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FINAL REPORT

NORTH WILLISTON ROAD SCOPING STUDY

10.10.2018



180 Battery Street, Suite 350
Burlington, VT 05401
802.383.0118
www.rsginc.com

PREPARED FOR:
TOWN OF WILLISTON
CHITTENDEN COUNTY PLANNING COMMISSION

SUBMITTED BY:
RSG



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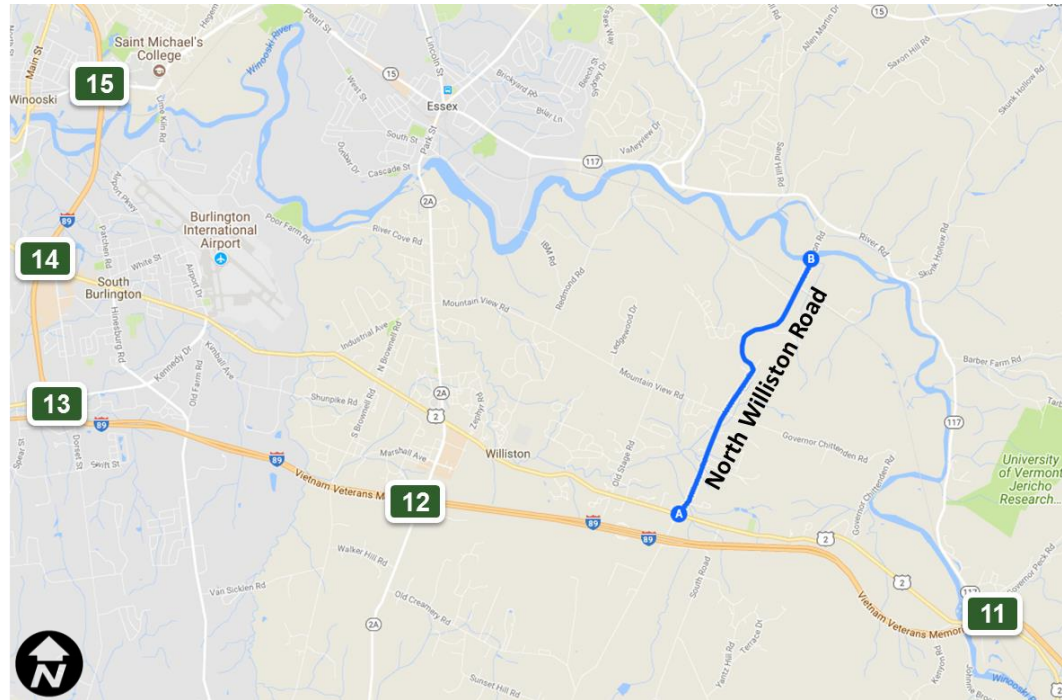
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1.0 INTRODUCTION AND OVERVIEW

This Final Report for the North Williston Road Multimodal Scoping Study summarizes the process, findings, and recommendations for improvements to the transportation system along North Williston Road in Williston, Vermont. The study analyzed the nearly three-mile roadway corridor between Williston Road (US Route 2) and the Winooski River just south of River Road (Vermont Route 117) in Essex.

FIGURE 1-1: STUDY AREA AND REGIONAL CONTEXT.



Source: Google Maps with RSG Overlay

The North Williston Road Multimodal Scoping Study was funded by the Chittenden County Regional Planning Commission (CCRPC) and the Town of Williston. The study was conducted by RSG, a transportation planning and engineering consulting firm, with assistance from CCRPC, the Town of Williston Department of Public Works (DPW), The Town of Williston Police Department, and Green Mountain Transit Authority. Additional project review and discussion was collected through the public outreach process described in this report.

1.1 | PROJECT DEVELOPMENT PROCESS

This Scoping Study was undertaken in four primary steps:

1. Evaluate and Document the Existing Transportation Network
2. Define the Project Purpose and Need
3. Evaluate Alternatives to Address Identified Issues
4. Develop a Preferred Alternative and Implementation Recommendation

Appendix A: *Existing Conditions Report* and Appendix B: *Alternative Analysis Report* provide detailed documentation of these processes. This report summarizes the first three steps outlined above and details an implementation plan for the recommended alternatives as developed through the public input process.

1.2 | PUBLIC ENGAGEMENT PROCESS

RSG developed a Public Participation Action Plan (PPAP) to assist communication with community stakeholders. The PPAP sought to identify under-represented communities and interest groups within and adjacent to the project area and develop a communication strategy. The PPAP was implemented to advertise local meetings, allow for project team interaction for individuals unable to attend meetings, and gather feedback throughout the project development process online and in person.

Primary public outreach events included:

- Local Concerns Meeting – May 2, 2017
- Online Crowdsourcing Mapping – April 12 to May 25, 2017
- Alternative Presentation Meeting – December 20, 2017
- Alternative Evaluation Feedback Period – December 20, 2017 to January 31, 2018

The CCRPC maintained a website dedicated to promoting project events and distributing project materials. The DPW coordinated meeting events with the Town Selectboard and was the primary contact between the public and project team. The Local Concerns and Alternatives Presentation Meetings were presented to the Selectboard and broadcast via local access television, available online. The project was featured in two articles in the Williston Observer: on April 20, 2017 and December 14, 2017.

1.3 | PROJECT PURPOSE AND NEED

The purpose of this project is to ensure that North Williston Road is a resilient travel corridor and that all travelers - including vehicles, pedestrians, and bicyclists - can travel safely and efficiently along the corridor.

PROJECT NEED

The need for this project is documented by:

- Traffic demands exceeding the roadway's initial design expectations;
- Proposed reconstruction of the VT-117 / River Road intersection in Essex, which may bring more traffic through the corridor;
- Evidence of erosion and underperforming drainage structures;
- Concerns from residents of unsafe speeds and driver behavior along the roadway
- Lack of bicycle facilities, despite being identified as a bike route
- Several separate "spot" intersection studies with no coordinated plan; and



- Continued regional land use development leading to North Williston Road as a significant regional traffic link.

CHALLENGE: CAPACITY AND LIVABILITY

A key challenge of this study is to meet the needs and desires of people who live and recreate along the road, while also supporting the needs of the regional transportation network, which relies on this road to support through traffic.

Residents along and adjacent to North Williston Road desire a neighborhood with slower speeds, that feel safe to walk and bicycle along, and with ease of access to their driveways. If North Williston Road was located in a different context, alternatives may attempt to reduce the amount of through traffic to help create a more livable neighborhood. However, because plans for the Circumferential Highway (the “Circ”) were discontinued, North Williston Road continues to be one of the few connections between VT-117 and VT-289 to the north and US-2 and I-89 to the south. North Williston Road is recognized as a Major Collector. For these reasons, North Williston Road will continue to serve both local and regional traffic needs.

The alternatives that have been identified in this report aim to reduce vehicle speeds and increase roadway safety and neighborhood livability in ways that adapt to increasing traffic volumes.

CHALLENGE: SUPPORTING RESILIENCE

Another challenge of this study is to support roadway resilience along North Williston Road. In the context of transportation systems, resilience is a characteristic of a facility to operate in adverse conditions. Along North Williston Road, resilience means the ability to maintain a serviceable roadway during storm events, including extreme rain, snow, ice, or other conditions.

2.0 EXISTING CONDITIONS

The project study area is a 2.8-mile segment of North Williston Road between US-2 in Williston Village and the Winooski River. North Williston Road is functionally classified as a Major Collector, reflecting the road's regional transportation importance. North Williston Road continues across the Winooski River into Essex for an additional 0.3 miles until it reaches VT-117.

Please refer to Appendix A: *Existing Conditions Report* for complete details on resources, constraints, data related to traffic volumes and crashes, and public comments regarding perceived issues along the North Williston Road corridor.

2.1 | STUDY AREA OVERVIEW

North Williston Road contains four distinct roadway segments: Residential, Rural, Hollow, and River (Figure 2-1). There are three significant intersections along North Williston Road: US-2 (Williston Road) / Oak Hill Road at its southern end, VT-117¹ (River Road) at its northern end, and Mountain View Road / Governor Chittenden Road. There are no signalized intersections along North Williston Road. These segments and intersections are discussed in greater detail in Appendix A.

FIGURE 2-1: NORTH WILLISTON ROAD SEGMENTS



Source: Google Maps with RSG Overlay

¹ The VT-117 / River Road intersection with North Williston Road is in the Town of Essex and under the jurisdiction of the VTrans; this intersection is outside the scope and authority of this report.

the hollow is co-located with a curve warning sign. The MUTCD recommends separate installation for separate, unrelated signs. Additionally, both signs appear to be placed below recommended installation height.

OBSERVED SPEED DATA

The CCRPC collected speed data on North Williston Road in both 2016 and July 2017. As shown in Figure 2-3, the 2016 data was collected north of Mountain View Drive with automatic traffic recorder (ATR). In July 2017, a 4-day count, including the weekend, was conducted south of Fay Lane with ATR WILL70. In both data collection periods/locations, the 85th percentile speed was determined to be over 10 miles over the posted speed limit of 35 mph. In 2016, north of Mountain View Road, the 85th percentile speed was in the **46-48 mph** range. In 2017, south of Fay Lane, the 85th percentile speed was in the **46-50 mph** range. The data from 2017 is illustrated in Figure 2-3.

FIGURE 2-3: SPEED DATA SOUTH OF FAY LANE IN JULY 2017.



