

2019 VERMONT

SAFETY BELT USE STUDY

STATEWIDE OBSERVATION RESULTS

VERMONT STATE HIGHWAY SAFETY OFFICE
BEHAVIORAL SAFETY UNIT
AGENCY OF TRANSPORTATION
WWW.GHSP.VERMONT.GOV



2019 VERMONT

SAFETY BELT USE STUDY

STATEWIDE OBSERVATION RESULTS

VERMONT STATE HIGHWAY SAFETY OFFICE
BEHAVIORAL SAFETY UNIT
AGENCY OF TRANSPORTATION

DILL BUILDING, UNIT A, 2178 AIRPORT ROAD
BARRE, VT 05641
WWW.GHSP.VERMONT.GOV

REPORT PREPARED BY

PREUSSER RESEARCH GROUP, INC
7100 MAIN STREET
TRUMBULL, CT 06611
WWW.PREUSSERGROUP.COM

Table of Contents

Background	2
Program Description	4
Data Collection Methods	5
Results	7
Discussion and Recommendations	11
References	12
Appendix A. Sample Observation Data Collection Form	A-1
Appendix B. Pinned Site Locations (Source: Google Maps)	B-1
Appendix C. Raw Seat Belt Use / Observed Counts	C-1
Appendix D. Raw Seat Belt Use Rates by Site	D-1
List of Figures and Tables	
Figure 1. Vermont Statewide Seat Belt Use (2007 – 2019)	3
Figure 2. Vermont Statewide vs. National Seat Belt Use (2007 – 2019)	3
Table 1. Annual Weighted Seat Belt Use Rates 2007-2019 (% Belted)	8
Table 2. 2019 Statewide Unweighted Survey Results (% Belted)	9
Table 3. 2019 Statewide Unweighted Survey Results by County Groupings (% Belted)	10



BACKGROUND

VERMONT SAFETY BELT USE STUDY

89.3%
Vermont's
2019 seat belt
use rate

This report summarizes the results of the 2019 Vermont Safety Belt Use Study. Preusser Research Group, Inc. (PRG) was contracted by the Vermont Agency for Transportation to collect roadside observations and prepare a final report on analyzed results for the Vermont's "Click It or Ticket" (CIOT) seat belt campaign in 2019. This national campaign is conducted annually by the National Highway Traffic Safety Administration (NHTSA). Two weeks of heightened enforcement and media surround the Memorial Day holiday. The procedures used for study design followed Federal Register Guidelines as outlined by 23 CFR Part 1340 (Uniform Criteria for State Observational Surveys of Seat Belt Use).

The State of Vermont first participated in a multi-state pilot of CIOT in 2002. Since then, a stable statewide seat belt use rate was observed from 2009 to 2015 in Vermont, while the U.S. rate showed steady increases over the same six-year period. A sizeable drop in belt use occurred from 2015 (85.0%) to 2016 (80.4%) in Vermont. However, the past two years have shown substantial increases. The 2018 and 2019 statewide belt use rates are the highest observed rates ever achieved in the state to date.

FIGURE 1
Vermont Seat Belt Use 2007-2019 (Weighted)

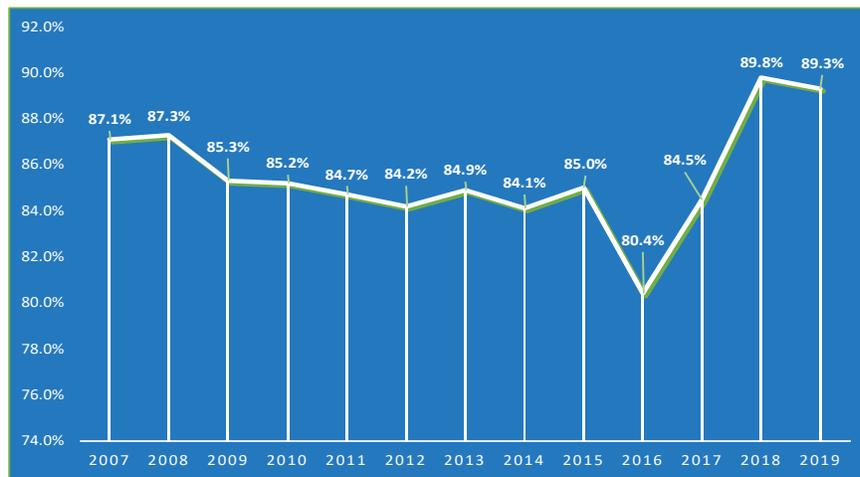


FIGURE 2
Vermont vs. National Seat Belt Use 2007-2019 (Weighted)

