

# Office of Highway Safety

## Road Safety Audit Review

<b>Town:</b>	South Burlington	<b>Date Reviewed:</b>	June 19, 2018
<b>Route:</b>	VT 116 and Cheese Factory Rd	<b>Mile points:</b>	VT 116 MM 0.16-0.32 (int 0.24), S5209 MM 0.75-0.79 (end)

### Location Map



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### RSAR Process

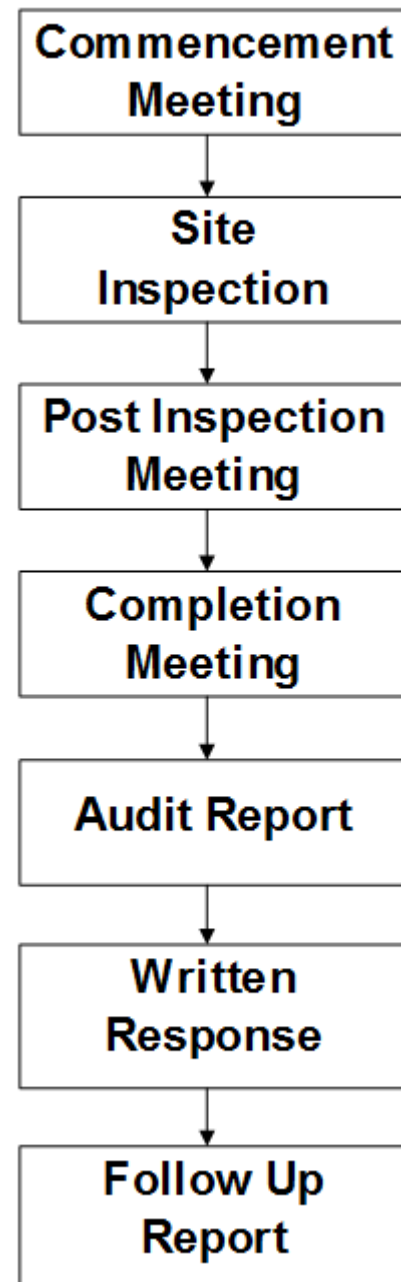
A Road Safety Audit Review (RSAR) is a formal examination of an existing road in which an independent, multi-discipline team (the Audit Team) reports on potential safety issues.

According to the Federal Highway Administration (FHWA), the purpose of a RSAR is to determine which elements of the road may present a safety concern, to what extent and under what circumstances as well as to identify opportunities to mitigate the identified safety concerns.

The RSAR process is composed of several steps as shown in Figure 1. The process starts with a Commencement Meeting during which the Audit Team reviews data and gathers community concerns. A Site Inspection is then performed by the Audit Team. The site visit involves the identification of safety deficiencies as seen in the field. The Audit Team will usually drive through the location of interest to “get a feel” for the area, traveling through each approach in the case of intersections. The team is to then drive at a slower speed to make observations. If needed, the team will also walk the location. Following the site inspection, the Audit Team holds a Post Inspection Meeting. It is during this meeting that the team members discuss their observations and identify safety issues. The team is to reach a consensus on the importance of each safety issue mentioned. Only those issues for which a consensus is reached are included in the RSAR findings. A RSAR report (Written Report) is prepared.

The Written Report identifies safety concerns and proposes guidance. These issues and solutions are presented in a tabular format associated to each Responsible Entity for

**Figure 1 - Road Safety Audit Process**



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ease of reporting. The Responsible Entities are any groups who own a roadway feature or who are responsible for making an improvement or for initiating further studies. These could include for example, the VTrans design section, the local town, the local police or the local RPC.

### **Location**

The location of this RSAR is the intersection of VT 116 and Cheesefactory Road in South Burlington and its approaches.

### **Purpose of the RSAR**

This RSAR was conducted as part of the Highway Safety Improvement Program (HSIP).

The RSAR herein has sought to identify potential safety hazards and physical features which may affect road user safety. However, it is possible that not every deficiency has been identified. It should further be recognized that the implementation of the guidance in this report might contribute to improve the level of safety of the facility reviewed but not necessarily remove all the risks.

### **RSAR Participants**

Mario Dupigny-Giroux from the Office of Highway Safety, VTrans, was the RSAR coordinator.

The other participants were:

Ashley Bishop,	Dist 5, VTrans
William Jerkins,	GHSP, VTrans
Christopher Mercon,	TSMO, VTrans
Josh Plaksa,	OHS, VTrans
Kelsi Record,	Traffic Design, VTrans

Adam Cate,	South Burlington PW
Patrick Mulcahy,	South Burlington PD
Justin Rabadoux,	South Burlington PW

Sai Sarepalli,	CCRPC
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### Information Reviewed

#### Geometry

The intersection of VT 116 and Cheesefactory Road is a 90-degree, three-way intersection. It is controlled by a stop sign on the Cheesefactory approach.

VT 116 is a two-lane road that runs south to north. The lanes are twelve feet wide and the shoulders on both sides are nine feet wide. There are no auxiliary lanes, but many southbound motorists who are making a right turn onto Cheesefactory Road are using the wide shoulder to make their maneuvers.

Cheesefactory Road is a two-lane road. Its roadway width is about twenty-two feet.

There is a 6.2 percent grade on VT 116 south of the intersection.

#### Speed Limit

The posted speed limit on VT 116 is 50 mph. The speed limit on Cheesefactory Road is 35 mph.

#### Speed Study

The Technical Services Section of the VTrans Maintenance and Operation Bureau performed a speed study in April 2018 on VT 116. Speeds for traffic traveling on VT 116 were measured at mile points 0.39 and 0.69.

