



2017 VERMONT

SAFETY BELT USE STUDY

VERMONT AGENCY OF TRANSPORTATION
GOVERNOR'S HIGHWAY SAFETY PROGRAM



VERMONT
AGENCY OF TRANSPORTATION
Governor's Highway Safety Program





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GOVERNOR'S HIGHWAY SAFETY PROGRAM
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Background

The present report summarizes the results of the 2017 Vermont Safety Belt Use Study. Preusser Research Group, Inc. (PRG) was contracted by the Vermont Agency of Transportation for data gathering activities in conjunction with the annual “Click It or Ticket” seat belt campaign in 2017. The campaign is conducted nationally by the National Highway Traffic Safety Administration (NHTSA). The procedures used for study design followed guidelines as outlined by 23 CFR Part 1340 – Uniform Criteria for State Observational Surveys of Seat Belt Use.

Vermont first participated in a multi-state pilot of Click It or Ticket in 2002. Vermont seat belt use data from 2003 to 2008 showed great variability but a gradual increase. A steadier belt use rate was observed from 2009 to 2015 though the US rate steadily increased over that time. A sizeable drop in use appeared to occur from 2015 to 2016 in the State of Vermont.

Figure 1 Vermont Seat Belt Use Rate 2003-2016 (Weighted)

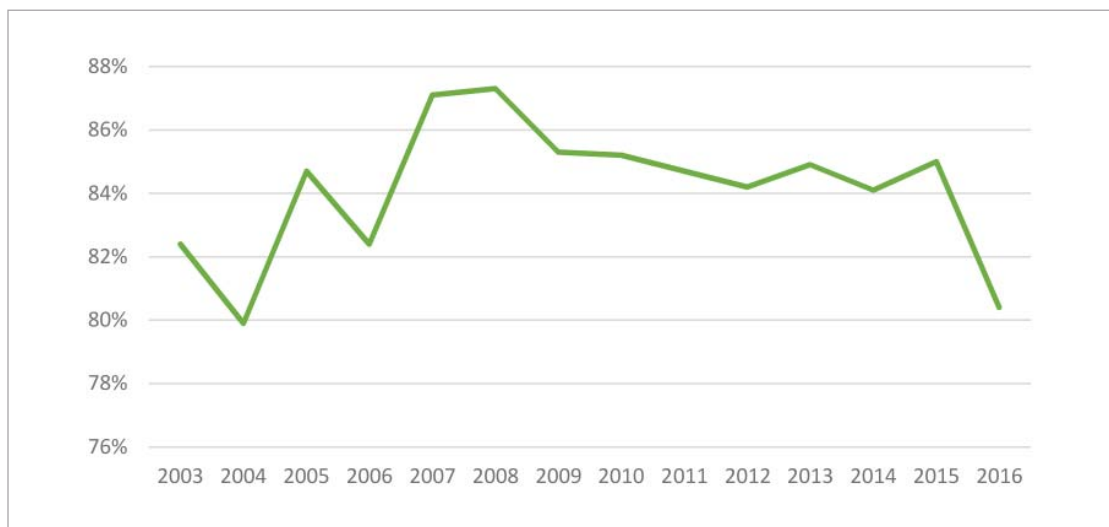
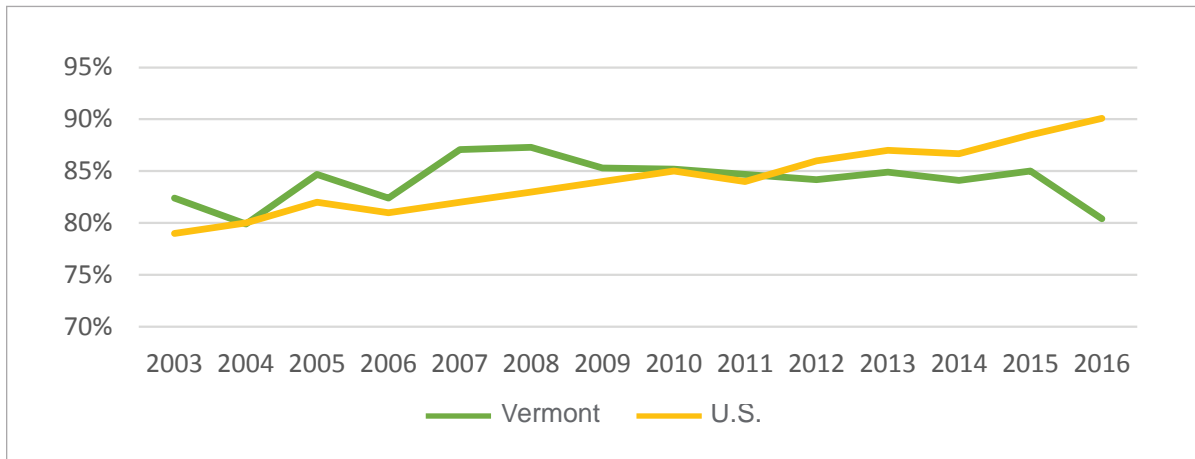


Figure 2 Vermont vs U.S. Seat Belt Use 2003-2016 (Weighted)



Several approaches are used to investigate and address belt use in Vermont. Vermont uses the data from this report to pinpoint and target areas of low use to help direct programmatic efforts. Vermont developed and funded a CIOT enforcement Task Force which is periodically deployed across the major roadways in low use areas as identified by seat belt observation results. Other valuable sources of information used to gauge seat belt programming efforts is the tracking of unrestrained fatality data including variations and patterns in unrestrained crash location, time, and days of the week. Vermont is also making plans to conduct nighttime seat belt observations to assess and address low nighttime seat belt use.

Program Description

NHTSA's high-visibility enforcement (HVE) model is a frequently used and proven technique to change driver behavior and enhance the effect of traffic laws. With this model, program funds pay for law enforcement overtime hours, so enhanced ticketing of seat belt violations can be performed. This effort is designed to increase the public's perceived likelihood of receiving a ticket and to increase perceptions of enforcement severity by police, both thought to impact law adherence. Targeted media advertising during the campaign educates the public about laws and associated fines while also publicizing increased law enforcement efforts.

Media efforts were implemented statewide in May 2017 with local earned media promotional efforts bolstered by paid national media advertising launched by NHTSA. The programs included use of the "Click It or Ticket" slogan and logo. Paid media included television, radio and online advertising as well as highway billboard signage. Seat belt observational surveys were conducted from June 2-9, 2017 immediately following the conclusion of the May National CIOT program.