Data Source: CCRPC

2.4 | CRASH SUMMARY

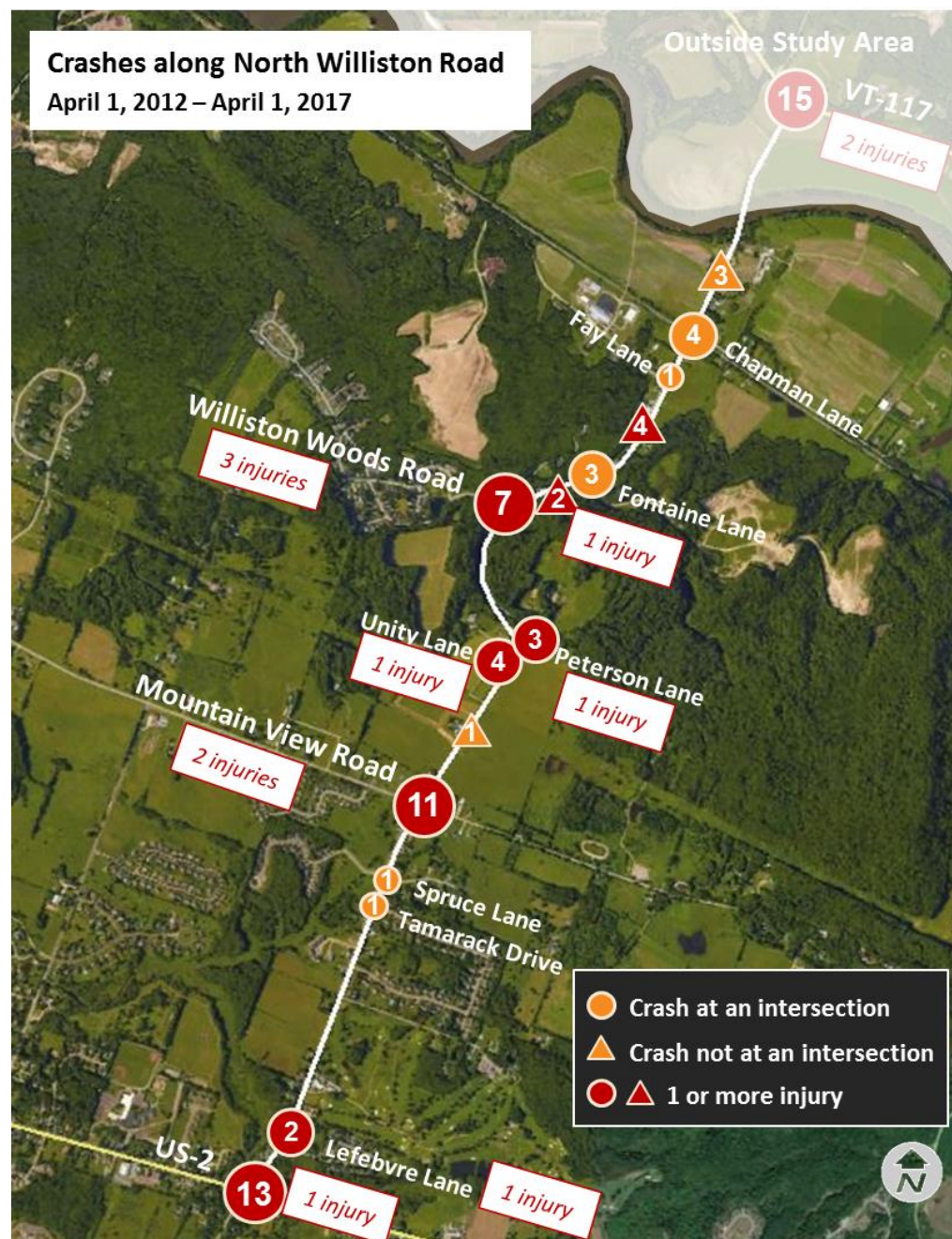
Crash records were found using the VTrans Public Crash Data Query Tool and by requesting crash records from the Town of Williston Police Department to determine the number, type, and location of reported crashes along North Williston Road **between April 1, 2012 and April 1, 2017**. In total, there were **76 reported crashes** over this time period, 12 (16%) of which resulted in injury. This equates to at least 15 crashes per year on average, with at least two resulting in injury. Figure 2-4 shows the location and number of all crashes in this time period, both at intersections and along the road.



During this time period, one reported crash involved a motorcyclist; this crash occurred at the intersection of North Williston Road and Unity Lane, at the south end of the hollow, and resulted in injury. None of the crashes involved pedestrians or bicyclists.

Notably, following the 2013 partial implementation of safety recommendations at the Mountain View Road and North Williston Road intersection, crashes have reduced from 18 collisions in a five-year period (January 1, 2006 – December 31, 2010) to 11 collisions in the most recent five-year period (April 1, 2012 – March 31, 2017).

FIGURE 2-4: REPORTED CRASHES ALONG NORTH WILLISTON ROAD, 2012 - 2017.



2.5 | ISSUES AND CONCERNS

A comprehensive list of transportation issues and concerns along the study corridor has been informed by background research, site visits, and public feedback. Below is a matrix of specific issues and the overarching concerns that these issues fall into.

TABLE 2-1: ISSUES AND OVERARCHING CONCERNS

Issues	Overarching Concerns			
	Safety for All Modes	Pedestrian and Bicycle Mobility	Traffic Flow	Stormwater Management
85th percentile speeds 10-15 mph over the limit	x			
At least 15 crashes per year on average, with at least 2 resulting in injury	x			
Limited intersection sight distance at Williston Woods Road	x			
Limited stopping sight distance in the Hollow	x			
Aggressive passing of slowing or slower cars	x			
Safety and traffic flow concerns at Mountain View Road intersection	x		x	
No pedestrian or bicycle facilities north of Mountain View Drive	x	x	x	
Pedestrian crossings at Fairway Drive and Tamarack Drive ignored by drivers	x	x		
Paved sidewalk in Residential area only 6 feet wide		x	x	
Overland erosion				x
Undersized culverts				x



3.0 IMPROVEMENTS FOR CONSIDERATION

A variety of proposed improvements were developed based on public feedback and comments to address the identified issues and concerns. The improvements were categorized as traffic calming measures, enhanced pedestrian crossings, cross section alternatives, and stormwater management strategies.

The alternatives presented and discussed at the Alternatives Presentation Meeting are summarized below. Please refer to Appendix B: *Alternative Analysis Report* for complete details on the design criteria, concepts considered but not progressed, more discussion on the costs and impacts associated with each alternative, and evaluation comparisons between all alternatives.

3.1 | TRAFFIC CALMING MEASURES

The following traffic calming measures were determined to be appropriate for the specific conditions along the corridor. Following the presentation and comment period, the effectiveness, general public feedback, and cost estimates associated with each appropriate traffic calming measures are summarized in Table 3-1.

TABLE 3-1: SUMMARY MATRIX OF TRAFFIC CALMING MEASURES

	Approximate Speed Reduction	Crash Reduction	Overall Public Feedback	Cost Estimate
Curbed Medians	1 to 8 mph	No data available	Positive	\$20,000 each
Centerline Rumble Strips	None	Reduce head-on and sideswipe crashes by 37%	Negative; noise concerns	\$10,000 / mile
Speed Tables	4 to 11 mph	No data available, but data for speed humps show significant reduction	Positive; noise concerns	\$4,000 each
Radar Speed Feedback Sign	1 to 8 mph	No data available	Positive	\$10,000 each
Warning Beacons	1 to 4 mph	No data available	Positive for improved signage	\$10,000 each
Chevron Curve Signs	0 to 2 mph	4-16% overall; 25% for nighttime crashes	Positive for improved signage	\$250 each
Intersection Warning Signs	No data available	No data available	Positive for improved signage	\$250 each
Gateway Treatments	Depends on treatment(s)	Depends on treatment(s)	Positive	Depends on treatment(s)
Banners (Placemaking)	No data available	No data available	Positive	Less than \$100 each

3.2 | ENHANCED PEDESTRIAN CROSSINGS

Pedestrian beacons were determined to be appropriate for crosswalks south of Mountain View Road. Two beacon types are yellow flashing beacons and LED-enhanced crossing signs. The estimated cost of a pair of LED-enhanced crossing signs per crosswalk is \$20,000. Public feedback was mostly positive.

3.3 | CROSS SECTION ALTERNATIVE SUMMARY

Because of differences in development, terrain, and roadside features of North Williston Road between the residential section south of Mountain View Road and the rest of the road, cross section alternatives have been split into two segments: south of Mountain View Road (the residential section), and north of Mountain View Road. The two segments have different issues to address, and they have different limitations for potential improvements.

Each of the alternatives in consideration propose widening the existing cross section, either to the roadway, adjacent to the roadway with a path, or both. The localized constraints along the roadway imply that there may be impacts due to the implementation of these alternatives. These include impacts to steep slope embankments, rights of way, existing utility poles, trees, landscaping, and drainage systems. The extent of these impacts is quantified on the evaluation matrix in Section 6.0.

None of the alternatives in consideration would preclude or impact the implementation of the past preferred alternatives identified in their respective intersection scoping studies.

Stormwater Management

Any cross section alternative that disturbs more than one acre of land will be subject to stormwater construction and stormwater operational permits. These permits outline specific stormwater treatment best management practices (BMPs) to address stormwater impacts due to construction activities, new impervious area, and the associated stormwater runoff. These BMPs may result in considerable impacts. It is assumed that all alternatives will result in implementation of these BMPs.

SOUTH OF MOUNTAIN VIEW ROAD

There are two alternatives for consideration south of Mountain View Road: Alternative 0 (Do nothing) and Alternative 1 (Widen sidewalk to create 10-foot path).