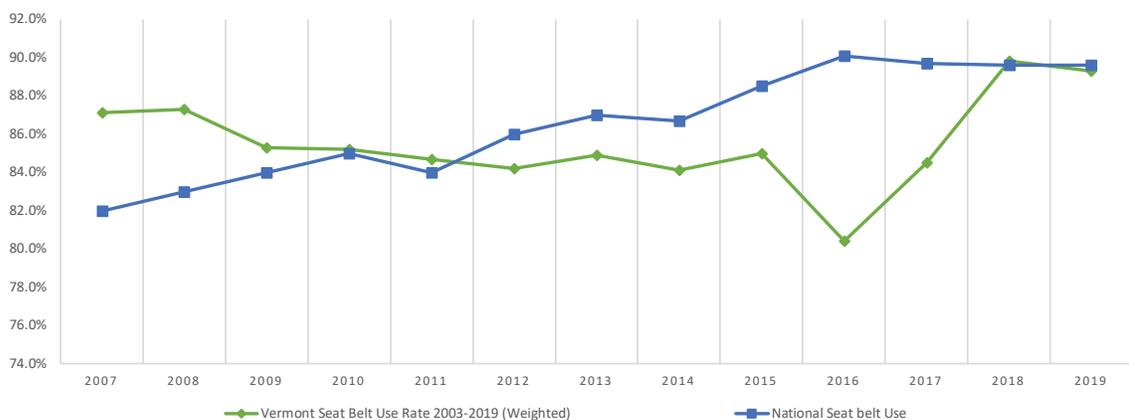


Figure 2. Vermont Statewide vs. National Seat Belt Use (2007 – 2019) Please Note: the 2019 national rate has not been released yet; the last known national rate is included twice

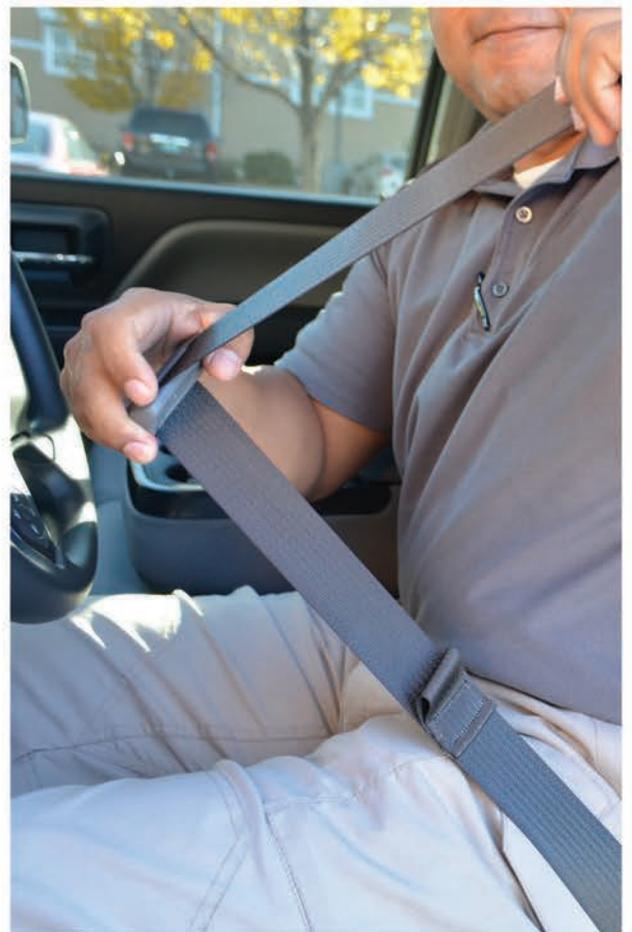
The state of Vermont uses the data from this report to pinpoint and target areas of low seat belt use to help direct occupant protection program efforts throughout the coming year. Vermont developed and funded a CIOT Enforcement Task Force which is periodically deployed across the major roadways in low use areas as identified by seat belt observation results. To supplement the data, PRG collects during roadside seat belt observations, we also track unrestrained (serious injury and fatality) crash data. Specifically, we look at variations and patterns in unrestrained crash locations across times of day and days of week. Vermont is making future plans to conduct nighttime seat belt observations to assess and address lower seat belt use at night.

PROGRAM DESCRIPTION

VERMONT SAFETY BELT USE STUDY

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 which result in heightened levels of seat belt specific enforcement activity and an overall increase of the number of issued seat belt citations. Targeted media advertising during the campaign educates the public about laws and associated fines while also publicizing increased law enforcement efforts. This type of 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 adherence to the law.

Media efforts were implemented statewide in May 2019 with local earned media promotional efforts bolstered by paid national media advertising launched by NHTSA. The programs included use of the CIOT slogan and logo. Paid media included television, radio and online advertising as well as highway billboard signage. Seat belt observational surveys were conducted from May 31 to June 13 immediately following the conclusion of the May national CIOT program.