Data Collection Methods

All observers are hired and trained by PRG. Three (3) PRG staff members participated in the 2017 daytime observations, each with extensive seat belt observation experience in addition to field instruction and multiple training sessions. These observers, working alone, performed all field data collection for this evaluation. Prior to any data collection, all observers went through a “refresher course” where the procedures were reviewed with all observers in a training session which included on-street practice. Training included additional procedures to follow should a site be temporarily unusable (e.g., due to bad weather or temporary traffic disruption), unusable during this survey period (e.g., due to construction), or permanently unusable. Training was conducted in the weeks leading up to the start of observations.

Daytime observations were conducted between 7:00 a.m. and 6:00 p.m. seven days a week. Each county’s observations were scheduled to be conducted in four clusters, with roughly five sites scheduled for each day. The first site to be observed was randomly selected; the subsequent sites were assigned in an order which provided balance by type of site and time of day while minimizing travel distance and time. For each site, the schedule specified time of day, day of week, roadway to observe, and direction of traffic to observe. Time of day was specified as one of five time periods, 7:00 – 9:00 a.m., 9:00 – 11:00 a.m., 11:00 a.m. – 2:00 p.m., 2:00 – 4:00 p.m., and 4:00 – 6:00 p.m., with a 45-minute observation period to take place for each individual site (within the timeframes noted above).

Observation sites were mapped in advance by the project manager. Mapping helped to identify geographic location of sites as well as the target day for observation. Advanced mapping preparation enabled observers to plan trips well ahead of time, thereby increasing efficiency in travel and labor. Each scheduled observer used GPS to reach all site locations, then referred to individual maps for instructions on where to park, stand, etc.

The same 82 sites used for 2016 seat belt observations were used for the 2017 survey. For more information on sampling methodology and sample weight calculations, see Tilton, Sullivan, Dowds & Sentoff, 2016.

Seat belt use was observed for 45 minutes at each site. All data were recorded on a paper form, noting vehicle type, as well as driver and passenger sex and seat belt use. Observers recorded belt use by marking the form appropriately for each person in each vehicle. Occupants were recorded as:

- Belted if the shoulder belt was in front of the person's shoulder
- Unbelted if the shoulder belt was not in front of the person's shoulder
- Unknown if it cannot reasonably be determined whether the driver or right front passenger was belted

All passenger vehicles (cars, pickups, vans and SUVs) with a gross vehicle weight up to 10,000 pounds were observed in the survey including small commercial vehicles. The target population was all drivers and right front seat passengers (excluding middle passengers and children harnessed in child safety seats) of vehicles traveling on public roads.

Vehicles to be observed were selected by identifying a reference point far enough down the road so that the vehicle, but not the driver, could be observed. This reference point was used to select each vehicle in turn. Only one vehicle at a time was recorded. Once the data for the target vehicle was recorded, the observer would start recording data from the next vehicle to pass the reference point. This procedure insured that the next vehicle to be observed was randomly selected from the traffic stream without prior knowledge of seat belt use. Only passenger vehicles were observed (excluding police, fire, or ambulance vehicles). Traffic direction was selected based on safest observation point and kept consistent for all observations.

Quality control monitors made random, unannounced visits to at least 5 percent of the observation sites. During these visits, the quality control monitor evaluated the observer's performance from a distance. The quality control monitor ensured that the observer arrived on time at assigned sites, stood at the designated observation location and carried out vehicle observations of seat belt use for the required time period. The quality control monitor also served as a point of contact during the data collection period to address observer questions (as needed) regarding the observation method.

Completed observation forms were sent to Preusser Research Group for data entry using Excel and/or SPSS. Data cleaning procedures performed included 10 percent entry checks to assess entry accuracy across all data entry forms completed and variable frequency counts to identify ineligible entry values or outliers. Data weights were applied and confidence interval estimations were conducted on the data using the same procedures as used in 2016. Unweighted data analyses were simple chi-square tests.



Results

Data collection was conducted June 2-9, 2017. Three observers gathered observation data with 9,089 vehicles observed and belt use collected for 11,536 occupants including 9,089 drivers and 2,447 passengers. Drivers accounted for 78.7 percent of persons observed. Vermont drivers and front outboard passengers had a combined weighted seat belt use of 84.5. The standard error rate was 1.384 percent, below the required 2.5 percent threshold required by NHTSA. The total incidence of unknown observations was less than 10% (0.2 percent) for all observations statewide, another NHTSA requirement.

Rates for 2007-2017 (all occupants, weighted) are found in Table 1 below. A considerable drop in use was observed in 2016. The 2017 use rate of 84.5 percent represents a return to a rate more consistent with those prior to 2016.

Table 1 Annual Weighted Seat Belt Use Rates 2007-2017 (% Belted)

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
87.1%	87.3%	85.3%	85.2%	84.7%	84.2%	84.9%	84.1%	85.0%	80.4%	84.5%



Belt use rates for subcategories of driver, vehicle, and road types using unweighted data are shown in Table 2. Significant differences by sex were found for both drivers and passengers. Belt use rate of female drivers were 7 percentage points higher than male drivers ($X^2(1) = 107.73$, $p < .0001$). Female passengers' use rate was almost 10 percentage points higher than male passengers ($X^2(1) = 54.06$, $p < .0001$). Among all observed occupants, belt use was 8 percentage points higher among female than male occupants ($X^2(1) = 160.59$, $p < .0001$).

Comparisons across vehicle types revealed a 15-percentage point difference between the highest and lowest belt use by drivers (SUV drivers at 93.0% and truck drivers at 77.8%, respectively). Differences in driver seat belt use across vehicle types was highly significant, $X^2(3) = 242.73$, $p < .0001$. Differences in belt use rates by passengers were also significant across vehicle type, $X^2(3) = 11.12$, $p < .05$.

Passenger belt use was significantly higher on weekends than on weekdays (91.6% and 87.6%, respectively), $X^2(1) = 10.16$, $p < .01$. There was no difference in driver use across days of the week. For all occupants, weekend use was significantly higher than weekday use, $X^2(1) = 7.99$, $p < .01$.