Alternative 0: Do Nothing

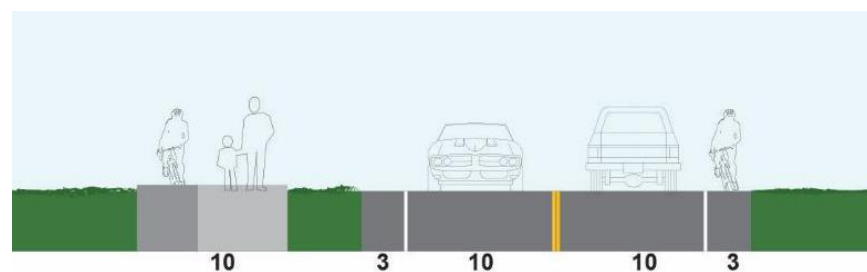
The existing cross section of North Williston Road south of Mountain View Road has ten-foot travel lanes, three-foot shoulders, and a six-foot asphalt sidewalk on the west side. With these dimensions, most road user groups have reasonably safe and comfortable facilities, even if the sidewalk and shoulder are not wide enough to be a true shared-use path and bike lanes, respectively. The sidewalk is used as a shared-use path by people of all ages walking, jogging, and riding bicycles.



Alternative 1: Widen Sidewalk to Create 10-Foot Path

True shared use paths are at least 10 feet wide (or 8 feet wide in constrained areas) so people can comfortably walk, jog, and bicycle alongside each other and past each other. There are many challenges to widening the sidewalk to 10 feet, but if the cross section south of Mountain View Road was to be widened, a wider path (as opposed to bike lanes, for example) would have the greatest positive impact. The additional 2 to 4 feet would be installed on the west side of the path or on the east side (in the green belt) when constrained on the west side. The alternative would require substantial Right-of-Way and curbing to be feasible.

FIGURE 3-1: WIDENED SIDEWALK SOUTH OF MOUNTAIN VIEW ROAD.



Source: RSG

The existing sidewalk is shown in light gray, and the proposed widening is shown in a darker shade of gray.

Public Feedback

South of Mountain View Road, the public prefers to leave the roadway as is (**Alternative 0**) by a large margin. The existing path and roadway shoulder offer sufficient options for pedestrians, bicyclists, and families in the neighborhood and avoids impacts to front yards, trees, and more. It was designed at six-feet wide because of these potential impacts.

NORTH OF MOUNTAIN VIEW ROAD

Despite variations in the roadway's geometry and physical constraints north of Mountain View Road, this entire section is proposed to have a consistent cross section. One exception is the separation between the road and the shared use path if a path is constructed, due to terrain, utility pole, or drainage limitations. All alternatives will extend north to the Winooski River bridge. For alternatives with a path, the path will be on the west side of the road to be consistent with the sidewalk south of Mountain View Road, and serving the greatest number of residents, particularly at Williston Woods.

There are four alternatives for consideration north of Mountain View Road, illustrated in greater detail in Appendix B.

Alternative 0: Do Nothing

Similar to the cross section alternative south of Mountain View Road, the do-nothing alternative proposes no changes to the roadway or cross section. The alternative does not

provide any bicycle or pedestrian accommodation, nor does it address roadway resilience concerns.

Alternative 1: Widen Road for Bike Lanes

Alternative 1, includes five-foot bike lanes or shoulders intended for use by people riding bicycles. The roadway would need to be widened by six feet in total, and the travel lanes would be reduced from 11 feet to 10 feet. Pedestrians would not have designated facilities. This alternative could first be implemented with just shoulder striping on each side, and bike lane symbols and signage could be added later depending on the outcome of the shoulders.

This is the lowest-cost and least impactful alternative. However, there are several areas along the corridor where this alternative would impact roadside features or need to be narrowed to avoid those features. A possible downside to this alternative is that the wider overall roadway may encourage greater motor vehicle speeds and improper passing.

Alternative 2: Construct a Shared-Use Path

Alternative 2 includes a separated 10-foot shared-use path intended for use by all non-motorized road users who do not want to travel on the roadway. The roadway would not be widened, but travel lanes would be reduced from 11 feet to 10 feet to be consistent with the roadway south of Mountain View Road, to encourage slower traffic, and to give on-road bicyclists slightly more space.



FIGURE 3-2: CROSS SECTION ALTERNATIVES NORTH OF MOUNTAIN VIEW ROAD.



Source: RSG

Alternative 3: Bike Lanes and a Shared-Use Path

Alternative 3 includes five-foot bike lanes or shoulders for road bicyclists and a separated 10-foot shared use path for all non-motorized road users who do not want to travel on the roadway. While a shared use path can accommodate pedestrians and bicyclists, many bicyclists prefer riding on the road to keep their speed up and not impede or be impeded by slower travelers on paths.

EVALUATION SUMMARY OF CROSS SECTION ALTERNATIVES

The dimensions, impacts, cost, and public support for each cross section alternative are shown in Table 3-2.

TABLE 3-2: SUMMARY MATRIX OF CROSS SECTION ALTERNATIVES

Cross Section Alternatives							
	Metric	South of Mountain View Road		North of Mountain View Road			
		0	1	0	1	2	3
		No Build	Widen Path	No Build	Widen Road, No Path	New Path, Existing Road	New Path, Widen Road
Public Support							
Public Support	Positive:Negative	n/a	1:7	n/a	2:2	5:3	0:0
Cross-Section Elements							
Travel Lanes	Width, Number	Two 10-foot Lanes	Two 10-foot Lanes	Two 11-foot lanes	Two 10-foot lanes	Two 10-foot lanes	Two 10-foot lanes
On-Road Bicycle Facilities	Yes/No	3-foot shoulders	3-foot shoulders	1-foot shoulders	Yes	2-foot shoulders	Yes
Total Pavement Widening	Distance	0 ft	0 ft	0 ft	6 ft	0 ft	6 ft
New Asphalt Area	Acres	0.0	0.42	0.0	1.3	2.1	3.3
Shared Use Path	Yes/No	6-ft path	Yes; 10 ft	No	No	Yes; 10 ft	Yes; 10 ft
Total Cross-Section (typical)	Distance	37	41	24	30	39	45
Impacts							
Right of Way	Each	0	16	0	0	16	23
Large Specimen Trees ¹	Number	0	25	0	1	30	30
Utility Poles	Number	0	2	0	9	3	13
Stone walls and fences	Length (LF)	0	420	0	100	50	100
Clearing / Slope Impacts	Area (1000 SF)	0	0	0	0	23	28
Stream / Ditching Impacts	Length (LF)	0	0	0	6600	3300	6600
Cost							
Cost Estimate ²	(Range, \$)	\$0	\$450,000 - \$680,000	\$0	\$1.5 - 2.4 million	\$3 - 4.9 million	\$3.9 - 6.3 million
Permits							
Act 250	Yes/No	No	No	No	No	No	No
Stormwater Construction Permit	Yes/No	No	No	No	Yes	Yes	Yes
Stormwater Operational Permit	Yes/No	No	No	No	Yes	Yes	Yes
NEPA Category	Varies	N/A	CE	N/A	CE	CE	CE

¹ - Does not include wholesale clearing of trees in wooded sections

² - Order of Magnitude Cost. Does not include costs associated with Right-of-Way

Color Legend	
	Least Impact / Positive
	Moderate Impact
	Greatest Impact / Negative



4.0 RECOMMENDATIONS AND IMPLEMENTATION

The following draft recommendations have been developed based on public input, discussions with the DPW, and professional judgement on effectiveness and safety.

4.1 | TRAFFIC CALMING MEASURES AND PEDESTRIAN ENHANCEMENTS

Aside from noise concerns related to rumble strips and speed tables installed near homes, the following traffic calming measures were received well by the public:



Curbed Medians: Install curbed medians at the intersection of Mountain View Road, as recommended in the 2012 scoping study. Consider their use as a gateway treatment between the railroad and Fay Lane. These could be installed at the same time or in one location first so residents can see how they work. **Total estimated cost for installation of 3 medians: \$60,000.**



Centerline Rumble Strips (CRS): Install centerline rumble strips in the Hollow. The CRS should be placed to minimize the noise impact to nearby homes, as shown in Figure 4-2. The DPW can determine exact start and end locations. The noise and potential for reverberation from rumble strips in this specific geography has been raised as a concern, but it cannot be fully understood until they are tested. Rumble strips are relatively inexpensive to install, and if unsuccessful, they can be paved over at a low cost. If after a trial period they are determined to be a detriment to the neighborhood and/or ineffective, a determination can be made to pave over them as a separate project or during the next repaving. **Total estimated cost for approximately 1,500 feet: \$3,000.**



Speed Tables: Install speed tables on straight, flat sections with spacing that keeps vehicles traveling at steady speeds. Locate as far away from houses as practical to minimize noise concerns. See proposed placement in Figures 4-1 through 4-4. In addition to speed tables, appropriate advanced warning signs and striping shall be installed. **Total estimated cost for approximately 11 speed tables: \$44,000.**



Radar Speed Feedback Signs: Install radar speed feedback signs in the residential and river sections, where the land use context supports their inducement to reduce speeds. **Cost per radar speed feedback sign installation: \$10,000.**



Curve Warning Sign with Yellow Flashing Beacon and Speed Detection: Install a flashing beacon with a curve warning sign and advisory speed limit facing northbound traffic on North Williston Road adjacent to Peterson Lane, in advance of the northbound horizontal curves entering the hollow. Include speed detection so that it only blinks when vehicles are approaching above 35 mph. Sign assembly shall replace existing curve warning and sign speed limit sign assembly (speed limit sign to be relocated). **Total estimated cost for beacon sign assembly and relocated speed limit sign installation: \$10,000.**



