



Welcome Jo VERMONT

THE GREEN MOUNTAIN STATE

2018 VERMONT SAFETY BELT USE STUDY

THE GOVERNOR'S HIGHWAY SAFETY PROGRAM AGENCY OF TRANSPORTATION

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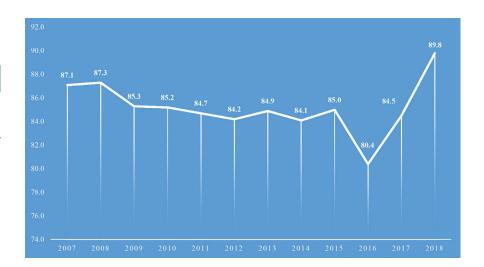


The 2018 seat belt use rate is 89.8%, the highest observed rate ever achieved to date.

The current report summarizes the results of the 2018 Vermont Safety Belt Use Study. Preusser Research Group, Inc. (PRG) was contracted by the Vermont Agency for Transportation to collect roadside observation and prepare a final report on analyzed results for the "Click It or Ticket" (CIOT) seat belt campaign in 2018. 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. 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 (2017 and 2018) have shown substantial increases. The 2018 statewide belt use rate (89.8%) is the highest observed rate ever achieved in the state to date.

Vermont Seat Belt Use 2007-2018 (Weighted)



Vermont vs.
National
Seat Belt Use
2007-2018
(Weighted)

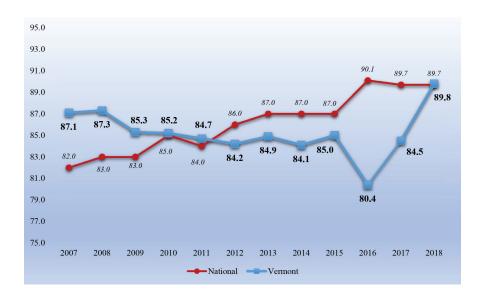


Figure 2. Vermont Statewide vs. National Seat Belt Use (2007 - 2018) Please Note: the 2018 national rate has not been released yet; the last known national rate is included twice

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 we collect 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

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 resulted 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 teh 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 2018 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 June 1-14, 2018 immediately following the conclusion of the national CIOT campaign.





Data Collection Methods

All observers are hired and trained by PRG. Three (3) PRG staff members participated in the 2018 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 two-part session (classroom overview followed by on-street practice). Training included procedures to follow should a site be temporarily unusable (e.g., due to bad weather or major traffic disruption), unusable during this survey period (e.g., due to construction), or permanently unusable.

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., 11:00-2:00 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.

In 2018, Vermont opted to redesign their 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. Thus, brand new sites were selected for the 2018 statewide survey and new weighting spreadsheets were developed. 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, 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 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. Emergency vehicles (police, ambulance, fire department) were not observed. 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 selected vehicle was recorded, the observer would start recording data from the next vehicle to pass the reference point. This procedure ensured that the

next vehicle to be observed was randomly selected from the traffic stream without prior knowledge of seat belt use. Traffic direction was selected based on safest observation point (observations conducted in future years collect data from the same direction to remain consistent).

Quality control monitors made random, unannounced visits to at least 5% 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 on locations to observe from, 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 Excel and/or SPSS. Data cleaning procedures included 10% entry checks to assess entry accuracy across all data collection 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 2017.

Unweighted data was used for all report results and tables. These analyses consisted of simple chi-square tests.

Results

Data collection was conducted June 1-14, 2018 at 89 sites across the state. Please see **Appendix B** for a Google Maps overview of pinned locations. Three observers gathered observation data from 10,003 vehicles and 12,368 occupants including 10,003 drivers and 2,365 passengers. Drivers accounted for 80.9% of persons observed. Vermont drivers and front outboard passengers had a combined weighted seat belt use of 89.8%. The standard error rate was 1.384%, below the required 2.5% threshold required by NHTSA. The total incidence of unknown observations was less than 1% (0.2 %) for all observations statewide, another federal (NHTSA) requirement.



Rates for 2007-2018 (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% represents a return to a rate more consistent with those prior to 2016. The 2018 rate was much higher than any previous rate. 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). Non-weighted raw counts and use rates by site location are provided in **Appendix C** and **Appendix D**.

Annual
Weighted
Seat Belt Use
Rates
2007-2018
(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
84.9%	84.1%	85.0%	80.4%	84.5%	89.8%

Seat 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 ($X^2(1) = 151.65$, p < .0001). Female passengers' use rate was also 8 percentage points higher than male passengers ($X^2(1) = 55.14$, p < .0001). Among all observed occupants, belt use was 8 percentage points higher among female than male occupants ($X^2(1) = 203.67$, p < .0001).

