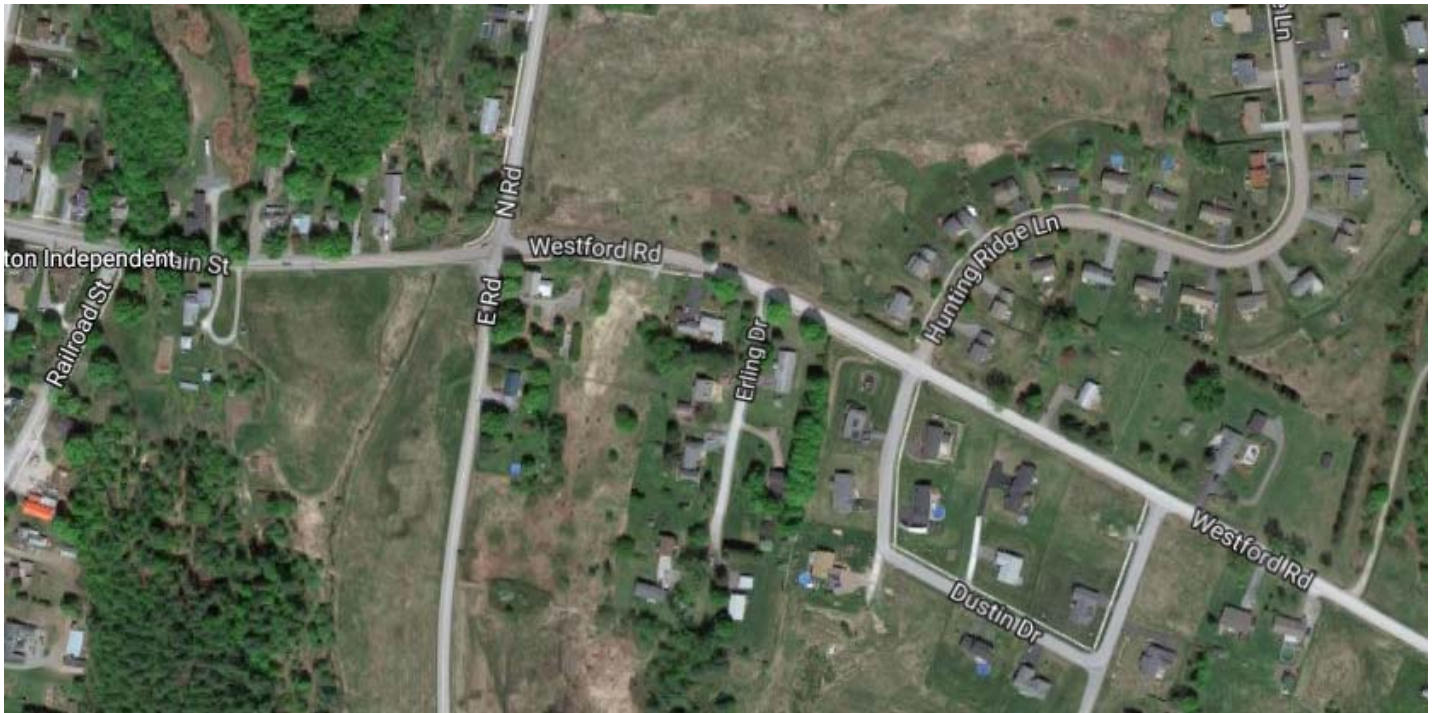


Office of Highway Safety

Road Safety Audit Review

Town:	Milton	Date Reviewed:	October 19, 2016
Route:	Westford Rd & Main St (mm 0.63) Main St and Railroad St (mm 0.47)	Mile points:	0.47 to 0.69

Location Map



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.

Office of Highway Safety

Road Safety Audit Review

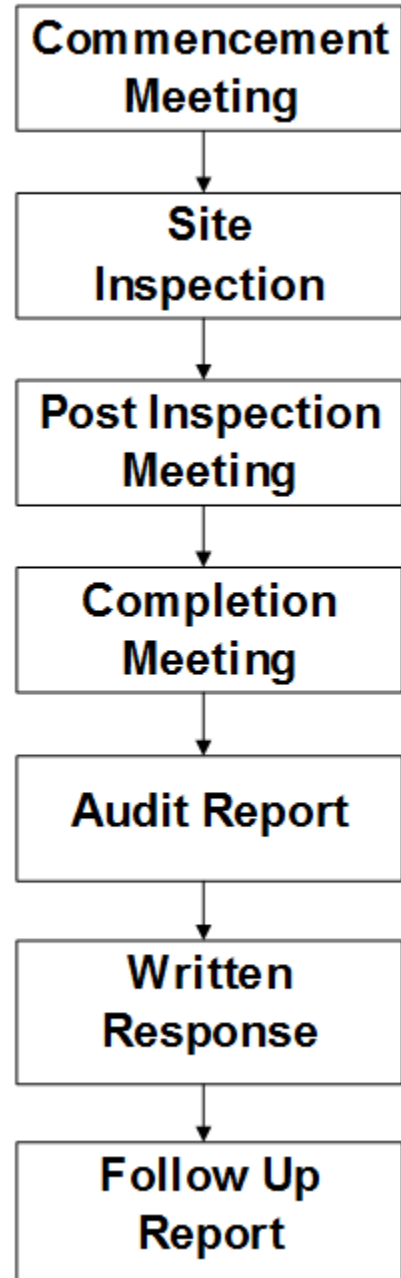
The RSAR process is composed of several steps as shown in Figure 1. The process starts with a **Commencement Meeting** during which the Audit Team reviews data and gathers community concerns. A **Site Inspection** is then performed by the Audit Team. The site visit involves the identification of safety 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. 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 section of Main Street from the intersection with Railroad Street up to the intersection with North Road and the section of Westford Road from this intersection to a point 0.3 mile eastward.

Figure 1 - Road Safety Audit Process



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Road Safety Audit Review

Purpose of the RSAR

This RSAR was initially convened to review the section of Westford Road from mile point 0.6 to mile point 0.9 as part of VTrans Highway Safety Improvement Program (HSIP). The locations selected for this HSIP effort were originally identified as high crash locations and subsequently ranked in terms of fatal and injury crash rate.

The extent of the original RSAR was modified to include the intersection of Main Street and Railroad Street at the request of the Town of Milton.

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:

Ashley Bishop,	District 5, VTrans
Tyler Guazzoni,	TSMO, VTrans
Dick Hosking,	District 5, VTrans
Pat McManamon,	DMV, VTrans
Nick Meltze,	Bike & Ped, VTrans
Dustin Keelty,	Milton Public Works
Paul Locke	Milton Police
Sai Sarepalli,	CCRPC

Office of Highway Safety

Road Safety Audit Review

Information Reviewed

Geometry

The intersection of Main Street and Railroad Street is a three-way intersection. It is located at mile point 0.47 on Main Street. At this intersection, Main Street runs west to east and Railroad Street is to the south. This intersection is controlled by a stop sign on Railroad Street.

There is a 9% downgrade on Main Street when approaching the intersection from the east. This vertical downgrade continues through the intersection. Railroad Street at the intersection is uphill as it meets with Main Street.

Corner sight distance to the right on Railroad Street is limited by the crest of the road on Main Street and by embankment to the right. The available stopping sight distance coming down the hill on Main Street towards the intersection is about 186 feet (as measured by VTrans TSMO).