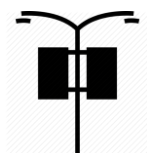
Chevron Curve Signs: Install chevron signs with reflective posts along curves in the hollow (see Figure 4-2), spaced approximately 100 feet between chevrons. Exact sign locations to be determined by field conditions. **Total estimated cost for approximately 14 signs: \$3,500.**



Intersection Warning Signs: Install an intersection warning sign on either side of Williston Woods Road so that both northbound and southbound traffic have advance warning. **Total estimated cost for two signs: \$500.**



Gateway Treatments: Install an “Entering Williston” sign facing southbound traffic immediately after the bridge and append a speed limit or “Traffic Calmed Corridor” sign to it. Improve the “Welcome to Williston” sign by trimming foliage around it, raising it, and adding plantings or place on top of a curbed median (as recommended earlier). Install a sign to the effect of “Welcome to North Williston, please drive carefully” facing northbound traffic just north of Fontaine Lane, and pair with a speed table (as recommended in the map) or a radar speed feedback sign. Specific details of these gateways to be developed, including the language on the signs, the sign materials, landscaping and year-round maintenance, and which traffic calming measures to use. Sign design and message to be compliant with MUTCD Section 2D.50. **Total cost will vary based on complexity of treatments.**



Banners on Utility Poles (Placemaking): In coordination with the gateway treatments, banners with a consistent theme may increase driver awareness and compliance of the speed limit. Banners should be placed in the residential areas south of Mountain View Road and north of the hollow; these banners may be a consistent Williston Town theme, or reflect the individual neighborhoods in which they are placed. The Town would need to approve designs and coordinate installation with the utility pole manager. **Total cost will vary based on decisions made by the community.**



Enhanced Pedestrian Crossings: Existing crosswalks are recommended to be enhanced to increase pedestrian visibility and to increase driver awareness of and conformance to pedestrians' rights of way. While North Williston Road does not meet VTrans' guidelines for pedestrian crossing treatments beyond an in-street sign due to its speed limit, volume, and number of lanes, the guideline is flexible within context. Rectangular rapid flashing beacons were suggested in an earlier draft of this report as an effective crossing enhancement, but the FHWA has since rescinded its approval of new installations due to their patent status. In response to requests from the public over the course of this study to increase pedestrian safety, pedestrian-activated LED enhanced signs are recommended at existing crosswalks with the highest demand. **Total estimated cost for installation at one crosswalk: \$15,000; All crosswalks: \$60,000**

Proposed locations of traffic calming measures are shown schematically in Figure 4-1 through Figure 4-4. These locations were chosen to optimize effectiveness and spacing of the features while minimizing impacts to adjacent property owners. Precise placement can be determined by the Department of Public Works, and some measures, such as speed tables, can first be tested with a limited deployment prior to complete installation along the entire corridor.

The total cost of these recommended features are presented in Table 4-1.

TABLE 4-1: ESTIMATED COST FOR RECOMMENDED TRAFFIC CALMING AND PEDESTRIAN ENHANCEMENTS.

	Unit	Quantity	Unit Cost	Total Cost
<i>Curbed Medians</i>	EA	3	\$20,000.00	\$60,000.00
<i>Centerline Rumble Strips</i>	FT	1500	\$2.00	\$3,000.00
<i>Speed Tables</i>	EA	11	\$4,000.00	\$44,000.00
<i>Radar Speed Feedback Sign</i>	EA	3	\$10,000.00	\$30,000.00
<i>Warning Beacons</i>	EA	1	\$10,000.00	\$10,000.00
<i>Chevron Curve Signs</i>	EA	14	\$250.00	\$3,500.00
<i>Intersection Warning Signs</i>	EA	2	\$250.00	\$500.00
<i>Enhanced Pedestrian Crossings</i>	EA	3	\$20,000.00	\$60,000.00
Total Recommended Traffic Calming and Pedestrian Enhancements Suite				\$211,000.00