Comparisons across vehicle types revealed a 13-percentage point difference between the highest and lowest belt use by drivers (SUV drivers at 92.7% and truck drivers at 79.4%, respectively). Differences in driver seat belt use across vehicle types was highly significant ($X^2(3)$ =245.18, p < .0001). Differences in belt use rates by passengers were also significant across vehicle type, $X^2(3)$ =48.51, p < .0001.

Driver belt use was significantly higher on weekdays than on weekends (90.2% and 86.1%, respectively), $X^2(1) = 33.12$, 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, $X^2(1) = 24.77$, p < .0001.

2018 Statewide Unweighted Survey Results (% Belted)

Variable	Driver	Passenger	Total
Sex		•	
Male	85.9%	84.1%	85.7%
Female	93.4%	92.2%	93.1%
Vehicle Type			
Car	91.1%	89.5%	90.8%
Truck	79.4%	82.5%	79.9%
SUV	92.7%	92.6%	92.7%
Van	90.2%	93.9%	91.1%
Time of Week			
Weekday	90.2%	89.3%	90.0%
Weekend	86.1%	89.5%	89.2%

Driver and Passenger belt use rates by County are presented in Table 3. Franklin County had the lowest belt use for drivers (80.9%) and Rutland County had the lowest belt use for passengers (85.3%). Highest belt use for drivers was observed in Bennington/Addison County (91.8%); highest belt use for passengers was observed in Chittenden County (93.6%). There were significant differences in belt use by County grouping among drivers (X^2 (6) =166.96, p <.0001), and for passengers (X^2 (6) =30.79, p <.02).



2018
Statewide
Unweighted
Survey Results
by County
Groupings
(% Belted)

County Grouping	Driver Use	Passenger Use	Total Use
Chittenden	91.6%	93.6%	92.0%
Bennington/Addison	91.8%	93.3%	92.1%
Franklin	80.9%	86.7%	82.1%
Caldeonia/Orleans	86.0%	88.4%	86.6%
Rutland	90.0%	85.3%	89.0%
Washington/Lamoille	91.5%	89.9%	91.2%
Windham/Orange/Windsor	91.0%	88.1%	90.4%
Statewide	89.2%	89.5%	89.2%



Discussion and Recommendations

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

Vermont faces several challenges in achieving seat belt use gains. Vermont has a largely rural population with pockets of urban areas, 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 2017 (67.6%) while Massachusetts

ranked 49th (73.7%). 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.

All of that said, the rate in 2018 represents Vermont's highest ever seat belt use rate. 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. It is too early to tell whether this rate is part of an upward trend in use or if future rates will be similar (or even lower) than the current peak rate.

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.

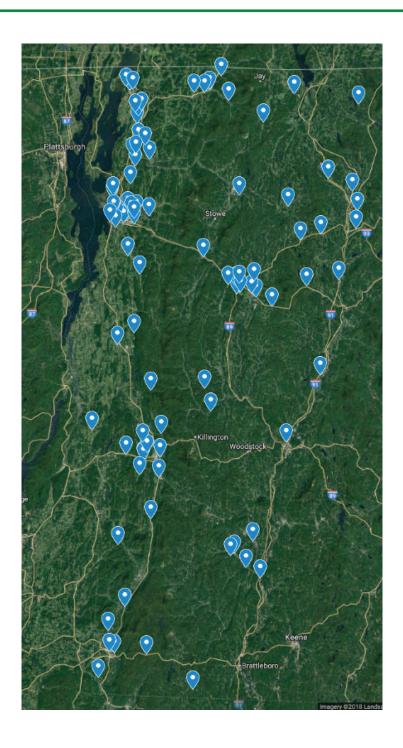
Chaudhary, N., Chaffe, R. (2017). Vermont 2017 Annual Seat Belt Use Survey: Final Report. Published by the Preusser Research Group, Inc. for the Vermont Agency of Transportation, Governor's Highway Safety Program.

