet	20%	80%	*	*	*	*
Cell Phone	72%	28%	47%	53%	27%	73%
Insect, animal, or object entering or striking vehicle	41%	59%	20%	80%	58%	42%
Looking at crash, traffic, or other vehicle	79%	21%	30%	70%	34%	66%

*Distraction was not significant at the .01 level using unweighted data for the significance test. Weighted data are shown in Table 16.

Appendix C
Survey Instrument

Distracted Driver Survey

Supplemental Form No. 5-02/FR-300P

In each traffic crash that involves **Driver Inattention** (Code #23 in either Block 17 or 18 of the FR-300P), **please indicate the NUMBER of drivers that were distracted by each specific distraction.** Note that if any driver had more than one distraction please indicate only the **MAIN** distraction. Therefore, the total of the **NUMBERS** entered on the lines should equal the total number of distracted drivers.

1. **Date of Crash:** _____

2. **County/Independent City where crash occurred:**

City County

(Name of Independent City/County)

3. **Site where crash occurred:** Urban Rural

4. **Total drivers involved in crash:** _____

5. **Total distracted drivers in crash:** _____

6. **Crash investigated by (check one):**

State Police

City/County Police Department

Sheriff's Office

Other: _____

7. **Was driver fatigue checked on FR-300P?**

Yes

No

SPECIFIC DISTRACTION

INSIDE THE VEHICLE (please write the **NUMBER** of drivers on each line)

____ Eating or drinking

____ Smoking or smoking related

____ Grooming (hair, makeup, shaving, etc.)

____ Passenger/children distraction (conversation, argument, etc.)

____ Unrestrained pet inside the car

____ Other distraction inside vehicle (specify): _____

USING/LOOKING AT/ REACHING FOR: (please write the **NUMBER** of drivers on each line)

____ Adjusting radio/changing CD or tape

____ Adjusting vehicle controls (mirrors, heater/ac, sun visor, etc.)

____ Cell phone (ringing, dialing, talking, etc.)

____ Document, book, map, directions, newspaper

____ Pager (ringing, buzzing, vibrating, looking at, etc.)

____ Technology device (electronic navigation system, on-board computer, laptop computer, etc.)

____ Personal items not listed above (purse, wallet, etc.) specify _____

OUTSIDE THE VEHICLE (please write the **NUMBER** of drivers on each line)

____ Insect, animal or object entering/striking vehicle

____ Looking at crash, other roadside incident, or traffic

____ Looking at scenery or landmarks

____ Other distraction outside vehicle (specify): _____

Please return this form with the FR-300P. If you have any questions about this form please contact Andrea Glaze at the Survey and Evaluation Research Laboratory, Virginia Commonwealth University. Phone 804-827-4220, or email aglaze@vcu.edu

This form is for statistical purposes only and is not intended to be used as evidence in court.

Appendix D
DMV Letter of Support

Dear :

The Department of Motor Vehicles has enlisted assistance from Virginia Commonwealth University's Survey and Evaluation Research Laboratory in the Center for Public Policy to develop a pilot project on Distracted Driving. The project is aimed at identifying the true nature of crashes from distracted and/or inattentive driving. Several law enforcement agencies throughout the state will be participating in the program. Therefore, we are requesting your assistance in the collection of crash data for the pilot project.

The pilot project is scheduled for a six-month period beginning June 15, 2002, through November 30, 2002. During this time data will be collected using a form that has been developed specifically for capturing and identifying distracted driving behaviors. The data collected will be analyzed and the results reported to the 2003 General Assembly session.

We are requesting that your officers begin using the Supplemental Form No. 5-02/FR-300P effective June 15, 2002. The supplemental form is to be completed for all crashes where one or more drivers were identified as inattentive and/or distracted. The officers will need to indicate how many drivers involved in the crash were distracted, and what specific driving behavior, as listed on the form, caused the distraction. The supplemental form should be submitted with the accident report.

Please distribute the enclosed supplemental forms to your officers for use between June 15, 2002 through November 30, 2002. Any questions regarding the supplemental form may be directed to Andrea Glaze at the Survey and Evaluation Research Laboratory at 804-827-4220.