FIGURE 4-1: PROPOSED TRAFFIC CALMING MEASURES IN NORTH WILLISTON





FIGURE 4-2: PROPOSED TRAFFIC CALMING MEASURES IN THE HOLLOW

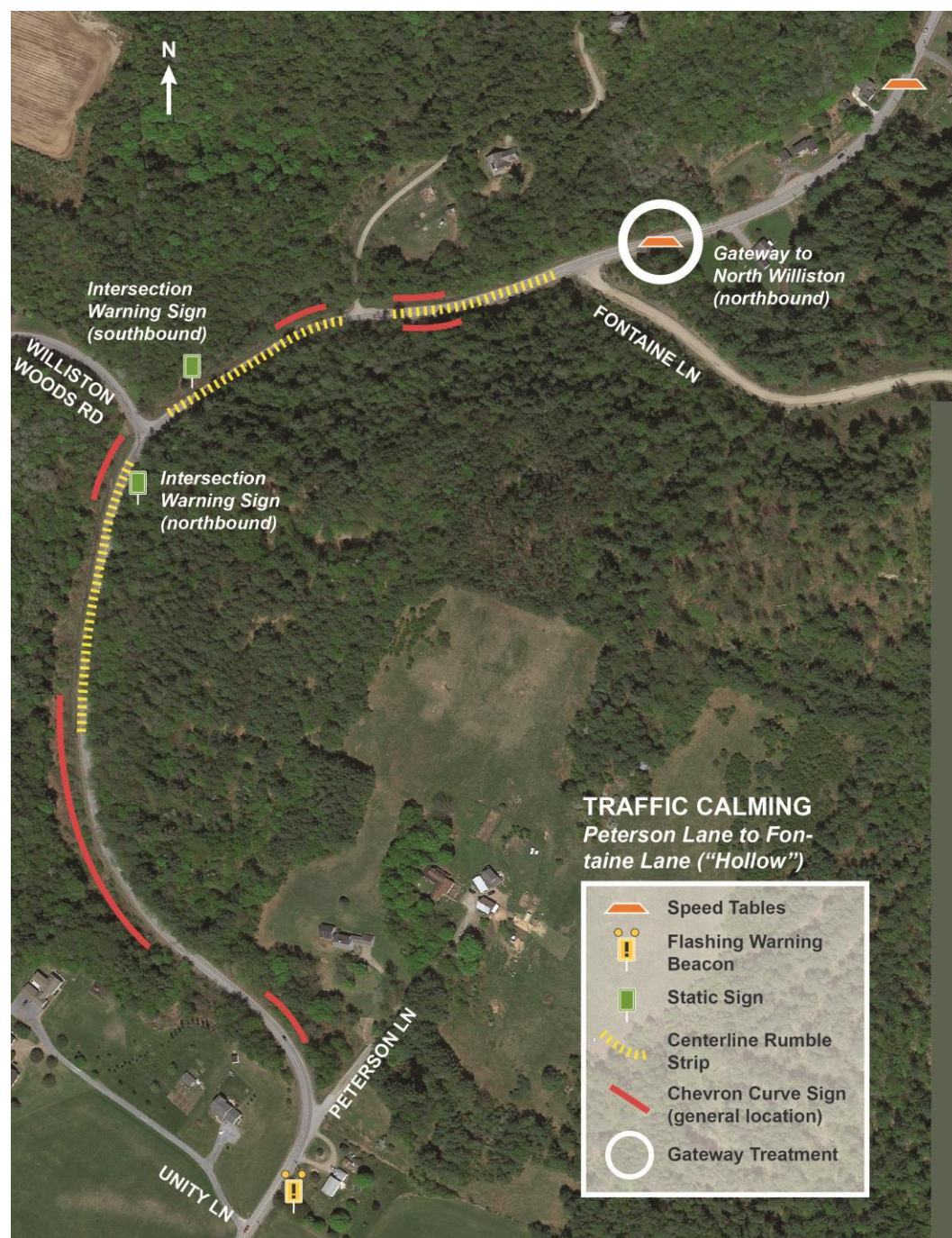


FIGURE 4-3: PROPOSED TRAFFIC CALMING MEASURES IN THE RURAL SECTION

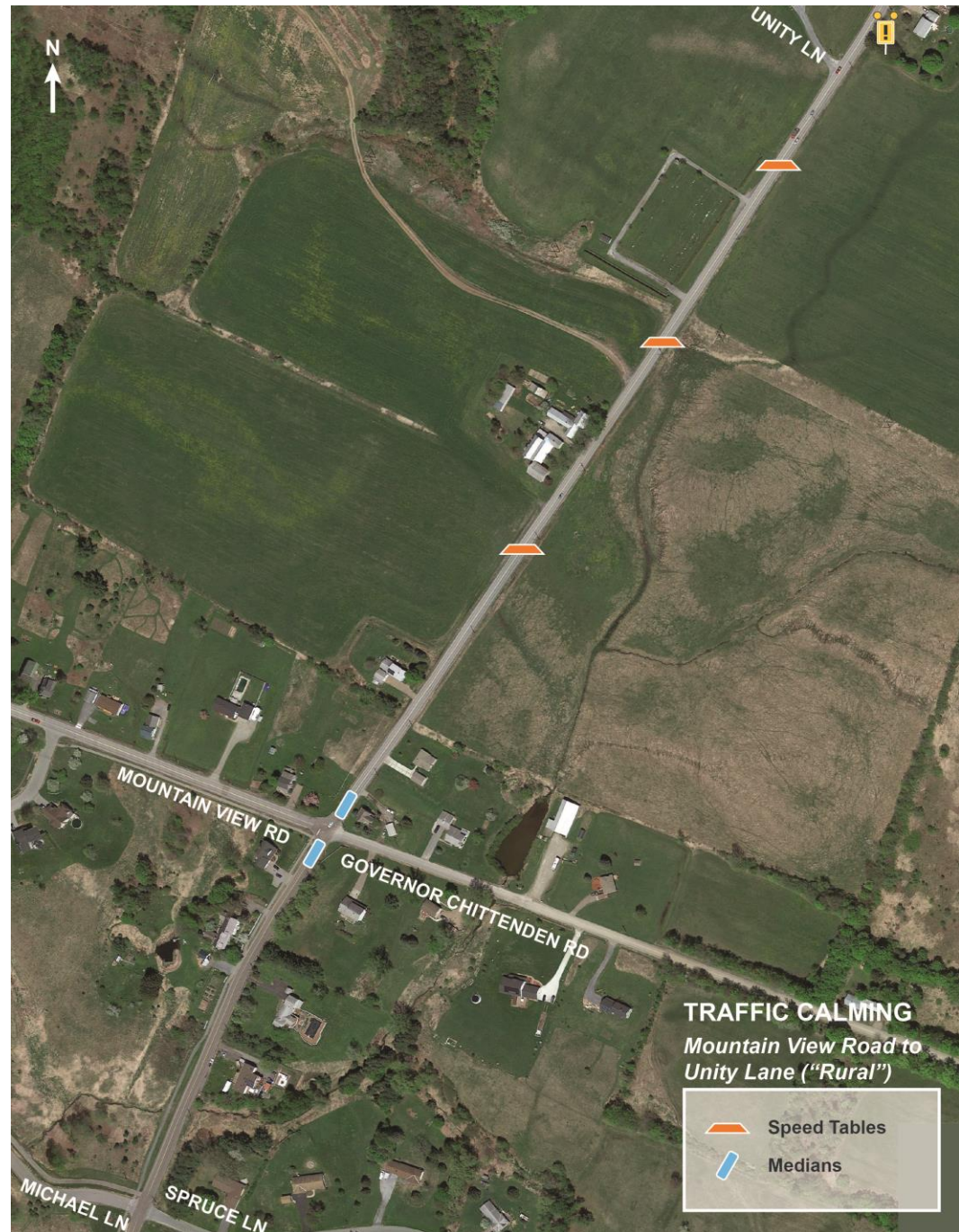




FIGURE 4-4: PROPOSED TRAFFIC CALMING MEASURES IN THE RESIDENTIAL SECTION



4.2 | CROSS SECTION ALTERNATIVES

From the traffic engineering perspective, the existing roadway cross section meets the vehicle demands on North Williston Road, and the existing cross section is expected to continue to operate acceptably into the future under reasonable traffic volume growth scenarios. The existing cross section fails to meet the needs of non-motorized travelers, particularly north of Mountain View Road.

SOUTH OF MOUNTAIN VIEW ROAD

For the roadway cross section south of Mountain View Road, Alternative 0 (no change) is recommended. The existing path was deliberately built at six-feet wide to minimize impacts to adjacent property owners. The resulting impacts of additional widening were received negatively by residents. The roadway has travel lanes as narrow as possible and the widest shoulders possible in the available space, allowing on-road bicyclists to have the maximum space possible. The existing configuration south of Mountain View Road adequately accommodates bicycle, pedestrian and vehicle travel.

The existing drainage system appears to be functioning properly. Two culverts have been identified as undersized; the functioning of these culverts should be monitored, and may require more regular maintenance. If development is planned nearby, replacement of these culverts should be considered. Continued proper maintenance, including catch basin sediment cleaning and debris clearing, should continue to be pursued by the DPW. Additional stormwater treatment features, as required by the appropriate stormwater operational and construction permits, should be constructed as development continues within the Allen Brook Watershed.

NORTH OF MOUNTAIN VIEW ROAD

Based on public feedback, the most popular cross sectional treatment north of Mountain View Road was Alternative 2 consisting of an off-road path offset from the existing roadway cross section. Given the considerable costs and complexities associated with Alternative 2 and the understanding that the alternative only partially addresses roadway resilience concerns along North Williston Road, a phased implementation of Alternative 1 (widened roadway) is recommended. This alternative allows reconstruction of drainage channels to ensure the roadway is prepared for storm events and provides wider shoulders for bicycle and pedestrian travel. This alternative does not preclude the future construction of an off-road path or reallocation of roadway space to exclusive bicycle and pedestrian use if desired. In the immediate term, it is recommended to reduce the travel lane width by restriping the lanes along North Williston Road to 10-feet wide to be consistent with the corridor south of Mountain View Road.

It is recommended to pursue this widening as a full depth reconstruction of North Williston Road. The existing pavement conditions is acceptable, and this reconstruction is not currently programmed. By preparing drainage channels, adjacent slopes, and utility poles for



an ultimate roadway paved width of 30-feet, the full depth reconstruction may be greatly simplified when programmed.

To prepare for the full-depth reconstruction and associated 6-foot widening to the ultimate North Williston Road cross section, it is recommended to prepare the adjacent grades to the ultimate width in sections. Depending on adjacent topography and slopes, several locations may require permanent Right-of-Way easements. It is recommended to complete a conceptual design of the ultimate width to identify the specific easements and complexities. The tasks to achieve this widened grade include:

- Improve roadway drainage and ditches through the hollow and other constrained locations; cut back slopes to the ultimate proposed location, armor slopes and ditches with rock at a maximum 1.5H : 1V slope, and provide armored ditches with underdrain in constrained locations;
- Install stormwater best management practice treatments to slow and store stormwater during storm events;
- Relocate utility poles beyond clear zone; and
- Identify opportunities to avoid constrained locations by focusing widening on the unconstrained side.

The narrowed travel lanes and wide shoulders should provide greater comfort for bicyclists and pedestrians, while the improved stormwater facilities and reduced tree canopy will improve overall roadway resilience along the corridor.

4.3 | STORMWATER MANAGEMENT STRATEGIES

Two strategies to improve stormwater management are to replace small culverts crossing the road with ones that meet VTrans' minimum size and to address existing erosion areas. These both apply to specific locations; stormwater management strategies for entire segments of the roadway may also be appropriate and are addressed in the recommended cross section alternatives in Section 4.2.

REPLACE UNDERSIZED CULVERTS

Replace culverts less than 18 inches in diameter to be 18 inches or greater. VTrans' minimum width for culverts crossing roads is 18 inches, and five culverts crossing North Williston Road are only 15 inches in diameter. One location, Culvert #3 in Figure 4-5, is adjacent to a proposed development project; reconstruction of this culvert should be considered during this development. There is also one culvert that is 18 inches wide, and the remaining eight culverts are 24 inches wide.

ADDRESS EROSION AREAS

Four erosion areas along North Williston Road, based on the Williston Town-Wide Watershed Improvement Plan (February 28, 2013), were indentified in the Existing Conditions assessment for this study. Based on that plan, location WR-05 is the only

location with an impact to public infrastructure. At this location, erosion is occurring on both sides of North Williston Road near the intersection with Fontaine Lane, due in part to heavy weight vehicles turning in and out. The Town conducted some maintenance activities in this location, and continued monitoring is recommended. The Town also received a grant to stabilize the adjacent ditch at this location, and it is recommended the Town plan for the ultimate widened roadway when reconstructing the drainage channel.

The ditches along North Williston Road in the Hollow have been identified as susceptible to erosion during storm events. The existing ditches currently require regular maintenance and armoring to prevent washouts; reconstruction of the ditches to manage the stormwater demand at the ultimate roadway width is included in the cross section alternatives discussed in the previous section.