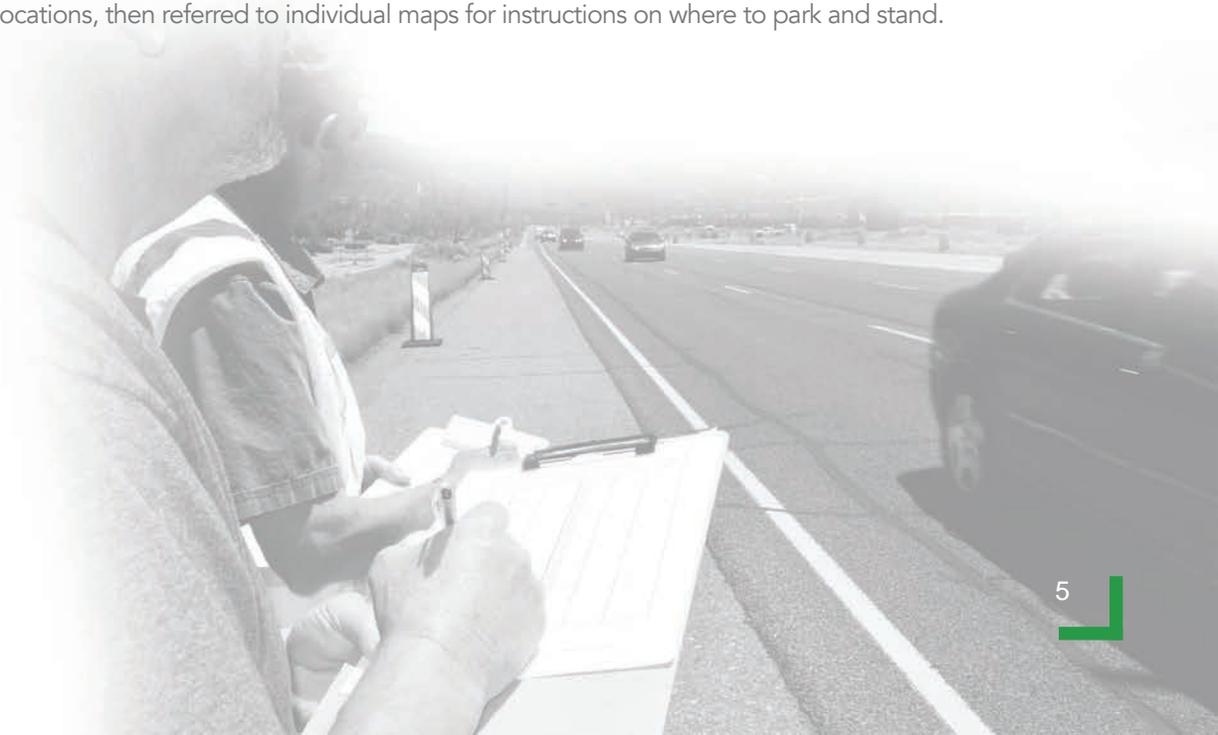
DATA COLLECTION METHODS

VERMONT SAFETY BELT
USE STUDY

Three (3) staff members, hired and trained by PRG, participated in the 2019 daytime observations, each with extensive seat belt observation experience in addition to field instruction and multiple training sessions. Training was conducted in the weeks leading up to the start of observations. Prior to any data collection, all observers went through a refresher course where the procedures were reviewed in a training session which included on-street practice. Training provided additional procedures to guide observers 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 (unsafe or unobservable). These observers, working alone, performed all field data collection for this evaluation.

Daytime observations were conducted between 7:00 a.m. and 6:00 p.m. seven days a week. Each county's observations were conducted in four clusters, with roughly five sites scheduled for each day. The observation first site was randomly selected; 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.

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 and stand.



In 2018, Vermont opted to redesign their survey and this new format was used in the 2019 survey. PRG conducted the redesign and submitted all new site information to NHTSA for approval. The newest design was kept as similar as possible to the previous year, but a change was made to allow weighting (and site selection) to be based primarily on traffic volume. The previous design, while adequate and approved, had the disadvantage of resulting in a small number of rural/low traffic volume sites having a relatively large influence on the overall seat belt use rate. Same sites were used for the 2019 observation as of the 2018 sites. More information on statistical sampling methodology and overall sample weight calculations is available upon request.

Seat belt use was observed for 45 minutes at each site. All data were recorded on a paper form (see Appendix A for sample form), noting vehicle type, 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 could not 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 procedure ensured that the next vehicle to be observed was randomly selected from the traffic stream without prior knowledge of seat belt use. Only one vehicle at a time was recorded. Once the data for the selected vehicle was recorded, the observer would start recording data from the next vehicle to pass the reference point. Traffic direction was determined based on the direction used in the 2018 survey.

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.

Field coordinators developed all observer schedules, provided detailed maps and site descriptions for observation locations, and served as the main points of contact during the data collection period to address observer questions as needed regarding observation method, unexpected site issues, etc.

Completed observation forms were sent to PRG for data entry using Microsoft Excel and/or Statistical Package for Social Science (SPSS). Data cleaning procedures included 10 percent entry checks to assess entry accuracy across all data entry forms 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 2018. Unweighted data was used for all report results and tables. These analyses consisted of simple chi-square tests.



RESULTS

VERMONT SAFETY BELT USE STUDY

Data collection was conducted May 31 to June 13, 2019 at 89 sites across the state. Please see Appendix B for a Google Maps overview of pinned locations. Three observers gathered observation data from 10,735 vehicles and 13,356 occupants including 10,735 drivers and 2,621 passengers. Drivers accounted for 80.4 percent of persons observed. Vermont drivers and front outboard passengers had a combined weighted seat belt use of 89.3. The standard error rate was 0.586 percent, below the required 2.5 percent threshold required by NHTSA. The total incidence of unknown observations was less than 1 percent (0.2 %) for all observations statewide, another NHTSA requirement.



Rates for 2007-2019 (all occupants, weighted) are found in Table 1. 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. The 2018 rate was much higher than any previous year's rate and similar trend was continued in 2019. It is unclear as to whether the state experienced a significant increase in use or if the new weighting and sites reflect a higher measured use (or both). However, looking at the last two years use rate (2018 and 2019), it is possible that there was a significant increase in the use rate. Non-weighted raw counts and use rates by site location are provided in **Appendix C** and **Appendix D**.