The intersection of Main Street, Westford Road, East Road and North Road is a four-way intersection. It is located approximately 780 feet east of the Railroad intersection, at mile point 0.63 on Main Street.

At this intersection, North Road runs north from the intersection, Westford Road runs east, East Road runs south, and Main Street runs west. The intersection is controlled by stop signs on North Road and East Road.

While traveling east on Main Street from just after the Railroad Street intersection, the highway at the scene has a moderate decline, from the crest of the hill leading into the intersection.

While traveling west on Westford Road towards the intersection, there is a curve to the left about two hundred feet prior the intersection.

Ballbanking was performed on this curve to determine the safe speed around the curve while traveling in the westbound direction. The table below shows the results obtained. The curve was driven twice at speeds of 35, 40 and 45 mph. The results indicate that traveling around this curve in the westbound direction at a speed of 40 mph or less is appropriate.

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Road Safety Audit Review

Ballbanking Readings, Degrees

Speed	1st Reading	2nd Reading
35 mph	8	9
40 mph	11	11
45 mph	14	15

Corner sight distance to the right when stopped on the East Road approach was measured on March 3, 2017. It was determined that, if the motorist would pull up beyond the normal stopping point, that about 465 feet of corner sight distance would be available. However, if the motorist would not move forward, then it was determined that sight distance would be hindered and reduced to about 210 feet. Given that these measurements were taken in March, it is possible that vegetation could affect the available corner sight distance at other times of the year.

The AASHTO recommended design corner sight distance values are 390 feet for a traveling speed of 35 mph and 445 feet for a speed of 40 mph.

Speed Limit

The posted speed limit on Main Street is 30 mph. It is 35 mph on Westford Road and 40 mph on both East Road and North Road.

The 85th percentile speed on Main Street between Railroad Street and North Road was estimated from a traffic counting device installed in July 2015 (D201) to be 33 mph (meaning that 85% of the traffic travels at a speed of 33 mph or less).

It was also determined from the same counting device that most vehicles travelled between 25 mph and 35 mph (this is the 10-mph pace and it represents the range of speeds that encompasses the highest proportion of vehicles).

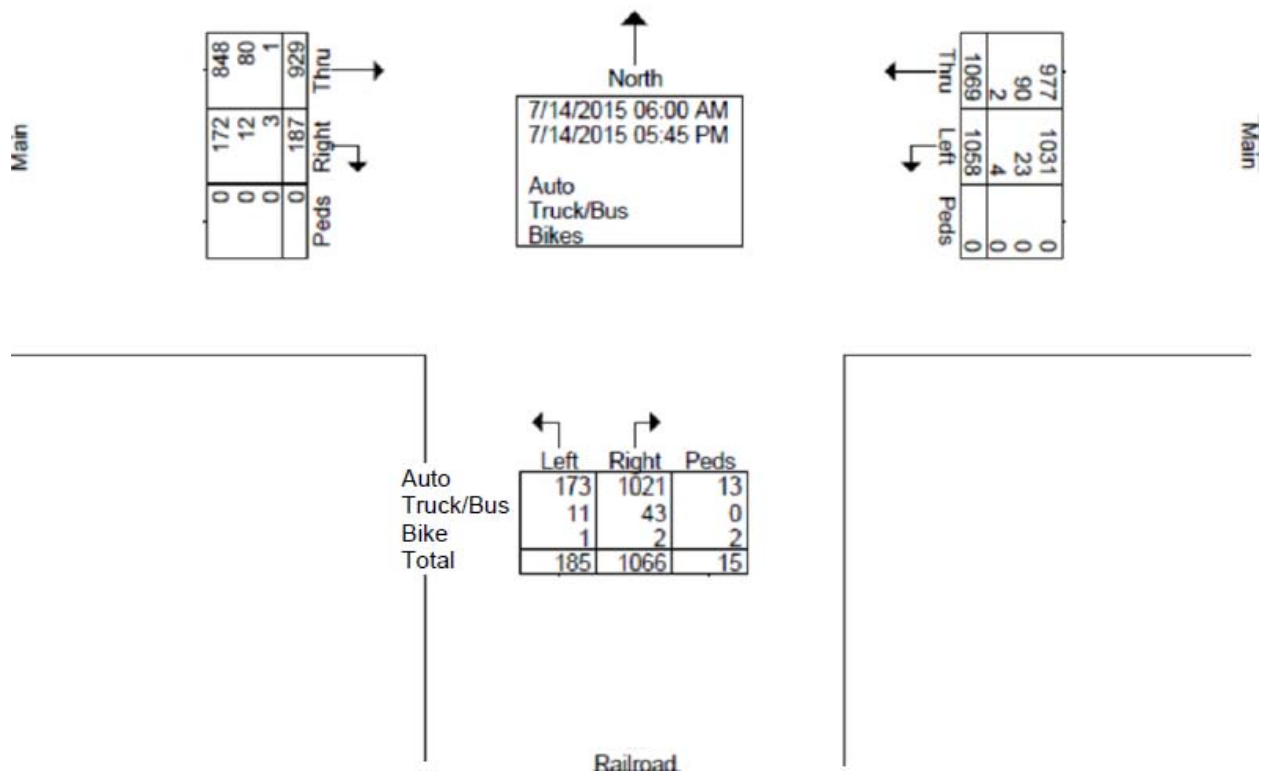
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Road Safety Audit Review

Traffic Volumes

A July 2015 count (D201) on Main Street between Railroad Street and North Road recorded 5042 vehicles per day. This traffic was almost evenly distributed between eastbound and westbound traffic with 2558 vehicles traveling east and 2484 traveling west.

A turning movement count was performed at the intersection of Main Street and Railroad Street in July 2015. The raw count for the twelve-hour period between 6:00 am and 6:00 pm is shown below.



The count shows that 2127 vehicles are entering the intersection from the east, 1116 vehicles are entering the intersection from the west and 1255 vehicles are entering from Railroad Street.

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Road Safety Audit Review

The count further indicates that 50% of the vehicles entering from the west are making a left turn onto Railroad Street (1058 vehicles). The count also shows that out of Railroad Street, 85% of the vehicles are making a right turn (1021 vehicles compared to 173 vehicles taking a left) and that on Main Street traveling eastbound, 83% of the vehicles are continuing through (929 vehicles).

A turning movement count was also done in July 2015 at the intersection of Main Street, Westford Road, North Road and East Road. The raw twelve-hour count is shown in the next figure.

The count shows that 1949 vehicles are entering the intersection from Main Street (from the east), 1357 vehicles are entering the intersection from Westford Road (from the west), 880 vehicles are entering from North Road (from the north) and 680 vehicles are entering from East Road (from the south).

Eighty percent of the traffic that is coming from Westford Road is continuing through the intersection while sixteen percent is taking a left onto East Road.