The results showed that the 85th percentile speed at mile point 0.39 was 55 mph (meaning that 85% of the traffic travels at a speed of 55 mph or less). Similarly, the 85th percentile speed at mile point 0.69 was 56 mph.

The results of this study also showed that the 10-mph pace, which is defined as the range of speeds that encompasses the highest proportion of vehicles, was between 46 and 55 mph at mile point 0.39 with seventy-two percent of all vehicles. At mile point 0.69, the range of the 10-mph pace was between 47 and 56 mph with a proportion of sixty-five percent.

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According to the City of South Burlington, the City of South Burlington and the Shelburne Police conduct enforcement on VT 116 about once a week in the pull-out area just south of the intersection.

### Sight Distances

The Technical Services Section of the VTrans Maintenance and Operation Bureau measured the stopping sight distance when traveling northbound to be between 450 and 500 feet. They also determined that the corner sight distance when stopped on Cheesefactory Road and looking south was 800 feet.

In comparison, the AASHTO stopping sight distance for 55 mph is 495 feet. The AASHTO corner sight distance for 55 mph is 610 feet.

### Traffic Volumes

The 2016 AADT on VT 116 was 6000 vehicles per day north of Cheesefactory Road and it was 4600 vehicles per day south of Cheesefactory Road. On Cheesefactory Road, the 2016 AADT was 3500 vehicles per day.

A twelve-hour turning movement count was conducted by the Technical Services Section of the VTrans Maintenance and Operation Bureau on June 29, 2016. The raw count shows that the afternoon peak hour from 4:45 pm to 5:45 pm has the largest amount of traffic. During this time period, 546 vehicles are entering the intersection from the north approach. Of these, 300 vehicles are turning right and 246 and continuing southbound. From the south approach, 139 vehicles are entering the intersection with 25 turning left and 114 continuing northbound. From the Cheesefactory Road approach, 189 vehicles are turning left and 63 are making a right turn.

### Auxiliary Lanes Analysis

In January 2018, the Traffic Research Unit completed northbound left-turn and southbound right-turn lane warrant analyses for this intersection for built years 2018 and 2022.

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These analyses were based on Design Hour Volumes. The overall peak hour at the subject intersection occurred in the afternoon. Based on PM DHVs, it was determined that a northbound left-turn lane was not warranted for either 2018 or 2022. However, using the same PM DHV, it was found that a southbound right-turn lane was warranted for both 2018 and 2022.

The analyses were also performed using AM DHVs. In this case, it was determined that a northbound left-turn lane was warranted for both 2018 and 2022 but that when using the same AM DHVs, a southbound right-turn lane was not warranted for either 2018 or 2022.

	<b>Traffic Volume Warrants</b>			
	<b>AM DHV</b>		<b>PM DHV</b>	
	<b>2018</b>	<b>2022</b>	<b>2018</b>	<b>2022</b>
<b>NB Left Turn Lane</b>	Met	Met	Not Met	Not Met
<b>SB Right Turn Lane</b>	Not Met	Not Met	Met	Met

### Pavement Condition

The surface condition on VT 116 is rated as fair with the year or last work being 2008 (VTransparency 10/11/2018).

### Traffic Control Devices

Traffic is controlled by a stop sign on Cheesefactory Road. There is a Cheesefactory Road street name sign on the southwest corner of the intersection.

There are advance warning side road signs (W2-2) in both directions on VT 116. These are located at mile point 0.10 in the northbound direction and at mile point 0.37 in the southbound direction.

There is a 50 mph speed limit sign in the southbound direction before the intersection at mile point 0.309.

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### Past Projects

Project STP 2508(1) was for the resurfacing of VT 116. This project was completed in 2008. The project also paved the approach of Cheeseactory Road for about twenty-five feet from the edge of VT 116. The stop sign on Cheeseactory Road was replaced as part of this project. All the other signs were retained.

Cheeseactory Road was reclaimed and paved with a district town highway class II roadway program grant in 2003.

Work Order 14-089 for the installation of a double arrow sign (W12-1) facing Cheeseactory Road traffic was completed on August 13, 2014.

Mario Dupigny-Giroux reported to TSMO, on January 23, 2017, that the double arrow sign had been knockdown. Tyler Guazzoni reported on February 9, 2017 that the double arrow sign had been put back up.

### Future Projects

There are no known future projects for this area.

### Crash History

This intersection is a high crash intersection for the 2012-2016 period.

There was a total of fourteen crashes reported between 2012 and 2016 in the area of this intersection and there was one crash reported in 2017.

The principal crash pattern at this intersection is a read-end crash in the northbound direction (four cases). In this situation, a northbound vehicle is about to make a left turn onto Cheeseactory Road and is rear-ended by a through vehicle. Two of the four cases happened under dark conditions.

Three other secondary crash patterns are recognizable.

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The first secondary crash pattern involves a vehicle that does not stop for the stop sign (driver does not see it) and that continues eastbound across VT 116 into the ditch (two cases). These crashes are typically happening under dark conditions.

The second secondary crash pattern involves a motorist who is stopped on Cheesefactory Road and who is intending to make a left turn onto VT 116 to travel northbound (two cases in five years, one more case in 2017). In these cases, there are southbound vehicles that are turning right onto Cheesefactory Road. These right turning vehicles are shadowing the presence of southbound through traffic. The motorist who is making the left turn does not see the southbound through vehicle and collides with it. These are taking place during the day in late afternoon.

The third secondary crash pattern involves vehicles that are traveling southbound on VT 116 and that lose control on VT 116 (two cases). These vehicles then continue across Cheesefactory Road.