Sincerely,

Vince M. Burgess
Assistant Commissioner

VMB:dts

Appendix E
Notification Fax

**Virginia Commonwealth University
Survey and Evaluation
Research Laboratory**

Fax

To: _____ **From:** Andrea Glaze
Fax: _____ **Pages:** 3
Phone: _____ **Date:** 3/27/03
Re: Distracted/Inattentive Driver Study **CC:** _____

I am writing to inform you of an upcoming project in which we are requesting your assistance in conducting. The Department of Motor Vehicles has contracted with Virginia Commonwealth University's Survey and Evaluation Research Laboratory to study crashes that involve driver distraction or inattention. We are requesting your assistance with the collection of data by completing a short supplemental form at crash scenes that involve distracted drivers. This study will begin June 15, 2002 and will end on November 30, 2002.

Please find attached a copy of a cover letter that explains the project in more detail and an example of the supplemental form. The original cover letter and supplemental forms for your officers are being mailed to you. These should be received by the end of the week.

If you have any questions regarding the study or supplemental form please contact me at the Survey and Evaluation Research Laboratory at 804-827-4220.

Thank you for your time and assistance with this project.

Sincerely,

Andrea Glaze
Project Manager

Appendix F
Follow-Up Fax

**Virginia Commonwealth University
Survey and Evaluation
Research Laboratory**

Fax

To:	From: Andrea Glaze
Fax:	Pages: 3
Phone:	Date: 6/28/02
Re: Distracted/Inattentive Driver Study	CC:

Thank you so much for your help in implementing this project. To date I have received almost 100 surveys in my office. I wanted to take this opportunity to address a few questions that I have received from troopers and officers around the state. I would greatly appreciate it if you could pass this information along to your troopers or officers.

- ◆ Please complete and return the survey for **only reportable accidents** where at least one driver was inattentive or distracted.
- ◆ If a driver was distracted by more than one distraction please **indicate only the main distraction** that caused the crash.
- ◆ If the crash occurred in a suburban location please write suburban next to item 3.
- ◆ Please return the surveys in the same manner that the FR-300P is returned to the DMV. The survey does not need to be attached to the FR-300P and the accident number does not have to be written on the survey.

If you have any questions that I have not addressed please call me at 804-827-4220 or you may e-mail me at aglaze@vcu.edu. Thanks again for your help in conducting this study!

Sincerely,

Andrea Glaze
Project Manager

Appendix G
End of Data Collection FAX

**Virginia Commonwealth University
Survey and Evaluation
Research Laboratory**

Fax

To: Captain Lenmuel S. Terry **From:** Andrea Glaze
Fax: 804-371-3234 **Pages:** 1
Phone: 800-552-9965 **Date:** 3/27/03
Re: Distracted/Inattentive Driver Study **CC:**

The Distracted Driver Survey will end on November 30, 2002. Please have your troopers or officers continue to complete the supplemental form at crash scenes that involve distracted drivers. I will be collecting the surveys from the Department of Motor Vehicles through the first few weeks in December.

Thank you for your help in making this project a success. I have received about 2,500 distracted driver surveys. If you have any questions regarding the study please contact me at the Survey and Evaluation Research Laboratory at 804-827-4220.

Thank you for your time and help with this project.

Sincerely,

Andrea Glaze
Project Manager

Appendix H
Open Ended Responses by Category

Driver Fatigue or Driver Asleep

	Number of Drivers
Apparently asleep.	13
Apparently fell asleep.	1
Appears driver fell asleep.	1
Asleep at the wheel.	2
Asleep at wheel.	1
Asleep while driving.	1
Asleep.	45
Dozed.	1
Drive # 1 fell asleep.	1
Driven fatigued and overreacted when driver passed him.	1
Driver #1 very fatigued.	1
Driver apparently asleep.	3
Driver apparently fell asleep.	2
Driver apparently sleep.	1
Driver asleep at wheel.	1
Driver asleep.	12
Driver at fault was fatigued.	1
Driver dozed off.	2
Driver fatigue	6
Driver Fatigue	1
Driver fatigue.	62
Driver fatigued.	1
Driver fell asleep at the wheel.	1
Driver fell asleep behind the wheel.	1
Driver fell asleep while driving.	1
Driver fell asleep.	50
Driver Fell Asleep.	1
Driver sleepy	1
Driver stated he fell asleep.	1
Driver stated he nodded off to sleep.	1
Driver very drowsy.	1
Driver was fatigue.	1
Driver was sleepy.	1
Drowsy.	1
Falling asleep.	3
Fatigue- fell asleep at the wheel.	1
Fatigue-looking down.	1
Fatigue	21
Fatigue.	28
Fatigued (Sleepy)	1
Fatigued.	4
Fell asleep	1