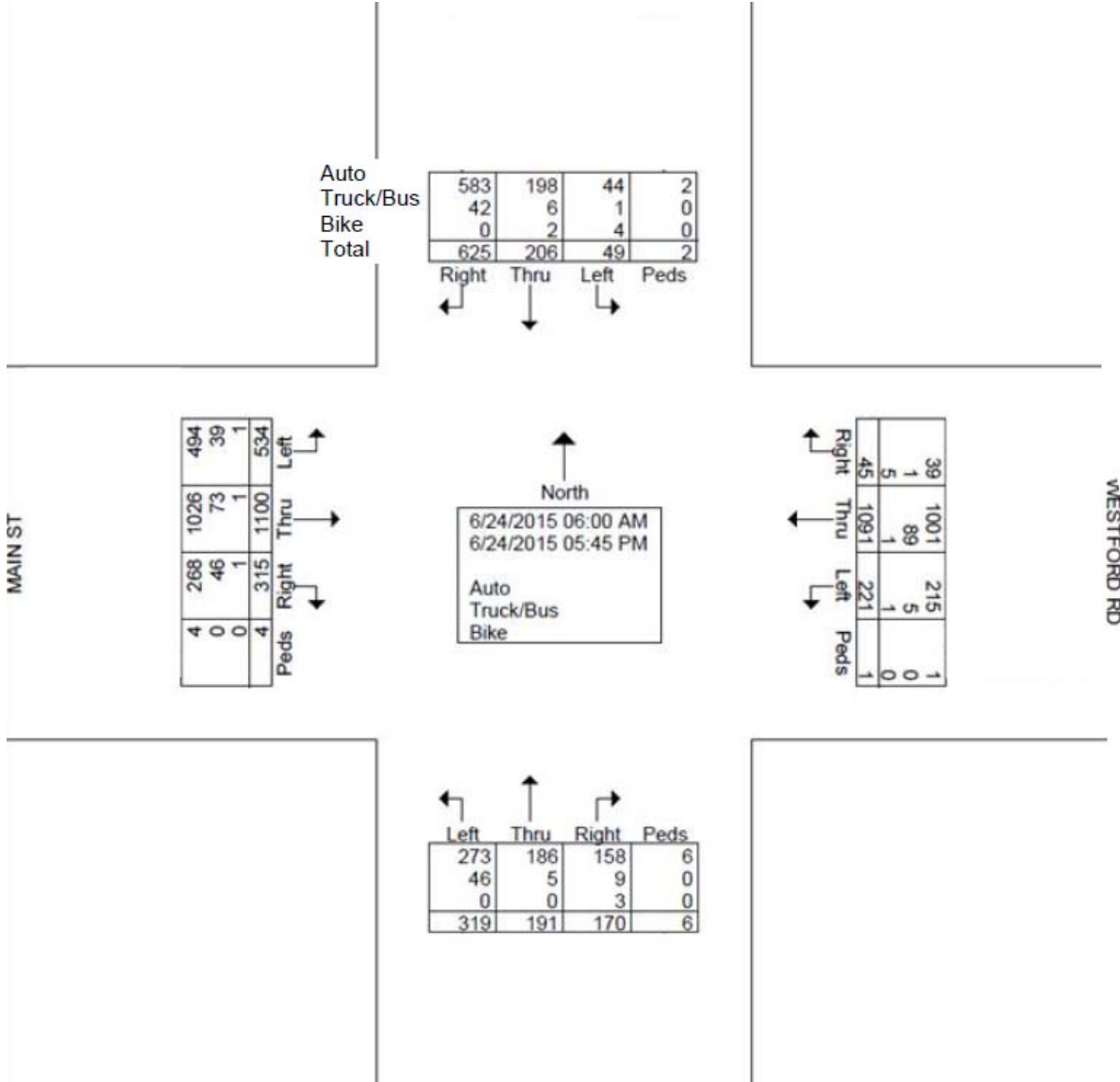
Most of the traffic from North Road is taking a right onto Main Street (71%) while twenty-three percent is continuing straight onto East Road.

From Main Street, most of the traffic is continuing through the intersection onto Westford Road (56%). Twenty-seven percent of the traffic is making a left turn onto North Road compared to sixteen percent of the traffic on this approach that is making a right turn onto East Road.

On the East Road approach, the majority of the traffic is making a left turn to continue onto Main Street while twenty-eight percent is continuing straight on North Street and twenty-three percent is making a right turn onto Westford Road.

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Traffic Signs

Traffic traveling westbound towards the intersection of Main Street and Railroad Street is warned of the intersection by a Dangerous Intersection yellow diamond sign. There is a 30 mph

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speed limit sign just east of the crest of the hill on Main Street. There is a stop sign on the Railroad Street approach to control traffic at the three-way intersection.

At the Main Street, Westford Road, North Road and East Road intersection, there are stop signs on the East Road and the North Road approaches.

Approaching the intersection from the east and traveling westbound, there is a Dangerous Intersection sign that is located about three hundred and fifty feet east of the intersection.

Both intersections have street name signs that have a nine-inch blade.

Past Traffic Studies

The Town of Milton completed a pedestrian and bicycle scoping study in May 2015¹. This scoping study proposed the construction of a new sidewalk between the intersection of Main Street and Railroad and the intersection of Main Street, Westford Road, North Road and East Road. The scoping study reported on the insufficient stopping sight distance on Main and the insufficient intersection sight distance for cars and pedestrians accessing Railroad Street.

The scoping study recommended the reconstruction of Main Street to reduce the elevation at the top of the existing vertical curve east of Railroad Street. Given the extensive road reconstruction needed to accomplish this, the scoping study recommended as a lower cost alternative, the prohibition of left turn movements coming out of Railroad Street.

In addition, the scoping study indicated that, while it had not done a warrant analysis, given the traffic volumes, an all-way stop could possibly be viable at the intersection of Main Street and Railroad intersection and the Main Street, Westford Road, North Road and East Road.

CCRPC prepared, in February 2016, a technical memorandum in response to a request by the Town of Milton to evaluate the appropriateness of converting the intersection of Main Street, Westford Road, North Road and East Road from a two-way stop to an all-way stop. CCRPC assessed the validity of each of the criteria listed in the 2009 Manual on Uniform Traffic Control

¹ Milton, VT Pedestrian and Bicycle Scoping Study, May 2015

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Devices (MUTCD) and concluded that the conditions at this intersection did not meet the guidance for multi-way stop controlled provided in the MUTCD.

In the same memorandum, CCRPC also investigated sight distance issues as they relate to left turning traffic at the Main Street and Railroad Street intersection. Based on traffic movement counts and measurements, the memorandum concluded that left turns from Railroad Street should be prohibited.

Past Projects

A number of Class II Highway grants were awarded by VTrans District 5 in the past to pave selected roads in Milton: 2010 East Road, 2012 Westford Road, 2014 Section A and B of Railroad Street.

Future Projects

A Class II Highway Grant for 2017 was awarded to pave a portion of North Road.

Crash History

The crash history was reviewed along this segment and at the two intersections for the five-year period covering the years 2011 to 2015.

There were two crashes reported at the Main Street and Railroad Street intersection. One of them was a fixed object crash as a result of a police chase. The other crash was a rear-end crash on Main Street, west of the vertical crest. This crash involved a left turning vehicle that was slowing down to make the turn onto Railroad Street and a westbound vehicle that was coming off the crest of the hill.

There were eight crashes at Main Street, Westford Road, North Road and East Road intersection. All of these crashes involved some form of a right angle crash between either two though vehicles or one through vehicle and one left turning vehicle.

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The reason for these crashes were varied and included being distracted (2 crashes), losing control on snow (1 crash), judging gap poorly (1 crash), thought it was a four-way stop or whose turn it is (2 crashes), did not see the other vehicle (1 crash), indecision – not sure which way to go (1 crash).