Table 2 2017 Statewide Unweighted Survey Results (% Belted)

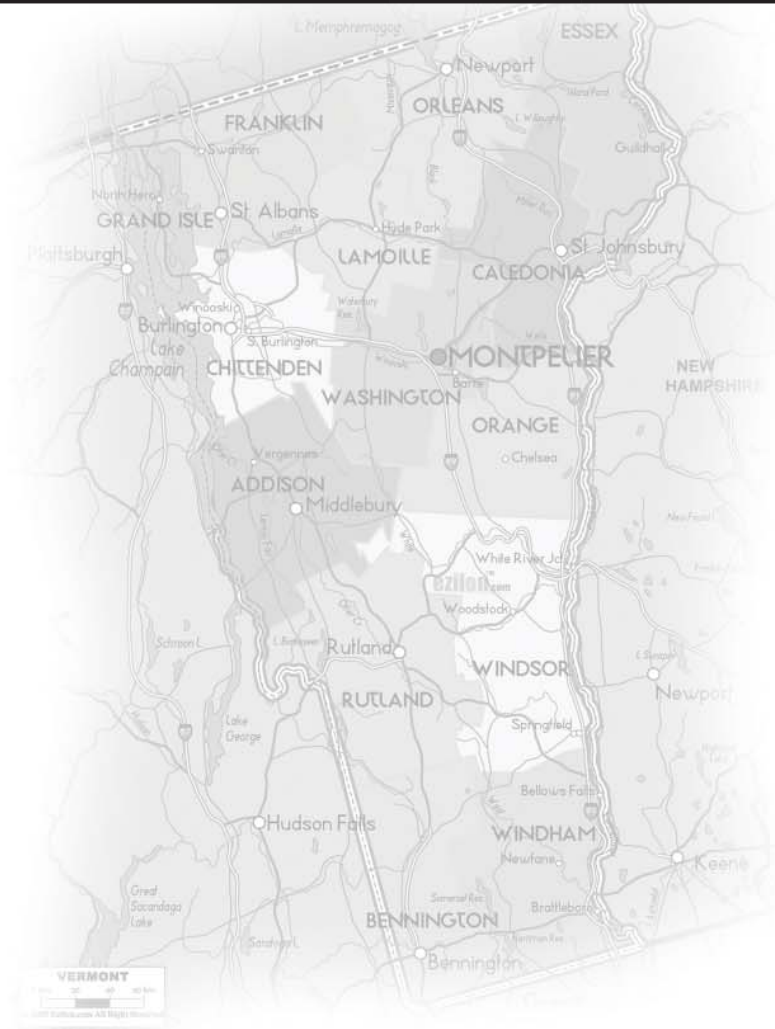
	Variable	Driver	Passenger	Total
Sex				
	Male	85.3%	83.3%	85.0%
	Female	92.4%	93.0%	92.6%
Vehicle Type				
	Car	88.6%	89.0%	88.7%
	Truck	77.8%	85.8%	79.2%
	SUV	93.0%	91.9%	92.8%
	Van	92.1%	88.4%	91.1%
Time of Week				
	Weekday	88.0%	87.6%	88.0%
	Weekend	88.9%	91.6%	89.7%

Driver and Passenger belt use rates by County groupings are presented in Table 3. Franklin/Grand Isle had the lowest belt use for drivers (84.3%) and Windham/Orange/Windsor had the lowest belt use for passengers (87.0%). Highest belt use for drivers was observed in Rutland (90.6%); highest belt use for passengers was observed in Chittenden (91.5%). Differences in belt use by County grouping was significant for drivers ($\chi^2(6) = 37.29$, $p < .0001$), but not so for passengers.

Table 3

2017 Statewide Unweighted Survey Results by County Groupings (% Belted)

	Variable	Driver Use	Passenger Use	Total Use
County Group				
	Chittenden	90.3%	91.5%	90.5%
	Bennington/Addison	89.0%	91.3%	89.6%
	Franklin/Grand Isle	84.3%	88.2%	84.8%
	Northeast Kingdom	84.5%	90.4%	85.8%
	Rutland	90.6%	90.4%	90.6%
	Washington/Lamoille	87.7%	89.5%	88.0%
	Windham/Orange/Windsor	86.7%	87.0%	86.8%
	Statewide	88.3%	89.6%	88.6%





Discussion and Recommendations

Vermont's belt rate over the last few years was lower than the national average. Exploring methods to raise global seat belt use could include: increasing enforcement, increasing awareness of driver license penalty points and fines for unbelted occupants, increasing awareness about the effectiveness of seat belt use in preventing injuries, and informing the public about the higher death rates for unbelted occupants. Populations with the lowest use rates such as pickup truck drivers are important populations to target for future programming efforts.

Vermont faces a number of challenges in achieving seat belt use gains. Vermont has a largely rural population with pockets of urbanicity, resulting in often large variations in use rates from county to county. That variability manifests itself in annual measures. In addition, several New England

states contiguous to Vermont have some of the lowest use rates nationwide. New Hampshire ranked last in belt use for 2016 (70.2 percent) while Massachusetts ranked 46th (78.2 percent). Counties contiguous to those states are prime targets for additional media and enforcement measures particularly for those roadways and communities that straddle state lines.

The introduction of nighttime seat belt use monitoring may shed light on additional areas of focus, as nighttime belt use is typically lower than daytime belt use. For instance, FARS data for the period 2012-2016 shows that belt use by fatally injured occupants of passenger vehicles is indeed much lower in nighttime crashes (27.7% belted) than in daytime crashes (53.0% belted) in the State of Vermont.

References

Tilton, S., Sullivan, J., Dowds, J. & Sentoff, K. (2016). Vermont 2016 Annual Seat Belt Use Survey: Final Report. Published by the UVM Transportation Research Center, TRC Report No. 17-001. January 2017.

Appendix A: Individual Sites: Counting Record and Raw Seat Belt Usage Rates

Observation Results by 45-Minute Observation Period

Heading Legend:

SID = Observation Site ID Number (internal to study)

TRC ID = Observation site ID for sites observed in 2015

CG = County group

FC = Functional classification of roadway

S = Site status – Primary (P) or Back-up (B)

DVMT = Daily vehicle-miles of travel represented by the road segment

SEGID = Agency of Transportation Segment ID

Route = Agency of Transportation highway designation of roadway

CntSta = Nearest continuous traffic count station

AA DT = Annualized Average Daily Traffic

π ifr = Probability that a segment is included in its County group, Functional Classification group, and Segment group

City or Town = Vermont city or town where the count site was located

Date Observed = Date which observations were conducted

Driver Belted = Driver was observed wearing a seat belt

Driver Not Belted = Driver was observed not wearing a seat belt

Driver Couldn't Tell = Observer could not determine if driver was wearing a seat belt

Passenger Belted = Passenger was observed wearing a seat belt

Passenger Not Belted = Passenger was observed not wearing a seat belt

Passenger Couldn't Tell = Observer could not determine if passenger was wearing a seat belt