Overall, the ratio of night-to-day crashes is 1.4, meaning that there are more crashes that are happening under dark conditions. All the single-vehicle crashes at this intersection happened under dark conditions.

### Citizen Complaints

A citizen wrote to the Governor in May 2014 following a serious injury crash by family members. This citizen reported that “the intersection they crashed is notoriously dangerous. At night, it is dark. The stop sign is not positioned well. It is difficult to get perspective at that intersection if there are no other vehicles traveling along”.

### Current Local Concerns

The City of South Burlington reported that crashes at this intersection were no frequent but that they were severe.

The City of South Burlington mentioned that people on Cheesefactory Road assumed that southbound traffic will be making a right turn. They have seen a lot of closed calls.



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### Identified Safety Concerns

This section lists the areas of safety concern identified by the audit team during the site inspection and from the analysis of available data. This section also reports the potential safety enhancements suggested by the audit team. The concerns are not listed in order of importance.

#### Concern: Northbound Rear-End Crashes

There are rear-end crashes in the northbound direction at this intersection. The vertical grade on VT 116 affects the available stopping sight distance in the northbound direction. The stopping sight distance when traveling northbound was determined to be between 450 and 500 feet. For traffic traveling at 55 mph, the recommended AASHTO stopping sight distance is 495 feet. The available sight distance is marginal for the higher rate of travel speeds on this road and may contribute to rear-end crashes in the northbound direction.

#### Safety Enhancements:

##### Immediate to Short

- Review the locations of the advance side road warning signs and bring them closer to the intersection as feasible.
- Install a Cheese Factory Rd street name plaque under each sign.

##### Mid to Long

- Evaluate the installation of a left turn lane or the possibility of flattening the vertical curve. The maximum project cost for adding a left turn lane to generate a benefits-to-costs ratio of 1 is \$750,000. The maximum project cost for flattening the vertical curve to generate a benefits-to-costs ratio of 1 is \$355,000.

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Concern: Broadside Crashes and near Misses Involving Eastbound Left Turning Vehicles

Southbound right turning vehicles in the westbound shoulder are shadowing the presence of southbound vehicles continuing through the intersection. In a typical crash, a motorist who is making the left turn does not see the southbound through vehicle and collides with it. The City of South Burlington also explains the occurrence of some of the near misses to be due to the motorists who are making the left turn thinking that the southbound vehicle will be making a right turn onto Cheesefactory Road.

Mid to Long

- Evaluate the installation of a right turn lane. The maximum project cost to generate a benefits-to-costs ratio of 1 for the installation of a right turn lane is \$250, 000.

Concern: Crashes under Dark Conditions Are Happening at a Higher Proportion

The occurrence of crashes under dark light conditions is 40% higher than that of daytime crashes. All single vehicle crashes at this intersection have taken place under dark conditions. Note, however, that a double large arrow was installed during the crash reporting period to address the issue of running through the intersection when conditions are dark.

Immediate to Short Term

- Install a stop ahead sign on Cheesefactory Rd (to provide an extra cue in dark conditions that the road is about to end).
- Add a reflective post panel to the stop sign to increase night time conspicuity.

Short to Mid

- Consider the installation of street lighting at this intersection.

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The application of the lighting intersection warrant mentioned in the VTrans Lighting Guide suggests that the partial lighting of this intersection is warranted (point-score for this intersection is estimated at 186).

The crash reduction factor for street lighting for all crashes is 15% (it is 71% for nighttime crashes). With a construction cost of \$10,000 (5-yr bid average is \$7,308) and yearly maintenance cost of about \$200 (LED, assuming a high-end usage of 90 kw per month), the safety benefit-cost ratio is around 22.

### **Summary of Safety Enhancements**

The safety concerns and potential actions that were identified in the previous sections are further summarized in the next table. These potential enhancements will be presented to respective parties for further consideration. The entities listed under the column called “Potential Responsibility” are suggested groups that could possibly implement some of the countermeasures.

In this table, time frames and costs are qualified as follows: short term, < 1 year; mid-term 1-3 years; long term > 3 years; low cost, < \$15,000; medium cost, \$15,001 - \$75,000; high cost, > \$75,001.

The safety concerns discussed previously are referred to in the table by the numbers shown here:

1. Northbound Rear-End Crashes,
2. Broadside Crashes and near Misses Involving Eastbound Left Turning Vehicles,
3. Crashes under Dark Conditions Are Happening at a Higher Proportion.

Potential Safety Enhancements Summary Table										
	Safety Concerns						Potential Responsibility	Safety Payoff <sup>1</sup>	Time Frame	Cost
Safety Enhancement	1	2	3	4	5	6				
Review the locations of the advance side road warning signs	X						VTrans – TSMO		Now to Short	Low
Install a Cheeseactory Rd street name plaque below each advance sign	X						VTrans – TSMO		Now to Short	Low
Evaluate the installation of a left turn lane	X						VTrans – AMP	44% reduction in All crashes (CMF ID 253, 4 stars)	Mid to Long	Med to High (max cost for B/C =1 is \$750,000)
Evaluate the possibility of flattening the vertical curve	X						VTrans – AMP	51% reduction in all crashes (CMF ID 721, 3 stars)	Mid to Long	Med to High (max cost for B/C = 1 is \$900,000)

<sup>1</sup> The CMF Clearinghouse explains that the star quality rating indicates the quality or confidence in the results of the study producing the CMF. The star rating is based on a scale (1 to 5), where a 5 indicates the highest or most reliable rating. The review process considers five categories for each study: study design, sample size, standard error, potential bias, and data source.