TABLE 1
Annual Weighted Seat Belt Use Rates 2007-2019 (Weighted)

2007	2008	2009	2010	2011	2012	
87.1%	87.3%	85.3%	85.2%	84.7%	84.2%	
2013	2014	2015	2016	2017	2018	2019
84.9%	84.1%	85.0%	80.4%	84.5%	89.8%	89.3%



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 8 percentage points higher than male drivers ($\chi^2(1) = 154.68, p < .0001$). Female passengers' use rate was also 12 percentage point higher than male passengers ($\chi^2(1) = 74.82, p < .0001$). Among all observed occupants, belt use was 8 percentage points higher among female than male occupants ($\chi^2(1) = 210.50, p < .0001$).

Comparisons across vehicle types revealed a 14-percentage point difference between the highest and lowest belt use by drivers (Car drivers at 92.2% and truck drivers at 78.7%, respectively). Differences in driver seat belt use across vehicle types was highly significant ($\chi^2(3) = 314.41, p < .0001$). Differences in belt use rates by passengers were also significant across vehicle type, $\chi^2(3) = 32.74, p < .0001$.

TABLE 2
2019 Statewide Unweighted Survey Results (% Belted)

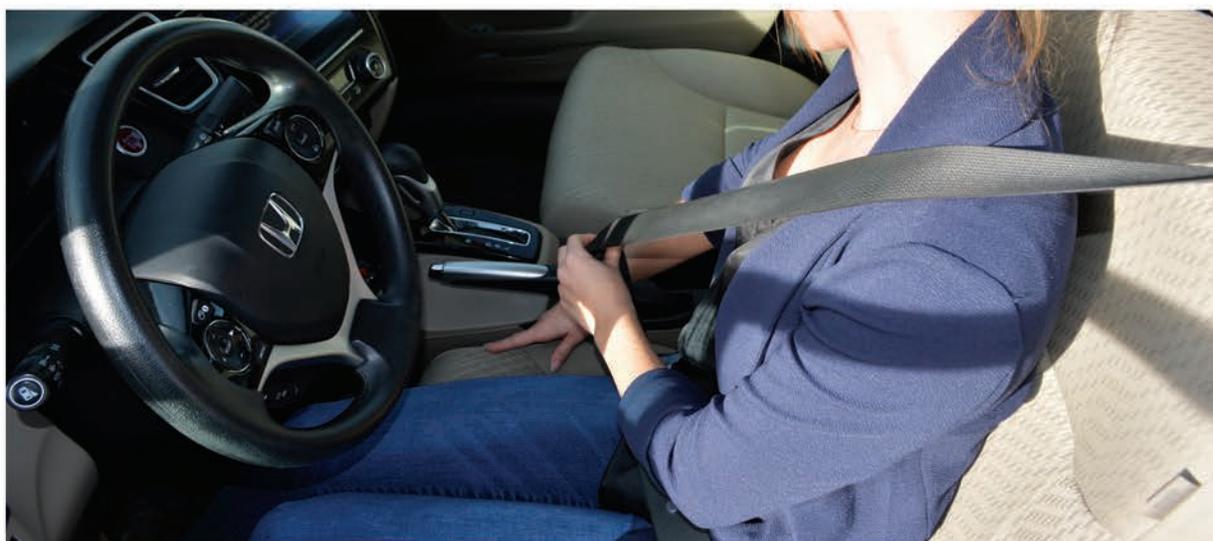
Variable	Driver	Passenger	Total
Sex			
Male	85.9%	80.6%	85.2%
Female	93.4%	92.1%	93.1%
Vehicle Type			
Car	92.2%	90.0%	91.8%
Truck	78.7%	80.6%	79.0%
SUV	91.5%	89.7%	91.1%
Van	90.6%	85.8%	89.4%
Time of Week			
Weekday	89.9%	88.3%	89.7%
Weekend	87.1%	87.2%	87.1%

Driver belt use was significantly higher on weekdays than on weekends (89.9% and 87.1%, respectively), $\chi^2(1) = 16.97, p < .0001$. There was no difference in passenger use across days of the week. For all occupants, weekday use was significantly higher than weekend use, $\chi^2(1) = 17.36, p < .0001$.

Driver and passenger belt use rates by county are presented in Table 3. Franklin had the lowest belt use for drivers (82.2%) and Rutland had the lowest belt use for passengers (83.7%). Highest belt use for drivers was observed in Chittenden (93.1%); highest belt use for passengers was also observed in Chittenden (92.6%). There were significant differences in belt use by county grouping among drivers ($\chi^2(6) = 154.07, p < .0001$), and for passengers ($\chi^2(6) = 23.66, p < .001$).

TABLE 3
2019 Statewide Unweighted Survey Results by
County Groupings (% Belted)

County Grouping	Driver Use	Passenger Use	Total Use
Chittenden	93.1%	92.6%	93.0%
Bennington/Addison	90.6%	89.7%	90.4%
Franklin	82.2%	84.8%	82.8%
Caldeonia/Orleans	87.0%	87.2%	87.1%
Rutland	87.3%	83.7%	86.7%
Washington/Lamoille	91.5%	88.6%	91.0%
Windham/Orange/Windsor	89.2%	86.0%	88.5%
Statewide	89.2%	87.9%	89.0%



DISCUSSION AND RECOMMENDATIONS

VERMONT SAFETY BELT USE STUDY

Vermont's current belt rate is near the national average but still below the NHTSA imposed target of 90 percent. 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 male occupants and pickup truck drivers are important populations to target for future programming efforts.

