

Office of Highway Safety

Road Safety Audit Review

Town:	St Albans Town	Date Reviewed:	May 31 2016 2017
Route:	VT 36 @ Rugg Road and Kyle Rd (private road)	Mile points:	VT 36 MM 4.84

Location Map



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RSAR Process

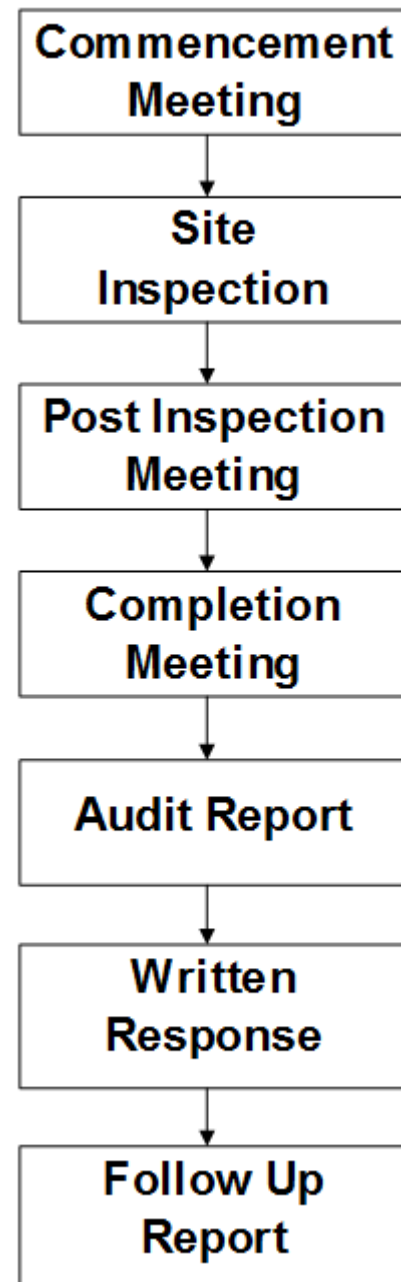
A Road Safety Audit Review (RSAR) is a formal examination of an existing road in which an independent, multi-discipline team (the Audit Team) reports on potential safety issues.

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 36, Rugg Road and Kyle Road in St Albans. This intersection is located at mile point 4.84 on VT 36.

Purpose of the RSAR

This RSAR was conducted at the request of the Town of St Albans to review the safety of the intersection and in particular, with issues egressing out of Kyle Road.

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:

Jim Cota,	District 8, VTrans
Tom Fields,	GHSP, VTrans
Tyler Guazzoni,	TSMO, VTrans
Justin LaPerle,	OHS, VTrans
Pat McManamon,	DMV, VTrans
Peter Pochop,	Permitting Services, VTrans
Paul White,	GHSP, VTrans
Ned Connell,	St Albans Town
Carrie Johnson,	Town Manager, St Albans Town
Alexis Laroe,	St Albans Town
Reginald & Lynda Emch	Residents, Kyle Road