Potential Safety Enhancements Summary Table										
	Safety Concerns						Potential Responsibility	Safety Payoff <sup>1</sup>	Time Frame	Cost
Safety Enhancement	1	2	3	4	5	6				
Evaluate the installation of a right turn lane		X					VTrans – AMP	14% reduction in all crashes (CMF ID 285, 4 stars)	Mid to Long	Med to High (max cost for B/C =1 is \$250,000)
Install a stop ahead sign on Cheeseactory Rd			X				City		Now to Short	Low
Add a red retroreflective strip on the stop sign post			X				VTrans – TSMO		Now to Short	Low
Consider the installation of street lighting at this intersection			X				VTrans – District 5 (with Safety Funds)	71% reduction in all nighttime crashes (CMFID 9029, 3 stars)	Short to Mid	Low
Possibly evaluate a roundabout as part of the other geometric changes listed above	X	X	X				VTrans – AMP	71% reduction in all crashes (CMF ID 229, 5 stars)	Mid to Long	High (max cost for B/C =1 is \$1,900,000)

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# COLLISION DIAGRAM

Key Number =

MUNICIPALITY: <u>South Burlington</u>	COUNTY: _____	FILE: <u>SoBurChee</u>
INTERSECTION: <u>VT-116</u>		CASE #: _____
PERIOD: <u>5</u> YEARS <u>0</u> MONTHS	FROM <u>1/1/2012</u> TO <u>12/31/2016</u>	BY: _____ DATE: <u>12/29/2017</u>



SYMBOLS		MANNER OF COLLISION	
	MOVING VEHICLE		REAR END
	TURNING VEHICLE		LEFT TURN
	BACKING VEHICLE		LEFT TURN
	PARKED VEHICLE		OVERTAKE
	RECORD NUMBER		OUT OF CONTROL
	PEDESTRIAN		HEAD ON
	BICYCLIST		RIGHT TURN
	ANIMAL		RIGHT TURN
	FIXED OBJECT		RIGHT ANGLE
	Fatal		SIDE SWIPE

Crash #	Route	Incident #	City/Town	Mile Marker	Crash Date	Time	Weather	Contributing Circumstances	Direction Of Collision	# Injuries	# Fatalities
1	VT-116	12SB008299	South Burlington	0.24	7/3/2012	1:34 PM	Clear	Inattention- No improper driving	Rear End	0	0
2	VT-116	12SB011011	South Burlington	0.24	8/23/2012	9:31 PM	Cloudy	No improper driving	Single Vehicle Crash	0	0
3	VT-116	13SB004490	South Burlington	0.26	3/30/2013	4:12 AM	Clear		Other - Explain in Narrative	0	0
4	VT-116	13SB012996	South Burlington	0.24	9/5/2013	9:12 PM	Other	Distracted- Disregarded traffic signs- signals- markings	Single Vehicle Crash	0	0
5	VT-116	13SB017460	South Burlington	0.24	12/9/2013	4:22 PM	Snow	Driving too fast for conditions	Single Vehicle Crash	0	0
6	VT-116	13SB15664	South Burlington	0.24	10/30/2013	6:00 PM	Clear	No improper driving	Rear End	4	0
7	VT-116	14SB004991	South Burlington	0.24	5/6/2014	9:30 PM	Clear	Disregarded traffic signs- signals- markings- Inattention	Single Vehicle Crash	1	0
8	VT-116	14SB008897	South Burlington	0.24	8/1/2014	11:04 PM	Clear	Inattention- No improper driving	Rear End	1	0
9	VT-116	14SB009516	South Burlington	0.24	8/19/2014	7:47 AM	Cloudy		Rear End	0	0

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Crash #	Route	Incident #	City/Town	Mile Marker	Crash Date	Time	Weather	Contributing Circumstances	Direction Of Collision	# Injuries	# Fatalities
10	VT-116	15SB005476	South Burlington	0.24	5/7/2015	3:20 PM	Clear	Failed to yield right of way	Left Turn and Thru-Angle Broadside -->v--	0	0
11	VT-116	15SB014365	South Burlington	0.24	12/1/2015	1:50 PM	Rain	Failed to yield right of way- No improper driving	Left Turn and Thru-Angle Broadside -->v--	1	0
12	VT-116	16SB008255	South Burlington	0.24	7/18/2016	3:36 PM	Rain	Failed to yield right of way- Driving too fast for conditions	Left Turn and Thru-Angle Broadside -->v--	0	0
13	CHEESEFACTORY RD	12SB00702	South Burlington	0.79	1/26/2012	9:46 PM	Snow	Driving too fast for conditions	Single Vehicle Crash	0	0
14	CHEESEFACTORY RD	2014SB010447	South Burlington	0.76	9/10/2014	9:33 PM	Cloudy	Visibility obstructed	Single Vehicle Crash	0	0
	VT-116	17SB004665	South Burlington	0.24	5/1/2017	7:31 AM	Rain	Failed to yield right of way- Inattention	No Turns- Thru moves only- Broadside ^<	2	0

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**12SB008299 1**

No diagram.

7/3/2012, 13:34. Minor two motor vehicle crash at the intersection of Hinesburg Road and Cheese Factory Road. No injuries.

Operator 1 stated she was coming from Chittenden and on her way to pick up someone at the bus station. Op 1 was traveling North on Hinesburg Road and stated she looked over at a sign as she was reaching the crest of a hill. Op 1 advised she did not observe Vehicle 2 until it was too late. Op 1 stated when she did see Veh 2 she hit her brakes but was unable to come to a stop before colliding with Veh 2. Op 1 estimated she was traveling approximately 40-45 miles per hour. Vehicle 1 had minimal damage to the front bumper. There were scratches, scraps, and a few dents.