Seven out of these eight crashes (88%) took place in the afternoon peak hour between 3:30 pm and 5:30 pm. The majority of the crashes also happened mostly during the summer months, between June and September (62% or 5 out of 8 crashes) compared to winter months between January and March (3 out 8 crashes or 38%).

Most of the crashes at this intersection took place in 2011 and 2012 compared to later years (4 in 2011, 3 in 2012, 1 each in 2013, 2014 and 2 in 2016).

There were three crashes east of the Main Street, Westford Road, North Road and East Road intersection on Westford Road.

One of these crashes was in the curve east of the intersection as a result of a motorist overcorrecting after driving off the shoulder to avoid an oncoming vehicle.

The second crash was in the same area but was caused by a mechanical failure while the third crash was a right angle crash at Horseshoe Circle.

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

Current Local Concerns

The Town of Milton is mostly concerned with the left turning issues at the Railroad Street intersection.

The Town is also wondering what is the best traffic control option for the Main Street, Westford Road, North Road and East Road intersection.

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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: Poor Sight Distance and Corner Sight Distance at the Railroad Street Intersection

Left turning vehicles that are stopped on the Railroad Street approach cannot see Main Street traffic that is approaching from the right due to the vertical crest and the embankment. As per the AASHTO Green Book, the required corner sight distance for a vehicle making a left turn is 335 feet (for a cross speed of 30 mph). In its 2016 memorandum, CCRPC estimated the available corner sight distance to be 200 feet while the Town's 2015 Pedestrian Scoping study estimated that same available distance to be about 250 feet. This issue is illustrated in the next two figures. The first picture shows the view when a vehicle is stopped at the stop sign. The second picture shows the view after creeping forward into the road.

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Westbound traffic on Main Street have a limited view of traffic turning left onto Railroad Street or turning left from Rail Road Street due to the vertical crest on Main Street. The available sight distance was measured by VTrans to be approximately 186 feet. As per the AASHTO Green Book, the required stopping sight distance for a 30 mph speed on a 9% downgrade is 227 feet. The picture below shows what a driver sees as he/she approaches the intersection.

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Safety Enhancements:

Short to Mid

Prohibit Left Turns from Railroad Street: The Town could consider prohibiting left turns from Railroad Street by installing the appropriate regulatory sign and enacting ordinance to this effect. However, without enforcement, it is unlikely that this measure would be efficient.

Upgrade Intersection Warning Sign: Replace the Dangerous Intersection sign with a conventional side road warning sign. Supplement this sign with a Railroad Street plaque.

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Dynamic Warning System: Install a dynamic warning system in conjunction with the westbound intersection sign that will activate a flashing beacon or LEDs around a supplemented plaque to warn Main Street westbound traffic that a vehicle is stopped on Main Street and about to turn left or that a vehicle on Railroad Street is about to turn left onto Main Street. See the diagram at the end of this report for a general layout.

All-way Stop Control (not advisable): The poor corner sight distance to the right when waiting on Railroad Street is a MUTCD criterion that is met for the consideration of all-way stop control at this intersection. However, given the substandard sight distance as a vehicle approaches the intersection from the east, converting this intersection to all-way stop control is not advisable and could result in more crashes.

Long Term

There was only one crash at this intersection during the last five-year period that was related to the issues mentioned above. Given this, a major reconstruction project that would increase the corner sight distance (by reducing the crest of the road) is not supported from a safety benefits-to-construction ratio (i.e. the construction cost would exceed the savings obtained in crash reduction).

Concern: Right Angle Crashes at the North Road Intersection

Right angle crashes is a recognizable pattern at this intersection. Crashes are mostly happening during the afternoon peak hour. The sight distance from Main Street is excellent. The sight distance from Westford Road is good.

Short Term

Sign Enhancement: Install a Cross Traffic Does Not Stop plaque (MUTCD code W4-4P) beneath each stop sign to eliminate the confusion that this intersection is not an all-way stop controlled



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intersection and to remind motorists that oncoming traffic on Main Street and Westford Road does not stop.

Marking Enhancements: Install and maintain stop bars.

Concern: Lack of Delineation at Curve to the Left when Traveling towards the North Road Intersection from Westford Road

While the safe speed around the curve was determined to be around 40 mph or below, given that there is a vertical curve prior to this curve and the intersection, it is likely that speeds approaching the curve are higher.

Nighttime visibility of the curve could potentially be a concern.

Safety Enhancements:

Short Term

Install 6" x 8" delineators spaced about 50 feet apart around the curve.

Install a horizontal curve sign with two side roads displayed on it (MUTCD Code W1-10a, Left) along with a street name plaque below it (MUTCD code W16-8aP).



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Concern: Lack of Pedestrian Connectivity at the North Road Intersection

There is a sidewalk along North Street that dead ends at the intersection. There are no other pedestrian amenities to assist pedestrians around this intersection or to other destinations.

Safety Enhancements:

Long Term

Construct a sidewalk along Main Street as suggested by the 2015 pedestrian and bicycle scoping study. Connect this sidewalk and the one on North Street with a crosswalk at the intersection across Main Street (west approach of the intersection).

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 respective parties for further consideration.

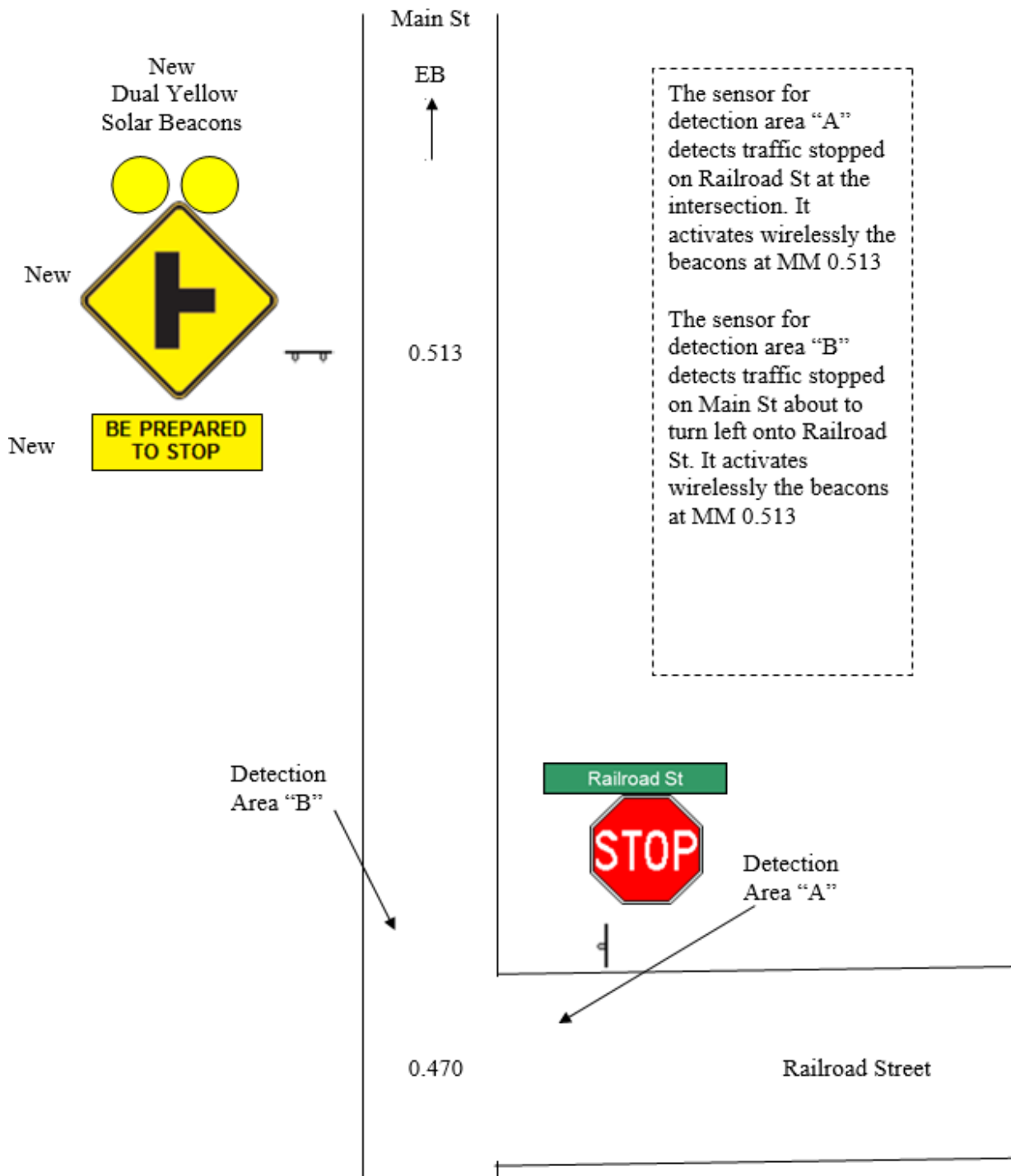
Potential Safety Enhancements Summary Table