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Bethany Remmers,

Northwest RPC

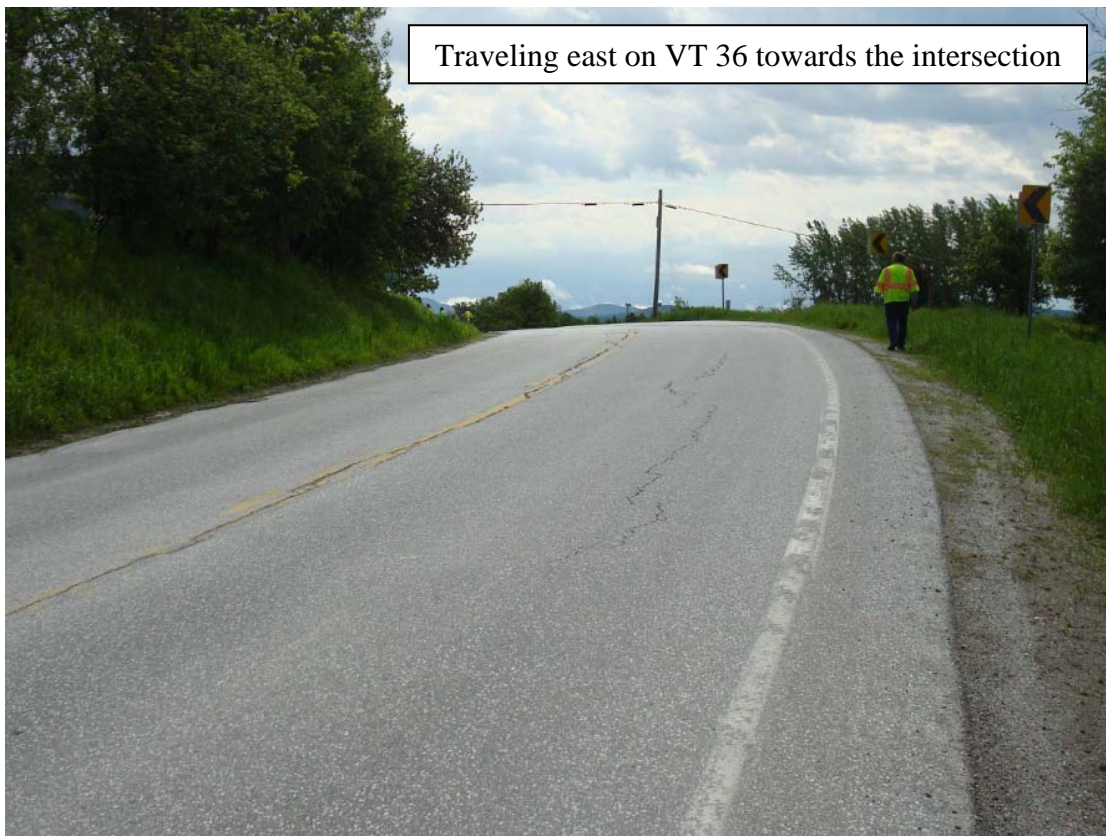
Information Reviewed

Geometry

This intersection is a four-way intersection. VT 36 is a west to east road by VTrans' convention. Rugg Road is to the south and Kyle Road, a private road, is to the north. There is also a drive about 60 feet east of Rugg Road (541 Fairfield Hill Road).

Traffic is free flowing on VT 36. Traffic must come to a stop at Rugg Road and Kyle Road.

Traveling east from St Albans, VT 36 follows an 8-degree horizontal curve, vertical grade combination.



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The pavement surface on VT 36 is rated as very poor in the area of the intersection with the year of last work being 2001 (VTransparency, June 2017).

Speed Limit

The posted speed limit on VT 36 in the area of the intersection is 50 mph. The approach speed limit on Rugg Road is not posted.

Traffic Volumes

The 2014 Average Annual Daily Traffic on VT 36 was 2900 vehicles per day.

There was a count done in 2016 on Rugg Road. The daily traffic was estimated to be 250 vehicles per day in both directions.

Traffic Signs

There are advance curve warning signs with a 35 mph advisory plaque underneath each sign in both directions on VT 36. For the sign west of the intersection for eastbound traffic, there is also a hidden drive left sign on the same assembly as the curve sign. These signs are in extremely poor conditions.

The horizontal curve is delineated with chevrons (two of the chevrons in the middle of the set are in very poor conditions).

The street name sign and the stop sign on Rugg Road were replaced in 2014.

Permitting

VTrans does not have a permit on records for the original Kyle Road Drive.

In September 2004, VTrans District 8 issued a permit to repair rainstorm damage in the right-of-way for the existing drive adjacent to Rugg Road at 541 Fairfield Hill Road. The permit was for the grading and paving of the existing drive so that water would not run into VT 36.

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In June 2013, VTrans District 8 issued a permit denial for the construction of a single-family house drive access about 443 feet east of Kyle Road. The reasons for the denial were based on safety concerns raised by the horizontal curve and downgrade issues.

The person who is selling two lots off Kyle Road received local permits for the new subdivision that predates the July 1, 2014 law under 24 V.S.A. Section 4416 requiring a letter of intent from VTrans confirming that VTrans has reviewed the proposed site plan whenever a proposed site plan involves access to a state highway.

Past Projects

Project STP 2128(1)S was for the resurfacing of VT 36. This project was completed in 2001.

Future Projects

Project STPG SIGN(58) is for the replacement of traffic signs on VT 36. The anticipated completion date is between September and November 2017. This project will relocate the advance curve warning signs in both directions closer to the curve and the intersection. The advisory speed plaques for both signs will be changed to 40 mph.

Land is for sale off Kyle Road (one 6-acre lot and one 3.6-acre lot are for sale).

A FPAV project on VT36 from the Class 1 TH limit in St. Albans Town (MM2.834) to Fairfield (MM 3.500) will be designed by VTrans (Paving Management) for CY19.

Crash History

This intersection or the segment of VT 36 that contains this intersection are not high crash locations.

The crash history was reviewed at the intersection for the seven-year period covering the years 2010 to 2016. Only four crashes occurred at this intersection during this period. On the other hand, Kyle Road resident, Lynda Emch mentioned at the meeting that there had been two

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resent incidents, with one possibly being a run-off-the road crash. These crashes are currently not appearing in the state database.

Crash narratives are provided at the end of this report along with a collision diagram.

Current Local Concerns

Comments from Kyle Road residents:

The residents of Kyle Road expressed their concern about the safety of their growing development when they exit their shared private road/ driveway onto VT 36. Two more lots are for sale and more people are likely to be using this intersection soon.