Operator 2 advised she was traveling North on Hinesburg and slowed down approaching the intersection with Cheese Factory Road. Op 2 stated she came to a complete stop and was signaling to make a left hand turn unto Cheese Factory Road. Op 2 advised she did observe Vehicle 1 approaching from behind but was unable to move out of the way in time.

Vehicle 2 had damage to the back bumper where Veh 1 made contact. There were dents and scratches, some buckling on the passenger side rear door and also damage to the trunk.

**12SB011011 2**

No diagram.

08/23/2012, 21:31, cloudy, dry. A single vehicle crash at the intersection of Hinesburg Road and Cheesefactory Road in South Burlington with possible injuries.

Operator 1 advised she was traveling southbound on Hinesburg Road in the area of Cheesefactory Road. Op 1 cannot recall at what point she lost consciousness, but remembers waking up when she was crossing over Cheesefactory Road and driving off the side of the road up a small hill.

Witness Statements: Witness advised he was traveling east on Cheesefactory Road. While he was approaching the intersection of Cheesefactory Road and Hinesburg Road, he observed Veh 1 travelling approximately 50 – 55 mph cut across Cheesefactory Road and drive off the road and up a hill. Passenger 1 advised she was in the front passenger side seat prior to the crash. Pass 1 confirmed the vehicle were traveling south on Hinesburg Road. Pass 1 advised the three of the passengers/operator were having a conversation while traveling on Hinesburg Road southbound and observed Veh 1 in a skid. Pass 1 stated Veh 1 left the roadway and hit a tree so hard it bounced back and hit it a second time. Pass 1 stated she did not see Veh 1 swerve to miss hitting a squirrel. Pass 2 advised he was in the rear passenger side seat. Driver stated the same as Pass 1.

**13SB004490 3**

No diagram.

03/30/2013, 04:12, clear, dry. Motor Vehicle 1 that had been struck while traveling on Hinesburg Road. SBPD dispatch advised the other Vehicle 2 had left the scene and was last seen traveling south on Hinesburg Road.

Operator 1 advised that she was traveling north on Hinesburg Road when Veh 2 traveling south swerved into her lane and struck the front of her vehicle. Op 1 advised Vehicle 2 continued traveling south on Hinesburg with unknown amount of damage and registration. Op 1 advised she was not injured during the accident. Veh 1 Heavy damage to the front bumper, grill and hood of the vehicle. There appeared to be possible paint transfer from Veh 2 but due to the damage it was unclear.

**13SB012996 4**

No diagram.

09/05/2013, 21:12, dry. One vehicle motor vehicle crash involving at the intersection of Cheese Factory Rd and Hinesburg Road in South Burlington. SBPD Dispatch reported no injuries. There were also no skid marks present.

Op#1 said he was talking to his Passenger while traveling west on Cheese Factory Lane. Op 1 said that he and Passenger were "deep in conversation" and he was not paying attention to the roadway. Op 1 said that he saw the stop sign at Cheese Factory Rd with the intersection at Hinesburg Road but he was traveling approximately forty (40) miles per hour. Op 1 said he applied the brakes to his vehicle but was unable to stop. There was no evidence of an attempt at braking in the roadway. It appeared Vehicle #1 passed through the intersection and off the east side of Hinesburg Road before striking a grass embankment, stopping the vehicle. Based on Op#1's failure to stop for the stop sign on Cheese Factory Rd I issued a VCVC for failing to yield.

**13SB017460 5**

No diagram.

Single motor vehicle roll over. The crash was closer to 2000 Hinesburg Road in the ditch area on the northbound side. Officer observed the vehicle was on its side.

Witness advised he had been traveling South on Hinesburg Road and stated the vehicle was traveling North on Hinesburg and advised the vehicle started to slide. Witness advised the vehicle went back and forth a couple of times (from sliding and correcting) before it went off the road.

Operator 1 advised she was heading South on Hinesburg Road and that she was going to take a right onto Cheese Factory Rd as she was heading toward Shelburne. Op 1 advised she had actually just made a left hand turn off of Cheese Factory Rd onto Hinesburg Road heading North. Op 1 advised she hit a patch of slush/ice in the center of the road causing her to lose control of her vehicle. Op 1 advised she attempted to gain control of the vehicle but went off the road way. Op 1 estimated she had been traveling approximately 35-40 miles per hour when she hit the slush/ice on the roadway.

Officer observed small dents to the front quarter panels on both sides and on the hood. The windshield was cracked in three places and the back two windows were broken out.

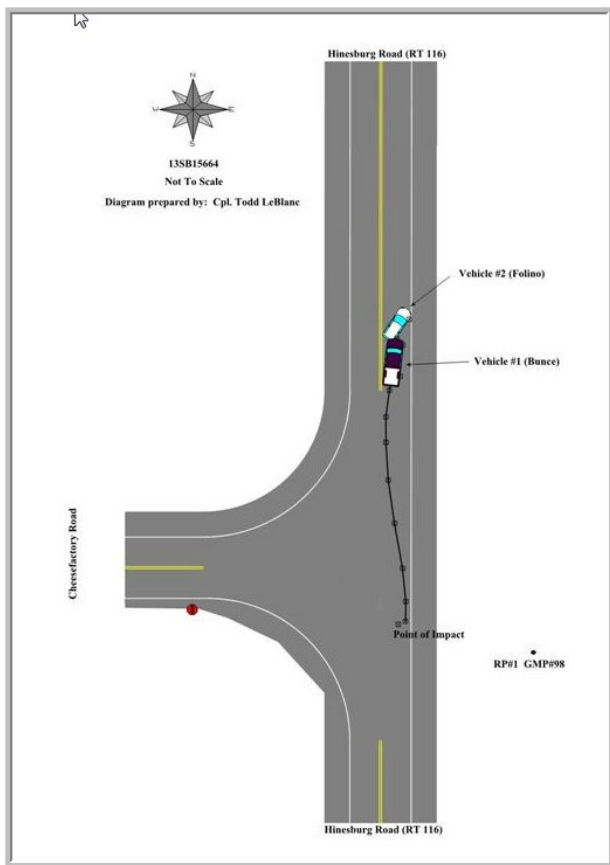
**13SB15664 6**

Clear, Dry. 10/30/2018/, 18:30. Two car motor vehicle crash with injuries at the intersection of Cheesefactory Road and Hinesburg Road in South Burlington. Two vehicles at a position of uncontrolled rest in the northbound lanes of Hinesburg Road, north of the Cheesefactory Road intersect.