TRC ID	CG	FC	S	SID	DVMT	SEGID	Route	FC	CntStra	AADT	City or Town	Date Observed	π_i/f_i	Driver Belted	Driver Not Belted	Driver Couldn't Tell	Passenger Belted	Passenger Not Belted	Passenger Couldn't Tell	Total Belted	Total Successfully Observed
TRC01	CC	Art	P	1108	3,779	8817	TH-4	14	D156	15300	Burlington	09-Jun-2017	0.0845	112	17	0	20	1	0	132	150
TRC02	CC	Art	P	1111	13,242	7984	TH-9	12	D001	14600	Burlington	09-Jun-2017	0.2261	324	42	0	40	1	0	364	407
TRC03	CC	Col	P	1207	1,156	8189	TH-13	17	D447	11800	Burlington	03-Jun-2017	0.0189	69	10	0	27	1	0	96	107
TRC04	CC	Art	P	1103	1,338	40542	TH-3	16	D331	6400	S. Burlington	03-Jun-2017	0.0229	161	17	0	62	5	0	223	245
TRC05	CC	Art	P	1110	5,242	40244	VT-116	14	D525	5500	S. Burlington	05-Jun-2017	0.0884	86	5	0	12	1	0	98	104
TRC06	CC	Col	P	1206	1,380	40505	TH-6	17	D524	5000	S. Burlington	03-Jun-2017	0.0225	93	6	0	23	1	0	116	123
TRC08	CC	Col	P	1201	2,056	40497	TH-10	17	SOBR40	4000	S. Burlington	05-Jun-2017	0.0336	66	5	0	9	0	0	75	80
TRC09	WL	Art	P	6104	22,599	V015-080207	V015-	6	NA	5700	Cambridge	04-Jun-2017	0.1055	115	14	0	58	4	0	173	191
TRC10	WL	Art	P	6107	6,885	V104-080201	V104-	6	NA	3500	Cambridge	04-Jun-2017	0.0321	79	9	0	35	3	0	114	126
TRC11	FGI	Col	P	3202	403	V207-060902	VT-207	7	F155	3100	Higgate	07-Jun-2017	0.0152	6	2	0			0	6	8
TRC12	WL	Art	P	6102	6,818	U302-120201	U302-	14	NA	6800	Barre Town	05-Jun-2017	0.0319	132	18	0	23	1	0	155	174
TRC13	WL	Col	P	6201	1,091	S6104120201	S6104	17	W239	2000	Barre Town	05-Jun-2017	0.0065	63	17	0	11	8	0	74	99
TRC14	CC	Art	P	1102	42,509	5177	I-89	1	W089	25500	Bolton	05-Jun-2017	0.7258	212	28	0	38	2	0	250	280
TRC15	WL	Art	P	6101	23,382	V100-120601	V100-	6	W364	3800	Dubury	02-Jun-2017	0.1091	66	11	0	16	2	0	82	95
TRC18	WL	Art	P	6105	115,783	I089-000011	I-89-	1	W034	23100	Middlesex	02-Jun-2017	0.5405	172	18	0	34	5	0	206	229
TRC19	WL	Col	P	6203	1,799	U002-121002	U002-	7	W145	3800	Middlesex	02-Jun-2017	0.0107	83	10	0	22	0	0	105	115
TRC20	WL	Col	B	6221	8,465	V064-121301	V064-	7	W357	3400	Northfield	03-Jun-2017	0.1929	3	3	0	1	0	0	4	7
TRC21	WL	Col	P	6202	32,378	V108-080803	V108-	7	L130	8400	Stowe	02-Jun-2017	0.091	97	13	0	28	5	0	125	143
TRC22	CC	Art	P	1107	5,333	12336	US-2	16	D019	10100	Colchester	09-Jun-2017	0.0904	123	14	0	46	4	0	169	187
TRC23	CC	Art	P	1105	5,292	57918	TH-1	16	COLC19	14000	Colchester	09-Jun-2017	0.0585	164	23	0	46	4	0	210	237
TRC24	CC	Art	P	1112	3,428	11978	VT-15	14	COLC13	20900	Colchester	03-Jun-2017	0.0254	216	23	0	66	8	0	282	313
TRC25	CC	Art	P	1108	1,488	51145	I-89	11	D423	8500	Williston	05-Jun-2017	0.0368	167	16	0	30	7	0	197	220
TRC26	CC	Col	P	1203	2,254	39275	TH-5	19	SHEL01	3400	Shelburne	05-Jun-2017	0.1295	158	9	0	12	2	0	170	181
TRC27	CC	Art	P	1113	7,582	61599	VT-116	6	D296	10400	Hinesburg	08-Jun-2017	0.0372	166	15	0	20	2	0	186	203
TRC28	CC	Art	P	1109	2,179	22281	VT-116	6	D127	3700	Hinesburg	08-Jun-2017	0.1521	43	6	0	1	1	0	44	51
TRC29	CC	Art	P	1101	8,906	39109	US-7	14	D243	18400	Shelburne	08-Jun-2017	0.0806	239	20	0	58	7	0	297	324
TRC30	CC	Col	P	1205	3,706	22311	TH-5	7	D360	1600	Hinesburg	08-Jun-2017	0.0071	29	4	0	3	0	0	32	36
TRC32	CC	Col	P	1204	437	10583	TH-4	9	D370	770	Charlotte	08-Jun-2017	0.0146	18	3	0	2	0	0	20	23
TRC33	Bad	Col	P	2201	2,737	V017-010302	V017-	7	A015	1600	Bristol	06-Jun-2017	0.179	194	36	0	29	3	0	223	262
TRC34	WL	Art	P	6103	38,340	V100-080701	V100-	6	L179	8700	Morristown	02-Jun-2017	0.08	162	29	0	10	0	0	172	201