Appendix A: Sample Observation Data Collection Form

Sample Observation Data Collection Form

	SITE ID NU	MBER:	C	ITY:			OBSERV DAY OF	ER NAME	:		
	LOCATIO) Ni:	DATE:				DAY OF	WEEK:			
	LOCATIO		ed Street)				(Cross	Street or o	ther landm:	ark)	
	WEATH	•		cle one):1)	Clear/Sun	nv	2) Light Rain			,	wet
,	TRAFFIC DIF										
		RIVER			ENGER			RIVER	,		ENGER
	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					
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34						69					

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

AADT = Annualized Average Daily Traffic

 πifr = 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

City or Town Date Observed Selection Probability of Selection Belted Selection Not Selection <th></th>											
Pate Observed Selection Probability of Selection Belted Belted Selection Not Tell Couldn't Selection Couldn't Selection Restence Selection Not Selection Select					DRIVER		Д	ASSENGI	ER		ALL
6/1/2018 0.823 90 8 0 36 5 0 6/1/2018 1 145 21 0 21 3 0 6/1/2018 1 145 21 0 24 1 0 6/1/2018 0.092 83 7 0 24 1 0 6/1/2018 0.085 46 2 0 42 0 0 6/1/2018 0.065 46 2 0 10 0 0 6/1/2018 0.044 126 4 1 22 1 0 6/1/2018 0.035 16 0 5 1 0 0 6/1/2018 0.048 14 0 0 5 1 0 6/1/2018 0.142 2 0 24 0 0 0 6/1/2018 0.142 2 1 0 5 1 0 6/1/201	City or Town	Date Observed	Probability of Selection	Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
6/1/2018 1 145 21 0 21 3 0 6/1/2018 0.092 83 7 0 24 1 0 6/3/2018 0.092 83 7 0 24 1 0 6/14/2018 0.065 46 2 0 42 0 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.035 14 0 5 2 0 0 6/14/2018 0.035 14 0 5 2 0 0 6/14/2018 0.035 14 0 5 2 0 0 6/12/2018 0.142 10 0 5 1 0 0 6/12/2018 0.165 1 0 5 1 0 0 <th< th=""><th>Bennington</th><th>6/1/2018</th><th>0.823</th><th>06</th><th>8</th><th>0</th><th>36</th><th>5</th><th>0</th><th>126</th><th>139</th></th<>	Bennington	6/1/2018	0.823	06	8	0	36	5	0	126	139
6/1/2018 0.092 83 7 0 24 1 0 6/3/2018 0.182 66 4 0 24 1 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.099 98 11 0 22 1 0 6/14/2018 0.035 16 0 5 1 0 0 6/14/2018 0.018 14 0 0 5 1 0 6/14/2018 0.078 24 1 0 5 1 0 6/12/2018 0.0142 27 0 14 2 0 0 6/12/2018 0.045 135 13 0 3 1 0 0 6/12/2018 0.035 135 12 0 1 0 0	Bennington	6/1/2018	1	145	21	0	21	3	0	166	190
6/3/2018 0.182 66 4 0 42 0 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.065 46 2 0 10 0 0 6/14/2018 0.099 98 11 0 5 1 0 0 6/14/2018 0.035 16 0 5 2 0 <t< th=""><th>Woodford</th><th>6/1/2018</th><th>0.092</th><th>83</th><th>7</th><th>0</th><th>24</th><th>1</th><th>0</th><th>107</th><th>115</th></t<>	Woodford	6/1/2018	0.092	83	7	0	24	1	0	107	115
6/14/2018 0.065 46 2 0 10 0 6/14/2018 0.044 126 4 1 22 1 0 6/14/2018 0.099 98 11 0 5 1 0 6/14/2018 0.035 16 0 5 2 0 0 6/14/2018 0.018 14 0 5 1 0 0 6/14/2018 0.018 14 0 5 1 0 0 6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.0412 270 10 0 24 0 0 6/3/2018 0.165 274 10 0 24 0 0 6/9/2018 0.051 183 26 0 22 0 0 6/6/2018 0.025 13 27 18 0 1 0 0	Sunderland	6/3/2018	0.182	99	4	0	42	0	0	108	112
6/14/2018 0.044 126 4 1 22 1 0 6/14/2018 0.099 98 11 0 22 0 0 6/14/2018 0.035 16 0 5 2 0 0 6/14/2018 0.018 14 0 5 1 0 0 6/14/2018 0.018 14 0 5 1 0 0 6/3/2018 0.078 24 1 0 5 1 0 6/3/2018 0.0148 40 8 0 14 2 0 6/3/2018 0.148 40 8 0 14 2 0 0 6/3/2018 0.165 274 10 0 24 0 0 0 6/6/2018 0.025 135 13 0 38 5 0 0 6/6/2018 0.025 12 0 12 0	Middlebury	6/14/2018	0.065	46	2	0	10	0	0	99	58
6/14/2018 0.099 98 11 0 22 0 0 6/1/2018 0.035 16 0 5 2 0 0 6/1/2018 0.035 16 0 5 1 0 0 6/1/2018 0.018 14 0 5 1 0 0 6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.048 40 8 0 14 2 0 6/9/2018 0.142 270 10 0 24 0 0 6/9/2018 0.165 274 10 0 24 0 0 6/6/2018 0.025 135 13 0 12 1 0 6/6/2018 0.038 216 8 1 19 1 0 6/5/2018 0.025 12 0 1 0 1 0	Middlebury	6/14/2018	0.044	126	4	1	22	1	0	148	154
6/1/2018 0.035 16 0 5 2 0 6/14/2018 0.018 14 0 5 1 0 6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.048 40 8 0 14 2 0 6/3/2018 0.0412 270 10 0 24 0 0 6/3/2018 0.0412 270 10 0 24 0 0 6/9/2018 0.051 183 26 0 63 2 0 6/6/2018 0.025 135 13 0 21 1 0 6/6/2018 0.035 135 18 0 38 5 0 6/5/2018 0.024 27 20 0 24 8 0 6/5/2018 0.025 120 27 0 12 0 0 6/5/2018 <t< th=""><th>Starksboro</th><th>6/14/2018</th><th>0.099</th><th>98</th><th>11</th><th>0</th><th>22</th><th>0</th><th>0</th><th>120</th><th>131</th></t<>	Starksboro	6/14/2018	0.099	98	11	0	22	0	0	120	131
6/14/2018 0.018 14 0 5 1 0 6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.148 40 8 0 14 2 0 6/12/2018 0.145 270 10 0 24 0 0 6/9/2018 0.165 274 10 0 24 0 0 6/6/2018 0.025 135 13 0 63 2 0 6/6/2018 0.025 135 18 0 38 5 0 0 6/5/2018 0.024 270 20 0 12 0 0 0 6/5/2018 0.042 65 7 0 12 0 0 0 6/6/2018 0.042 66 25 0 12 0	Pownal	6/1/2018	0.035	16	0	0	5	2	0	21	23