Fell asleep at the wheel.	3
Fell asleep.	58
Fell to sleep.	1
He fell asleep.	1
He was asleep.	1
Lack of rest (sleep).	1
N/A Fell asleep	1
Possibly fell asleep.	1
Sleep	132
Sleep.	2
Sleeping	3
Sleeping driver.	1
Sleeping.	2
Subject fell asleep.	2
The driver was asleep.	1
Went to sleep.	2
Yawning	1
Yawning/ probably fell asleep.	1
Total	495

Alcohol

	Number of Drivers
Alcohol in driver.	1
Alcohol.	20
Alcohol; ran off road.	1
Also drinking involved.	1
Bicycling - driver had been drinking.	1
D.U.I.	1
Drinking alcohol beverage.	1
Driver does not recall what happened - too drunk to remember.	1
Driver driving under influence.	1
Driver heavily intoxicated.	1
Driver highly intoxicated.	2
Driver intoxicated.	1
Driver was inattentive due to intoxication.	1
Driving drunk.	1
Driving under influence of alcohol.	1
Driving under influence.	1
Driving under the influence.	1
Driving while intoxicated, not aware of road hazards.	1
Driving while intoxicated.	1
Drunk driver.	2
Drunk driving.	1
Drunk Driving.	1
Drunk.	1
DUI	6
DUI.	1
DWI.	1
Influence of alcohol.	1
Intoxicated	2
Intoxicated.	4
Over reacted to merging traffic due to alcohol.	1
Subject DUI didn't see warning sign nor stop sign.	1
Under influence of alcohol.	1
Unknown (inattention/DUI)	1
Total	63

Driver Not Paying Attention/Day Dreaming

	Number of Drivers
Not paying attention, had mind on friend that died.	1
"Just didn't pay attention" (senior driver)	1
Both drivers not paying attention.	2
Day dreaming	2
Day Dreaming	1
Day dreaming.	2
Daydreamer	1
Daydreaming	5
Daydreaming while listening to radio.	1
Daydreaming.	5
Daydreaming/not paying attention	1
Did not realize traffic stopped.	1
Did not realize vehicles in front were slowing down.	1
Didn't know why she struck vehicle, wasn't paying attention.	1
Driver # 1 - Not Paying Attention.	1
Driver concentrating on personal issues, not traffic.	1
Driver day dreaming.	1
Driver day dreaming/thought vehicle moved.	1
Driver daydreaming.	1
Driver does not know what happened, mind on bills not driving.	1
Driver had no idea what caused him to run off right side of road, but he wasn't paying real good attention or it would not have happened.	1
Driver inattention for both drivers.	2
Driver inattention.	3
Driver inattention: stated he didn't see that truck.	1
Driver just not pay attention.	1
Driver not paying attention.	5
Driver not paying full time attention to traffic device at the scene when accident happened.	1
Driver was elderly-not concentrating on his driving.	1
Driver was not paying attention.	1
Drivers just not paying attention to the traffic ahead of them.	2
Elderly female not paying attention.	1
Inattention to a slow moving trailer (Farm tractor) in his lane.	1
Just not paying attention.	2
Just not paying attention/looked, didn't see other vehicle.	1
Just wasn't paying attention.	2
Mind on something else.	1
Not able to specify why wasn't paying attention. Seems to have "zoned out".	1
Not attentive to road.	1
Not attentive.	2