TRC ID	CG	FC	S	SID	DVMT	SEGID	Route	FC	CntStra	AADT	City or Town	Date Observed	$\pi / f/r$	Driver Belted	Driver Not Belted	Driver Couldn't Tell	Passenger Belted	Passenger Not Belted	Passenger Couldn't Tell	Total Belted	Total Successfully Observed
TRC35	CC	Col	P	1202	4,897	49157	VT-128	7	D309	2100	Westford	04-Jun-2017	0.0344	66	9	0	28	2	0	94	105
TRC36	FGI	Art	P	3101	8,207	V104A060801	VT-104A	6	F047	4700	Georgia	04-Jun-2017	0.0104	23	7	0	7	0	0	30	37
TRC37	BAI	Art	P	2101	2,048	V022A010203	V022A	6	A113	4500	Bridport	06-Jun-2017	0.0332	88	9	0	25	1	0	113	123
TRC38	BAI	Col	P	2203	6,245	V074-011807	V074-	7	A154	1900	Shoreham	06-Jun-2017	0.0761	29	3	0	5	0	0	34	37
TRC39	BAI	Art	P	2106	14,919	U007-011703	U007-	2	A107	7900	Salisbury	06-Jun-2017	0.0125	126	8	0	21	1	0	147	156
TRC40	WL	Art	P	6106	2,683	V100-121702	V100-	6	W008	1300	Warren	05-Jun-2017	0.2214	36	0	0				36	36
TRC42	WOW	Art	P	7109	47,229	I091-000016	I-91	1	N002	7700	Fairlee	04-Jun-2017	0.3659	29	1	0	12	0	0	41	42
TRC43	WOW	Art	P	7104	78,002	I089-000002	I-89	1	Y085	23300	Hartford	04-Jun-2017	0.5813	169	13	0	94	4	0	263	280
TRC44	WOW	Art	P	7114	123,938	I089-000005	I-89	1	Y001	14200	Randolph	05-Jun-2017	0.5422	41	8	0	12	2	0	53	63
TRC46	WOW	Art	P	7112	115,603	I091-000008	I-91	1	Y075	11900	Weathersfield	06-Jun-2017	0.0216	28	7	0	5	1	0	33	41
TRC47	WOW	Col	P	7206	3,952	U005-140810	U005-	7	Y223	10400	Hartford	04-Jun-2017	0.0437	126	20	0	53	7	0	179	206
TRC48	WOW	Col	P	7201	7,990	V014-141701	V014-	7	Y003	1600	Sharon	04-Jun-2017	0.0475	24	4	0	12	0	0	36	40
TRC49	FGI	Art	P	3103	11,314	U002-070402	US-2	6	G102	2900	N Hero	07-Jun-2017	0.0036	18	3	0	2	1	0	20	24
TRC50	FGI	Col	P	3201	774	S6F239	TH12	9	F165	1500	St Albans Town	07-Jun-2017	0.1157	52	10	0	6	1	0	58	69
TRC51	FGI	Col	P	3203	1,337	U007-061501	US-7	7	F149	4500	Swanton	07-Jun-2017	0.0569	71	8	0	12	2	0	83	93
TRC52	FGI	Art	P	3102	13,555	V105-060308	VT-105	6	NA	6400	Enosburg	07-Jun-2017	0.0285	40	9	0	3	0	0	43	52
TRC53	Rut	Art	P	5104	6,124	V022A110710	V022A	6	NA	4900	Fair Haven	02-Jun-2017	0.0833	67	7	0	19	2	0	86	95
TRC54	Rut	Art	P	5103	13,632	U004-112003	U004-	14	R081	12900	Rutland Town	02-Jun-2017	0.0406	212	21	0	65	7	0	277	305
TRC55	Rut	Art	P	5102	8,740	V030-111706	V030-	6	R126	2800	Poultney	02-Jun-2017	0.0023	109	13	0	12	4	0	121	138
TRC56	Rut	Col	P	5202	373	S3216112001	S3216	17	R472	1200	Rutland Town	02-Jun-2017	0.1126	29	6	0	3	0	0	32	38
TRC57	Rut	Art	P	5101	24,261	U004-111003	U004-	2	R112	11200	Mendon	02-Jun-2017	0.117	163	17	0	52	3	0	215	235
TRC58	Rut	Art	P	5105	25,189	U007-111601	U007-	2	R102	9000	Pittsford	02-Jun-2017	0.0328	142	11	0	36	3	0	178	192
TRC59	Rut	Col	P	5201	5,419	V140-112502	V140-	7	R316	910	Wallingford	03-Jun-2017	0.047	14	1	0	2	1	0	16	18
TRC60	BAI	Art	P	2105	9,207	V030-021002	V030-	6	B121	2500	Rupert	03-Jun-2017	0.0891	49	6	0	24	1	0	73	80
TRC61	BAI	Art	P	2102	17,478	V011-021602	V011-	6	B114	6600	Winhall	05-Jun-2017	0.0668	73	10	0	19	3	0	92	105
TRC62	BAI	Col	P	2202	12,555	V007A020601	V007A	7	B103	4900	Manchester	03-Jun-2017	0.0662	116	12	0	48	7	0	164	183
TRC63	BAI	Art	P	2104	12,972	V009-021703	V009-	2	B130	3500	Woodford	04-Jun-2017	0.0896	37	3	0	19	1	0	56	60
TRC64	BAI	Art	P	2103	17,562	U007-020802	U007-	2	B112	6100	Pownal	04-Jun-2017	0.0089	101	13	0	52	6	0	153	172
TRC65	WOW	Col	P	7204	1,620	S0176-41502	S0176	7	Y300	1300	Rochester	05-Jun-2017	0.0347	52	15	0	19	5	0	71	91
TRC66	WOW	Art	P	7116	7,387	U004-142403	U004-	2	Y116	8600	Woodstock	04-Jun-2017	0.0582	140	9	0	53	2	0	193	204
TRC67	WOW	Art	P	7101	12,406	V103-141002	V103-	2	Y062	9000	Ludlow	03-Jun-2017	0.0728	166	32	0	67	9	0	233	274

TRC ID	CG	FC	S	SID	DVMT	SEgid	Route	FC	CntStra	AADT	City or Town	Date Observed	$\pi / f/r$	Driver Belted	Driver Not Belted	Driver Couldn't Tell	Passenger Belted	Passenger Not Belted	Passenger Couldn't Tell	Total Belted	Total Successfully Observed
TRC68	WOW	Art	P	7111	15,536	V103-140708	V103-	2	V161	4600	Chester	06-Jun-2017	0.0138	92	14	0	17	2	0	109	125
TRC69	WOW	Art	P	7107	2,928	V103-140701	V103-	2	V427	5200	Chester	06-Jun-2017	0.0179	50	9	0	13	4	0	63	76
TRC70	WOW	Art	P	7108	3,832	V100-131002	V100-	6	NA	2500	Londonderry	03-Jun-2017	0.043	105	14	0	43	7	0	148	169
TRC71	WOW	Art	P	7113	9,162	V011-141813	V011-	6	V133	9000	Springfield	06-Jun-2017	0.0115	103	22	0	31	9	0	134	165
TRC72	WOW	Col	P	7203	2,111	S0117131404	S0117	7	X153	6700	Bellows Falls	05-Jun-2017	0.0133	112	36	0	30	15	0	142	183
TRC73	WOW	Art	P	7102	2,835	U005-132005	U005-	6	NA	4300	Westminster	05-Jun-2017	0.0795	151	27	0	22	6	0	173	206
TRC74	WOW	Art	P	7103	16,967	V030-131704	V030-	6	X124	3800	Townshend	05-Jun-2017	0.0413	50	9	0	10	1	0	60	70
TRC75	WOW	Art	P	7105	8,813	V030-131204	V030-	6	NA	5200	Newfane	05-Jun-2017	0.0488	62	9	0	10	6	0	72	87
TRC76	WOW	Art	P	7110	10,410	V009-132204	V009-	2	X133	5700	Wilmington	04-Jun-2017	0.0835	154	11	0	78	7	0	232	250
TRC77	WOW	Art	P	7115	17,794	V009-131101	V009-	2	X134	4800	Marlboro	04-Jun-2017	0.0813	104	14	0	48	7	0	152	173
TRC78	WOW	Art	P	7106	17,323	V030-130203	V030-	16	X130	6300	Brattleboro	04-Jun-2017	0.0574	74	11	0	28	3	0	102	116
TRC79	WOW	Col	P	7202	10,500	V131-142005	V131-	7	V177	5400	Weathersfield	06-Jun-2017	0.0125	58	7	0	13	3	0	71	81
TRC80	NEK	Art	P	4104	2,505	V191-100703	V191-	6	NA	3300	Derby	02-Jun-2017	0.0212	104	9	0	18	2	0	122	133
TRC81	NEK	Art	P	4102	4,245	V016-100801	V016-	6	P022	1600	Glover	02-Jun-2017	0.0283	25	7	0	7	2	0	32	41
TRC82	NEK	Col	P	4202	5,151	U005-030202	U005-	7	C101	2700	Burke	02-Jun-2017	0.0035	67	3	0	18	0	0	85	88
TRC84	NEK	Col	P	4201	14,437	U005-030707	U005-	7	C146/CYA	14300	Lyndon	02-Jun-2017	0.0794	168	44	0	33	7	0	201	252
TRC85	NEK	Art	P	4101	1,746	U005-031108	U005-	16	C165	5600	St Johnsbury	03-Jun-2017	0.0087	108	17	0	55	2	0	163	182
TRC86	NEK	Art	P	4103	2,843	U002-031115	U002-	14	C160	8600	St Johnsbury	03-Jun-2017	0.0142	136	34	0	42	6	0	178	218
TRC87	WOW	Col	P	7205	4,614	V110-091502	V110-	7	N127	860	Washington	05-Jun-2017	0.0252	16	1	0	1	0	0	17	18
TRC88	NEK	Art	P	4105	3,603	U002-050706	U002-	2	E007	2600	Concord	03-Jun-2017	0.018	56	8	0	24	2	0	80	90
TRC89	CC	Art	P	1104	3,187	51487	US-2	14	Will12	11590	Williston	03-Jun-2017	0.0545	168	16	0	72	8	0	240	264