6/3/2018 0.078 24 1 0 9 0 0 6/3/2018 0.048 40 8 0 14 2 0 6/3/2018 0.148 40 8 0 14 2 0 6/3/2018 0.0412 270 10 0 24 0 0 6/9/2018 0.0165 274 10 0 24 0 0 6/9/2018 0.025 138 26 0 63 2 0 6/6/2018 0.024 207 18 0 38 5 0 6/5/2018 0.024 270 20 0 94 8 0 6/5/2018 0.15 101 27 0 12 0 0 6/5/2018 0.042 65 7 0 12 0 0 6/5/2018 0.127 60 25 0 11 0 0 <tr< th=""><th>Goshen</th><td>6/14/2018</td><td>0.018</td><td>14</td><td>0</td><td>0</td><td>5</td><td>1</td><td>0</td><td>19</td><td>20</td></tr<>	Goshen	6/14/2018	0.018	14	0	0	5	1	0	19	20
6/3/2018 0.148 40 8 00 14 2 0 6/12/2018 0.0412 270 10 0 24 0 0 6/9/2018 0.0412 270 10 0 24 0 0 6/9/2018 0.051 183 26 0 63 2 0 6/9/2018 0.025 135 13 0 51 1 0 6/6/2018 0.049 207 18 0 38 5 0 0 6/5/2018 0.038 216 8 1 19 1 0 0 6/5/2018 0.15 101 27 0 12 0 </th <th>Rupert</th> <td>6/3/2018</td> <td>0.078</td> <td>24</td> <td>⊣</td> <td>0</td> <td>6</td> <td>0</td> <td>0</td> <td>33</td> <td>34</td>	Rupert	6/3/2018	0.078	24	⊣	0	6	0	0	33	34
6/12/2018 0.412 270 10 0 24 0 0 6/9/2018 0.165 274 10 0 77 6 0 6/9/2018 0.065 183 26 0 633 2 0 6/6/2018 0.025 135 13 0 21 1 0 6/6/2018 0.049 207 18 0 38 5 0 6/5/2018 0.038 216 8 1 19 1 0 6/5/2018 0.15 101 27 0 94 8 0 6/5/2018 0.042 65 7 0 12 0 0 6/5/2018 0.042 65 7 0 11 0 0 6/5/2018 0.0249 184 9 0 12 0 0 6/5/2018 0.229 33 10 6 3 0 0	Shaftsbury	6/3/2018	0.148	40	8	0	14	2	0	54	64
6/9/2018 0.165 274 10 0 77 6 0 6/9/2018 0.091 183 26 0 63 2 0 6/6/2018 0.0049 135 13 0 21 1 0 6/6/2018 0.049 207 18 0 38 5 0 6/12/2018 0.038 216 8 1 19 1 0 6/5/2018 0.224 270 20 0 94 8 0 0 6/5/2018 0.042 65 7 0 12 0 0 6/5/2018 0.085 139 7 0 12 0 0 6/5/2018 0.0249 184 9 0 11 0 0 6/5/2018 0.249 82 7 0 12 0 0 6/5/2018 0.25 9 12 0 0 0 0 <th>South Burlington</th> <th>6/12/2018</th> <th>0.412</th> <th>270</th> <th>10</th> <th>0</th> <th>24</th> <th>0</th> <th>0</th> <th>294</th> <th>304</th>	South Burlington	6/12/2018	0.412	270	10	0	24	0	0	294	304
6/9/2018 0.091 183 26 0 63 2 0 6/6/2018 0.025 135 13 0 21 1 0 6/6/2018 0.024 207 18 0 38 5 0 6/12/2018 0.038 216 8 1 19 1 0 6/5/2018 0.024 270 20 0 94 8 0 6/5/2018 0.042 65 7 0 12 0 0 6/12/2018 0.085 139 7 0 11 0 0 6/12/2018 0.127 60 25 0 11 0 0 6/5/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 33 10 6 3 0 0 6/12/2018 0.25 3 6 3 0 0	South Burlington	6/9/2018	0.165	274	10	0	77	9	0	351	376
6/6/2018 0.025 135 13 0 21 1 0 6/6/2018 0.049 207 18 0 38 5 0 6/12/2018 0.038 216 8 1 19 1 0 6/5/2018 0.224 270 20 0 94 8 0 6/5/2018 0.15 101 27 0 12 0 0 6/12/2018 0.085 139 7 0 10 0 0 6/12/2018 0.127 60 25 0 11 1 0 6/5/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 3 10 6 3 0 0 6/5/2018 0.25 3 1 0 6 3 0	Williston	6/9/2018	0.091	183	26	0	63	2	0	246	274
6/6/2018 0.049 207 18 0 38 5 0 6/12/2018 0.038 216 8 1 19 1 0 6/5/2018 0.024 270 20 0 94 8 0 6/5/2018 0.15 101 27 0 12 0 0 6/5/2018 0.085 139 7 0 23 0 0 0 6/5/2018 0.127 60 25 0 11 1 0 0 6/5/2018 0.249 184 9 0 12 0 0 0 6/5/2018 0.25 33 10 6 3 0 0	Essex	6/6/2018	0.025	135	13	0	21	1	0	156	170
6/12/2018 0.038 216 8 1 19 1 0 6/5/2018 0.224 270 20 0 94 8 0 6/5/2018 0.15 101 27 0 12 0 0 6/5/2018 0.042 65 7 0 12 0 0 6/12/2018 0.027 60 25 0 11 1 0 6/5/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 33 10 6 3 0 6/12/2018 0.25 3 6 3 0	Burlington	6/6/2018	0.049	207	18	0	38	2	0	245	268
6/5/2018 0.224 270 20 0 94 8 0 6/5/2018 0.15 101 27 0 12 0 0 6/5/2018 0.042 65 7 0 10 0 0 6/12/2018 0.085 139 7 0 23 0 0 6/5/2018 0.127 60 25 0 11 1 0 6/5/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 33 10 6 3 0 6/12/2018 0.25 3 6 3 0	Essex	6/12/2018	0.038	216	8	1	19	1	0	235	245
6/5/2018 0.15 101 27 0 12 0 0 6/6/2018 0.042 65 7 0 10 0 0 6/12/2018 0.085 139 7 0 23 0 0 6/5/2018 0.127 60 25 0 11 1 0 6/5/2018 0.249 184 9 0 12 0 0 6/12/2018 0.25 33 10 6 3 0 6/12/2018 0.493 82 7 0 13 1 0	Cholchester	6/5/2018	0.224	270	20	0	94	∞	0	364	392
6/6/2018 0.042 65 7 0 10 0 0 6/12/2018 0.085 139 7 0 23 0 0 6/5/2018 0.127 60 25 0 11 1 0 6/5/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 33 10 6 3 0 0 6/12/2018 0.493 82 7 0 13 1 0	Cholchester	6/5/2018	0.15	101	27	0	12	0	0	113	140
6/12/2018 0.085 139 7 0 23 0 0 6/5/2018 0.127 60 25 0 11 1 0 0 6/5/2018 0.249 184 9 0 12 0 <th>Hinesburg</th> <th>6/6/2018</th> <th>0.042</th> <th>65</th> <th>7</th> <th>0</th> <th>10</th> <th>0</th> <th>0</th> <th>75</th> <th>82</th>	Hinesburg	6/6/2018	0.042	65	7	0	10	0	0	75	82
6/5/2018 0.127 60 25 0 11 1 0 6/6/2018 0.249 184 9 0 12 0	Williston	6/12/2018	0.085	139	7	0	23	0	0	162	169
6/6/2018 0.249 184 9 0 12 0 0 6/5/2018 0.25 33 10 0 6 3 0 6/12/2018 0.493 82 7 0 13 1 0	Cholchester	6/5/2018	0.127	09	25	0	11	1	0	71	97
6/5/2018 0.25 33 10 0 6 3 0 6/12/2018 0.493 82 7 0 13 1 0	Essex Junction	6/6/2018	0.249	184	6	0	12	0	0	196	205
6/12/2018 0.493 82 7 0 13 1 0	Milton	6/5/2018	0.25	33	10	0	9	3	0	39	52
	Jericho	6/12/2018	0.493	82	7	0	13	1	0	92	103