Vehicle #1 had come to rest with its severely damaged front end up against the rear end of Vehicle #2. Vehicle #2 sustained extremely heavy rear end and roof damage. Both front seat backs in Vehicle #2 were broken.

Witness advised Veh 1 ran into the rear end of Vehicle 2, which was apparently stopped and trying to turn left on to Cheesefactory Road.

Op 2 advised me she was driving on Route 116 taking Passenger to a doctor's appointment. Op 2 advised she was turning left onto Cheesefactory Road, at which time she was struck from behind by Vehicle #1. Op advised she believed she was using her turn signal when she was struck, and was talking on the telephone with her daughter. Op 2 also advised she was rolling forward slightly at the time of impact. Op 2 advised she sustained facial injuries to include at least a broken nose. Op 1 admitted to have been driving the pickup truck.



**14SB004991 7**

No diagram.

05/06/2014, 21:30, clear, dry. Motor vehicle crash with injuries which had occurred at the intersection of Cheesefactory Road and Hinesburg Road in South Burlington. It appeared Veh 1 traveled east on Cheesefactory Road, across Hinesburg Road, and then collided with the embankment located on the east side of Hinesburg Road.

There were no tire marks present on Hinesburg or Cheesefactory Road related to this crash. There were drag marks leading up the embankment which were apparently left by this vehicle. These drag marks were in front of the vehicle, as though it made the marks and then backed down the embankment to its then present location. The vehicle sustained front end damage, rear bumper damage and several airbags had deployed inside the vehicle.

Operator 1 advised me he had "missed" the stop sign at the end of Cheesefactory Road. Op 1 advised he did live in the area, and had passed through the intersection several times before.

Based upon the statements of the operator and evidence at the scene, it is the opinion of this officer that this crash was caused by inattention on the part of Op 1 in failing to stop for the stop sign located at the end of Cheesefactory Road.

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**14SB008897 8**

8/1/2014, 23:04. At the time of this accident, the roadway was dry and the weather was clear. It was dark and the roadway was unlit (2304).

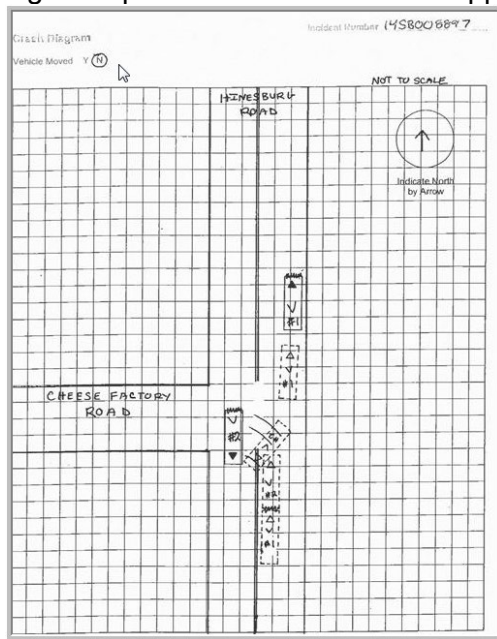
Vehicle 1 was located in the breakdown lane on the east side of Hinesburg Road just north of the Cheese Factory Road intersection and was facing north. It appeared to have come to a controlled rest. It sustained significant impact damage to the front end and its airbags had been deployed. It was towed from the scene.

Vehicle 2 was located on Hinesburg Road at the intersection with Cheese Factory Road and was facing south. Veh 2 appeared to have come to an uncontrolled rest in this position. Several yaw marks were present indicating Vehicle #2 spun approximately 180 degrees as a result of the impact. It sustained significant impact damage to the rear end and was towed.

Op 2 stated he was traveling south on Hinesburg Road from Hinesburg and was going to a location in South Burlington. This did not make any sense because Hinesburg is located south of South Burlington.

Operator 1 stated she was a friend of Op 2's and they had left a location in Hinesburg together. Op 1 was driving to her home in Burlington while Op 2 was going to a location in South Burlington. Op 1 was following his car as they drove north on Hinesburg Road. As they approached the intersection with Cheese Factory Road, Op 1 looked down for a moment and when she looked back up, she saw the brake lights from Veh 2. Op 1 was unable to avoid colliding with Veh 2. Op 1 estimated she was drive approximately 55 miles per hour at the time of the accident and was unsure if her vehicle had come to a controlled or uncontrolled rest, but assumed it was a controlled rest based upon it's straight alignment in the brake down lane.

Op 2 stated he was traveling from Hinesburg to a location in South Burlington on Hinesburg Road. As he approached the intersection with Cheese Factory Road, he slowed his vehicle down and activated his turn signal. Op 2 did not see Vehicle 1 approaching the rear of his vehicle before the crash occurred.



**14SB009516 9**

No diagram.