Vermont faces several challenges in achieving seat belt use gains. The state has a largely rural population with pockets of urban areas, resulting in often large variations in use rates from county to county. 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 2018 (76.4 percent) while Massachusetts ranked 47th (81.6 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 2012-2018 shows that belt use by fatally injured occupants of passenger vehicles is indeed much lower in nighttime crashes (52.1% belted) than in daytime crashes (74.9% belted) in the state of Vermont.

In 2019, use rate was down slightly (0.5 points) from the highest ever use rate of 2018 (89.8%), however 2019 rate is still up by 5 percentage points from the 2017 use rate (84.5%). The decrease from 2018 is not significant and therefore the 2019 rate indicates no real change from the prior year. The last two years show record high use in the state but, it may be that some of the gains are from the redesign and may not reflect an actual change in usage but merely a different way of measuring the rate. However, looking at the current trend, it is likely that the new method will lead to more stability in future rates.

REFERENCES

VERMONT SAFETY BELT USE STUDY

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.

Chaudhary, N., Chaffe, R. (2017). Vermont 2017 Annual Seat Belt Use Survey: Final Report. Published by the Preusser Research Group, Inc. for the Vermont Agency of Transportation, Governor's Highway Safety Program.

Photo Credits

AB1358, Erika Mitchell, Nickbeer, Pierre-Olivier Valiquette, and Ken Wiedemann / iStock by Getty Images
Michelle Cisewski / Safer New Mexico Now

Design by Safer New Mexico Now



APPENDIX A

Sample Observation Data Collection Form

Sample Observation Data Collection Form

SITE ID NUMBER: _____ CITY: _____ OBSERVER NAME: _____

DATE: _____ - _____ - _____ DAY OF WEEK: _____

LOCATION: _____

(Observed Street)

(Cross Street or other landmark)

WEATHER CONDITION (circle one): 1) Clear/Sunny 2) Light Rain 3) Cloudy 4) Fog 5) Clear but wet

TRAFFIC DIRECTION: N S E W START TIME (Observation period = exactly 60 minutes): _____ AM / PM

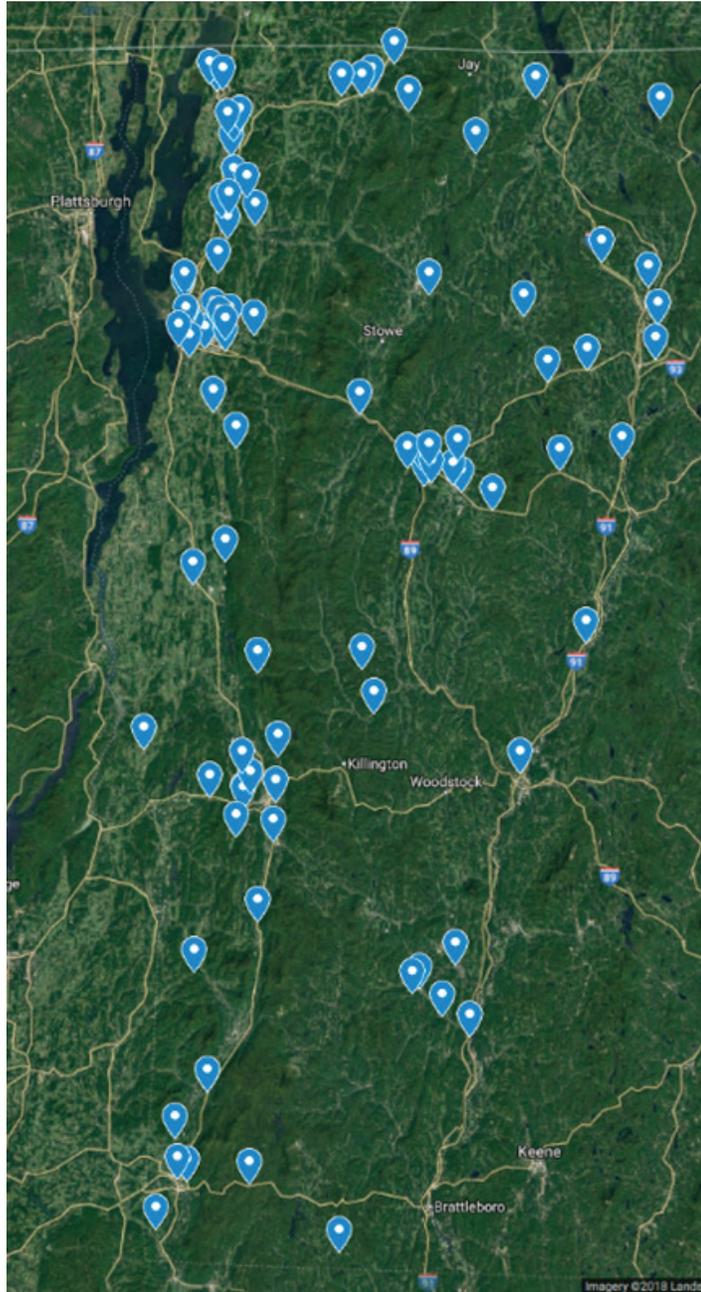
DRIVER			PASSENGER		DRIVER			PASSENGER	
Vehicle Type	Sex	Use	Sex	Use	Vehicle Type	Sex	Use	Sex	Use
C = Car T = Pick Up S = SUV V = Van	M = Male F = Female U = Unsure	Y = Yes N = No	M = Male F = Female U = Unsure	Y = Yes N = No U = Unsure	C = Car T = Pick Up S = SUV V = Van	M = Male F = Female U = Unsure	Y = Yes N = No	M = Male F = Female U = Unsure	Y = Yes N = No U = Unsure
1					36				
2					37				
3					38				
4					39				
5					40				
6					41				
7					42				
8					43				
9					44				
10					45				
11					46				
12					47				
13					48				
14					49				
15					50				
16					51				
17					52				
18					53				
19					54				
20					55				
21					56				
22					57				
23					58				
24					59				
25					60				
26					61				
27					62				
28					63				
29					64				
30					65				
31					66				
32					67				
33					68				
34					69				
35					70				



