

Office of Highway Safety

Road Safety Audit Review

Town:	Bennington	Date Reviewed:	September 17, 2015
Route:	VT 7a @ Houghton Lane	Mile points:	VT 7a: 1.71

Location Map



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RSAR Process

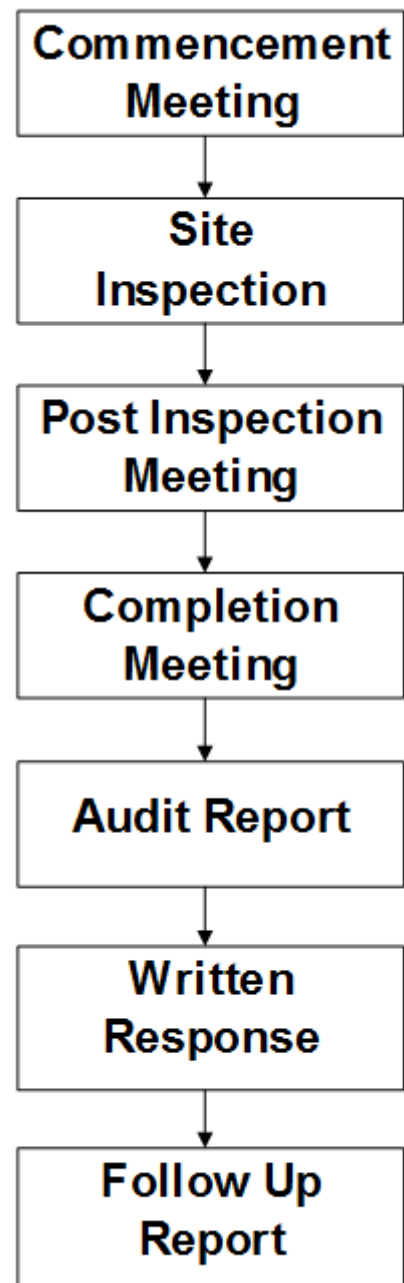
A **Road Safety Audit Review** (RSAR) is a formal examination of an existing road in which an independent, multi-discipline team (the Audit Team) reports on potential safety issues.

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 ease of reporting.

Figure 1 - Road Safety Audit Process



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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 7a, Rice Lane and Houghton Lane in Bennington.

Purpose of the RSAR

This RSAR was conducted as part of a Vermont Highway Safety Alliance effort lead by the Enforcement Focus Group. The locations selected for this effort were originally identified as high crash locations and ranked high in terms of fatal and injury crashes. In addition, the final locations were further selected for their potential of reducing crashes through enforcement.

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 may 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:

Tom Fields,	Office of Highway Safety, VTRANS
Greg Krizen,	District 1, VTRANS
Pat McManamon,	DMV Enforcement, VTRANS
Mike Yannotti,	District 1, VTRANS
Mike Anders,	Bennington County Regional Commission
R.J. Jolly,	Town of Bennington
Camillo Grande,	Bennington Police Department

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David Dutcher,

Bennington Police Department

Information Reviewed

Geometry

This is a four-way intersection with roads that meet at 90 degrees. This intersection is controlled with stop signs on Rice Lane and Houghton Lane. VT 7a traffic is free flowing.

There is an 8-degree downgrade south of the intersection. The starting point of this downgrade is shown to start at about mile point 1.56 in ArcGIS.

There is also a downgrade on Houghton Lane approaching the intersection.

Stopping and Corner Sight Distances are shown below.

VT-7A Stopping Sight Distance:

- Northbound VT-7A to Houghton Lane – 505 FT
- Southbound VT-7A to Houghton Lane – 900+ FT
- Northbound VT-7A to Rice Lane – 538 FT
- Southbound VT-7A to Rice Lane – 900+ FT

Rice Lane Corner Sight Distance:

- Looking Right (to south) – 538 FT
- Looking Left (to north) - 407 FT

Houghton Lane Corner Sight Distance:

- Looking Left (to south) – 388 FT
- Looking Right (to north) – 403 FT

Speed Limit

The posted speed limit is 50 mph on VT 7a while it is 35 mph on both Rice Lane and Houghton Lane.

Traffic Volumes

The actual 2012 Average Annual Daily Traffic on VT 7a was 5100 vehicles per day south of the intersection and it was 5500 vehicles per day north of the intersection.

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The latest 12-hour turning movement count was done in 2009. VTrans Traffic Research Section indicated that a factor of 1 could be applied to this count to convert it to 2015 since there has not been significant growth in traffic in urban areas.

The majority of the traffic is entering this intersection from either direction on VT 7a. Thirty-nine percent of the traffic is entering the intersection from the north on VT 7a, 37% from the south, 15% from Houghton Lane and 9% from Rice Lane.

Seventy – nine percent of the traffic on the south approach is continuing straight on VT 7a while 82% of the traffic that is coming from the north is continuing straight.

Forty percent of the traffic from Houghton Lane is turning left, 32% is turning right and 27% is continuing across to Rice Lane. On Rice Lane, 50% of the traffic is making a left turn onto VT 7a, 38% are crossing to Houghton lane and 13% are making a right turn.

The 2009 Turning Movement Report is provided at the end of this report.