				DRIVER		<u> </u>	PASSENGER	ER		ALL
City or Town	Date Observed	Probability of Selection	Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Burlington	6/6/2018	0.958	107	9	0	25	4	0	132	142
South Burlington	6/9/2018	0.229	35	3	0	13	0	0	48	51
Burlington	6/9/2018	0.686	53	4	0	10	0	0	63	67
Georgia	6/2/2018	1	165	24	0	70	5	0	235	264
Swanton	6/1/2018	0.753	108	29	0	22	_∞	0	130	167
Swanton	6/1/2018	0.321	136	14	0	38	3	0	174	191
Swanton	6/1/2018	1	108	17	0	40	1	0	148	166
Berkshire	6/3/2018	0.078	58	15	0	12	9	0	70	91
Enosburg	6/4/2018	0.125	83	17	0	30	2	0	113	135
Fairfax	6/2/2018	0.102	120	30	0	45	3	0	165	198
Fairfax	6/4/2018	0.414	93	24	0	14	2	0	107	133
St Albans City	6/2/2018	0.008	37	6	0	15	2	0	52	63
Montgomery	6/3/2018	0.102	40	6	0	18	2	0	58	69
St Albans City	6/2/2018	0.116	127	50	0	20	9	0	147	203
Milton	6/1/2018	1	09	14	0	7	1	0	29	82
Fairfax	6/5/2018	0.31	17	10	0	2	2	0	19	31
Richford	6/4/2018	0.265	14	7	0	2	2	0	16	25
Swanton	6/1/2018	1	09	11	0	11	1	0	71	83
Enosburg Falls	6/4/2018	0.443	28	13	0	9	2	0	34	52
St Albans City	6/2/2018	0.72	20	16	0	14	2	0	64	81
Ryegate	6/8/2018	0.406	73	7	0	27	2	0	100	109
Ryegate	6/7/2018	0.646	20	8	0	∞	0	0	58	99
St Johnsbury	6/7/2018	0.059	103	18	0	25	9	0	128	152
Danville	6/8/2018	0.221	156	21	0	48	7	0	204	232
Hardwick	6/7/2018	0.084	50	10	0	19	1	0	69	80