Appendix B: Raw Seat Belt Use Rates by Site

TRC ID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants	Sample Weight
TRC01	Burlington	86.8%	95.2%	88.0%	6,990
TRC02	Burlington	88.5%	97.6%	89.4%	569
TRC03	Burlington	87.3%	96.4%	89.7%	26,064
TRC04	S. Burlington	90.4%	92.5%	91.0%	55,862
TRC05	S. Burlington	94.5%	92.3%	94.2%	3,636
TRC06	S. Burlington	93.9%	95.8%	94.3%	18,346
TRC08	S. Burlington	93.0%	100.0%	93.8%	24,663
TRC09	Cambridge	89.1%	93.5%	90.6%	240
TRC10	Cambridge	89.8%	92.1%	90.5%	2,578
TRC11	Highgate	75.0%	n/a	75.0%	97,534
TRC12	Barre Town	88.0%	95.8%	89.1%	7,870
TRC13	Barre Town	78.8%	57.9%	74.7%	240,232
TRC14	Bolton	88.3%	95.0%	89.3%	38
TRC15	Duxbury	85.7%	88.9%	86.3%	223
TRC18	Middlesex	90.5%	87.2%	90.0%	19
TRC19	Middlesex	89.2%	100.0%	91.3%	1,066
TRC20	Northfield	50.0%	100.0%	57.1%	693
TRC21	Stowe	88.2%	84.8%	87.4%	274
TRC22	Colchester	89.8%	92.0%	90.4%	3,511
TRC23	Colchester	87.7%	92.0%	88.6%	1,191
TRC24	Colchester	90.4%	89.2%	90.1%	8,536
TRC25	Williston	91.3%	81.1%	89.5%	30,450
TRC26	Shelburne	94.6%	85.7%	93.9%	20,538
TRC27	Hinesburg	91.7%	90.9%	91.6%	1,735
TRC28	Hinesburg	87.8%	50.0%	86.3%	21,180
TRC29	Shelburne	92.3%	89.2%	91.7%	421
TRC30	Hinesburg	87.9%	100.0%	88.9%	7,587