FIGURE 4-5: CULVERTS CROSSING NORTH WILLISTON ROAD; LOCATION OF EROSION SITE WR-05 NEAR NORTH WILLISTON ROAD

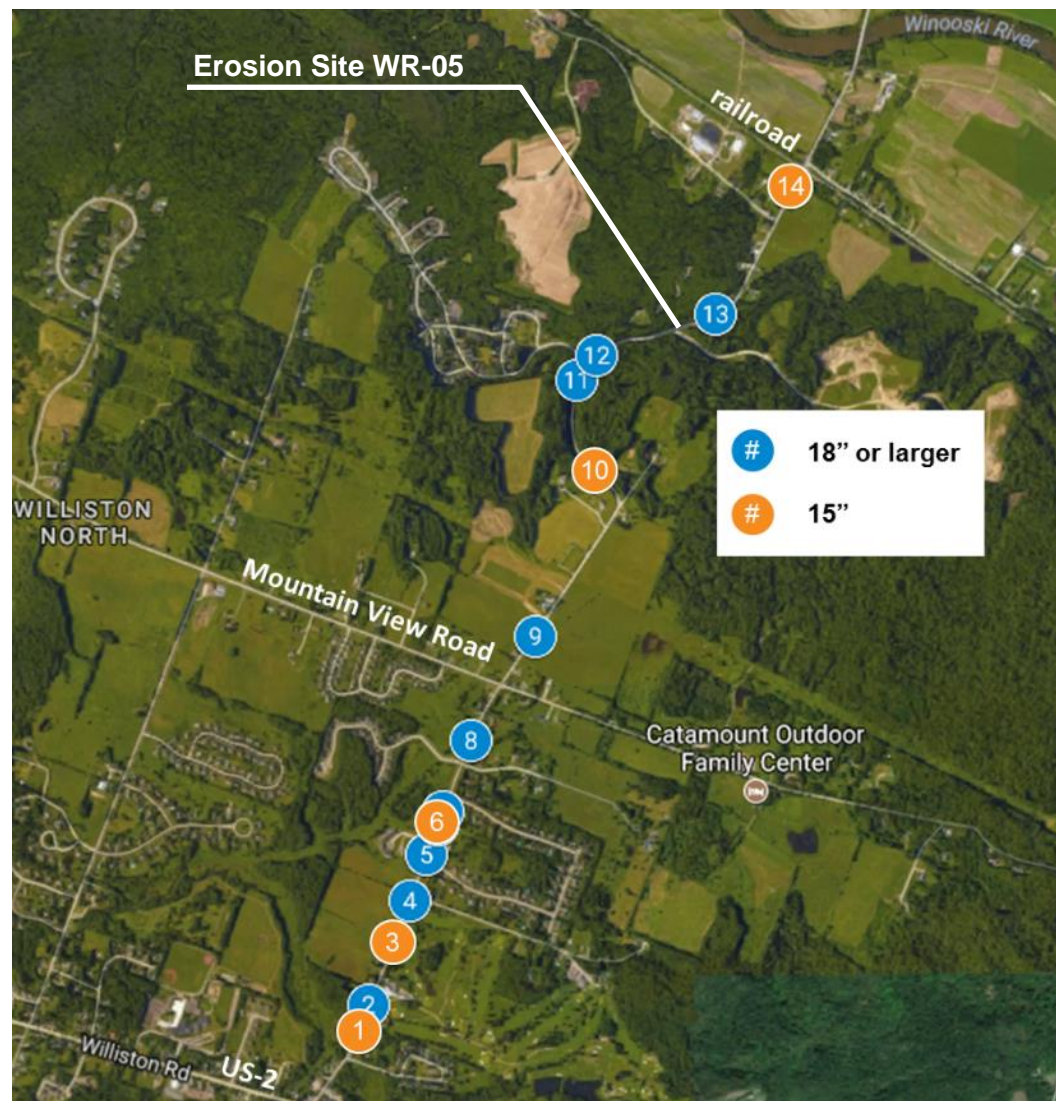


Image source: Google Satellite. Data source: Vermont Gas and VTculverts.org. Graphic source: RSG



4.4 | MOUNTAIN VIEW ROAD INTERSECTION

Many members of the public have raised concerns over safety and traffic flow at the intersection of North Williston Road, Mountain View Road, and Governor Chittenden Road. In particular, eastbound vehicles on Mountain View Road must wait in long queues during peak hours and have a difficult time turning onto North Williston Road once reaching it. Many residents have requested an all-way stop to address these concerns.

This intersection was studied in a scoping study in 2012, where six alternatives were reviewed in detail, including an all-way stop. At that time, an all-way stop was not recommended². Volumes and crash warrants were not met, and safety was projected to worsen; stop signs at this location on North Williston Road could increase rear-end crashes and may encourage disobedience to the stop signs. The Selectboard chose to advance a combination of safety and traffic calming measures, which have been partially implemented since then.

At the time of the 2012 scoping study, there had been 18 crashes at Mountain View Road in the previous five years (2006 to 2010). In the previous five years leading to present day (2012 to 2017), there have been 11 crashes at Mountain View Road. This is a reduction of 40 percent.

OPTIONS

- **Continue to implement the Preferred Alternatives from the 2012 Scoping Study.** Curbed medians on North Williston Road at the Mountain View Road intersection, discussed in this report, are one of those features. Delays in implementation are caused by potential ROW and wetland impacts.
- **Conduct a 12-hour turning movement count to determine if an all-way stop is now warranted.** The most recent turning movement count at Mountain View Road was in 2009; the 2012 study had adjusted volumes from that count based on available data from nearby automatic traffic counters. Volumes from nearby traffic counters were reviewed in this study to understand traffic changes in the past five to eight years (to project growth from the last traffic count and the 2012 study), but different traffic counters show varying patterns, so accurately estimating the area's growth rate is not possible with the available data.
- **Consider revisiting alternatives from the 2012 scoping study that were determined to have a positive impact but were not approved at the time.** Alternatives with positive outcomes but not approved by the Selectboard at the time include a roundabout and an additional approach lane on Mountain View Road. These could be revisited if there are still issues at this intersection after implementing the approved alternatives.

² Since the substantial completion of this scoping report, an updated traffic count and multi-way stop warrant analysis revealed that multi-way stop control is warranted and appropriate at this intersection. Refer to Appendix C for additional details.

4.5 | MAINTENANCE AND UPGRADES

The following are low-cost maintenance measures that may enhance the accessibility and safety of the road for all modes. Investment in these features also suggests to the traveling public that the community is mindful about the roadway and its varied users.

- All existing signs along the study corridor should be checked for visibility and conformance to MUTCD standards and fixed or replaced as needed. Observed issues include signs sitting low in the ground, signs without retroreflective backgrounds, and signs blocked from view by overgrown foliage.
- Repaint crosswalks, stop bars, centerline, edge line and all line striping as needed; repaint North Williston Road travel lanes north of Mountain View Road as 10-feet wide.
- Maintain shoulders and bike lanes to be free of gravel and debris; ensure adjacent aggregate shoulders are graded to allow free drainage from roadway.
- Conduct regular tree trimming through constrained locations to maintain sight lines.
- Continue to maintain existing stormwater systems as appropriate: cleaning sediment from catch basins, clearing debris from inlets and ditches, and other regular seasonal tasks.



4.6 | NEXT STEPS

In a publicly warned and attended Town Selectboard meeting held Tuesday, May 15, 2018, the Selectboard recognized North Williston Road as an increasingly critical regional travel corridor. Following recommendation by the Department of Public Works, the Selectboard voted unanimously to implement the following phased schedule of improvements to address the issues documented in this scoping study:

PHASE 1 / IMMEDIATE TERM (1-2 YEARS):

- **Install chevron signs through the hollow.**
- **Install speed activated curve warning sign** on the northbound approach to the hollow.
- **Install enhanced pedestrian crossing features** at crosswalks along the corridor.
- **Implement multi-way stop control** at North Williston Road and Mountain View Road following the updated warrant analysis requested after substantial completion of this scoping report (see Appendix C).

PHASE 2 / MEDIUM TERM (2-5 YEARS):

- **Install speed tables** at four locations as identified in the Public Works Memo to the Selectboard (see Appendix D).
- **Install radar speed feedback sign.**
- **Install centerline rumble strips.**

PHASE 3 / LONG TERM (5+ YEARS):

- **Implement Alternative 3** with a widened roadway and new path to the North Williston Village.



APPENDIX

APPENDIX A: EXISTING CONDITIONS REPORT





FINAL VERSION

NORTH WILLISTON ROAD SCOPING STUDY EXISTING CONDITIONS

DECEMBER 2017



180 Battery Street, Suite 350
Burlington, VT 05401
802.383.0118
www.rsginc.com

PREPARED FOR:
TOWN OF WILLISTON
CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION

SUBMITTED BY:
RSG



NORTH WILLISTON ROAD SCOPING STUDY EXISTING CONDITIONS

PREPARED FOR:
TOWN OF WILLISTON
CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION

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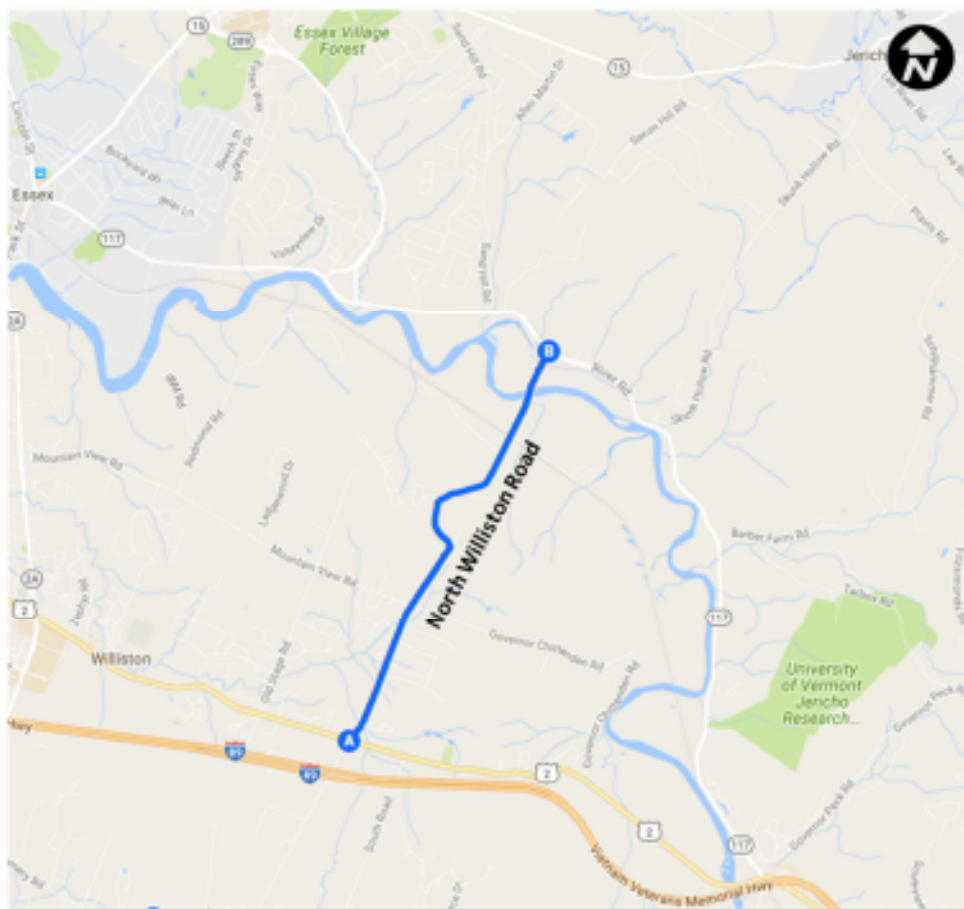


1.0 INTRODUCTION

1.1 | PROJECT BACKGROUND

North Williston Road is a 3.1-mile, two-lane town highway in Williston, Vermont, running north-south between US Route 2 and Vermont Route 117. It serves as a key regional connection over the Winooski River between Vermont Route 15 and I-89 - a connection of increased significance now that the Circumferential Highway plans have been discontinued. The road also intersects Mountain View Road, which serves as a secondary east-west route through the Town of Williston. In addition to its significance in the larger roadway network, North Williston Road is an important local roadway; the town center, residential side streets, two popular recreational areas, and two shared-use paths are some of the community destinations off or along North Williston Road.