				DRIVER		d	PASSENGER	ER		ALL
City or Town	Date Observed	Probability of Selection	Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Newport	6/3/2018	0.078	41	6	0	77	2	0	89	74
Lowell	6/3/2018	0.069	52	5	0	32	1	0	84	06
Groton	6/13/2018	0.049	16	2	0	3	1	0	19	22
Morgan	6/3/2018	0.088	17	9	0	12	2	0	29	37
Lyndonville	6/7/2018	0.044	41	4	0	9	3	0	47	54
Lyndonville	6/6/2018	0.21	122	27	0	19	4	0	141	172
West Rutland	6/5/2018	\vdash	97	13	0	26	2	0	123	141
West Rutland	6/4/2018	1	146	13	0	25	3	0	171	187
North Clarendon	6/4/2018	0.109	128	14	0	41	9	0	169	189
Danby	6/4/2018	0.098	72	11	0	38	7	0	110	128
Rutland City	6/5/2018	0.179	221	20	1	47	12	0	268	301
Benson	6/4/2018	0.346	53	9	0	17	2	0	70	78
Rutland Town	6/5/2018	0.164	82	7	0	9	1	0	88	96
Proctor	6/5/2018	0.088	15	3	0	1	0	0	16	19
West Rutland	6/3/2018	0.025	23	4	0	10	1	0	33	38
Castleton	6/4/2018	0.204	22	4	0	2	1	0	24	29
Rutland	6/4/2018	0.104	58	9	0	8	0	0	99	72
Barre	6/11/2018	0.698	236	11	0	57	2	0	293	306
Berlin	6/11/2018	0.656	362	24	0	41	4	0	403	431
Cabot	6/8/2018	0.377	73	7	0	13	2	0	98	92
Barre	6/8/2018	0.1	84	20	0	21	4	0	105	129
Barre	6/11/2018	0.044	223	25	0	34	∞	1	257	291
Duxbury	6/12/2018	0.005	188	18	0	54	4	0	242	264
East Montpelier	6/9/2018	0.072	90	14	0	41	3	0	131	148
Berlin	6/8/2018	0.044	98	12	1	12	3	1	86	115