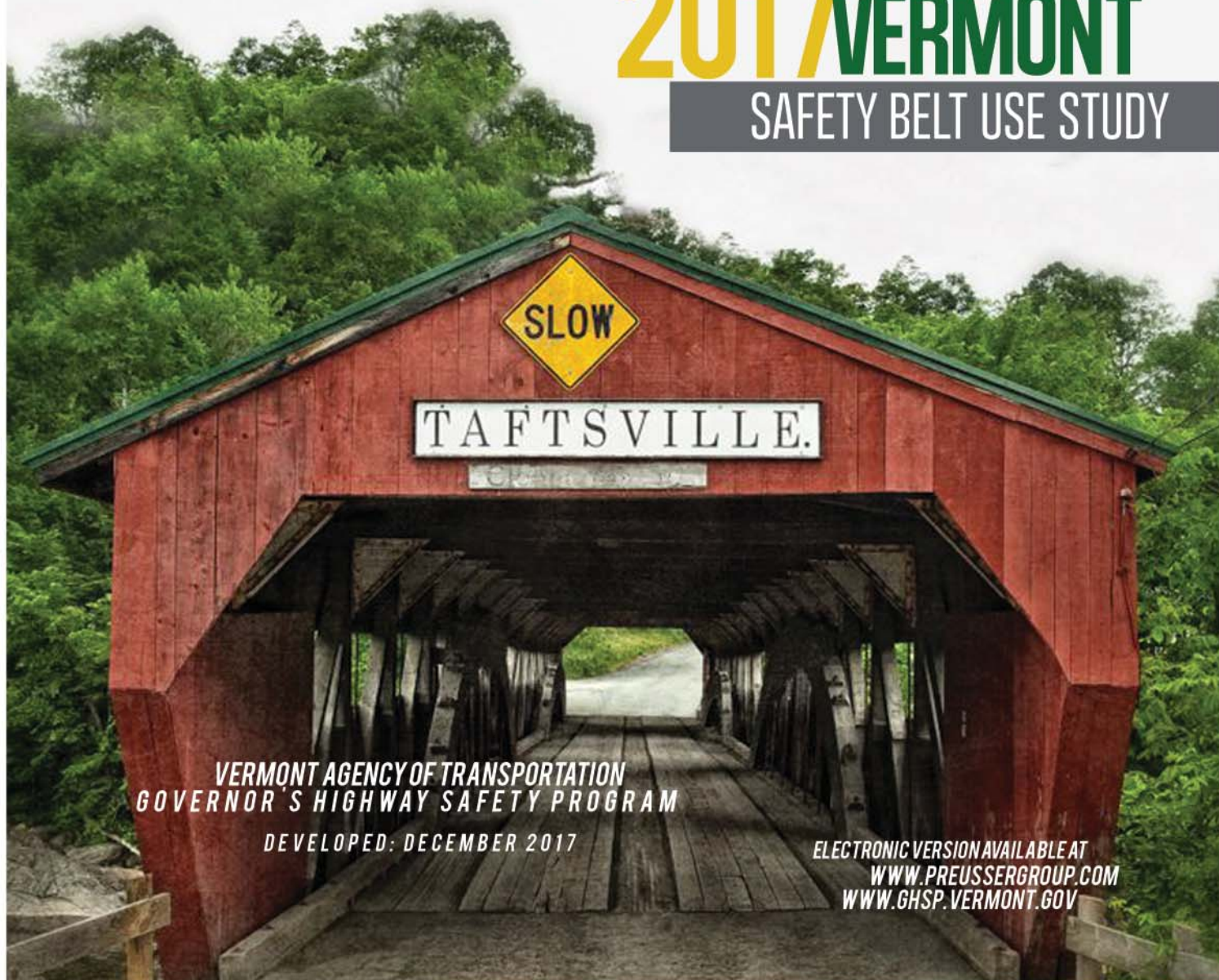
TRC ID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants	Sample Weight
TRC32	Charlotte	85.7%	100.0%	87.0%	183,449
TRC33	Bristol	84.3%	90.6%	85.1%	14,257
TRC34	Morristown	84.8%	100.0%	85.6%	249
TRC35	Westford	88.0%	93.3%	89.5%	4,349
TRC36	Georgia	76.7%	100.0%	81.1%	6,184
TRC37	Bridport	90.7%	96.2%	91.9%	27,003
TRC38	Shoreham	90.6%	100.0%	91.9%	8,218
TRC39	Salisbury	94.0%	95.5%	94.2%	505
TRC40	Warren	100.0%	n/a	100.0%	51,750
TRC42	Fairlee	96.7%	100.0%	97.6%	166
TRC43	Hartford	92.9%	95.9%	93.9%	60
TRC44	Randolph	83.7%	85.7%	84.1%	24
TRC46	Weathersfield	80.0%	83.3%	80.5%	28
TRC47	Hartford	86.3%	88.3%	86.9%	19,961
TRC48	Sharon	85.7%	100.0%	90.0%	4,880
TRC49	N Hero	85.7%	66.7%	83.3%	3,754
TRC50	St Albans Town	83.9%	85.7%	84.1%	204,523
TRC51	Swanton	89.9%	85.7%	89.2%	3,682
TRC52	Enosburg	81.6%	100.0%	82.7%	2,285
TRC53	Fair Haven	90.5%	90.5%	90.5%	9,869
TRC54	Rutland Town	91.0%	90.3%	90.8%	1,979
TRC55	Poultney	89.3%	75.0%	87.7%	4,852
TRC56	Rutland Town	82.9%	100.0%	84.2%	1,986,254
TRC57	Mendon	90.6%	94.5%	91.5%	629
TRC58	Pittsford	92.8%	92.3%	92.7%	583
TRC59	Wallingford	93.3%	66.7%	88.9%	9,586
TRC60	Rupert	89.1%	96.0%	91.3%	3,937

TRC ID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants	Sample Weight
TRC61	Winhall	88.0%	86.4%	87.6%	1,156
TRC62	Manchester	90.6%	87.3%	89.6%	2,031
TRC63	Woodford	92.5%	95.0%	93.3%	2,077
TRC64	Pownal	88.6%	89.7%	89.0%	1,130
TRC65	Rochester	77.6%	79.2%	78.0%	118,177
TRC66	Woodstock	94.0%	96.4%	94.6%	6,646
TRC67	Ludlow	83.8%	88.2%	85.0%	2,377
TRC68	Chester	86.8%	89.5%	87.2%	1,519
TRC69	Chester	84.7%	76.5%	82.9%	42,167
TRC70	Londonderry	88.2%	86.0%	87.6%	24,838
TRC71	Springfield	82.4%	77.5%	81.2%	4,325
TRC72	Bellows Falls	75.7%	66.7%	73.6%	70,182
TRC73	Westminster	84.8%	78.6%	84.0%	45,192
TRC74	Townshend	84.7%	90.9%	85.7%	1,263
TRC75	Newfane	87.3%	62.5%	82.8%	4,681
TRC76	Wilmington	93.3%	91.8%	92.8%	1,121
TRC77	Marlboro	88.1%	87.3%	87.9%	386
TRC78	Brattleboro	87.1%	90.3%	87.9%	1,210
TRC79	Weathersfield	89.2%	81.3%	87.7%	2,827
TRC80	Derby	92.0%	90.0%	91.7%	54,807
TRC81	Glover	78.1%	77.8%	78.0%	18,933
TRC82	Burke	95.7%	100.0%	96.6%	11,687
TRC84	Lyndon	79.2%	82.5%	79.8%	1,486
TRC85	St Johnsbury	86.4%	96.5%	89.6%	37,491
TRC86	St Johnsbury	80.0%	87.5%	81.7%	14,157
TRC87	Washington	94.1%	100.0%	94.4%	14,653
TRC88	Concord	87.5%	92.3%	88.9%	26,273
TRC89	Williston	91.3%	90.0%	90.9%	118



2017 VERMONT

SAFETY BELT USE STUDY



**VERMONT AGENCY OF TRANSPORTATION
GOVERNOR'S HIGHWAY SAFETY PROGRAM**

DEVELOPED: DECEMBER 2017

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 **VERMONT**
AGENCY OF TRANSPORTATION
Governor's Highway Safety Program

Vermont Seat Belt Use Survey Reporting Form

Part A:*

State: VERMONT
 Calendar Year of Survey: 2017
 Statewide Seat Belt Use Rate: 84.5%

I hereby certify that:

Joe Flynn has been designated by the Governor as the State's Highway Safety Representative (GR), and if applicable, the GR has delegated the authority to sign the certification in writing to Bruce Nyquist, the Coordinator of the State Highway Safety Office.

The reported Statewide seat belt use rate is based on a survey design that was approved by NHTSA, in writing, as conforming to the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.

The survey design has remained unchanged since the survey was approved by NHTSA.

William A Leaf, Ph.D., a qualified survey statistician, has reviewed the seat belt use rate reported above and information reported in Part B and has determined that they meet the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.

Signature:

Date:

Printed Name:

[Signature]
 6/13/2017
 Joe Flynn

* To be completed by the GR or, if applicable, the Coordinator of the State Highway Safety Office.