Figure 1-1. Context Map



Pedestrians, drivers, transit riders, and bicyclists alike travel along North Williston Road as part of their regular commutes and errands. A gravel extraction site towards the north end of the project area generates heavy vehicle truck loads, while pedestrians and bicyclists may travel along this road for recreation. From the residential section to the rural and forested section to the agricultural Winooski River valley, the road is home to natural beauty, industrial and agricultural activities, and community connections tying the region together.

Considering the local context, multiple modes of transportation, and increasing traffic volumes, the Town of Williston is conducting this multimodal transportation infrastructure scoping study along North Williston Road. The study was originally identified in the Town's 2011 Comprehensive Plan. The goal of this study is to identify the appropriate roadway cross sections, drainage and stormwater enhancements, and safety improvements to accommodate the increased demands associated with nearby land development, growth in commuter traffic, demands for growing bicycle and pedestrian traffic, and changing hydraulic conditions.

1.2 | STUDY AREA

The geographic area of the study includes four distinct roadway segments along North Williston Road: residential, rural, hollow, and river (Figure 1-2). In the residential section, the roadway is 26-feet wide, with 10-foot travel lanes and 3-foot shoulders in both directions. In the remaining three segments, north of Mountain View Road, North Williston Road is approximately 24-feet wide, with 11-foot travel lanes and 1-foot shoulders. The right-of-way is assumed to be a 3-rod width (49.5 feet), according to the Town.

There are three significant intersections along North Williston Road: US-2 (Williston Road) / Oak Hill Road at its southern end, VT-117 (River Road) at its northern end, and Mountain View Road / Governor Chittenden Road where the landscape changes from residential to rural. There are no signalized intersections along North Williston Road.

Figure 1-2. Roadway Segments



The **residential** segment is between Williston Road (US Route 2) and Mountain View Road, characterized by a denser development pattern with looping streets and cul-de-sacs that funnel vehicular traffic onto North Williston Road. The terrain is relatively level, and an existing 6-foot asphalt path runs along the western side of the roadway.

The **rural** segment is between Mountain View Road and Peterson Lane, characterized by less dense development, relatively level terrain, and no existing bicycle or pedestrian infrastructure.

The **hollow** segment is between Peterson Lane and Fay Lane, characterized by the relatively steep and winding descent northbound from the rural plateau to the Winooski River valley. The upper portion of the hollow is relatively undeveloped, with more houses

towards the river. Toward the middle of this segment is the tee intersection of Williston Woods Road, which provides access to a senior living community consisting of 122 manufactured homes. Throughout the rest of the Hollow segment, the roadway appears relatively narrow, with significant drainage ditches on both sides and no bicycle or pedestrian infrastructure.

The **river** segment is between Fay Lane and the Winooski River and includes the North Williston Historic District whose prominence came about with the advent of the railroad that passes through the area. The area is comprised of residential homes and agricultural use. There are no dedicated bicycle or pedestrian facilities on this roadway segment.

1.3 | PROJECT GOALS AND OUTCOMES

GOALS

- Evaluate the existing traffic and safety operations
- Identify opportunities and constraints for improvement
- Propose preferred treatments for an improved transportation system

OUTCOMES

- Documentation of traffic, safety, environmental, stormwater, and historic issues
- Compilation of “spot studies”
- Incorporation of public input and support
- Estimate of the future traffic demands
- Improvement plan to realize the community vision
- Compile all the above in a final report



2.0 PURPOSE AND NEED STATEMENT

The purpose and need statement is a summary of the context and issues related to the project that justifies the need for action. It was initially based upon the analyses of existing and future conditions and was revised following input at the Local Concerns Public Meeting (May 2, 2017). Alternative designs are evaluated relative to their ability to satisfy the project's purpose and need statement.

PROJECT PURPOSE

The purpose of this project is to ensure that North Williston Road is a resilient travel corridor and that all travelers - including vehicles, pedestrians, and bicyclists - can travel safely and efficiently along the corridor.

PROJECT NEED

The need for this project is documented by:

- Traffic demands exceeding the roadway's initial design expectations;
- Proposed reconstruction of the River Road intersection, which may bring more traffic through the corridor;
- Evidence of erosion and underperforming drainage structures;
- Concerns from residents of unsafe speeds and driver behavior along the roadway
- Lack of bicycle facilities, despite being identified as a bike route
- Several separate “spot” intersection studies with no coordinated plan; and
- Continued regional land use development leading to North Williston Road as a significant regional traffic link.

3.0 PAST STUDIES AND PLANS

Several studies have been conducted by the Town of Williston and Chittenden County Regional Planning Commission along and adjacent to the corridor over the past 15 years. These studies and their recommended preferred alternatives are summarized in this section.

US 2 / NORTH WILLISTON ROAD INTERSECTION SCOPING STUDY

Chittenden County Metropolitan Planning Organization, 2009 | [Link](#)

Prepared by: RSG

This study reviewed the intersection of Williston Road (US-2) and North Williston Road, in Williston Village. The needs listed in the final report included:

- congestion and significant queues during peak hours
- the intersection's classification as a High Crash Location, and
- the number of pedestrians in this historic, dense section of town.

There were four considered alternatives, including a signal, a roundabout, and modifications of these. The Town Selectboard's initial preferred alternative was the roundabout alternative; however, following much public input, the decision was modified in favor of keeping the intersection as a four-way stop-controlled intersection.

Figure 3-1. Roundabout Alternative of the US-2 Intersection Study





NORTH WILLISTON ROAD AND MOUNTAIN VIEW ROAD INTERSECTION STUDY

Chittenden County Regional Planning Commission, 2012 | [Link](#)

Prepared by: RSG

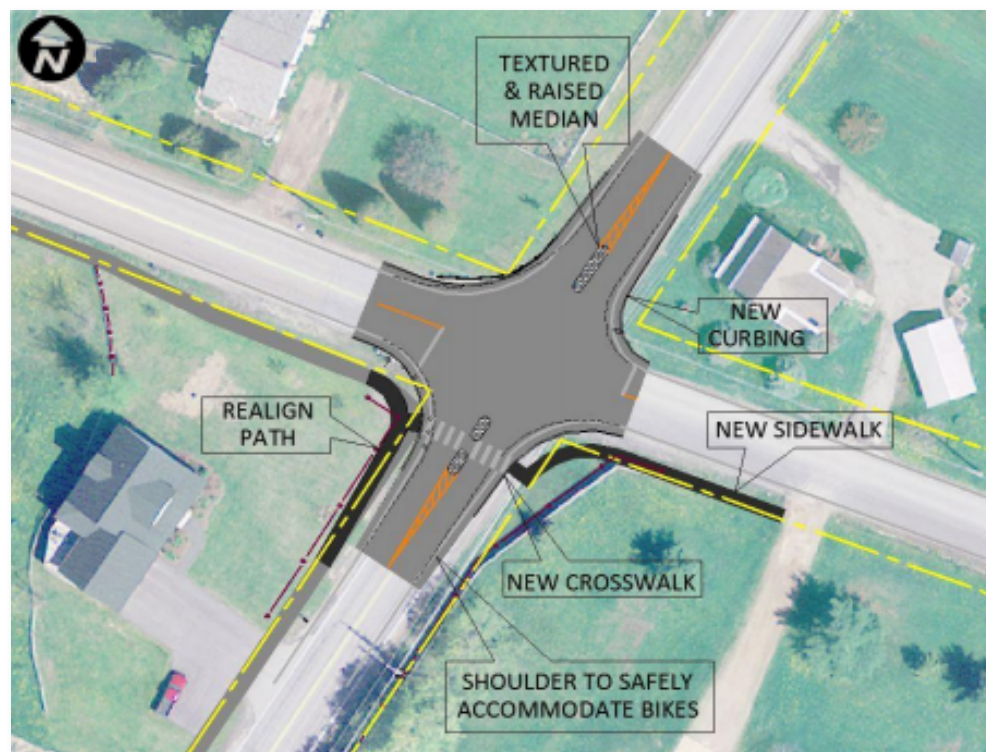
This study reviewed the needs and possible improvement options at the intersection of North Williston Road and Mountain View Road / Governor Chittenden Road.

The report lists several traffic contributions of significance:

- The IBM campus to the northwest is a significant trip generator
- North Williston Road makes connections from Essex, Jericho, and points northeast to Williston and South Burlington via its Winooski River crossing. It is sometimes referred to as the “de facto” Circ Highway.
- The Fontaine sand pit generates dump truck traffic with varying intensities depending on the season and degree of economic activity.
- Events at the Catamount Family Outdoor Center on Governor Chittenden Road also influence vehicle, bicycle and pedestrian traffic at this intersection.