Besides the poor visibility to the west, the residents also mentioned that there was a dip in the road on VT 36 when looking towards Bakersfield.

The residents also indicated that the school bus was stopping on the Rugg Road side of VT 36 and that the children who live on Kyle Road had to cross VT 36.

Comments from St. Albans City Police Cpl Michael Schrader (via Email):

Cpl Schrader mentioned that the problem was that there was a blind corner for eastbound traffic on VT 36 (heading towards Fairfield).

He also explained that the main issue was that if you were pulling out of either Kyle Road or Rugg Road, you had to truly commit to go, as a motorist would not be able to stop at the last second to avoid a crash. He continued to explain that he had been caught there multiple times where a collision had almost occurred.

Per his observations, although there is a 35 mph yellow advisory speed warning sign underneath the curve sign, motorists are not traveling less than 40 mph around that corner. He suggested that the only people that were traveling eastbound less than 40 mph around the corner were people preparing to turn onto either Kyle Rd or Rugg Rd.

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To his knowledge, there has not been a crash at this intersection recently but if one happens, he suspects that it could cause serious bodily injury or worse.

According to Cpl Schrader, he could write several "Driving Too Fast for Conditions" tickets in a day for doing 50 mph around that corner, but the traffic court judge would not convict those because the speed limit is 50 mph on VT 36.

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: Poor Sign Condition and Placement of Curve Warning Signs

The curve advance warning sign assemblies are in poor conditions as they have been vandalized by gunshots. It was further determined that the locations of these sign assemblies were too far to properly warn motorists of the curve and of the upcoming intersection.

It was also observed that two of the chevrons were very faded.

Safety Enhancements:

Replace and relocate the curve sign assemblies closer to the curve and intersection.

Replace at a minimum the two chevrons that are faded.

Concern: Children Have to Cross VT 36 in Front of the School Bus

Children residing on Kyle Road are being dropped off on the south side of VT 36 at Rugg Road. Children then have to cross VT 36 to get to Kyle Road. Because of the horizontal curve and of the vertical crest, the bus is not readily visible.

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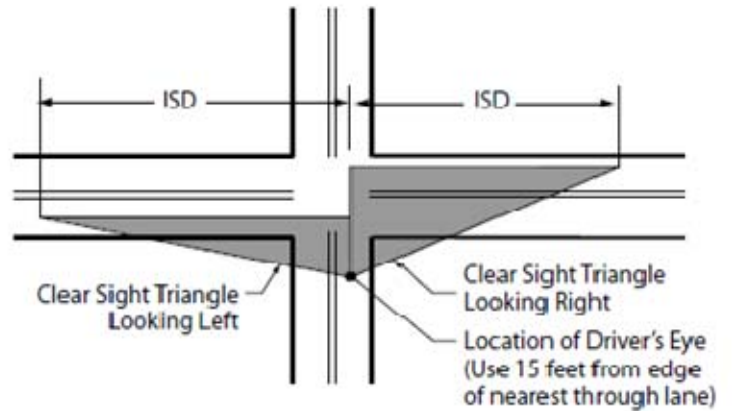
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Safety Enhancements:

Install a school bus stop ahead sign eastbound on VT 36 before the crest of the curve.

Concern: Corner Sight Distance Issue, Northwest Quadrant (Kyle Rd)

The corner sight distance (ISD) for a motorist that is stopped on Kyle Road and who is looking to the right (west), towards ST Albans, is inadequate and below standards. The recommended corner sight distance for the actual posted speed limit of 50 mph is 555 feet.



The available corner sight distance was measured to be 273 feet.

The embankment on the north side of VT 36 and the horizontal/vertical curve combination west of the intersection contribute to this issue.