APPENDIX B

Pinned Site Locations

Source: Google Maps





APPENDIX C

Raw Seat Belt Use/ Observed Counts

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

AAADT = 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

APPENDIX C
Raw Seat Belt Use/ Observed Counts

City or Town	Date Observed	Probability of Selection	DRIVER			PASSENGER			ALL	
			Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Bennington	5/31/2019	0.822686	99	12	0	38	6	0	137	155
Bennington	5/31/2019	1	256	34	0	48	4	0	304	342
Bennington	6/5/2019	0.091556	80	7	0	39	4	0	119	130
Bennington	6/5/2019	0.182475	83	7	0	43	5	0	126	138
Addison	6/1/2019	0.064734	54	2	0	13	1	0	67	70
Addison	5/31/2019	0.043652	139	10	0	22	1	0	161	172
Addison	5/31/2019	0.09913	87	8	0	11	1	0	98	107
Bennington	6/6/2019	0.034997	17	2	0	6	1	0	23	26
Addison	6/2/2019	0.018275	19	3	0	9	1	0	28	32
Bennington	6/2/2019	0.078163	19	2	0	7	2	0	26	30
Bennington	6/12/2019	0.148487	31	5	0	8	2	0	39	46
Chittenden	5/31/2019	0.411616	394	13	0	62	5	0	456	474
Chittenden	6/2/2019	0.164534	364	14	0	118	5	0	482	501
Chittenden	6/11/2019	0.091444	214	9	0	78	2	0	292	303
Chittenden	6/4/2019	0.02504	146	5	0	13	1	0	159	165
Chittenden	5/31/2019	0.049278	220	10	0	41	7	0	261	278
Chittenden	6/2/2019	0.038122	249	14	0	27	1	0	276	291
Chittenden	6/3/2019	0.2243	276	34	0	88	7	0	364	405
Chittenden	6/2/2019	0.150448	119	28	0	15	5	0	134	167
Chittenden	6/6/2019	0.042202	61	4	0	10	0	0	71	75
Chittenden	6/6/2019	0.085089	115	7	0	18	0	0	133	140
Chittenden	6/4/2019	0.126894	84	28	0	13	4	0	97	129
Chittenden	6/10/2019	0.249215	232	10	0	18	1	0	250	261

City or Town	Date Observed	Probability of Selection	DRIVER			PASSENGER			ALL	
			Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Chittenden	6/12/2019	0.249631	42	12	0	10	1	0	52	65
Chittenden	6/12/2019	0.493438	52	9	0	7	3	0	59	71
Chittenden	6/1/2019	0.958376	88	2	0	15	1	0	103	106
Chittenden	6/1/2019	0.229037	29	1	0	9	0	0	38	39
Chittenden	6/12/2019	0.686486	49	4	0	8	1	0	57	62
Franklin	6/13/2019	1	205	30	0	73	15	0	278	323
Franklin	6/13/2019	0.753079	118	23	0	20	8	0	138	169
Franklin	6/4/2019	0.321063	143	25	0	34	1	0	177	203
Franklin	6/5/2019	1	153	26	0	38	1	0	191	218
Franklin	6/1/2019	0.07797	44	11	0	11	2	0	55	68
Franklin	6/3/2019	0.124671	82	17	0	17	6	0	99	122
Franklin	6/1/2019	0.102002	153	24	0	78	5	0	231	260
Franklin	6/3/2019	0.414468	77	19	0	11	1	0	88	108
Franklin	6/3/2019	0.007725	37	10	0	17	5	0	54	69
Franklin	6/2/2019	0.102354	51	21	0	23	9	0	74	104
Franklin	6/4/2019	0.116317	122	31	0	22	5	0	144	180
Franklin	6/12/2019	1	77	26	0	14	6	0	91	123
Franklin	5/31/2019	0.310464	11	10	0	0	1	0	11	22
Franklin	6/1/2019	0.264681	12	2	0	2	0	0	14	16
Franklin	6/1/2019	1	74	15	0	11	2	0	85	102
Franklin	6/1/2019	0.443162	21	11	0	2	2	0	23	36
Franklin	6/13/2019	0.719647	47	8	0	17	1	0	64	73
Caledonia	6/13/2019	0.406021	83	4	0	42	6	0	125	135