Not aware of position of vehicle in roadway.	1
Not aware of vehicles position on roadway.	1
Not paying attention- too fast.	1
Not paying attention - no external distraction.	1
Not paying attention and rear ended other vehicle.	1
Not paying attention didn't see the vehicle.	1
Not paying attention to driving.	1
Not paying attention to roadway (daydreaming).	1
Not paying attention to roadway.	2
Not paying attention to traffic behind	1
Not paying attention to traffic.	2
Not paying attention to vehicle turning.	1
Not paying attention, just went off roadway.	1
Not paying attention, ran off road.	1
Not paying attention.	25
Not paying attention/ stepped on gas instead of break.	1
Not paying enough attention to vehicle ahead of her didn't realize it was slowed to turn.	1
Not paying proper attention to her driving.	1
Said mind was wandering.	1
Said thinking about something else.	1
Stated he was not paying attention.	1
Stated she was thinking about other things and wasn't paying attention to her driving.	1
Statement: "Just was not paying attention"	1
Steep grade in road, driver wasn't paying attention to traffic approaching.	1
Subject not paying attention, day dreaming.	1
Subject stated that she just wasn't paying attention.	1
The drivers would not state if they were distracted, but from the placement of the tire marks, it was clear that they were not paying attention.	2
Thinking about groceries she was going to buy at Krogers.	1
Thinking of problems, not focused on the road.	1
Unknown (daydreaming)	1
Unknown distraction, possibly daydreaming.	1
Was not paying attention to driving.	2
Was not paying attention to road, did not see other vehicle.	1
Was not paying attention to road. Just got to close to soft shoulder.	1
Was not paying attention to the other driver.	1
Wasn't paying attention.	1
Total	125

Driver Medical/Emotional Impairment

	Number of Drivers
Blacked out while driving.	1
Complications from prescription eye drops.	1
Coughing.	2
Crying	1
Diabetes	1
Diabetic-low blood sugar.	1
Diabetic illness.	1
Diabetic pobestion.	1
Diabetic seizure.	1
Driver Blacked Out.	1
Driver had an epileptic seizure.	1
Driver had heart attack.	1
Driver has terminal cancer and was confused.	1
Driver ill.	2
Driver in diabetic shock.	1
Driver passed out; medical condition.	1
Driver sneezed.	1
Driver stated he went unconscious, but did not know if it was before or after the accident.	1
Driver stated that he blacked out or passed out.	1
Driver suffered from coughing fit.	1
Driver suffers from epilepsy and had a seizure.	1
Driver was ill-has not taken medication.	1
Driver was ill due to pregnancy.	1
Driver was scratching eye.	1
Driver went into labor.	1
Emotionally distraught.	1
Emotionally upset.	1
Foreign item in driver's eye.	1
Having medical problem.	1
Ill (chest pains).	1
Ill, insulin deficiency.	1
Ill.	1
Illness.	1
Looked down to cough.	1
Lost lens out of glasses.	1
Medical reason unknown.	1
On medication.	1
Passed out.	1
Possible heart attack.	1
Possibly experiencing a health problem	1
Reaching for a bag to throw up in.	1

Rubbing eyes.	1
Seizure	1
Sneezing.	2
Stomach pain.	1
Stress due to her 15 year old child leaving a suicide note.	1
Subject said she got dizzy and passed out.	1
Total	50

Other Distraction Inside the Vehicle

	Number of Drivers
Attempted to close driver door of vehicle.	1
Cleaning windshield.	1
Clothes hanging in front of window.	1
Delivers Newspapers.	1
Doing the mail.	1
Driver of vehicle charged in accident stated there were no distractions.	1
Driver stated she was hot.	1
Driver was injecting himself with heroin.	1
Driver was trying to lose a narcotics dealer that was attempting to stop driver after not paying for narcotics.	1
Floor board.	1
Footwear	1
Impaired	3
Item under driver seat slid under driver's foot.	1
Just pulled from a parking lot	1
Playing with flip-flop on her foot.	1
Praying	1
Soda bottle rolling in floor board.	1
Spinning tires intentionally for a group of teenagers, seat reclined 140 degrees	1
Test driving vehicle.	1
Transmitting on police radio and making a turn.	1
Various items in front.	1
Vehicle's seat.	1
Writing.	1
Total	25

Driver Fatigue/Asleep and Alcohol

	Number of Drivers
Alcohol and asleep.	1
Asleep and intoxicated.	1
Driver was intoxicated and fatigued.	1
DUI/Sleepy.	1
Fatigue and intoxication.	1
Fatigued/Intoxicated	1
Fell asleep (alcohol related).	1
Intoxicated/sleepy driver.	1
Sleepy/DUI.	1
tired driver (DUID)	1
Total	10

Purse/Wallet/Money

	Number of Drivers
Money	5
Purse	14
Wallet	4
Wallet or Cell Phone	1
Total	24

Looking in Glove Compartment

	Number of Drivers
Looking in glove compartment	3

Reaching for Unknown Item

	Number of Drivers
Officer did not indicate item	2
Reached for item in floorboard	8
Unknown Item	2
Total	12