Safety Concern	Safety Enhancement	Responsibility	Safety Payoff	Time Frame	Cost
Railroad St Intersection: Poor Sight Distance and Corner Sight Distance at the Railroad Street Intersection	Could prohibit left turns from Railroad Street. But unlikely to be effective without enforcement	Town	Low	Short-Mid	Low (for sign) High (for enforcement)
	Replace the Dangerous Intersection sign with a conventional side road warning sign. Supplement this sign with a Railroad Street plaque	VTrans (through statewide project)	Low	Mid	Low
	Install a dynamic warning system in conjunction with the westbound intersection sign	VTrans (through statewide project)	22% reduction ²	Mid	Mid (\$15,000)
North Rd Intersection: Right Angle Crashes	Install a Cross Traffic Does Not Stop plaque (MUTCD code W4-4P) beneath each stop sign	Town or VTrans (through statewide project)		Short (if Town) Mid (if VTrans)	Low
	Install and maintain stop bars	Town or VTrans (through statewide project) Maintain: Town		Short (if Town) Mid (if VTrans)	Low
Lack of Delineation at Curve to the Left when Traveling towards the North Road Intersection from Westford Road	Install 6" x 8" delineators around the curve, spaced about 50 feet apart	Town or VTrans (through statewide project) Maintain: Town		Short (if Town) Mid (if VTrans)	Low
	Install a horizontal curve sign with two side roads displayed on it (W1-10a) along with a street name plaque below it (W16-8aP)	Town or VTrans (through statewide project) Maintain: Town		Short (if Town) Mid (if VTrans)	Low

² <http://www.dot.state.mn.us/its/projects/2011-2015/rural-intersect-conflict-warn-system/documents/d3ricwssafety.pdf>

Lack of Pedestrian Connectivity at the North Road Intersection	Construct a sidewalk along Main Street as suggested by the 2015 pedestrian and bicycle scoping study. Connect this sidewalk and the one on North Street with a crosswalk at the intersection across Main Street	Town		Long	High
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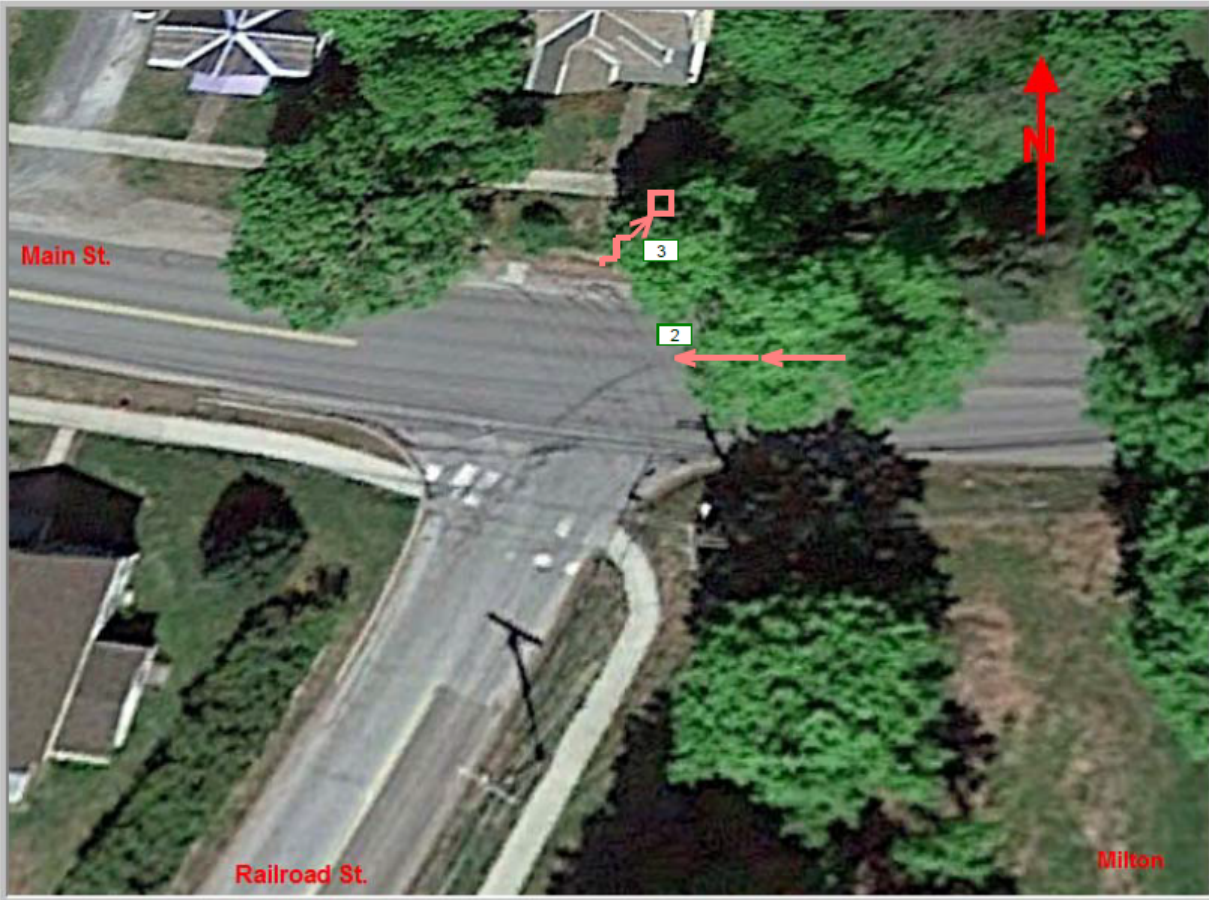
Dynamic Warning Sign Layout