Signs and Markings

There are currently intersection warning signs (W2-1) in both directions on VT 7a. These signs are supplemented with a street name plaque that display the names of the side roads and an arrow next to each name to indicate which side of VT 7a the side road is. These signs are located at mile point 1.633 in the northbound direction and at mile point 1.785 in the southbound direction. The signs are 36 inches by 36 inches in size and were made of type III sheeting material. The conditions of the signs are rated as fair.

The intersection is controlled by stop signs located on Rice Lane and Houghton Lane. The street name sign for Houghton Lane is located in the southeast corner of the intersection. The one for Rice Lane is located above the stop sign.

Pavement markings on Houghton Lane consist of a double yellow centerline, a stop bar, edgelines and crosshatched markings to reduce the width of the approach.

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Pavement Conditions

Pavement conditions on the north approach of the intersection on VT 7a are rated as poor by VTrans. They are rated as fair south of the intersection. These ratings are based on 2014 data. The last paving work was done in 1990.

Past Projects

In 2004 a signage route review of VT 7a was conducted in this area and resulted in the replacement and relocation of very old, faded and non-retroreflective advance warning intersection signs (W2-1) as well as the removal of obsolete “watch for straight and turning vehicle” signs (VW-083, code in 2004) that were accompanied with 30 mph advisory speed plaques and that were located before the W2-1 signs. This was implemented through work order 04-140.

Houghton Lane was paved in summer 2015.

In fall 2015, District 1 performed repair work on the culvert that is located approximately 100 feet north of the intersection on VT 7A as the headwall was failing.

Future Projects

There are no planned paving projects in this area as of December 4, 2015.

Traffic Studies

The Technical Services Section of the VTrans Maintenance and Operation Bureau performed a speed study on November 17, 2015. Speeds for traffic traveling on VT 7a were measured at a distance of 500 feet from the intersection on both approaches. Only the speeds of the vehicles that were continuing through the intersection on VT 7a were recorded.

The results showed that the 85th percentile speed in both directions was 49 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 40 and 49 mph for southbound

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traffic with 81% of all vehicles. In the northbound direction, there were two ranges of speeds that had the highest proportions of vehicles. These ranges were between 41 and 50 mph as well as between 38 and 48 mph. Both ranges accounted for 67% of the through vehicles that were traveling in the northbound direction.

Crash History

Crash history was reviewed at the intersection for the five-year period covering the years 2010 to 2014. Crashes that took place during 2015 up to the time of this review were also examined to provide additional insight.

This intersection is defined as a high crash location (the latest report covers the period 2010 to 2014). The intersection ranks 45th out of 132 high crash intersections under the conventional high crash location reporting. However, this intersection ranks third out of the 132 high crash intersections based on the fatal and injury crash rate (2008-2012 data).

A collision diagram and the crash narratives for each of the crashes are provided at the end of this report.

Fourteen crashes occurred at this intersection between 2010 and 2014. In addition to these fourteen crashes, it is known that two more took place in 2015 (with not all of the data being up to date as of December 2015). Thus in total, there would be sixteen crashes in five years and eleven months or 2.7 crashes per year.

Over this period, the crash patterns at this intersection were right angle crashes (14 out of 16 or 88%) and left turn crashes (2/16/ or 12%).

Seventy-one percent of the right angle crashes involved a vehicle from Houghton Lane compared to 29% from Rice Lane. Furthermore, 70% of the right angle that involved a vehicle from Houghton Lane also involved a vehicle traveling northbound on VT 7a. Similarly, most of the right angle crashes involving a vehicle from Rice Lane also involved a vehicle traveling northbound on VT 7a.

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Ninety-two percent of the right angle crashes at this intersection took place during daylight conditions and 50% took place between 9:00 am and 11:00 am. With respect to the time of year, these crashes happened mostly during the spring and summer months (60%).

In 71% of the cases, these right angle crashes resulted in an injury.

Current Local Concerns

VTrans was contacted, in July 2014 following a recent crash at the intersection, by a driving school educator who lived in the area and who used the intersection frequently. This person explained that he was afraid to take his students through the intersection due to the limited line of site and the high speed limit. This person further stated that what truly made it exceptionally dangerous this time of year (July) was if the grass in all directions near the intersection was not cut frequently.

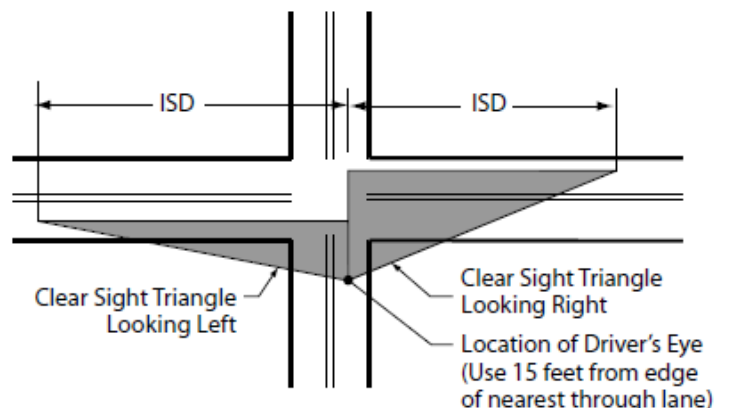
While conducting the road safety audit, those familiar with the intersection explained that because of the crest, people had to “gun it” and that crashes resulted in significant injuries.