Dry, clear. 13:45. MVC with no injuries on Hinesburg Road. The crash occurred on Hinesburg Road near the intersection of Cheese Factory Road. On scene the roadway is dry, worn asphalt and the weather was partly cloudy. There was roadway debris.

Op 1 advised she was traveling north on Hinesburg Road and was approaching the intersection of Cheese Factory Road when she noticed Vehicle 2 stopped in front of her. Op 1 advised she was unable to stop and struck Vehicle 2 in the rear bumper. Op 1 advised she was not injured.

Op 2 said she was traveling north on Hinesburg Road and had come to a stop to make a left onto Cheese Factory Road, when Vehicle 1 struck her from behind.

Vehicle #1 Heavy front end damage to the bumper, hood and grill of the vehicle. Vehicle #2 Heavy damage to the rear end of the vehicle to the bumper and trunk.

Based on the information provided by both operators, it appeared Op 1 failed to recognize Vehicle 2 had stopped in front of her causing her to strike Vehicle 2.

**15SB005476 10**

5-7-15, 15:20. Clear, Dry. Two vehicle accident at the intersection of Cheese Factory and Hinesburg Roads in South Burlington. There were no reported injuries.

Operator 1 stated he had been traveling east on Cheese Factory and had stopped for the stop sign at the intersection with Hinesburg Road. Op 1 advised he was stopped and was preparing to make a left turn onto Hinesburg Road heading north. He stated there was a milk truck stopped in front of him which was also preparing to make a left onto Hinesburg Road heading north. The milk truck entered the intersection and completed its left turn. Op 1 then looked to his left and saw a car which was traveling south on Hinesburg Road which was preparing to make a right turn onto Cheese Factory Road. Op 1 then entered the intersection to make his left turn and ended up colliding with Veh 2. Veh 2 had been traveling south on Hinesburg Road behind the car which had turned right onto Cheese Factory Road just prior to Veh 1 entering the intersection. Veh 1 sustained minor damage to its front bumper.

Operator 2 stated she had been traveling south on Hinesburg Road and there was a car in front of hers. The car in front of her turned right onto Cheese Factory and she also noticed the milk truck which turned left in onto Hinesburg Road across her path of travel. Veh 1 then tried to turn left onto Hinesburg Road in front of her and she subsequently collided with the pickup.

Vehicle # 2 sustained moderate damage to front passenger side of the car. A check of DMV records revealed that Hallock's privilege to operate in the state was under suspension. She was issued an OSC ticket and she contacted a friend who drove her car from the accident scene.

The investigation revealed Veh 1 had failed to see Veh 2, because his view had been blocked by the car which had been turning right onto Cheese Factory Road. He then entered the intersection and collided subsequently collided with Veh 2.

**15SB014365 11**

12/01/2015, 13:50, rain, wet. Motor vehicle crash involving multiple vehicles with a report of at least one injured party. The western most lane of continuous south bound travel had two vehicles with varying degrees of damage as a result of this crash.

All the vehicles involved in this crash were still on Hinesburg Rd and Cheesefactory Road. Vehicle #1 was facing northeast in the western most lane of continuous south bound travel. Vehicle #1 had extensive damage from the front bumper to the right rear of the bed. Vehicle #2 was facing north in the western most lane of south bound travel. Vehicle #2 had damage to the front bumper and right front fender as well as the hood. Vehicle #3 was facing east at the stop sign at Cheesefactory Road's intersection with Hinesburg Road. Vehicle #3 had damage to its front bumper and the airbags had deployed.

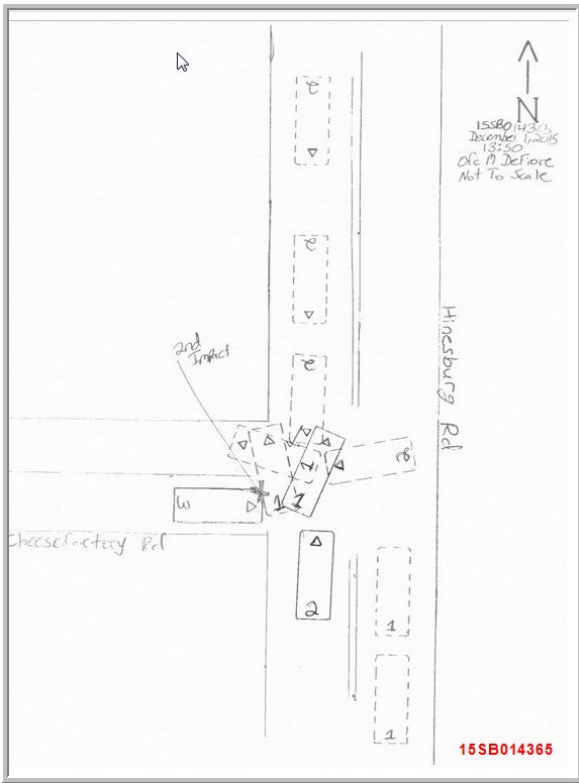
Operator 1 stated he had been traveling north on Hinesburg Road and attempted to turn left onto Cheesefactory Road when he was broadsided by Veh 2 which was traveling south.

Operator #2 stated she had been traveling south on Hinesburg Road at approximately 45MPH when Vehicle #1 turned in front of her.

Operator #3 stated she had been approaching the intersection of Hinesburg Road coming from Cheesefactory when the collision happened. Her vehicle was struck as a result of the crash between Vehicles 1 and 2.