COLLISION DIAGRAM

Key Number =

MUNICIPALITY: <u>Milton</u> COUNTY: _____ INTERSECTION: <u>RAILROAD STREET- MILTON</u> PERIOD: <u>5</u> YEARS <u>0</u> MONTHS FROM <u>1/1/2011</u> TO <u>12/31/2015</u>	FILE: <u>MiltonMainRailrd</u> CASE #: _____ BY: _____ DATE: <u>1/19/2017</u>
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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	→ ←	HEAD ON
↘	LEFT TURN	↘ ↙	RIGHT TURN
↙	LEFT TURN	↙ ↘	RIGHT TURN
→	OVERTAKE	↘ ↙	RIGHT ANGLE
~	OUT OF CONTROL	→ ↘	SIDE SWIPE

COLLISION DIAGRAM

Key Number = 1

MUNICIPALITY: <u>Milton</u>	COUNTY: _____	FILE: <u>ENWEST</u>
INTERSECTION: <u>Westford Rd</u>		CASE #: _____
PERIOD: <u>5</u> YEARS <u>0</u> MONTHS	FROM <u>1/1/2011</u> TO <u>12/31/2015</u>	BY: _____ DATE: <u>10/12/2016</u>



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

COLLISION DIAGRAM

Key Number = 2

MUNICIPALITY: <u>Milton</u> COUNTY: _____	FILE: <u>ENWEST</u>
INTERSECTION: <u>Westford Rd</u>	CASE #: _____
PERIOD: <u>5</u> YEARS <u>0</u> MONTHS FROM <u>1/1/2011</u> TO <u>12/31/2015</u>	BY: _____ DATE: <u>10/12/2016</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	↔	HEAD ON
↘	LEFT TURN	↘	RIGHT TURN
↙	RIGHT TURN	↙	RIGHT TURN
↘	LEFT TURN	↘	RIGHT ANGLE
→	OVERTAKE	↘	SIDE SWIPE
~	OUT OF CONTROL		

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
1	Main St at Railroad St	0.47	10/8/2015	22:02				Single Vehicle	Officer was conducting patrol in a Marked Milton Police Cruiser. Was traveling sb on Railroad St. Near the area of McMullen Rd, observed a vehicle traveling nb which appeared to be exceeding the posted speed limit. Activated patrol car's radar and observed the target speed of the approaching vehicle was 43 MPH. Officer continued to follow the vehicle with my patrol cars lights activated as it went over the railroad tracks and around a corner. The vehicle appeared to speed up. Officer activated patrol car's siren in addition to the blue emergency lights. The vehicle then accelerated to a higher speed. At the intersection of Railroad St and Main St, the vehicle failed to yield for the stop sign and continued through the intersection without stopping, colliding with an embankment. Officer subsequently conducted SFST's on the defendant at the Milton Police Department and determined she was not under the influence of drugs or alcohol.

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

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
2	Main St at Railroad St	0.48	4/6/2013	12:14				Rear End	Two-car motor vehicle accident. Op #1 advised that he was traveling west on Main Street approaching Railroad Street. As he crested the hill, he advised that traffic was stopped in front of him and he ended up rear-ending vehicle #2. Op #2 advised that he was slowing down to make a left hand turn onto Railroad Street when he was rear ended from behind by Vehicle #1. Op #2 stated that Vehicle #1 had been tailgating him for miles. Op #2 stated that Vehicle #1 would speed up and get to less than a car length from him, then slow down and back off. Op #2 advised me that he was even concerned that he was going to get rear ended when he slowed down to make the turn. I spoke with op 1 about this, and he advised that he was just going with the flow of traffic. Op #1 did not outright admit to tailgating but did agree with me that he was following too closely. Vehicle #1 had damage to its front end to include a metal push number and the bumper cover. Vehicle #2 had damage to its rear bumper as well as a caved in trunk. Op #1 was issued VCVC (traffic ticket) for following too closely, which resulted in the collision.

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

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
1	Westford Rd	0.63	3/13/2011	17:22	Cloudy	1	0	No Turns- Thru moves only- Broadside ^<	On 03/13/2011 I responded to the intersection of Westford Road and East Road in the Town of Milton for a reported two-vehicle collision with possible injury. I was the first to arrive on scene. Upon arrival, I observed multiple vehicles in the southbound lane of Westford Road/Main Street. All four roads at the time of the incident were paved and were wet. The weather was overcast and it was light out. I first spoke with Operator #2. She told me that she had been traveling west on Westford Road. As she approached the intersection where the accident occurred, she observed a vehicle turn from North Road onto Main Street without stopping at the stop sign. She told me that she was slowing down when Vehicle #1, which had stopped on East Road, traveled straight through the intersection onto North Road. She said she collided with Vehicle #1, and that she had not moved her vehicle since the collision. I then spoke with two witnesses, they both told me they were traveling behind Vehicle #2. They said Vehicle #1 pulled into the intersection, traveling from East Road to North Road, in front of Vehicle #2. They said Vehicle #2 could do nothing to avoid the collision. I then spoke with Operator #1. He told me he was unfamiliar with the area and the he had just moved into a house in Fairfax. He said he was on East Road stopped at the intersection. He said he saw Vehicle #2 traveling west on Westford Road, but thought there were stop signs on all four roads. He said he entered the intersection, where Vehicle #2 collided with him. Investigation: During my investigation, I found Vehicle #1 had entered the intersection from East Road. Vehicle #1 was traveling north, intending on entering North Road. Vehicle #2 was traveling west on Westford Road. Vehicle

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

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
									<p>#1 entered the intersection in Vehicle #2's path of travel. Vehicle #2 was unable to avoid the collision, and struck Vehicle #1 in the passenger side rear quarter panel area. This caused Vehicle #1 to spin clockwise 180 degrees and come to a position of uncontrolled rest in the southbound lane of Westford Road, facing south. Vehicle #2 traveled approximately 10 feet further after the impact before coming to a position of controlled rest in the intersection, facing northwest. Conclusion: The statements of the operators, witnesses, and evidence at the scene lead this officer to believe the cause of the collision was Operator 1 failing to yield right of way to Vehicle #2, which was traveling on a highway which did not require vehicles to stop before entering the intersection.</p>

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
2	Westford Rd	0.63	6/6/2011	17:07	Cloudy	2	0	No Turns- Thru moves only- Broadside ^<	On June 6, 2011 at 1707 hours a three car motor vehicle accident at North and Main. Duffy Road prior to this intersection is a level grade and straight. However, Westford Road as it approaches this intersection is curved and is a downhill grade. The weather at the time of the accident was a clear and the road. Op 1 stated he had attempted to cross the intersection from East Road in front of the oncoming traffic but did not have enough time to get through and had cut off the truck coming down the hill from Westford Road causing the accident. Operator #1 advised he was traveling northbound on East Road at about 40 MPH. As he was approaching this intersection, he observed the stop sign and then proceeded to cross the intersection he observed vehicle # 2 in the lane of travel and realized he did not have time to cross the intersection. Operator #2 advised he slammed on his brakes and tried to avoid Vehicle #1. Operator #2 advised that he could not avoid the collision. Operator # 2 advised hitting vehicle # 1 caused both vehicles to hit vehicle # 3 stopped at the stop sign at the intersection. Operator #2 while traveling westbound on Westford Road had the legal right of way through this intersection. It cannot be proven if Vehicle #1 actually stopped at the posted stop sign on East Road. However, it is clear that Vehicle #1 failed to yield the right of way to Vehicle #2 that was traveling westbound on Westford Road and approaching this intersection. Vehicle #2 was unable to avoid this collision. The front of Vehicle #2 struck the right side of Vehicle #1.