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: Corner Sight Distance Issue, Southeast Quadrant

The corner sight distance (ISD) when stopped on Houghton Lane and looking to the left (or south), towards VT 7a is inadequate (*it was measured at 388 feet, which is below AASHTO's guidance of 555 feet for the actual*



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50 mph posted speed limit and below the value suggested for the 85th percentile speed of 49 mph). The embankment, a utility pole, a mail box and possibly the vertical crest south of the intersection contribute to this issue. Tall grass during the summer months was also reported as a contributing factor.



Safety Enhancements:

Mow twice a year in this area. District and Town to work together and coordinate.

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Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the east side. Evaluate what additional gain could be obtained by lowering the road.

Relocate the utility pole.

Install a dynamic warning system (like the one at Rice lane and VT 67a) that would warn traffic on VT 7a that a vehicle is stopped on Houghton Lane (as well as on Rice Lane as well).

Alternatively, install the system so that a vehicle on Houghton Lane is informed that a northbound vehicle on VT 7a is approaching the intersection.

Add an advisory plaque to the northbound advance warning intersection assembly that would match the speed for the corresponding available corner sight distance.

Reduce the speed limit on VT 7a to 45 mph (5 mph below the recorded 85th percentile speed).

Concern: Corner Sight Distance Issue, Northeast Quadrant

The corner sight distance (ISD) when stopped on Houghton Lane and looking to the right (or north), towards VT 7a is inadequate (*it was measured at 403 feet, which is below AASHTO's guidance of 555 feet for the actual 50 mph posted speed limit and below the value suggested for the 85th percentile speed of 49 mph*).

The embankment, and a utility pole, contribute to this issue. Tall grass could potentially be an issue here as well.



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Safety Enhancements:

Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the east side, north of the intersection.

Relocate the utility pole.

Mow twice a year in this area. District and Town to work together and coordinate.

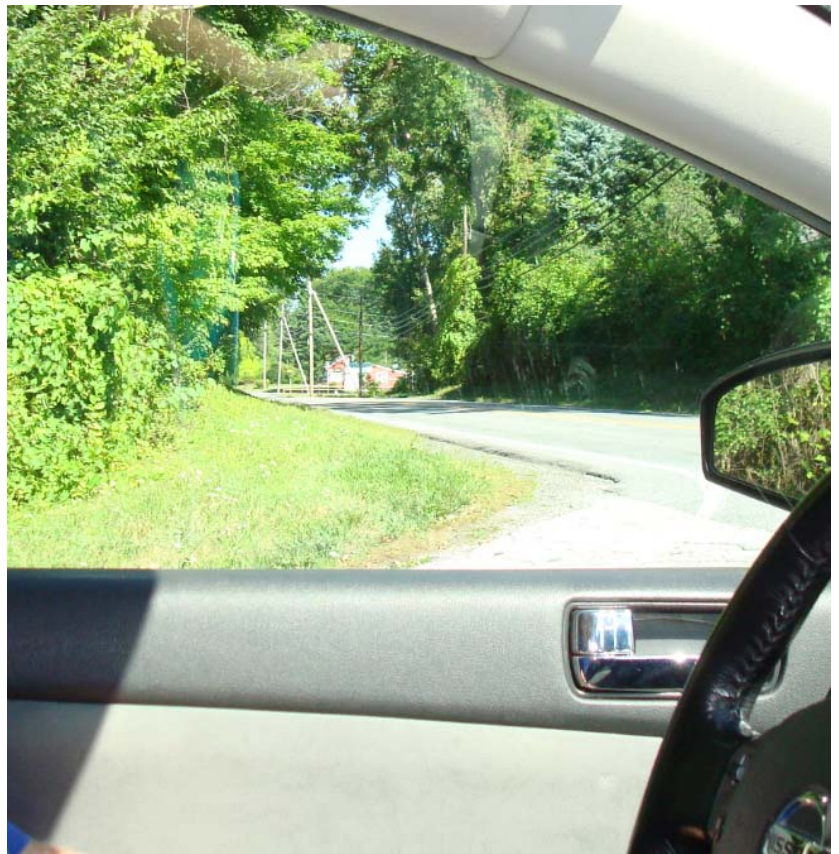
Add an advisory plaque to the northbound advance warning intersection assembly that would match the speed for the corresponding available corner sight distance.

Reduce the speed limit on VT 7a to 45 mph (5 mph below the recorded 85th percentile speed).

Concern: Corner Sight Distance Issue, Northwest Quadrant

The corner sight distance (ISD) when stopped on Rice Lane and looking to the left (or north), towards VT 7a is inadequate (*it was measured at 407 feet, which is below AASHTO's guidance of 555 feet for the actual 50 mph posted speed limit and below the value suggested for the 85th percentile speed of 49 mph*).

The embankment, and tall grass during the summer months could reduce the corner sight distance.



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Safety Enhancement:

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

Mow twice a year in this area. District and Town to work together and coordinate.