APPENDIX C
Raw Seat Belt Use/Observed Counts

City or Town	Date Observed	Probability of Selection	DRIVER			PASSENGER			ALL	
			Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Caledonia	5/31/2019	0.645829	45	1	0	6	1	0	51	53
Caledonia	6/11/2019	0.059123	115	10	0	27	4	0	142	156
Caledonia	6/4/2019	0.221062	146	18	0	51	4	0	197	219
Caledonia	6/2/2019	0.084402	64	19	0	16	3	0	80	102
Orleans	6/1/2019	0.077974	39	9	0	16	4	0	55	68
Orleans	5/31/2019	0.069395	45	20	0	30	6	0	75	101
Caledonia	6/3/2019	0.049309	10	1	0	4	0	0	14	15
Orleans	6/4/2019	0.088293	19	1	0	11	0	0	30	31
Caledonia	6/2/2019	0.044165	45	5	0	12	1	0	57	63
Caledonia	6/4/2019	0.210201	122	21	0	23	6	0	145	172
Rutland	6/13/2019	1	96	20	0	21	2	0	117	139
Rutland	6/2/2019	1	222	25	0	41	9	0	263	297
Rutland	6/5/2019	0.108669	126	19	0	51	9	0	177	205
Rutland	6/4/2019	0.098097	64	13	0	22	6	0	86	105
Rutland	6/4/2019	0.179033	264	38	0	55	6	0	319	363
Rutland	6/3/2019	0.34617	49	7	0	12	3	0	61	71
Rutland	5/31/2019	0.164151	74	8	0	10	2	0	84	94
Rutland	6/3/2019	0.088089	15	2	0	4	0	0	19	21
Rutland	6/3/2019	0.025011	22	3	0	10	3	0	32	38
Rutland	6/10/2019	0.204407	47	10	0	6	2	0	53	65
Rutland	6/10/2019	0.103709	76	8	0	9	5	0	85	98
Washington	6/2/2019	0.698046	220	8	0	38	6	0	258	272

City or Town	Date Observed	Probability of Selection	DRIVER			PASSENGER			ALL	
			Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Washington	6/11/2019	0.656367	377	22	0	69	6	0	446	474
Washington	6/11/2019	0.37726	63	2	0	14	2	0	77	81
Washington	6/5/2019	0.099536	118	13	0	20	2	0	138	153
Washington	6/3/2019	0.044143	195	30	0	38	9	0	233	272
Washington	6/1/2019	0.004735	145	15	0	39	1	0	184	200
Washington	6/7/2019	0.072073	126	18	0	64	8	0	190	216
Washington	6/7/2019	0.043668	67	8	0	16	0	0	83	91
Lamoille	6/7/2019	0.107815	91	23	0	9	7	0	100	130
Washington	6/10/2019	0.263075	56	5	0	7	0	0	63	68
Washington	6/11/2019	0.116944	172	8	0	19	2	0	191	201
Windsor	6/8/2019	0.0632	298	15	0	32	1	0	330	346
Orange	6/8/2019	0.121104	156	9	0	39	4	0	195	208
Windham	6/8/2019	0.072124	103	14	0	36	12	0	139	165
Windsor	6/8/2019	0.10219	121	29	0	50	10	0	171	210
Orange	6/6/2019	0.131414	79	8	0	22	2	0	101	111
Windsor	6/6/2019	0.055725	60	5	0	18	0	0	78	83
Windham	6/7/2019	0.034316	46	6	0	13	4	0	59	69
Windsor	6/8/2019	0.012475	162	27	0	68	13	0	230	270
Windham	6/7/2019	0.074221	66	16	0	22	2	0	88	106
Windsor	6/3/2019	0.016373	17	5	0	7	1	0	24	30
Windsor	6/10/2019	0.007178	10	1	0	0	1	0	10	12

APPENDIX D

Raw Seat Belt Use Rates by Site

SiteNum	SiteID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants
1101	101BAd	Bennington	89.20%	86.40%	88.40%
1102	102BAd	Bennington	88.30%	92.30%	88.90%
1201	201BAd	Woodford	92.00%	90.70%	91.50%
1202	202BAd	Sunderland	92.20%	89.60%	91.30%
1301	301BAd	Middlebury	96.40%	92.90%	95.70%
1302	302BAd	Middlebury	93.30%	95.70%	93.60%
1303	303BAd	Starksboro	91.60%	91.70%	91.60%
1401	401BAd	Pownal	89.50%	85.70%	88.50%
1402	402BAd	Goshen	86.40%	90.00%	87.50%
1403	403BAd	Rupert	90.50%	77.80%	86.70%
1404	404BAd	Shaftsbury	86.10%	80.00%	84.80%
2101	101CC	South Burlington	96.80%	92.50%	96.20%
2102	102CC	South Burlington	96.30%	95.90%	96.20%
2201	201CC	Williston	96.00%	97.50%	96.40%
2202	202CC	Essex	96.70%	92.90%	96.40%
2301	301CC	Burlington	95.70%	85.40%	93.90%
2302	302CC	Essex	94.70%	96.40%	94.80%
2303	303CC	Cholchester	89.00%	92.60%	89.90%
2401	401CC	Cholchester	81.00%	75.00%	80.20%
2402	402CC	Hinesburg	93.90%	100.00%	94.70%
2403	403CC	Williston	94.30%	100.00%	95.00%
2404	404CC	Cholchester	75.00%	76.50%	75.20%
2501	501CC	Essex Junction	95.90%	94.70%	95.80%
2502	502CC	Milton	77.80%	90.90%	80.00%
2503	503CC	Jericho	85.30%	70.00%	83.10%
2504	504CC	Burlington	97.80%	93.80%	97.20%
2505	505CC	South Burlington	96.70%	100.00%	97.40%
2506	506CC	Burlington	92.50%	88.90%	91.90%
3101	101FGI	Georgia	87.20%	83.00%	86.10%
3102	102FGI	Swanton	83.70%	71.40%	81.70%
3201	201FGI	Swanton	85.10%	97.10%	87.20%
3202	202FGI	Swanton	85.50%	97.40%	87.60%
3301	301FGI	Berkshire	80.00%	84.60%	80.90%
3302	302FGI	Enosburg	82.80%	73.90%	81.20%
3303	303FGI	Fairfax	86.40%	94.00%	88.80%
3401	401FGI	Fairfax	80.20%	91.70%	81.50%
3402	402FGI	St Albans City	78.70%	77.30%	78.30%
3403	403FGI	Montgomery	70.80%	71.90%	71.60%
3404	404FGI	St Albans City	79.70%	81.50%	80.00%