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
3	Westford Rd	0.63	7/26/2011	15:38	Cloudy	1	0	No Turns- Thru moves only- Broadside ^<	On July 26, 2011, the Milton Police Department responded to a report of a two-car motor vehicle crash at the intersection of Main Street and North Road. Operator #1 indicated she had entered the intersection from North Road traveling southbound. She seemed uncertain if she had stop or not. Operator #2 who advised he had been traveling eastbound on Main Street. He advised as he entered the intersection, he observed Vehicle #1 enter the intersection without stopping at the stop sign. He advised Operator #1 did not slow down and he was unable to avoid the collision. Witness 1 initially advised he believed Vehicle #1 had entered the intersection traveling northbound from East Road, intending to cross onto North Road. When I pointed out to Witness 1 that both operator's statements refuted this and in fact placed Vehicle #1 traveling the opposite direction, he advised he could not be certain and advised "it just happened so fast, it was like it was in slow motion". Witness 1 advised he was unsure if Vehicle #1 had stopped at the stop sign or not. I then spoke with Witness 2 who advised she'd observed the crash. She advised Vehicle #1 pulled in front of Vehicle #2, but was unsure if the vehicle had stopped and then proceeded or simply had continued without stopping. Witness 2 further advised upon speaking with Operator #2, Operator #2 stated she was on her phone at the time of the crash. When I spoke to Operator #2 about this, she denied that she was on the phone at the time the crash occurred. She advised she had called directly after to let her boyfriend know she was involved in a crash. INV: The roadway at the time of the crash was dry and clear. The weather was overcast and it began to rain lightly shortly after the crash occurred as the scene was being cleared.

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
4	Westford Rd	0.63	2/24/2012	17:58	Snow	2	0	Left Turn and Thru- Head On ^v--	<p>On Friday, February 24th, 2012, intersection of North Road and Westford Road for a report of a two car motor vehicle crash. Operator #1 advised he was stopped on North Road at the stop sign at the intersection with Westford Road. Operator #1 advised he and his passenger were trying to decide whether to turn right or left. Operator #1 advised he decided to turn left (west) onto Westford Road and did not see Vehicle #2. Operator #1 advised when he pulled into the intersection to turn left, his vehicle struck Vehicle #2. Operator #2 who advised she was traveling east on Westford Road approaching the four-way intersection when Vehicle #1 pulled in front of her and struck her vehicle.</p> <p>INVESTIGATION: It was snowing at the time of this crash and the road surface was covered with snow and slush. Based on the statements of the operators Vehicle #1 was stopped at the stop sign on North Road. Operator #1 was talking with his passenger about which way he should turn. Operator #1 decided to turn left and entered the intersection as Vehicle #2 was approaching the intersection. The front driver side area of Vehicle #1 struck the front bumper area of Vehicle #2 as Vehicle #1 pulled in front of Vehicle #2. Although it was snowing and the road, surface was covered with snow and slush at the time of this crash, neither operator claimed that the road surface conditions contributed to the crash.</p>

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
5	Westford Rd	0.63	6/27/2012	15:43	Cloudy	0	0	Other - Explain in Narrative	On Wednesday, June 27, 2012. The weather at the time of the collision was clear and warm and the roadway was dry. This collision occurred during the hours of daylight. Operator #1, advised he had been traveling east on Main Street approaching the intersection. Operator 1 stated he had not seen the vehicle approaching from Westford Road when he attempted to make a left hand turn onto North Road. Operator #2, advised he had been traveling west on Westford Road, intending to continue west on Main Street when Vehicle #1 turned across the westbound travel lane in front of him. In a sworn written statement, Operator 2 stated "He pulled in front of me about 20 feet away. Witness 1 advised that due to the stop and then the small hillcrest on Main Street, neither he nor Vehicle #1 had the opportunity to gain much speed. Witness 1 advised they were both traveling at approximately 30-35 mph as they approached the intersection with North Road. Witness 1 advised the collision had shocked him; he advised there were no brakes or hesitation by Vehicle #1 as Vehicle #2 came down the hill towards the intersection. Witness 1 advised Vehicle #1 just turned across in front of Vehicle #2 at the last second. Witness 1 advised it was "weird" as if the driver did not see Vehicle #2 at all; he advised neither the driver nor the passenger appeared to have looked at the oncoming car at all. Witness 1 advised the oncoming car was traveling faster than they were but "wasn't doing 50"; Investigation revealed that prior to the collision, Vehicle #1 was traveling east on Main Street and attempted a turn onto North Road. Vehicle #2 was traveling west on Westford Road. The road surface was dry and clear and that the intersection was clearly visible from all directions with a warning

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
									<p>sign in place along the westbound lane of Westford Road, 435 feet east of the intersection. I noted skid marks left by Vehicle #2 (measured at 35 feet in length from start to the point of impact) and a scrub mark left by the passenger rear tire of Vehicle #1 at the point of impact.</p>

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
6	Westford Rd	0.63	3/20/2013	7:57	Snow	0	0	No Turns- Thru moves only- Broadside ^<	The Milton Police Dept. received a report of a motor vehicle accident at the intersection of North Rd and Main Street. Operator #1 advised he attempted to slow down for the stop sign at the end of North Rd, and lost control, skidding into the intersection with Main Street and collided with V#2. Operator #2 advised as he entered the intersection with North Rd he was struck by V#1.
7	Westford Rd	0.63	1/10/2014	18:09	Cloudy	0	0	No Turns- Thru moves only- Broadside ^<	On January 10, 2014. The road was wet at the time on the incident. The weather was cloudy and it was dark. Operator #1 stated he was driving north on East Road. Operator #1 stated he came to a stop at the stop sign at the intersection. Operator #1 stated he assumed that Operator #2 had a stop sign as well so proceeded into the intersection into the path of Operator #2. Operator #1 stated he was going under 10 MPH at the time of the crash. Operator #2 stated he was driving east on Main Street. Operator #2 stated Operator #1 pulled in front of him as he was driving into the intersection. Operator #2 stated he applied his brakes but could not stop in time. Operator #2 stated he was going between 30 and 35 MPH at the time of the crash. Investigation revealed prior to the collision Vehicle #1 was traveling northbound on East Road. Vehicle #1 came to a stop at the stop sign then proceeded into the intersection. Vehicle #2 was traveling eastbound on Main Street. Vehicle #1 traveled directly into the path of Vehicle #2 causing the crash

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
8	Westford Rd	0.63	9/13/2015	17:07	Rain	0	0	Left Turn and Thru-Broadside v<- -	On Sunday, September 13th, 2015 at approximately 1707 hours. Operator 1 stated she was driving north on East Road and came to a stop at the stop sign at the intersection of Main Street. Operator 1 said she proceeded through the intersection without paying attention to oncoming traffic and was struck by vehicle 2. Operator 1 stated she did not know what she was thinking and should not have gone through the intersection. Operator 2 said she was heading eastbound on Main Street and vehicle 1 pulled into the intersection from the stop sign. Operator 2 stated she could not stop and collided with vehicle 1. Investigation: This crash occurred during daylight hours. It was raining lightly at the time of the crash and the roads were wet.