Reaching for Other Item

	Number of Drivers
Baby bottle	1
Back pack	1
Bag	1
Beads	1
Bottle	1
Chicken box	1
Clock	1
Clock inside vehicle	1
Cooler (ice box)	1
Deer head	1
Items in disarray	1
Laundry	1
Liquor bottle	1
Looking at items in seat	1
Lotion bottle	1
Lunch box	1
Meat	1
Military id	1
Oil	1
Package	1
Packages	1
Palm pilot or sun glass case	1
Paycheck	1
Pen	3
Pictures	1
Press parking pass	1
Saw glasses	1
Shoe	1
Sunglasses	3
Sweater	1
Tissue	2
Toolbox	1
Toy for child	1
Tuxedo	1
Total	39

Item Fell

	Number of Drivers
Bag on seat fell when driver applied brake	1
Cooler overturned from seat to floor board	1
Dropped keys and ID badge	1
Large stereo speaker fell forward in back seat area of vehicle	1

Oil can which fell on floor	1
Personal items falling from front seat	1
Something fell on floorboard	1
Tool belt fell at feet	1
Total	8

Looking at Other People

	Number of Drivers
Distracted by another driver waving him to proceed.	1
Driver was looking at another driver next to her that she thought was passing out.	1
Looking at a boy on a bicycle.	1
Looking at business where husband had stopped (looking for him).	1
Looking at child riding 4-wheeler in neighborhood field.	1
Looking at firemen at a house near crash.	1
Looking at jogger.	1
Looking at neighbors outside of vehicle.	1
Looking at people on sidewalk.	1
Looking at runners in street for foot race.	1
Looking for someone (women).	1
Mail carrier delivering mail.	1
Men working on side of the road.	1
Mind set on getting the attention of a female driver.	1
Occupants of another vehicle yelling at him.	1
Pedestrian.	1
People on sidewalk.	1
Saw a friend in other vehicle.	1
Saw friend drive by.	1
Someone called out his name.	1
Stated he saw a fight on sidewalk.	1
Talking to pedestrians.	1
Vdot work crew.	1
Watching driver in front of them not the traffic.	2
Waving at a friend in yard.	1
Waving to neighbor.	1
Waving to some friends to his immediate left.	1
Work crew on side of the road.	1
Total	29

Eyes Not on Road

	Number of Drivers
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"Nothing in particular" just looked away for a moment.	1
"Took eyes off road for one moment"	1
Blind spot.	3
Checking blind spot.	1
Checking over left shoulder for oncoming traffic.	1
Did not realize vehicle was in blind spot.	1
Did not see car stop.	1
Did not see other vehicle.	1
Did not see vehicle when changing lanes.	1
Didn't see vehicle (gray vehicle, gray road).	1
Didn't see vehicle stopped in front of him; driver inattention.	1
Driver just looks away at nothing.	1
Driver just states that she looked down and away for the road for 1 minute.	1
Driver looked down in vehicle.	1
Driver looked to the right to change lane, looked back toward the front and was too close to the car in front, jerked the wheel and overcorrected the vehicle.	1
Driver looking down for a second.	1
Driver of 1999 Lincoln 4DR did not observe the change of direction of the 1989 white ford van making a left turn.	1
Driver stated he did not look.	1
Driver thought vehicle in front was making left turn instead of right turn (Driver had right turn signal on).	1
Driver was looking for restroom.	1
Failed to look to see if way was clear a second time.	1
Failed to see vehicle in front of her.	1
Funeral procession looked down briefly.	1
Glanced off roadway.	1
Just did not see the other vehicle.	1
Just had tunnel vision.	1
Just looked away for a second.	1
Just looked down!	1
Just looked off the road a second.	1
Just looking at floor board.	1
Just looking down.	1
Just wasn't looking for other vehicle.	1
Looked away from road.	2
looked away from roadway	1
Looked away to change lanes.	1
Looked down for a second.	1
Looked down for no reason.	1
Looked down.	2
Looked over to change lanes.	1
Looked to the left.	1
Looking around at other things going on in the area.	1