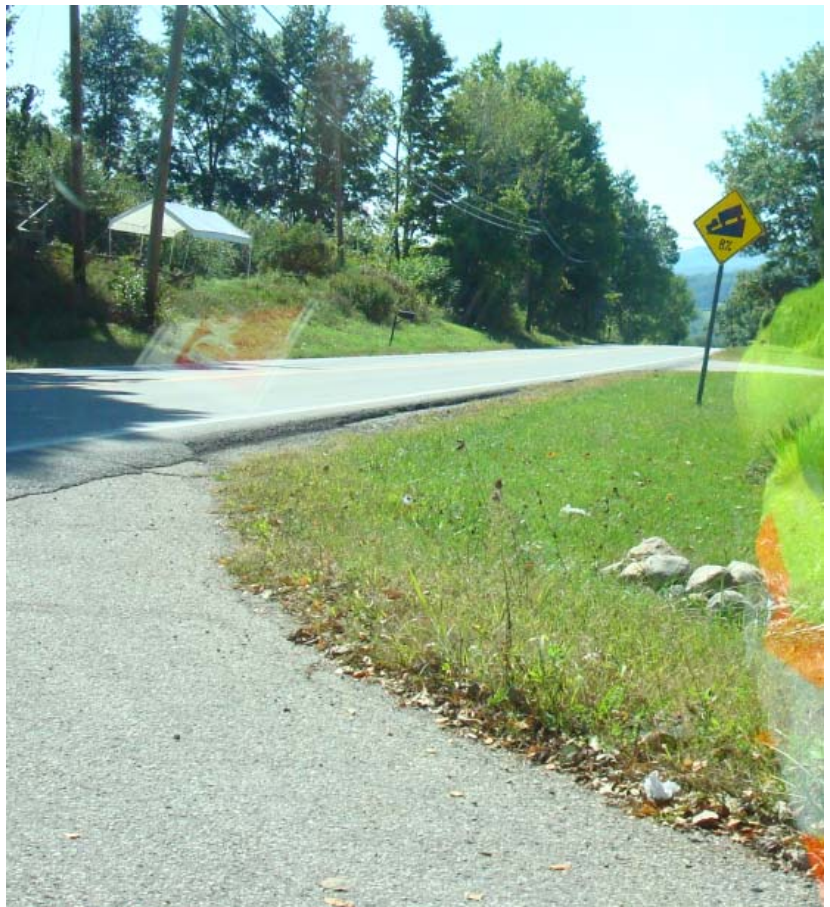
Assess if removing brush and tree limbs permanently would improve visibility.

Reduce the speed limit to 45 mph (5 mph below the recorded 85th percentile speed).

Concern: Potential Corner Sight Distance Issue, Southwest Quadrant)

The corner sight distance (ISD) when stopped on Rice Lane and looking to the left (or north), towards VT 7a is limited (*it was measured at 538 feet, which is somewhat below AASHTO's guidance of 555 feet for the actual 50 mph posted speed limit and below the value suggested for the 85th percentile speed of 49 mph*). The vertical crest south of the intersection contributes to this *issue*.

Tall grass during the summer month could be also a contributing factor.



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Safety Enhancements:

Mow twice a year in this area. District and Town to work together and coordinate.

Evaluate what gain in corner sight distance could be achieved by lowering the road.

Reduce the speed limit to 45 mph (5 mph below the recorded 85th percentile speed).

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 the Director of the Office of Highway Safety for further consideration.

Potential Safety Enhancements Summary Table

Safety Concern	Safety Enhancement	Responsibility	Safety Payoff	Time Frame	Cost
General Corner Sight Distance Issue, All Quadrants	Mow twice a year in this area. District and Town to work together and coordinate.	VTrans (District 1) & Town	Med	Annually	Low
	Reduce the speed limit on VT 7a to 45 mph (5 mph below the recorded 85th percentile speed).	VTrans (TSMO)	Med	Short/Mid	Low
	If no gain in corner sight distance can be physically achieved, for each direction on VT 7a, add an advisory plaque to the advance warning intersection assemblies that would match the speed of the worst available corner sight distance.	VTrans (TSMO)	Low	Short	Low
Corner Sight Distance Issue, Houghton Lane, Looking Left (388 ft available)	Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the east side, south of the intersection.	VTrans (AMP)	Med	Short/Mid	Med (\$1,67,000 for B/C>1)
	Evaluate what additional gain could be obtained by lowering the road.	VTrans (AMP)	High	Mid	High (\$1,670,000 for B/C>1)
	Relocate the utility pole.	VTrans (District 8 & Utilities)	Med	Short	Med
	Install a dynamic warning system (like the one at Rice lane and VT 67a) that would warn traffic on VT 7a that a vehicle is stopped on Houghton Lane (as well as on Rice Lane as well). Alternatively, install the system so that a vehicle on Houghton Lane is informed that a northbound vehicle on VT7 a is approaching the intersection.	VTrans (TSMO)	Med	Short/Mid	Low (est \$7,000 for project)
Corner Sight Distance Issue, Houghton Lane, Looking Right (403 ft available)	Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the east side, north of the intersection.	VTrans (AMP)	Med	Short/Mid	High (\$1,670,000 for B/C>1)
	Relocate the utility pole.	VTrans (District 8 & Utilities)	Med	Short	Med