Part B:

Statewide standard error:	1.384%	Statewide	Numbers of Occupants ...			Percent
		Total	Belted	Unbelted	Unkn Use	Unkn Use
Nonresponse rate:	0.208%	Drivers:	8,014	1,057	12	0.132%
		Passengers:	2,181	253	12	0.491%
		Total:	10,195	1,310	24	0.208%

Site ID	Primary(P)/ Backup(B)	Date Observed	Selection Prob.	Scoring Weight	Total Number of ...		Numbers of Occupants ...		
					Drivers	Qual Psgrs	Belted	Unbelted	Unkn Use
1106	P	6/9/2017	0.06450	6,990	129	21	132	18	0
1111	P	6/9/2017	0.22610	569	366	41	364	43	0
1207	P	6/3/2017	0.01890	26,064	79	28	96	11	0
1103	P	6/3/2017	0.02290	55,862	178	67	223	22	0
1110	P	6/5/2017	0.08940	3,636	91	13	98	6	0
1206	P	6/3/2017	0.02250	18,346	99	26	116	7	2
1201	P	6/5/2017	0.03360	24,663	71	9	75	5	0
6104	P	6/4/2017	0.10550	240	129	62	173	18	0
6107	P	6/4/2017	0.03210	2,578	88	38	114	12	0
3202	P	6/7/2017	0.01520	97,534	8	0	6	2	0
6102	P	6/5/2017	0.03190	7,870	151	24	155	19	1
6201	P	6/5/2017	0.00650	240,232	80	19	74	25	0
1102	P	6/5/2017	0.72580	38	240	40	250	30	0
6101	P	6/2/2017	0.10910	223	77	19	82	13	1
6105	P	6/2/2017	0.54050	19	190	40	206	23	1
6203	P	6/2/2017	0.01070	1,066	93	24	105	10	2
6221	B	7/16/2016	0.1929	693	6	1	4	3	0
6202	P	6/2/2017	0.19290	274	110	34	125	18	1
1107	P	6/9/2017	0.09100	3,511	138	50	169	18	1
1105	P	6/9/2017	0.09040	1,191	187	50	210	27	0
1112	P	6/3/2017	0.05850	8,536	239	75	282	31	1
1108	P	6/5/2017	0.02540	30,450	183	37	197	23	0
1203	P	6/5/2017	0.03680	20,538	167	14	170	11	0
1113	P	6/8/2017	0.12950	1,735	181	22	186	17	0

Vermont Seat Belt Use Survey Reporting Form

1109	P	6/8/2017	0.03720	21,180	49	2	44	7	0
1101	P	6/8/2017	0.15210	421	259	65	297	27	0
1205	P	6/8/2017	0.06060	7,587	33	3	32	4	0
1204	P	6/8/2017	0.00710	183,449	21	2	20	3	0
2201	P	6/6/2017	0.01460	14,257	232	32	223	39	2
6103	P	6/2/2017	0.17900	249	191	10	172	29	0
1202	P	6/4/2017	0.08000	4,349	75	30	94	11	0
3101	P	6/4/2017	0.03440	6,184	30	8	30	7	1
2101	P	6/6/2017	0.01040	27,003	100	27	113	10	4
2203	P	6/6/2017	0.03320	8,218	32	5	34	3	0
2106	P	6/6/2017	0.07610	505	136	22	147	9	2
6106	P	6/5/2017	0.01250	51,750	38	0	36	0	2
7109	P	6/4/2017	0.22140	166	30	12	41	1	0
7104	P	6/4/2017	0.36590	60	182	98	263	17	0
7114	P	6/5/2017	0.58130	24	49	14	53	10	0
7112	P	6/6/2017	0.54220	28	35	6	33	8	0
7206	P	6/4/2017	0.02160	19,961	146	60	179	27	0
7201	P	6/4/2017	0.04370	4,880	28	12	36	4	0
3103	P	6/7/2017	0.04750	3,754	21	3	20	4	0
3201	P	6/7/2017	0.00360	204,523	62	7	58	11	0
3203	P	6/7/2017	0.11570	3,682	79	14	83	10	0
3102	P	6/7/2017	0.05690	2,285	49	3	43	9	0
5104	P	6/2/2017	0.02850	9,869	74	21	86	9	0
5103	P	6/2/2017	0.06330	1,979	233	72	277	28	0
5102	P	6/2/2017	0.04060	4,852	122	16	121	17	0
5202	P	6/2/2017	0.00230	1,986,254	35	3	32	6	0
5101	P	6/2/2017	0.11260	629	180	55	215	20	0
5105	P	6/2/2017	0.11700	583	153	39	178	14	0
5201	P	6/3/2017	0.03280	9,586	15	3	16	2	0
2105	P	6/3/2017	0.04700	3,937	55	25	73	7	0
2102	P	6/5/2017	0.08910	1,156	83	22	92	13	0
2202	P	6/3/2017	0.06680	2,031	128	55	164	19	0
2104	P	6/4/2017	0.06620	2,077	40	20	56	4	0
2103	P	6/4/2017	0.08960	1,130	114	58	153	19	0
7204	P	6/5/2017	0.00890	118,177	68	25	71	20	2
7116	P	6/4/2017	0.03470	6,646	149	55	193	11	0
7101	P	6/3/2017	0.05820	2,377	198	76	233	41	0
7111	P	6/6/2017	0.07280	1,519	106	19	109	16	0
7107	P	6/6/2017	0.01380	42,167	59	17	63	13	0
7108	P	6/3/2017	0.01790	24,838	119	50	148	21	0
7113	P	6/6/2017	0.04300	4,325	125	40	134	31	0
7203	P	6/5/2017	0.01150	70,182	148	45	142	51	0
7102	P	6/5/2017	0.01330	45,192	178	28	173	33	0
7103	P	6/5/2017	0.07950	1,263	59	11	60	10	0
7105	P	6/5/2017	0.04130	4,681	71	16	72	15	0
7110	P	6/4/2017	0.04880	1,121	165	85	232	18	0
7115	P	6/4/2017	0.08350	386	118	55	152	21	0
7106	P	6/4/2017	0.08130	1,210	85	31	102	14	0
7202	P	6/6/2017	0.05740	2,827	65	16	71	10	0
4104	P	6/2/2017	0.01250	54,807	113	20	122	11	0
4102	P	6/2/2017	0.02120	18,933	32	9	32	9	0
4202	P	6/2/2017	0.02830	11,687	70	18	85	3	0
4201	P	6/2/2017	0.07940	1,486	212	40	201	51	0
4101	P	6/3/2017	0.00870	37,491	125	57	163	19	0
4103	P	6/3/2017	0.01420	14,157	170	48	178	40	0
7205	P	6/5/2017	0.02520	14,653	17	1	17	1	0
4105	P	6/3/2017	0.01800	26,273	64	26	80	10	0
1104	P	6/3/2017	0.05450	118	184	81	240	24	1
TOTAL					9,089	2,447	10,199	1,313	24