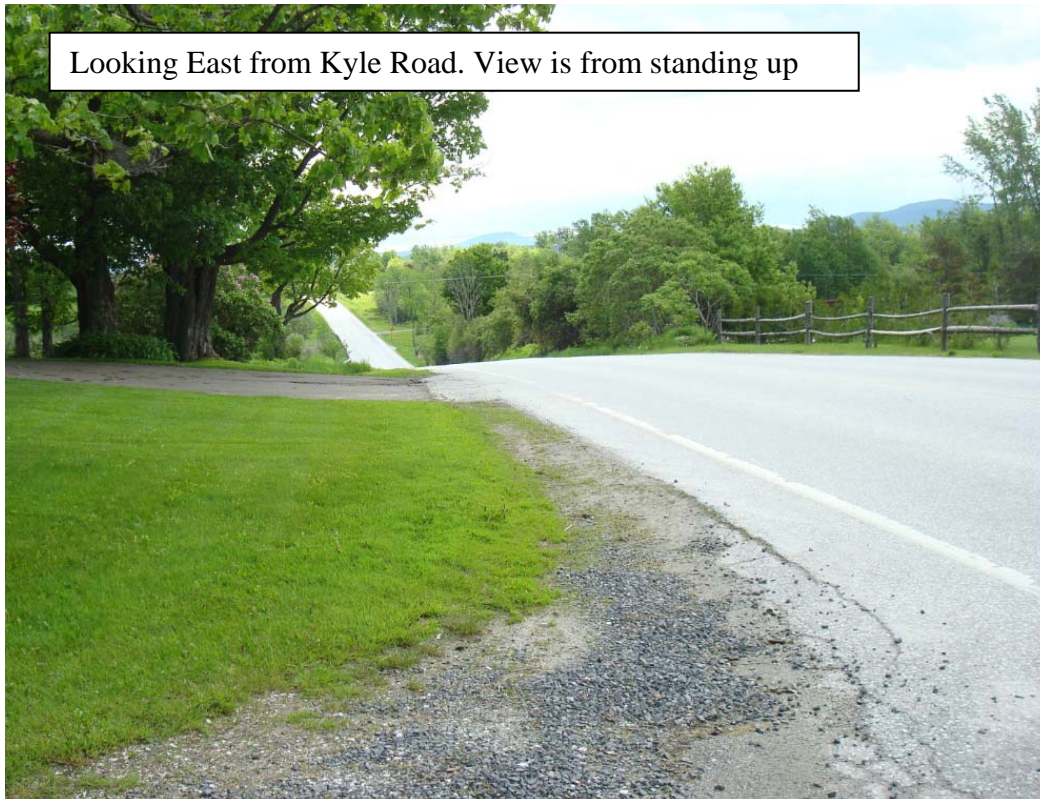


Looking West from Kyle Road. View is from driver's position

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Besides the poor visibility to the west, there is also a low spot in the road on VT 36 when looking towards Bakersfield that makes it hard sometimes for a motorist on Kyle Road to see vehicles that are traveling westbound. This contributes to the difficulties of making a left turn to the east out of Kyle Road.



Safety Enhancements:

Improve the advance curve signage as mentioned previously by relocating the signs closer to the intersection and by replacing them with new Type IX sheeting signs.

Evaluate what gain in corner sight distance could be achieved to the west by cutting back the bank on the north side of the road.

Install a dynamic warning system (like the one at Russell Road in Sheldon) that would inform motorists on Kyle Road that a vehicle is approaching from the right. Alternatively, install a

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system west of the intersection that would warn traffic traveling eastbound on VT 36 that a vehicle is stopped on Kyle Road.

Evaluate how to address the low spot on VT 36 east of the intersection.

Other Safety Enhancements:

The idea of closing the access at Kyle Road and relocating it about 450 feet east of its current location was discussed. The new access would provide better corner sight distance in both directions compared to its current location. This could possibly be considered if a request for a future site plan is made.

Concern: Corner Sight Distance Issue, Southwest Quadrant (Rugg Rd)



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The corner sight distance for a motorist that is stopped on Rugg Road and who is looking to the left (west), towards ST Albans, is inadequate and below standards. The recommended corner sight distance for the actual posted speed limit of 50 mph is 555 feet.

The berm and tall grass (possibly snowbanks as well during winter), the lower approach grade on Rugg Road and the horizontal/vertical curve combination on VT 36 contribute to this issue.

Safety Enhancements:

Remove the berm (looks mostly like tall grass from the picture)

Keep the grass low (by mowing twice a year in this area).

Evaluate what gain in corner sight distance could be achieved by rising the approach on Rugg Road.

Install a dynamic warning system (like the one at Russell Road in Sheldon) that would inform motorists on Kyle Road that a vehicle is approaching from the left. Alternatively, install a system west of the intersection that would warn traffic traveling eastbound on VT 36 that a vehicle is stopped on Rugg Road.

Other Safety Enhancements:

The idea of providing a new road that would come out west of the intersection to permit motorists who turn left from Rugg Road to turn at a safer place was suggested by a resident during a post discussion with the Town.

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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.