				DRIVER			PASSENGER	ER		ALL
City or Town	Date Observed	Probability of Selection	Belted	Not Belted	Couldn't Tell	Belted	Not Belted	Couldn't Tell	Total Belted	Total Successfully Observed
Morristown	6/4/2018	0.108	75	6	0	2	0	0	77	98
Berlin	6/11/2018	0.263	49	4	0	∞	0	0	57	61
Berlin	6/11/2018	0.117	162	9	0	18	2	0	180	188
White River	6/13/2018	0.063	303	16	0	46	1	0	349	366
Fairlee	6/13/2018	0.121	136	11	0	19	1	0	155	167
Chester	6/2/2018	0.072	155	11	0	48	6	0	203	223
Concord	6/2/2018	0.102	135	12	0	09	9	0	195	213
Chester	6/13/2018	0.131	75	_∞	0	14	0	0	89	97
Orange	6/13/2018	0.056	09	3	0	20	2	1	80	98
Stockbridge	6/1/2018	0.034	61	6	0	14	3	0	75	87
Halifax	6/2/2018	0.012	107	30	0	20	13	0	157	200
Springfield	6/2/2018	0.074	98	11	0	40	4	0	138	153
Belows Falls	6/2/2018	0.016	23	9	0	8	4	0	31	41
Chester	6/14/2018	0.007	35	0	0	8	0	0	43	43

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	91.8%	87.8%	90.6%
1102	102BAd	Bennington	87.3%	87.55%	87.45%
1201	201BAd	Woodford	92.2%	96.0%	93.0%
1202	202BAd	Sunderland	94.3%	100.0%	96.4%
1301	301BAd	Middlebury	95.8%	100.0%	96.6%
1302	302BAd	Middlebury	96.2%	95.7%	96.1%
1303	303BAd	Starksboro	89.9%	100.0%	91.6%
1401	401BAd	Pownal	100.0%	71.4%	91.3%
1402	402BAd	Goshen	100.0%	83.3%	95.0%
1403	403BAd	Rupert	96.0%	100.0%	97.1%
1404	404BAd	Shaftsbury	83.3%	87.5%	84.4%
2101	101CC	South Burlington	96.4%	100.0%	96.7%
2102	102CC	South Burlington	93.5%	92.8%	93.4%
2201	201CC	Williston	87.6%	96.9%	89.8%
2202	202CC	Essex	91.2%	95.55%	91.8%
2301	301CC	Burlington	92.0%	88.4%	91.4%
2302	302CC	Essex	96.0%	95.0%	95.9%
2303	303CC	Cholchester	93.1%	92.2%	92.9%
2401	401CC	Cholchester	78.9%	100.0%	80.7%
2402	402CC	Hinesburg	90.3%	100.0%	91.5%
2403	403CC	Williston	95.2%	100.0%	95.9%
2404	404CC	Cholchester	70.6%	91.7%	73.2%
2501	501CC	Essex Junction	95.3%	100.0%	95.6%
2502	502CC	Milton	76.7%	66.7%	75.0%
2503	503CC	Jericho	92.15%	92.9%	92.2%
2504	504CC	Burlington	94.7%	86.2%	93.0%
2505	505CC	South Burlington	92.1%	100.0%	94.1%
2506	506CC	Burlington	93.0%	100.0%	94.0%
3101	101FGI	Georgia	87.3%	93.3%	89.0%
3102	102FGI	Swanton	78.8%	73.3%	77.8%
3201	201FGI	Swanton	90.7%	92.7%	91.1%
3202	202FGI	Swanton	86.4%	97.6%	89.2%
3301	301FGI	Berkshire	79.5%	66.7%	76.9%
3302	302FGI	Enosburg	83.0%	85.7%	83.7%
3303	303FGI	Fairfax	80.0%	93.8%	83.3%
3401	401FGI	Fairfax	79.5%	87.5%	80.5%