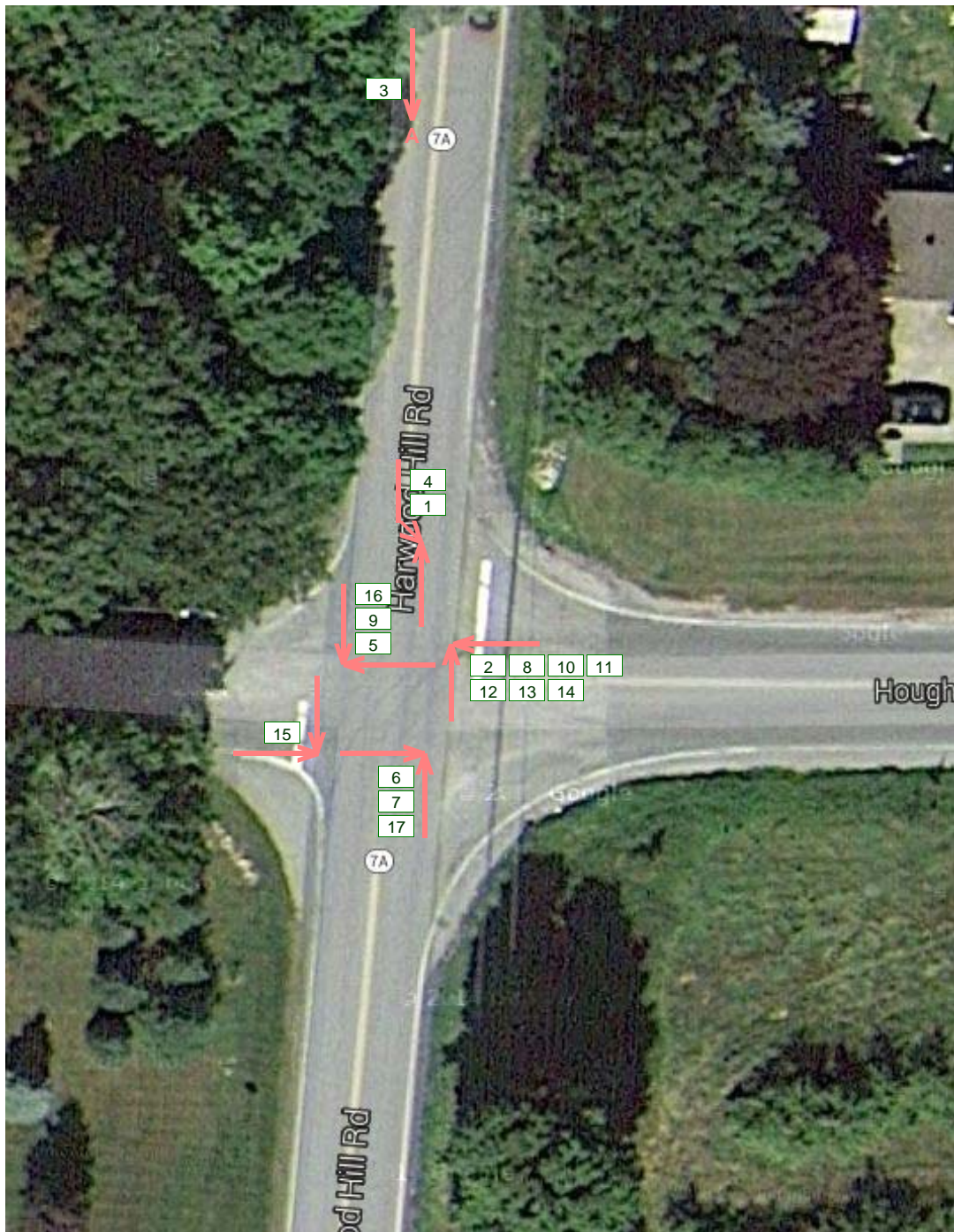
Note: THIS DOCUMENT IS EXEMPT FROM DISCOVERY OR ADMISSION UNDER 23 U.S.C. 409

Corner Sight Distance Issue, Rice Lane, Looking Left (407 ft available)	Evaluate what gain in corner sight distance could be achieved by cutting back the bank on the west side, north of the intersection.	VTrans (AMP)	Med	Short/Mid	Med (\$1,67,0000 for B/C>1)
	Assess if removing brush and tree limbs permanently would improve visibility.	VTrans (District 1)	Med	Short	Low
Potential, corner Sight Distance Issue, Rice Lane, Looking Right (538 ft available)	Evaluate what additional gain could be obtained by lowering the road.	VTrans (AMP)	Low	Mid	High (\$1,670,000 for B/C>1)

COLLISION DIAGRAM

Key Number =

MUNICIPALITY: <u>Bennington</u>	COUNTY: _____	FILE: <u>enfvt7arice2</u>
INTERSECTION: <u>VT-7A</u>		CASE # : _____
PERIOD: <u>5</u> YEARS <u>5</u> MONTHS	FROM <u>1/1/2010</u> TO <u>5/4/2015</u>	BY: _____ DATE: <u>12/7/2015</u>