Potential Safety Enhancements Summary Table

Safety Concern	Safety Enhancement	Potential Responsibility	Safety Payoff	Time Frame	Cost	
Poor Sign Condition and Placement of Curve Warning Signs	Replace and relocate the signs closer to the intersection. Consider using type IX sheeting. Replace also the chevrons that are faded	VTrans (project STPG SIGN(58))		Short	Low	
Children Have to Cross VT 36 in Front of the School Bus	Install an eastbound school bus stop ahead sign on VT 36 before the crest of the curve	VTrans (project STPG SIGN(58)) ¹		Short	Low	
Corner Sight Distance Issue, Northwest Quadrant when Looking to the West from Kyle Road	Improve the advance curve signage as mentioned previously by relocating the signs closer to the intersection and by replacing them with new Type IX sheeting signs	VTrans (project STPG SIGN(58))		Short	Low	
	Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the north side of the road		potential reduction ² : 48% Inj, 11% PDO	Short-Mid	Low- Mid	
	Install a dynamic warning system (like the one at Russell Road in Sheldon) that would inform motorists on Kyle Road that a vehicle is approaching from the right		31% crash reduction CMF 8471	Short-Mid	About \$15,000	
	<u>Alternatively</u> , install a system west of the intersection that would warn traffic traveling eastbound on VT 36 that a vehicle is stopped on Kyle Road		32% crash reduction CMF 4916	Short-Mid	About \$15,000	
	Evaluate how to address the low spot on VT 36 east of the intersection	Possibly VTrans when designing the next paving project on VT			Short-Mid	Low- Mid
	The idea of closing the access at Kyle Road and relocating it about 450 feet east of its current location was discussed				Long	High

¹ Project manager, Mike LaCroix, confirmed that the School Bus Stop Ahead sign and type IX sheeting for the curve signs and chevrons will be incorporated

² CMF ID 307 for Inj, CMF ID 308 for PDO

Potential Safety Enhancements Summary Table

Safety Concern	Safety Enhancement	Potential Responsibility	Safety Payoff	Time Frame	Cost
Corner Sight Distance Issue, Southwest Quadrant when Looking to the West from Rugg Road	Remove the berm (looks mostly like tall grass from the picture)	VTrans District		Short	Low
	Keep the grass low (by mowing twice a year)	VTrans District		Short	Low
	Evaluate what gain in corner sight distance could be achieved by rising the approach on Rugg Road	Possibly VTrans when designing the next paving project on VT 36		Short-Mid	Low-Mid (to evaluate)
	Install a dynamic warning system (like the one at Russell Road in Sheldon) that would inform motorists on Kyle Road that a vehicle is approaching from the left		31% crash reduction CMF 8471		About \$15,000
	Alternatively, install a system west of the intersection that would warn traffic traveling eastbound on VT 36 that a vehicle is stopped on Rugg Road		32% crash reduction CMF 4916		About \$15,000

Note: THIS DOCUMENT IS EXEMPT FROM DISCOVERY OR ADMISSION UNDER 23 U.S.C. 409

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: <u>St. Albans Town</u>	COUNTY: _____	FILE: <u>VT36RuggRd</u>
INTERSECTION: <u>VT 36</u>		CASE #: _____
PERIOD: <u>7</u> YEARS <u>0</u> MONTHS	FROM <u>1/1/2010</u> TO <u>12/31/2016</u>	BY: _____ DATE: <u>7/11/2017</u>



4

SYMBOLS		MANNER OF COLLISION	
→	MOVING VEHICLE	→←	REAR END
↘	TURNING VEHICLE	↙↘	LEFT TURN
↔	BACKING VEHICLE	↘↙	LEFT TURN
▭	PARKED VEHICLE	→→	OVERTAKE
999	RECORD NUMBER	↔↔	OUT OF CONTROL
P	PEDESTRIAN	↔↔	HEAD ON
B	BICYCLIST	↘↙	RIGHT TURN
A	ANIMAL	↙↘	RIGHT TURN
▣	FIXED OBJECT	↘↙	RIGHT ANGLE
■	Fatal	↘↙	RIGHT ANGLE
		↔↔	SIDE SWIPE

VT-36 Fairfield Hill Rd. St. Albans Town

Report Number: 11FRC2229
 Reporting Agency: Franklin County SD
 Crash Date: June 17, 2011 6:55 PM
 Street Address: VT-36 Fairfield Hill Rd.
 Crash Type: Property Damage Only
 Direction of Collision: Same Direction Sideswipe

[Street View](#)
[Zoom to](#)