SiteNum	SiteID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants
3402	402FGI	St Albans City	80.4%	88.2%	82.5%
3403	403FGI	Montgomery	81.6%	90.0%	84.1%
3404	404FGI	St Albans City	71.8%	76.9%	72.4%
3501	501FGI	Milton	81.1%	87.5%	81.7%
3502	502FGI	Fairfax	63.0%	50.0%	61.3%
3503	503FGI	Richford	66.7%	50.0%	64.0%
3504	504FGI	Swanton	84.5%	91.7%	85.5%
3505	505FGI	Enosburg Falls	68.3%	54.5%	65.45%
3506	506FGI	St Albans City	76.9%	87.5%	79.0%
4101	101NEK	Ryegate	91.2%	93.1%	91.75%
4102	102NEK	Ryegate	86.2%	100.0%	87.9%
4201	201NEK	St Johnsbury	85.1%	80.6%	84.2%
4203	203NEK	Danville	88.1%	87.3%	87.9%
4301	301NEK	Hardwick	83.3%	95.0%	86.2%
4302	302NEK	Newport	82.0%	91.7%	85.1%
4303	303NEK	Lowell	91.2%	97.0%	93.3%
4401	401NEK	Groton	88.9%	75.0%	86.4%
4402	402NEK	Morgan	73.9%	85.7%	78.4%
4404	404NEK	Lyndonville	91.1%	66.7%	87.0%
4405	405NEK	Lyndonville	81.9%	82.6%	82.0%
5101	101Rut	West Rutland	88.2%	83.9%	87.2%
5102	102Rut	West Rutland	91.8%	89.3%	91.45%
5201	201Rut	North Clarendon	90.1%	87.25%	89.4%
5202	202Rut	Danby	86.7%	84.4%	85.9%
5301	301Rut	Rutland City	91.3%	79.7%	89.0%
5302	302Rut	Benson	89.8%	89.5%	89.7%
5303	303Rut	Rutland Town	92.1%	85.7%	91.7%
5401	401Rut	Proctor	83.3%	100.0%	84.2%
5402	402Rut	West Rutland	85.2%	90.9%	86.8%
5403	403Rut	Castleton	84.6%	66.7%	82.8%
5404	404Rut	Rutland	90.65%	100.0%	91.7%
6101	101WL	Barre	95.5%	96.6%	95.8%
6102	102WL	Berlin	93.8%	91.1%	93.5%
6201	201WL	Cabot	91.25%	86.7%	90.5%
6202	202WL	Barre	80.8%	84.0%	81.4%
6301	301WL	Barre	89.9%	79.1%	88.3%
6302	302WL	Duxbury	91.3%	93.1%	91.7%
6303	303WL	East Montpelier	86.5%	93.2%	88.5%
6401	401WL	Berlin	86.9%	75.0%	85.2%

SiteNum	SiteID	City or Town	Driver Raw Use Rate	Passenger Raw Use Rate	Raw Use Rate All Occupants
6402	402WL	Morristown	89.3%	100.0%	89.5%
6403	403WL	Berlin	92.5%	100.0%	93.4%
6404	404WL	Berlin	96.4%	90.0%	95.7%
7101	101WOW	White River	95.0%	97.9%	95.4%
7102	102WOW	Fairlee	92.55%	95.0%	92.8%
7201	201WOW	Chester	93.4%	84.2%	91.0%
7202	202WOW	Concord	91.8%	90.9%	91.5%
7301	301WOW	Chester	90.4%	100.0%	91.8%
7302	302WOW	Orange	95.2%	87.0%	93.0%
7303	303WOW	Stockbridge	87.1%	82.4%	86.2%
7401	401WOW	Halifax	78.1%	79.4%	78.5%
7402	402WOW	Springfield	89.9%	90.9%	90.2%
7403	403WOW	Belows Falls	79.3%	66.7%	75.6%
7404	404WOW	Chester	100.0%	100.0%	100.0%



SAFETY BELTUSE STUDY THE GOVERNOR'S HIGHWAY SAFETY PROGRAM AGENCY OF TRANSPORTATION DEVELOPED: OCTOBER 2018 ELECTRONIC VERSION AVAILABLE AT WWW.PREUSSERGROUP.COM WWW.GHSP.VERMONT.GOV AGENCY OF TRANSPORTATION Governor's Highway Safety Program