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

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
1	VT-7A	1.71	4/26/2010	16:53	Rain	1	0	Left Turn and Thru, Angle Broadside -->v--	On Monday April 26, 2010 at 16:53 hours, a motor vehicle crash with injuries at RT 7A and Houghton Lane. At the time the crash the weather was rainy and the asphalt road was wet. Op #2 (advised that he was traveling northbound of Rt 7A and that Vh#1 was traveling southbound. Op #2 said that Vh #1 attempted to make a left hand turn onto Houghton Lane. Op #2 advised that Vh #1 turned right in front of him and he did not have time to stop to avoid striking the vehicle in the passenger side. Witness advised that he was at the Rice Lane stop sign waiting to turn onto Rt 7A. Advised that Vh #1 was traveling southbound and made a left turn onto Houghton Lane, into the path of Vh #2. Injury 3.
2	VT-7A	1.71	6/12/2010	9:42	Rain	1	0	No Turns, Thru moves only, Broadside ^<	At the time of the collision the weather was overcast and raining and the road surface was wet. Op 1 was entering the intersection and she saw veh#2 she tried to stop but her brakes failed and they did touch the floor. Operator of veh#2 advised that she was northbound on Rt.7a at about 35mph when veh#1 came out of the side street and struck her. She attempted to avoid the collision but could not. Witness who was in a vehicle behind veh#1 advised that veh#1 pulled right into the side of veh#2. Inj 4.

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
3	VT-7A	1.71	6/11/2011	12:01	Rain	4	0	Head On	Landmark: Airgas. Single motor vehicle. Operator # 1 advised that she was traveling south on Harwood Hill at approximately 45 MPH. Advised that she observed the deer run into the roadway and could not stop in time to prevent from striking the deer. At the time of this collision it was dark out. The weather was overcast, mostly cloudy and windy. There were no other obstructions near the roadway that would impair a driver's view traveling north or south on Harwood Hill. Vehicle # 1 had extensive front-end damage to the front bumper and the driver's side headlight had been removed. The damage was caused when the deer's torso struck the vehicle. There were signs of deer hair in the front fender of the vehicle. The deer ran from east to west. The deer died on impact. Property Damage Only

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
4	VT-7A	1.71	10/4/2011	9:12	Cloudy	1	0	No Turns, Thru moves only, Broadside ^<	<p>At the time of the crash it overcast and it was raining. The blacktop road surface was wet but free of debris. The operator of V#1 said that he was traveling south on route 7A and needed to make a left turn on Houghton Lane. He said he was slowing down and was at about 30 miles per hour when his vehicle started to slide on the wet pavement. The operator of V#2 said that he was traveling at about 45 miles per hour north on route 7A when all of a sudden V#1 came straight into his lane and he could do nothing to avoid it. He said that he was struck and it spun their vehicle around. A witness said that she was outside and was looking toward 7A. She said that she saw V#1 cross over into V#2 path of travel and they had a head on collision. Another witness said that she was at the intersection of 7A and Houghton at the stop sign. She said that she saw #1 crossed over the yellow lines hitting into #2, head on. It was found that speed was not a factor in this crash. It was raining and officer believed that the wet blacktop contributed to the crash. V#1 was traveling south on 7A, not at an excessive speed, he saw that he needed to slow down to make a left turn on to Houghton Lane. He did this and lost control of his car and slid into the oncoming traffic, failing to stay in his lane, and struck V#1 in the front driver side of the vehicle. It also should be noted that officer saw that the tires for V#1 (although it was a newer vehicle) were very worn. The tread was almost non-existent. This is also a contributing factor in why V#1 could not stop quick enough on the wet road surface.</p> <p>Injury 3</p>

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
5	VT-7A	1.71	10/25/2011	15:39	Clear	1	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash the sky was overcast and the road surface was wet. Operator of veh#1 advised that she was stopped on Houghton Lane in a westbound direction. She advised that she looked both ways before proceeding and did not see veh#2 traveling south on Rt.7A. She advised that she pulled out and then there was the collision. Operator of veh#2 advised that he was traveling south on Rt.7A at about 30mph. He advised that as he approached the Houghton Lane intersection veh#1 pulled out and he could not stop the vehicle in time to avoid the collision. Injury 4
6	VT-7A	1.71	4/11/2012	15:25	Clear	0	0	No Turns, Thru moves only, Broadside ^<	Veh#1 stopped for a stop sign on Rice Lane and then entered the intersection without due care, causing both vehicles to collide. There were no view or road obstructions for either operator. A witness advised that he was driving east on Rice Lane and was behind Veh#1, an SUV. The SUV came to a stop and then pulled out into the intersection, in front of the northbound pickup truck (Veh#2.) Op 2 advised that he was northbound on Route 7-A at about 35 MPH, because he knows this intersection is crazy. All of a sudden this guy darted out in front of him. Op 1 said he stopped for the stop sign and when he pulled out he did not see veh #2. Injury 4

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
7	VT-7A	1.71	8/10/2012	8:45	Rain	0	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash, the weather was clear and mild, and the road surface was clear and dry. The operator of vehicle #1 advised he had been eastbound on Rice Lane and had stopped at the stop sign at the intersection of Harwood Hill Road. Advised he was eating some food and not paying complete attention to the road. Advised he thought the coast was clear and pulled out to crossover onto Houghton Lane and did not see vehicle #2 traveling northbound. The operator of vehicle #2 advised he had been northbound on Harwood Hill Road. As he was approaching the Rice Lane intersection, vehicle #1 pulled out to cross Harwood Hill Road. The officer felt that the operator of vehicle #1 should have been able to see vehicle #1 approaching. Property Damage Only