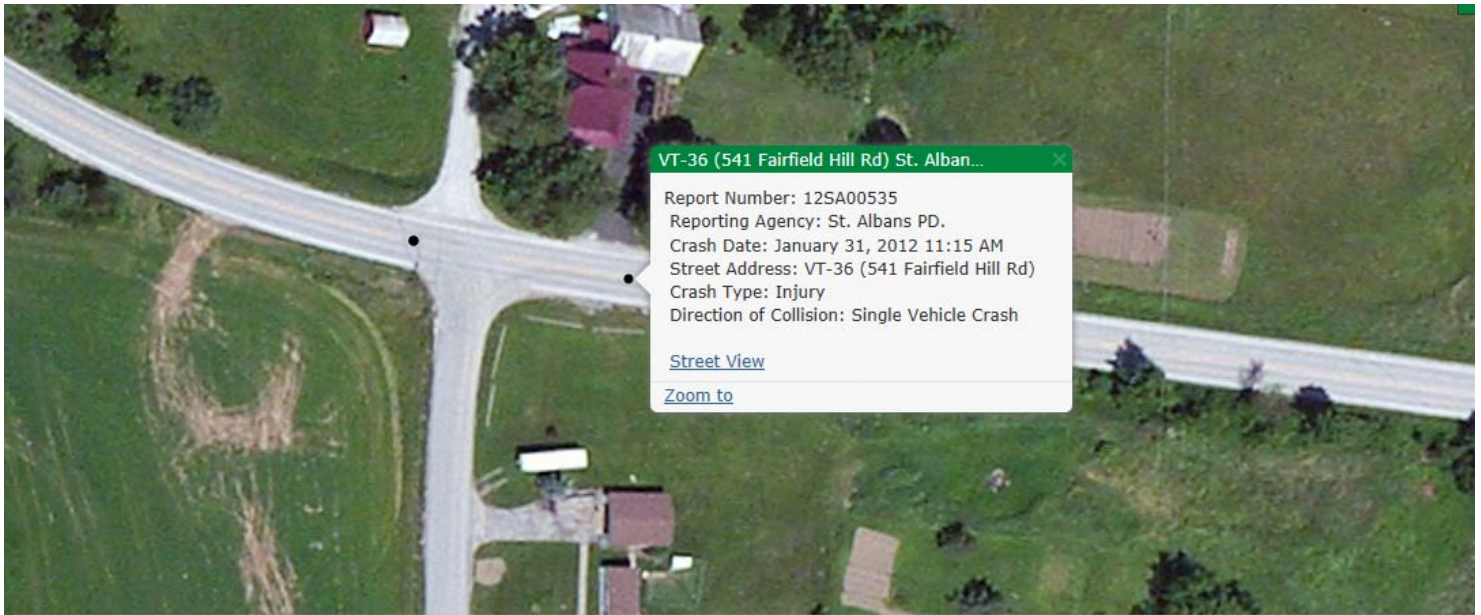
✓	June 16, 2012 11:00 PM	St. Albans Town	VT-38 (48 Lower Newton Rd)	VT-38	Property Damage Only	Rear End
✓	June 16, 2013 1:08 PM	St. Albans Town	VT-104 Fairfax Road	VT-104	Injury	No Turns, Thru moves only, Broadside ^<
✓	June 16, 2013 7:05 AM	St. Albans Town	Fairfield At Fairfax Rd	Unknown	Property Damage Only	Other - Explain in Narrative
✓	June 17, 2011 10:16 AM	St. Albans Town	555 Fairfax Rd.	VT-104	Property Damage Only	Other - Explain in Narrative
✓	June 17, 2011 6:55 PM	St. Albans Town	VT-36 Fairfield Hill Rd.	VT-36	Property Damage Only	Same Direction Sideswipe
✓	June 17, 2014 2:11 PM	St. Albans Town	TH-14 (193 French Hill Rd)	TOWN ROAD 0014	Injury	Single Vehicle Crash
✓	June 17, 2015 4:25 PM	St. Albans Town	277 Swanton Rd	Unknown	Property Damage Only	Rear-to-rear
✓	June 18, 2012 4:47 PM	St. Albans Town	US-7 (75 Swanton Road)	US-7	Injury	Rear End

#1

No Narrative.

200 feet east of Rugg Road.