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
9	Westford Rd	0.63	9/14/2015	15:16	Rain	0	0	Left Turn and Thru- Head On ^v--	On Monday, September 14th, 2015. Op 1 said he was stopped at the stop sign on North Road when a car turned off of East Road; believing it was now his turn he proceeded to take a left turn onto Westford Road when the collision occurred. Op 2 was at the stop sign on East Road and drove across the intersection when it was his turn and no cars were approaching from the east or west. As he entered onto North Road, he was struck by Operator 1. He advised that he observed Operator 1 at a complete stop on North Road prior to the collision. Investigation: This crash occurred on North Road and partially in the center of the four-way intersection. The road surface was wet. This crash occurred during daylight and it was lightly raining. This crash occurred on a level section of the road. Both Vehicle 1 and 2 came to a complete stop on North Road and East Road, respectively. When Operator 2 determined it was safe to enter the intersection from East Road he did so traveling north onto North Road. At this time Operator 1 perceived that it was also safe to enter the intersection, made a left turn to travel east on Westford Road, and struck Vehicle 2.

Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
10	Westford Rd	0.72	12/8/2013	7:40	Cloudy	1	0	Head On	<p>On Sunday, December 8th, 2013, Westford Road near the intersection with North Road in the Town of Milton for a report of a motor vehicle crash. STATEMENTS: Op 1 advised she was traveling west on Westford Road when her vehicle left the right side of the roadway, onto the shoulder. Op 1 advised she overcorrected to the left, which caused her vehicle to slide sideways across Westford Road and into the ditch on the opposite side of the road. Operator 1 advised she was traveling at approximately 40 mph. Witness 1 advised he was driving east on Westford Road when he observed Operator 1's vehicle drive off the road onto the shoulder. He advised their vehicles passed each other and he looked in his rearview mirror and observed Operator 1's vehicle sliding sideways across Westford Road and into the ditch. Witness 1 advised he did not believe the vehicle was traveling excessively fast and estimated the speed at 40 mph. Operator 1 said she was traveling west on Westford Road at 40 mph when a tan SUV pulled out of a driveway. Operator 1 advised the vehicle drove slightly into her lane so she drove to the right side of the roadway. She advised her tires left the pavement and she overcorrected to the right, causing her vehicle to slide sideways and go into the ditch on the opposite side of the road. I asked Operator 1 if she had fallen asleep and she advised she had not. INVESTIGATION: There are ditches immediately off the pavement on both sides of Westford Road where this crash occurred. It was light at the time of this crash and the air temperature was approximately 30 degrees Fahrenheit. The road surface was dry and the weather was cloudy with no precipitation. This crash occurred on a moderate downward grade and a slight curve to</p>

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
									<p>the left (when traveling west as Operator 1 was). Officer observed curved tire marks across the pavement indicating sliding, rotating tires. These marks would have been caused by a vehicle rotating in a counter-clockwise direction while sliding across the pavement which was most likely due to overcorrection to the left by Operator 1. Officer inspected the shoulder and located tire marks indicating where the vehicle had left the pavement and then returned to the pavement. CONCLUSION: Crash was caused by Operator 1's vehicle leaving the right side of the roadway and Operator 1 overcorrecting to the left, which caused her vehicle to rotate counter-clockwise and slide across Westford Road and into a ditch. Operator 1's vehicle also struck a fire hydrant. Operator 1 claimed a vehicle crossed into her lane forcing her to move to the right and off the pavement to avoid a collision. Operator 1's estimation of her speed was 40 mph, which is 5 mph faster than the posted speed limit on this section of Westford Road.</p>

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
11	Westford Rd	0.72	8/14/2014	11:49	Cloudy	0	0	[No Direction of Collision]	On 08/14/14 I was called to a disabled vehicle in the roadway just North of the intersection of Westford Road and North Road. On arrival, I observed vehicle, in the middle of the Eastbound lane facing South. Town of Milton highway department was on scene already doing traffic control. Operator 1 told me she had been driving Westbound and heard a loud noise and then her left front tire had fallen off.

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
12	Westford Rd	0.90	11/28/2014	9:22	Cloudy	1	0	No Turns- Thru moves only- Broadside ^<	At the intersection of Westford Road and Horseshoe Circle while traveling East bound on Westford Rd. The roadway curves to the right and is uphill just prior to the scene. The roadway at the scene is straight and is uphill. The weather at the time of the accident is cloudy and the roadway was slush covered and slippery. Operator 1 advised he was pulling out of Horseshoe Circle and had pulled forward to see the roadway both ways on Westford Rd. He advised he had looked Westbound and started to pull out as he looked Eastbound. As he pulled out a little further he looked back westbound and saw vehicle 2 coming up the hill at a high rate of speed. Operator 1 advised he stopped his vehicle but that the nose of the truck may have been into the roadway slightly. Just as he stopped his truck the other vehicle hit the front of his truck and went into the ditch. Operator 1 advised he backed up a little so no one else would hit the truck and then checked on the other vehicle. He advised the other operator had moved the other vehicle up a little and then got out and wanted him to pull the vehicle out of the ditch. Operator 1 advised he told the other operator that he was not going to do that and the Police were called. Operator 2 came forward to advise that he was coming up the hill just minding his own business when he saw the truck pulling out. He advised as he went by, his vehicle was hit and he went into the ditch. The investigation determined that prior to the accident Vehicle 1 was traveling North bound on Horseshoe Circle at the intersection of Westford Rd. Vehicle 2 was traveling Eastbound on Westford Rd as about 45 miles per hour. Upon impact, Vehicle 1 stopped and then backed off the Westford Rd roadway back onto Horseshoe Circle. Vehicle 2 upon impact veered across the

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
									<p>centerline attempted to correct and entered into the ditch on the West bound side of the roadway. vehicle 2 impacted a telephone pole which is at the inside portion of the ditch just East of the intersection. The primary cause of the accident was determined to be Vehicle 1 had entered into the travel portion of the intersection without yielding to the vehicle already in the travel portion of the roadway. Secondary factors were Vehicle 2 had bald, summer tires which did not have tread enough to maintain control of the vehicle and maintain lane at the posted speed limit and Vehicle 2 had been in traveling at a speed to fast for the road and vehicle conditions</p>

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Crash Number	Road	Marker	Date	Time	Weather	Injuries	Fatalities	Type	Description
13	Westford Rd	0.63	1/8/2016	16:30	Clear	1	0	Left Turn and Thru- Angle Broadside -->v--	1/8/16 16:30. The intersection of East Road and Main Street for a report of a two-car motor vehicle crash. Op 1 advised that he was headed north on East Road and was stopped at the stop sign He advised that he looked and saw a silver car headed east on Main Street that was approaching him. He advised he thought he had enough time to make a left hand turn. When he went to make the left hand turn he collided with the silver vehicle. Operator #2 advised she was traveling east on Main Street. She advised she saw the other vehicle stopped and saw the operator look right at her. She stated at the last moment he started his left hand turn and collided with her car. Witness 1 advised that she was behind vehicle #1 as it traveled north on East Road. She advised the vehicle was driving erratically prior to the accident. Advised that vehicle #1 abruptly made a left hand turn and collided with vehicle #2. Witness 2 advised she was behind vehicle #2 as they traveled east on Main Street. She advised that vehicle #1 abruptly pulled out in front of vehicle # 2 and collided with it. Investigation showed that vehicle #1 was stopped on East Road at the intersection with Main Street. Vehicle #1 was waiting to make a left hand turn to travel west on Main Street. Vehicle #1 made a left hand turn as vehicle #2 was approaching.

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