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
8	VT-7A	1.71	8/10/2012	8:45	Rain	0	0	No Turns, Thru moves only, Broadside ^<	The road surface is blacktop which was wet at the time of the accident as it was raining?? The weather was cloudy?? and warm and played no role in the accident. OP 1 she stated she was traveling westbound on Houghton Lane and had come to a complete stop at the intersection of Harwood Hill. Operator#1 stated at one point a vehicle drove alongside her vehicle to turn northbound onto Harwood Hill. With this action taking place Operator#1 stated she could not see clearly the oncoming traffic from the north. Operator#1 stated at one point she began to cross Harwood Hill and while halfway in the roadway observed the oncoming V#2 which was traveling southbound. Operator#1 stated she attempting to apply the gas but could not avoid being struck in the left rear by V#2. OP 2 advised he was traveling northbound on Harwood Hill at approximately 45 MPH in a state highway dump truck. Operator#2 stated as he approached the intersection of Houghton Lane he observed V#1 pull into his path of travel. There was also a witness to the accident who advised he was traveling northbound on Harwood Hill when he observed V#1 rolled into the intersection of Harwood Hill. There were no skid marks in the roadway and speed did not appear to be a factor in this accident. Property Damage Only

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
9	VT-7A	1.71	8/13/2013	12:55	Rain	0	0	No Turns, Thru moves only, Broadside ^<	Road conditions were snow and ice, with wind, causing the roads to be very slippery. Op 1 advised that he was traveling on Houghton Lane coming to the intersection. He wanted to turn left, but could not stop and slid into the intersection. Operator #2 advised that she was traveling southbound on her way into Bennington when the truck appeared in front of her, and she hit it. Investigation: Operator #2 was traveling on Harwood Hill Road traveling southbound. Vehicle #1 was traveling westbound on Houghton Lane, and wanted to turn left onto Harwood Hill Road. However he was unable to stop and slid into the intersection in front of Vehicle #2, and was hit. Injury 4
10	VT-7A	1.71	8/13/2013	12:55	Rain	0	0	No Turns, Thru moves only, Broadside ^<	Operator #1 advised that he was stopped at Houghton Lane and was crossing the intersection when out of nowhere the other vehicle came and hit him. Operator #2 advised that they were traveling north on Route 7a near the intersection of Houghton Lane when a truck came out in front of her. She advised that she hit the brakes and swerved to avoid a broadside collision, striking the truck in the rear and then going into the embankment at the intersection. Property Damage Only

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
11	VT-7A	1.71	12/10/2013	13:22	Snow	1	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash the weather was cloudy with snow falling. The road surfaces were snow and ice covered. Op 1 advised she was traveling west on Houghton Lane at approximately 20 MPH. Advised that as she approached the intersection she applied the brakes but the anti-lock braking system did not work and that she slid past the stop sign and into the middle of Harwood Hill Road. Advised that the road was too icy for her vehicle to stop. The operator of vehicle #2 advised he was traveling north on Harwood Hill at approximately 40 MPH. Advised the red vehicle came out of the intersection and his vehicle hit that vehicle, which then caused both of the vehicles to hit the third vehicle. The operator of vehicle #3 advised she was traveling south on Harwood Hill Road at approximately 20 MPH. Advised the red car slid through the intersection, then hit the green car in the side and then both vehicles hit her vehicle. Advised it looked as though the red car might not have been able to stop for the stop sign on Houghton Lane. Upon investigation it was found that vehicle #1 was traveling west on Houghton Lane. It was also found that V1 was traveling at approximately 20 MPH in a 35 MPH zone. It was also found that V1 could not come to a complete stop for the stop sign thus ended up traveling into the middle of Harwood Hill Road and into oncoming north and southbound traffic. It was also found that vehicle #2 was traveling north on Harwood Hill Road at approximately 40 MPH. Injury 4

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
12	VT-7A	1.71	3/5/2014	10:31	Clear	2	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash, the weather was clear and cold, and the road surface was clear and dry, with snowbanks on the shoulders. Op 1 advised she had been west on Houghton Lane and had come to a complete stop at the VT RT 7A intersection. She advised it was her intention to cross over VT RT 7A and continue straight onto Rice Lane. Advised that she thought she had looked and started out into the intersection and was hit by vehicle #2. The operator of vehicle #2 advised she was northbound on VT RT 7A and was approaching the Houghton Lane/Rice Lane intersection. Advised as she got close, she could see the operator of vehicle #1 was not looking in her direction and was starting into the intersection. Advised she braked and swerved but was not able to avoid hitting vehicle #1 which kept on coming out into her path. The road to the south of the crash scene is straight and downhill and it is felt that the operator of vehicle #1 should have been able to see vehicle #2 approaching. There was no indication at the scene that vehicle #2 was traveling at an excessive rate of speed. Injury 3