Looking around.	2
Looking at cargo in bed of truck.	1
Looking at clouds.	1
Looking at demolished house.	1
Looking at floorboard area.	1
Looking at low flying aircraft from an air show at NAS Oceana.	1
Looking at other direction.	1
Looking at parking lot he was going to turn into at intersection.	1
Looking at smoke from exhaust.	1
Looking at trash in bed of truck.	1
Looking away from road.	2
Looking away.	2
Looking back	1
Looking back while changing lane.	1
Looking behind him for other vehicles.	1
Looking down at floor.	1
Looking down inside vehicle.	2
Looking down.	7
Looking in rear view mirror at a vehicle coming up on vehicle fast.	1
Looking over shoulder to make lane change attempt.	1
Looking over shoulder to merge.	1
Looking over shoulder.	2
Looking over shoulders to change lane.	1
Looking to area in which he was pulling off left shoulder.	1
Looking to the side	1
Looking wrong way.	1
No real "distraction" just neither driver looking before changing lanes.	2
Not looking at road, but at median (rumple strips).	1
Not looking at traffic	1
Not looking for vehicle while backing in roadway.	1
Not looking forward.	1
Not paying attention to hill crest. Driver started to go up a hill. saw another car crest. the hill. Driver got startled and ran off road.	1
Not watching rear-view mirror.	1
Parking space.	1
Stated that she was looking to her left and had not realize that traffic had stopped.	1
Stated was looking down towards floorboard.	1
Took eyes off road briefly.	1
Took eyes off road.	1
Took eyes off the road.	1
Took eyes off vehicle in front and looked out front side window to see if road was clear in order to merge into traffic.	1
Unknown - Stated took eyes off road.	1
Vehicle in blind spot.	1

Vehicle pulled into blindspot.	1
Watching rocks fall down embankment	1
Total	101

Object in Roadway

	Number of Drivers
Object in road.	1
Object in roadway.	2
Road debris.	1
Rolled up carpet in highway.	1
Something on roadway.	1
Swerving to avoid tire tread.	1
Total	7

Weather Conditions

	Number of Drivers
Bad weather - rain.	1
Bright sun/Failed to see brake lights.	1
Driver #1 advised glare of motorcycle caused to close his eyes.	1
Driver distracted by rain.	1
Driver stated no distraction, unable to stop, due to wet pavement.	1
Extreme rain down fall.	1
Fog-just ran off road.	1
Fog on window.	1
Fog.	2
Foggy windows and windshield.	1
Glare from oncoming vehicle's windshield.	1
Glare of sun.	1
Heavy rain.	3
Hydroplaned, roadway wet.	1
Ice on windshield.	1
Rain	3
Rain on windshield, had wipers on.	1
Rain puddle.	1
Rain.	1
Rainfall.	1
Raining heavy.	1
Raining, driver not paying to highway condition.	1
Raining, hard.	1
Raining. Not enough reaction distance.	1
Rainy conditions.	1
Road conditions were wet, not enough breaking distance.	1
Severe storm (wind/rain).	1
Sudden rainstorm, dirty windshield.	1
Sun glare.	2
Sun in eyes of driver.	1
Sun in eyes.	2
Sun.	1
Sunlight blocking / blinding operator's view.	1
Sunlight glare.	4
Sunlight.	3
Surface glare.	1
Water in road.	1
Water on roadway (raining).	1
Weather related (probably) driver left scene.	1
Weather.	3
Windows fogged over.	1
Windshield fogged.	1
Total	56

Looking at Signs

	Number of Drivers
7-11	1
Did not see sign.	1
Driver looking at traffic light instead of vehicle ahead.	1
Driver missed the street she wanted to turn on and did not look at traffic light ahead.	1
Fail to notice construction ahead signs.	1
Lane closing sign.	1
Looking at fruit stand/sign.	1
Looking at green light.	1
Looking at light (head turned) while changing lanes.	1
Looking at light not vehicle in front.	1
Looking at road signs.	2
Looking at street signs.	1
Looking at traffic light.	1
Looking at wrong exit/off ramp sign.	1
Looking for correct road to turn on.	1
Not paying attention to road sign.	1
Not reading signs.	1
Paying attention to height restriction sign on R.R. trestle.	1
Reading highway sign (directions).	1
Reading sign.	1
Traffic light.	2
Traffic signal.	1
Traffic stop.	1
Total	25

Other Distraction Outside of Vehicle

	Number of Drivers
Billboards being repaired.	1
Bridge lift in progress.	1
Building	2
Building.	1
Construction area	1
Distracted by steel surface of draw bridge.	1
Dumpster blocking clear view.	1
Dust being made by their vehicle.	1
Embankment.	1
Fireworks.	1
Heard emergency vehicle apparently.	1
Lawnmower.	1
Load on vehicle.	1
On motorcycle riding with another bike.	1
Parked vehicle exhaust (heavy smoke).	1
Road construction.	1
Yard sale.	1
Total	18