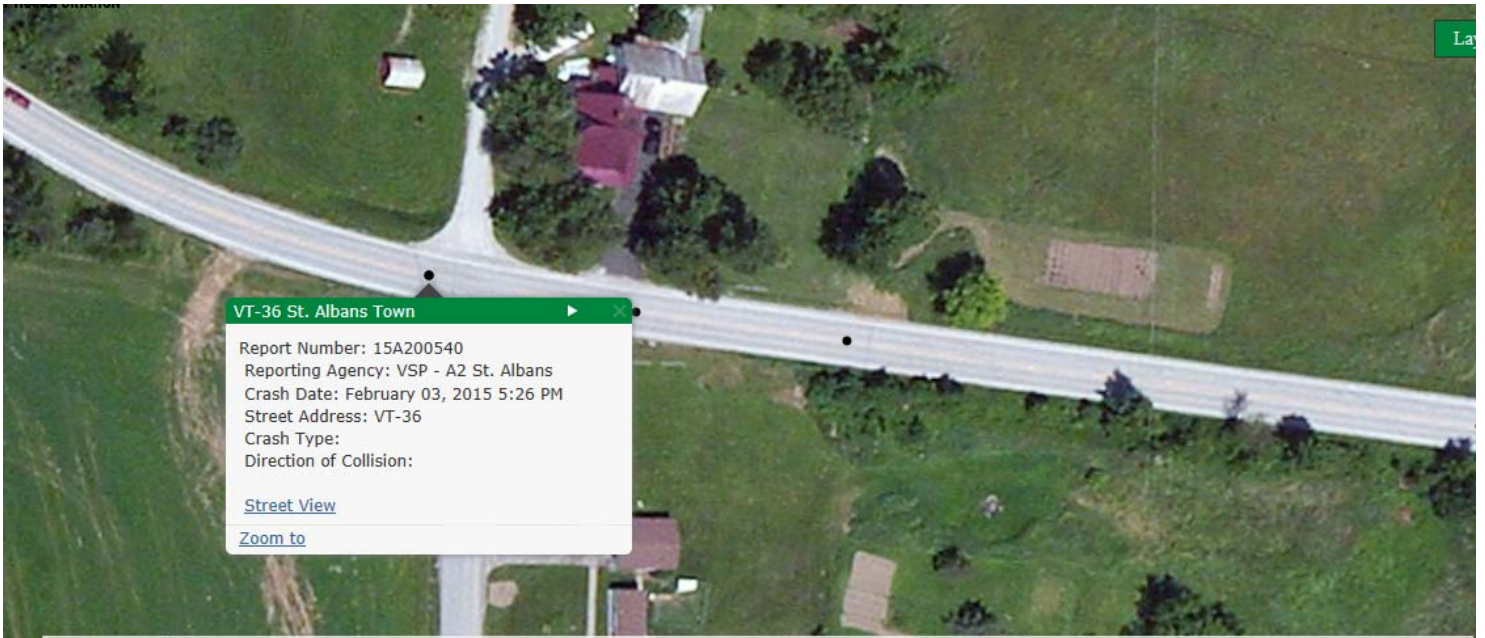
Same direction sideswipe. Dry road. Operating defective equipment.



✓	January 30, 2014 1:01 PM	St. Albans Town	277 Swanton Rd	Unknown	Property Damage Only	Other - Explain in Narrative
✓	January 30, 2015 10:30 AM	St. Albans Town	I-89 SB MM 114	I-89		
✓	January 30, 2015 6:03 AM	St. Albans Town	1394 Fisher Pond Rd	VT-104	Property Damage Only	Other - Explain in Narrative
✓	January 30, 2015 6:56 AM	St. Albans Town	FAU-8210 Nason St	NASON ST.	Property Damage Only	Rear End
✓	January 31, 2012 11:15 AM	St. Albans Town	VT-36 (541 Fairfield Hill Rd)	VT-36	Injury	Single Vehicle Crash
✓	January 31, 2013 2:19 PM	St. Albans Town	177 Swanton Rd	Unknown	Property Damage Only	Opp Direction Sideswipe
✓	January 31, 2016 10:44 AM	St. Albans Town	Fairfield Hill Rd	VT-36	Injury	Single Vehicle Crash
✓	July 01, 2011 2:00 PM	St. Albans Town	170 Swanton Road	Unknown	Property Damage Only	Other - Explain in Narrative

#2

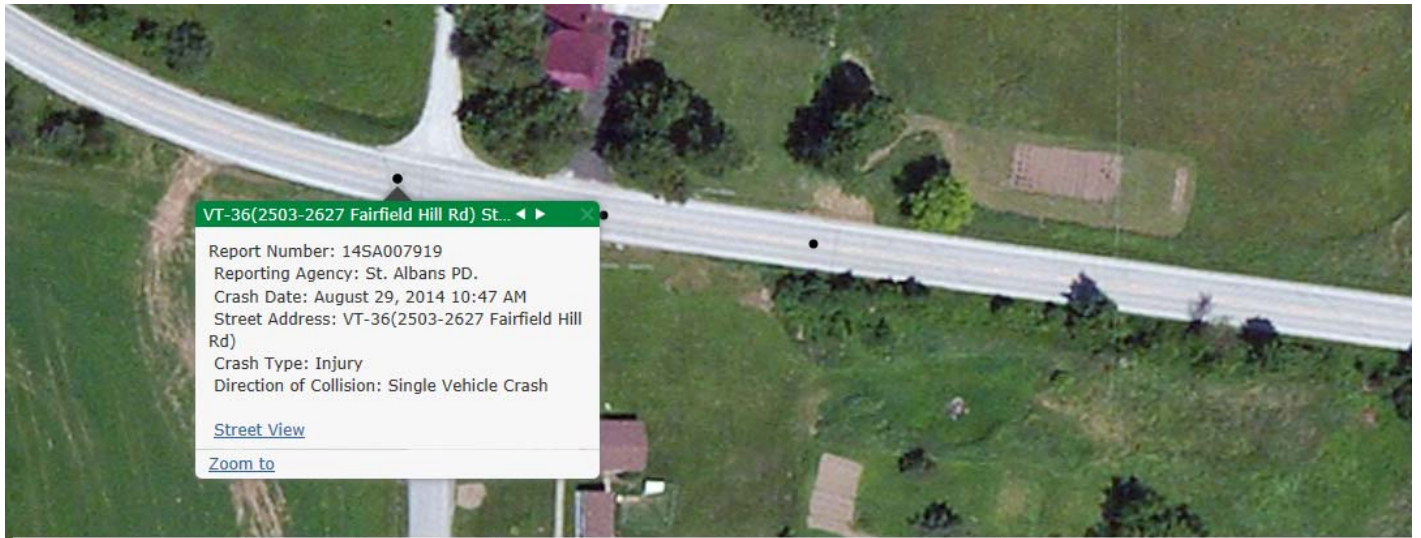
This one vehicle crash occurred at 541 Fairfield Hill Road in St Albans Town on 01-31-2012 at approximately 1215 hours. 541 Fairfield Hill Road is at the top of a hill on VT 36, approximately 98 feet northeast of the intersection of Rugg Road and Route 36. The weather at the time of the crash was cloudy, snow was falling and the road surface was snow covered. Vehicle #1 was found on the lawn of the residence at 541 Investigation revealed that prior to the crash, Vehicle #1 was traveling eastbound on Route 36 at a speed of approximately 50 mph. The road surface was snow covered and was slippery. As the vehicle crested the hill at a location near the intersection of Rugg Road and RT 36 it began to slide. The vehicle slid across the westbound lane of RT 36 then across a portion of the lawn at 541 Fairfield Hill Road. The left front of the vehicle struck a large tree on the lawn at 541 Fairfield Hill Road. The vehicle rebounded then turned ninety degrees and came to a point of final rest approximately 6 to eight feet west of the tree facing the south toward Rt 36.