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
13	VT-7A	1.71	4/14/2014	10:00	Cloudy	2	0	Right Turn and Thru, Broadside ^<--	The surface of the road is blacktop and at the time of the crash, the weather was clear skies, the road surface was clear and dry, with lighting conditions described as "daylight". Op 2 said that she was at a complete stop on Houghton Lane, at its intersection with Route 7A. was intending on driving straight across Houghton Lane to Rice Lane. Said that she saw vehicle #1 traveling north on Route 7A and begin to make a right turn to head east on Houghton Lane. Said that she perceived that vehicle #1 was traveling too fast to make this turn. She told officer as #1 began to make the turn "I knew he was going to hit me". Said that after her vehicle was struck, the other vehicle continued east on Houghton Lane and disappeared over an embankment. A witness was stopped at the stop sign on Rice Lane at its intersection with Route 7A. Said that she was intending on traveling east across Route 7A onto Houghton Lane. Said that she saw vehicle #1 traveling north on 7A at a high rate of speed and then try to make a right turn onto Houghton Lane. Injury 2.

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
14	VT-7A	1.71	7/17/2014	9:57	Clear	1	0	No Turns, Thru moves only, Broadside ^<	<p>VT RT 7A is a slight uphill and straight in the area of Houghton Lane when traveling north and Houghton Lane is a slight downhill and straight when traveling west. At the time of the crash, the weather was clear and warm, and the road surface was clear and dry. The operator of vehicle #1, advised she had been west on Houghton Lane and had come to a stop at the stop sign at the intersection of VT RT 7A. Advised it was her intention to proceed straight across the intersection to continue west on Rice Lane. Advised she did not see any vehicles approaching and started up into the intersection. Advised she did not see vehicle #2 approaching and it was then right in front of her and she hit the side of the vehicle. Felt vehicle #2 was traveling at an excessive rate of speed. The operator of vehicle #2 advised she had been northbound on Harwood Hill Road at about 40 mph and was continuing north. Advised as she was approaching the Houghton Lane intersection, Vehicle #1 came out from Houghton Lane without stopping for the stop sign and hit the side of her vehicle. A Traffic Crash Reconstructionist, was able to calculate the speed of vehicle #2 from the marks left in the roadway at 38 to 41 mph at impact, which is below the posted speed limit of 50mph. The road to the south of the crash scene is straight and downhill. It is felt that vehicle #1 should have been able to see vehicle #2 approaching. Injury 2.</p>

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
15	VT-7A	1.71	11/25/2014	13:46	Cloudy	1	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash the weather was cloudy and cool; the road surface was clear and dry. Op 2 said she was traveling south on Harwood Hill and the other car pulled out in front of her. Said she pulled into the other lane in an attempt to avoid the crash and almost struck a utility pole. The operator of Vehicle #1(V1) stated he was traveling east on Rice Lane and stopped at the intersection. V2 was traveling south on Harwood Hill and was approaching the intersection with Rice Lane and Houghton Lane. At or about the same time V1 was traveling east on Rice Lane; approaching the same intersection. At some point when V2 entered the intersection, V1 entered the intersection and collided with V2. Injury 3.

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
16	VT-7A	1.71	5/4/2015	9:50	Clear	1	0	No Turns, Thru moves only, Broadside ^<	At the time of the crash the weather was sunny and warm; the road surface was clear and dry. Op 2 said he was traveling south on Harwood Hill and did not recall anything after the collision. In the subsequent interview, he said he was traveling between 35-40 MPH and saw the other vehicle coming out into the intersection. Op 1 said he saw the other car on Rice Lane, but didn't see the other car coming. Stated his intention was to cross the intersection onto Rice Lane. Witness said he was stopped [facing east] on Rice Lane at the intersection with Harwood Hill. Said he saw [V1] and another vehicle traveling behind it coming down Houghton Lane. Said [V1] did not stop and pulled out into the intersection. Murphy said he couldn't determine which direction [V1] was intending to travel. Upon investigation, V2 was traveling south on Harwood Hill and was approaching the intersection with Houghton Lane. At or about the same time V1 was traveling west on Houghton Lane; approaching the same intersection. At some point V1 either failed to stop or entered the intersection prematurely and collided with V2. V2 attempted to avoid the collision by pulling to the right. V2 then collided with a stop/street sign, drove between 2 trees, across the lawn, over a rock wall, into a pine tree. Injury 3.

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
17	VT-7A	1.71	11/16/2015	16:46	Cloudy	1	0	No Turns, Thru moves only, Broadside ^<	Two-vehicle, with Injury. Date & Time reported: 16 November, 2015, 1646 Hours. Op 2 advised she was driving North on Harwood Hill (Vermont 7A) when Vehicle #1 crossed Harwood Hill east-bound from Rice Lane to Houghton Lane. Advised she swerved to the right to try and avoid the collision, but Vehicle #1 accelerate through the intersection, resulting in Op 2 steering into Vehicle #1. Op 1 advised she had stopped on Rice Lane at the intersection with Harwood Hill. Rice she waited for some amount of time at the intersection due to traffic, looked both ways when traffic passed and proceeded into the intersection towards Houghton Lane. Rice advised me she then saw Vehicle #2 and felt the impact. Vehicle #1 entered the intersection and was struck in the rear passenger's side door by Vehicle #2. This resulted in Vehicle #1 rolling on to its driver's side. Officer indicated that it should be noted there is poor visibility for vehicles on Rice Lane and Houghton Lane to observe northbound traffic.