Investigation: Vehicle #1 had been traveling north on Hinesburg Road in the eastern most lane of continuous north bound travel. Vehicle #2 had been traveling south in the westernmost lane for continuous southbound travel. Vehicle #3 was approaching the stop sign on Cheesefactory Road at its intersection with Hinesburg Road. Vehicle #1 just prior to impact with Vehicle #2 attempted to turn left on to Cheesefactory Road in front of Vehicle #2 which was coming the opposite direction. The front right of vehicle #2 struck the right rear of Vehicle #1. Vehicle #1 and Vehicle #2 both began to spin causing the collision between vehicle #1 and vehicle #3. Vehicle #2 continued forward and came to a position of uncontrolled rest facing north in the southbound lane. Vehicle #1 also came to a position of uncontrolled rest facing northeast in the southbound lane. At the scene there were no signs of braking by Vehicle #2. The only marks on the roadway were from the vehicle's tires as they spun from the impact.

Conclusion: It is the opinion of the Officer that operator #1 is at fault for this crash. Operator #1 was turning left from Hinesburg Road onto Cheesefactory Road. Operator #1 failed to yield the right of way to vehicle #2 causing the crash and subsequent collision with Vehicle #3.



**16SB008255 12**

No diagram.

7/18/16 3:36 pm. Raining. Water standing. A two-car motor vehicle crash with reported injuries.

Witness 1 advised she was behind Vehicle 1 traveling east on Cheese Factory Road. Witness 1 stated Veh 1 had stopped at the stop sign at the intersection of Cheese Factory Road and Hinesburg Road. Witness 1 stated Veh 1 was making left hand turn onto Hinesburg Road. Witness 1 stated Veh 1 had paused for a couple of moments and then started forward. Witness 1 advised Veh 2 was traveling on Hinesburg Road and that Vehs 1 and 2 collided. Witness 1 stated it was raining heavily when the crash occurred.

Witness 2 advised she was traveling south behind Veh 2. Witness 2 stated she observed Veh 1 pull out and Veh 2 swerve around it. Witness 2 stated the two vehicles hit and eventually pulled off to the side.

Operator 1 advised they were heading home from the stables in Shelburne and stopped at the intersection of Cheese Factory Road and Hinesburg Road. Op 1 stated she was going to make a left turn onto Hinesburg Road. Op 1 advised she observed two construction type vehicles traveling south on Hinesburg Road that were turning right onto Cheese Factory Road. Op 1 stated she checked the other way and observed a vehicle at the bottom the hill traveling north on Hinesburg Road. Op 1 advised after the trucks turned she started forward as she did not see Vehicle 2. Op 1 stated as she started to turn, Vehicle 2 came out of nowhere and they collided. When asked, op 1 estimated she was going 10 miles per hour as she was just starting forward for the turn. Vehicle 1 damage to the front end of the and the passenger side of the front of the vehicle was wrecked.

Operator #2 advised she was traveling south on Hinesburg Road going approximately 50 miles per hour. Op 2 advised the Veh 1 pulled out in front of her. Op 2 stated she swerved toward the left to go around Veh 1 but

was unable to do so. Op 2 advised they collided and her vehicle continued on until it came to a stop. Vehicle #2 had damage to the front passenger side wheel. The tire was blown and the fender around it was dented in and scraped. Part of the front passenger side door was dented in near the hinge.

The crash is a result of Op 2 failing to yield the right of way to oncoming traffic. The weather contributed to the crash as there was poor visibility from the pouring rain.

**12SB00702 13**

No diagram.

01/26/2012, 21:46, snowing, snow covered. Single motor vehicle crash. Operator 1 stated she was not injured and it was determined she was not intoxicated.

It was snowing out at the time of the crash and the roads were snow covered. I observed tires tracks indicating Operator #1 was traveling southbound on Hinesburg Road when she lost control of her vehicle and slid off the road. Operator #1 was attempting to make a right turn onto Cheesefactory Road. Vehicle #1 slid across the west and east bound travel lanes of Cheesefactory Road and came to a stop in the ditch on the south side of Cheesefactory road. Vehicle #1 knocked down the stop sign posted for eastbound traffic on Cheesefactory Road. I observed moderate damage to the driver's side front bumper area of Vehicle #1.

**2014SB010447 14**

No diagram.

A single vehicle crash involving a cow. No injuries to Operator #1 were reported. Operator 1 who advised me she was traveling westbound on Cheesefactory road when the crash occurred. Operator #1 stated an oncoming vehicle's headlights temporarily blinded her and she did not see the cow in the road until as she was striking it. Operator #1 stated the cow was essentially on the yellow line in the middle of the road.

**17SB004665**

On 05/01/2017 at approximately 0731. The air bag side airbag was deployed in vehicle #1 because it was struck broadside by vehicle #2.

Operator #1 stated she was stopped at the stop sign on Cheese factory road facing east. There was traffic heading south and she was waiting for an opportunity to turn left on to northbound Hinesburg Road. Operator #1 noticed a line of vehicles heading south with signs they were going to turn right onto west bound Cheese factory Road. Operator #1 saw an opportunity to proceed to turn left, she did not see vehicle #2 heading south behind the turning vehicles.

As vehicle #1 was proceeding east and was now into the path of vehicle #2 which was heading south vehicle #1 was in the southbound lane and stopped suddenly not sure whether to speed up to avoid vehicle #2 or stay stationary.

Operator #2 stated he was traveling south on Hinesburg road. As he was approaching the intersection with Cheese Factory Road he was in a line of traffic where the vehicles in front of him were turning right onto westbound Cheese Factory Road. The turning vehicles blocked his vision of vehicle #1 which had proceeded on the southbound lane of Hinesburg Road after stopping at the stop sign. Vehicle #1 stopped in the southbound lane in front of him at such a time where he did not have the reaction time to avoid crashing into vehicle.



Officer's Signature \_\_\_\_\_