✓	February 02, 2016 3:20 PM	St. Albans Town	Rt 7	US-7	Property Damage Only	Same Direction Sideswipe
✓	February 02, 2017 12:00 PM	St. Albans Town	755 MAQUAM SHORE	MAQUAM SHORE RD	Injury	Rear End
✓	February 03, 2011 10:32 AM	St. Albans Town	US-7 (138 Swanton Rd.)	US-7	Injury	Right Turn and Thru, Same Directio
✓	February 03, 2013 9:20 PM	St. Albans Town	TH-20 Dunsmore Rd	TOWN ROAD 0020	Injury	Single Vehicle Crash
✓	February 03, 2015 5:26 PM	St. Albans Town	VT-36	VT-36		
✓	February 03, 2015 7:53 AM	St. Albans Town	Min. C 0764(15 Georgia Shore Rd)	MinCollector	Property Damage Only	Opp Direction Sideswipe
✓	February 03, 2015 9:00 AM	St. Albans Town	503 Swanton Rd	US-7	Property Damage Only	Head On

3

No Report



✓	August 28, 2011 2:00 AM	St. Albans Town	VT 140 (Fisher Pond Road)	VT-104	Property Damage Only	Single Vehicle Crash
✓	August 28, 2015 6:27 PM	St. Albans Town	Route 104	VT-104	Property Damage Only	Rear End
✓	August 28, 2015 9:41 PM	St. Albans Town	890 Fairfax Rd	FAIRFAX RD	Property Damage Only	Head On
✓	August 29, 2012 9:37 AM	St. Albans Town	VT-38 (3649 Lower Newton Road)	VT-38	Property Damage Only	Single Vehicle Crash
✓	August 29, 2014 10:47 AM	St. Albans Town	VT-36(2503-2627 Fairfield Hill Rd)	VT-36	Injury	Single Vehicle Crash
✓	August 29, 2015 10:00 AM	St. Albans Town	8 Swanton Rd	Unknown	Property Damage Only	Other - Explain in Narrative
✓	August 29, 2015 6:45 PM	St. Albans Town	TH-15 (111 Lord Rd)	TOWN ROAD 0015	Injury	Single Vehicle Crash
✓	August 30, 2011 11:27 AM	St. Albans Town	Interstate Access Road	ST. ALBANS ST. HWY. SOUTH	Property Damage Only	Same Direction Sideswipe

#4

August 29th, 2014, at 1050 hours. The crash occurred west of the intersection of VT 36) and Rugg Road, in the Town of St. Albans. This was a single vehicle crash with an incapacitating injury that included entrapment. The area of collision (A.O.C.) was south of Route 36 and west of Rugg Road. The vehicle exited the highway at the crest of a small hill. There were no defects in the asphalt surfaces of the roadway at the scene of the crash. No roadway evidence was able to be located. The skies were clear and sunny. Fairfield Road was dry. This crash happened in the late morning daylight hours. V-1 had not been moved from its point of final rest. Witnesses advised they were following O-1 and that O-1 did not make the turn. Just went straight off the road and into the tree.