SiteNum	SiteID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants
3501	501FGI	Milton	74.80%	70.00%	74.00%
3502	502FGI	Fairfax	52.40%	0.00%	50.00%
3503	503FGI	Richford	85.70%	100.00%	87.50%
3504	504FGI	Swanton	83.20%	84.60%	83.30%
3505	505FGI	Enosburg Falls	65.60%	50.00%	63.90%
3506	506FGI	St Albans City	85.50%	94.40%	87.70%
4101	101NEK	Ryegate	95.40%	87.50%	92.60%
4102	102NEK	Ryegate	97.80%	85.70%	96.20%
4201	201NEK	St Johnsbury	92.00%	87.10%	91.00%
4203	203NEK	Danville	89.00%	92.70%	90.00%
4301	301NEK	Hardwick	77.10%	84.20%	78.40%
4302	302NEK	Newport	81.30%	80.00%	80.90%
4303	303NEK	Lowell	69.20%	83.30%	74.30%
4401	401NEK	Groton	90.90%	100.00%	93.30%
4402	402NEK	Morgan	95.00%	100.00%	96.80%
4404	404NEK	Lyndonville	90.00%	92.30%	90.50%
4405	405NEK	Lyndonville	85.30%	79.30%	84.30%
5101	101Rut	West Rutland	82.80%	91.30%	84.20%
5102	102Rut	West Rutland	89.90%	82.00%	88.60%
5201	201Rut	North Clarendon	86.90%	85.00%	86.30%
5202	202Rut	Danby	83.10%	78.60%	81.90%
5301	301Rut	Rutland City	87.40%	90.20%	87.90%
5302	302Rut	Benson	87.50%	80.00%	85.90%
5303	303Rut	Rutland Town	90.20%	83.30%	89.40%
5401	401Rut	Proctor	88.20%	100.00%	90.50%
5402	402Rut	West Rutland	88.00%	76.90%	84.20%
5403	403Rut	Castleton	82.50%	75.00%	81.50%
5404	404Rut	Rutland	90.50%	64.30%	86.70%
6101	101WL	Barre	96.50%	86.40%	94.90%
6102	102WL	Berlin	94.50%	92.00%	94.10%
6201	201WL	Cabot	96.90%	87.50%	95.10%
6202	202WL	Barre	90.10%	90.90%	90.20%
6301	301WL	Barre	86.70%	80.90%	85.70%
6302	302WL	Duxbury	90.60%	97.50%	92.00%
6303	303WL	East Montpelier	87.50%	88.90%	88.00%
6401	401WL	Berlin	89.30%	100.00%	91.20%
6402	402WL	Morristown	79.80%	56.30%	76.90%
6403	403WL	Berlin	91.80%	100.00%	92.70%
6404	404WL	Berlin	95.60%	90.50%	95.00%
7101	101WOW	White River	95.20%	97.00%	95.40%
7102	102WOW	Fairlee	94.60%	90.70%	93.80%
7201	201WOW	Chester	88.00%	75.00%	84.20%
7202	202WOW	Concord	80.70%	83.30%	81.40%
7301	301WOW	Chester	90.80%	91.70%	91.00%
7302	302WOW	Orange	92.30%	100.00%	94.00%
7303	303WOW	Stockbridge	88.50%	76.50%	85.50%
7401	401WOW	Halifax	85.70%	84.00%	85.20%
7402	402WOW	Springfield	80.50%	91.70%	83.00%
7403	403WOW	Belows Falls	77.30%	87.50%	80.00%
7404	404WOW	Chester	90.90%	0.00%	83.30%

2019 VERMONT

SAFETY BELT USE STUDY
STATEWIDE OBSERVATION RESULTS

VERMONT STATE HIGHWAY SAFETY OFFICE
BEHAVIORAL SAFETY UNIT
AGENCY OF TRANSPORTATION
WWW.GHSP.VERMONT.GOV

VERMONT
SAFETY BELT USE STUDY
REPORT
PREPARED BY:

Preusser Research Group, Inc. for the
Vermont State Highway Safety Office
Behavioral Safety Unit
Agency of Transportation
Content design and edited by Safer New Mexico Now

Electronic version available at www.ghsp.vermont.gov
and www.preussergroup.com