Driver Error (Misjudgment/Inexperience)

	Number of Drivers
82 year old driver, applied gas pedal, not break while turning.	1
Accelerated too quickly-lost control.	1
Adjusting pants, foot slipped off foot rest.	1
Allowed foot to slide off the brake.	1
Allowed vehicle to drive onto rumble strip.	1
Also driver on motorcycle leaned over to far causing his muffler to touch the pavement making him lose control.	1
Cut corner on turn.	1
Did not know dimension of vehicle.	1
Driver did not anticipate other vehicle towing a trailer.	1
Driver did not realize slow truck speed.	1
Driver inexperience only been driving 2 months misjudged curve.	1
Driver issued a speeding ticket, pulled off and struck guard rail.	1
Driver of vehicle not familiar with ramp speed an inexperience factors in accident.	1
Driver vehicle 3 stopped in roadway improperly.	1
Floored accelerator - losing control.	1
Foot slipped down between accelerator and console.	1
Foot slipped off brake.	1
Foot slipped off vehicles brake pedal.	1
Inexperienced driver.	1
Just ran off road right.	1
Let vehicle drive onto right shoulder, lost control, ran off road left.	1
Lost control of vehicle in driveway.	1
Misjudged distance between vehicle and building.	1
Misjudged distance in between vehicles.	1
Misjudged distance.	1
Misjudged traffic lane/shoulder.	1
N/A Driver misjudged speed of other vehicle.	1
No motorcycle experience.	1
Ran off road.	3
Said she couldn't stop on time.	1
Stated "Scared of the truck".	1
Thought other driver was going to proceed.	1
Thought vehicle in front was moving when it was in fact stopped.	1
To far on shoulder to let other vehicle by.	1
Too close to the edge of roadway.	1
Vehicle accelerated on loose material.	1
Vehicle got over too far to the right on shoulder.	1
Wet foot brake.	1
Total	40

Automobile Mechanical Problem

	Number of Drivers
Accelerator stuck attempted to fix.	1
Could not get cruise control off.	1
Driver complained that vehicle had brake failure on two occasions and was checked by dealer and nothing was found.	1
Failure to tighten wheel fasteners (lug nuts).	1
Past crash - driver advised L.R. Tire noise.	1
Thought tire was going flat.	1
Tire blowout.	1
Total	7

Lost/Unfamiliar with Road

	Number of Drivers
Driver not aware of two left turn lanes.	1
Driver not familiar with road. Did not pay enough attention to direction of the road.	1
Driver was not aware of traffic situation at time of accident.	1
Looking for address.	1
Lost	1
Unaware where she was going.	1
Unfamiliar roadway.	1
Unfamiliar with road.	2
Total	9

Unknown Distraction

	Number of Drivers
Distraction unknown.	1
Driver didn't specify distraction.	1
Driver didn't specify.	1
Driver dropped off right shoulder, reason unknown.	1
Driver gave no explanation.	2
Driver of motorcycle; driver has no memories of accident.	1
Driver stated he could not remember the distraction.	1
Driver stated he has no idea of what happened.	1
Driver stated she didn't recall what distracted her.	1
Driver unable to recall, looked up and was on the vehicle.	1
Driver was killed: unknown distraction. Driver inattention is suspected.	1
He doesn't know.	1
Looking at a mile post or asleep.	1
NA	1
No reason given.	1
Not sure driver was disoriented at the scene.	1
Officier did not specify	1
Subject unaware why he struck vehicle.	1
Unable to determine	1
Unable to determine cause.	1
Unable to specify.	1
Uncertain	1
Undetermined by driver.	1
Unknown - driver killed - possible asleep.	1
Unknown - subject unconscious - very serious condition.	1
Unknown	24
Unknown (did not remember).	1
Unknown cause.	1
Unknown distraction	1
Unknown distraction.	1
Unknown why subject loss control.	1
Unknown.	9
Unknown. Could not describe what he saw.	1
Unknown. Struck mirror of parked vehicle.	1
Witness suspect they has seen her look down before accident. Driver said she did not look down.	1
Total	67