Six build alternatives were considered, ranging from converting to an all-way stop, to installing a roundabout. The preferred alternative was a combination of safety and traffic calming measures, which was partially implemented in the spring of 2013.

Figure 3-2. One Set of the Final Recommendations of the Mountain View Road Intersection Study



MOUNTAIN VIEW ROAD BICYCLE / PEDESTRIAN FACILITIES STUDY

Chittenden County Regional Planning Commission, 2014 | [Link](#)

Prepared by: Stantec Consulting Services Inc.

This study looked at the Mountain View Road corridor for suitability of bicycle and pedestrian infrastructure. It evaluated a widened roadway with shared use shoulders, or an off-road path on either side of Mountain View Road. The widened roadway was selected as the preferred alternative, which included a crown shift and widening 4-feet on one side of the road to provide 11-foot travel lanes and 4-foot, uncurbed, shared-use shoulders in both directions.

VT117-NORTH WILLISTON ROAD SCOPING STUDY

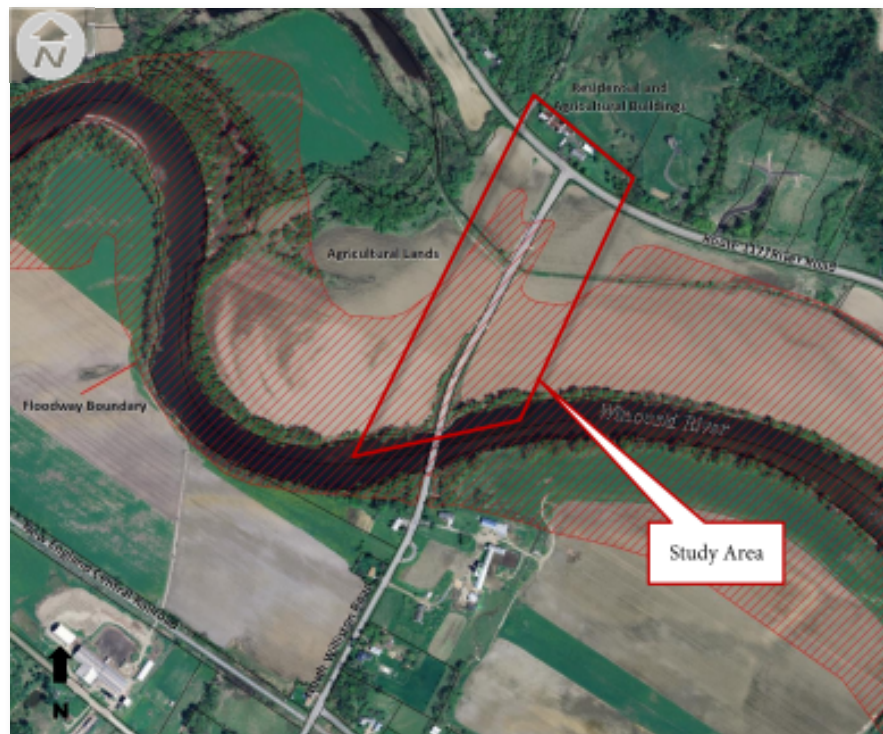
Chittenden County Regional Planning Commission, 2013 | [Link](#)

Prepared by: Dubious & King, Inc.

The intersection of VT-117 and North Williston Road was studied after being identified as a critical intersection in need of improvement during the Williston-Essex Network Transportation Study (WENTS). This intersection study responded to two major issues:

1. Queuing and vehicle crashes during peak hours, partially caused by left turns from North Williston Road onto VT-117
2. Flooding of North Williston Road between this intersection and the Winooski River bridge several times each year

Figure 3-3. Floodway Boundary and VT-117 Intersection Study Area





This study recommended alternatives to meet the two major needs of the intersection and surrounding roadway: 1) a resiliency project to reduce the duration and impact of roadway closures (including a wider culvert, reconstructed roadway banks, and a network of roadway closure alert signs), and 2) a roundabout or signal at the intersection of VT-117.

TRANSPORTATION IMPROVEMENT PRIORITIZATION PLAN

Town of Williston, 2006 | See Appendix

Prepared by: RSG

The purpose of this study was for the Town to have a prioritization methodology to prioritize the construction of projects funded through its capital program, though the methodology was ultimately not adopted. Projects were prioritized based on safety, congestion, potential use, connectivity, multi-modal travel, natural/cultural resource, and enhancements. The intersections of North Williston Road with US-2 and Mountain View Road were two of the prioritized projects in the study, ranking as #1 and #2, respectively, of the eight intersections studied.

4.0 EXISTING CONDITIONS

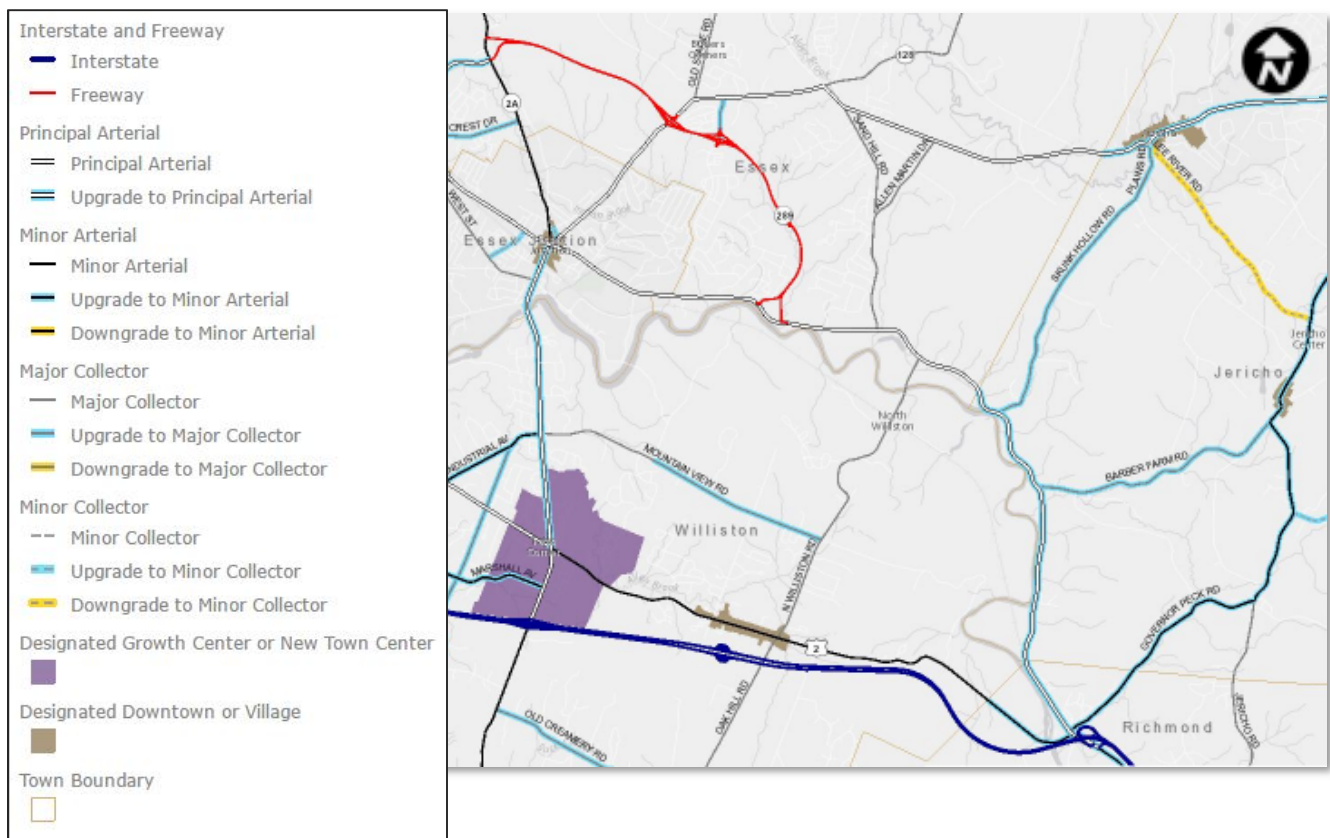
4.1 | NETWORK CONNECTIVITY

ROADWAY NETWORK

North Williston Road is classified as a major collector in the state's functional classification system. The CCRPC recently evaluated and proposed numerous changes to the functional class system in Chittenden County. These changes were approved by the Federal Highway Administration (FHWA) on September 21, 2017. The changes upgrade and downgrade some road segments based on how they presently operate. North Williston Road remains a major collector, and the segment of Mountain View Road immediately west of North Williston Road has been upgraded from a local road to a major collector.

Due to classification as a major collector, North Williston Road is on the federal aid system and is eligible to receive federal funding for improvements.

Figure 4-1. Proposed Changes to the Function Classification System (CCRPC)



VT Route 289, shown in red in Figure 4-1, is part of the originally planned Circumferential Highway (the "Circ"). Had plans for the Circ been continued, this route would have extended south to I-89. Circ plans were discontinued in 2011, resulting in North Williston Road continuing as one of the few connections between VT-117 and VT-289 to the north and US-2 and I-89 to the south.



Winooski River Crossing

North Williston Road is also one of just eight non-interstate, public roadway crossings of the Winooski River in Chittenden County. Only four of these are off the state highway system, including North Williston Road, making it particularly valuable for bicycle riders and pedestrians, who may not feel comfortable using a higher-volume road to cross the river. The next closest public crossings of the Winooski are both at least 3.5 miles away, and both are state highway crossings (US 2 and VT 2A).

Truck Traffic

The legal load limit on North Williston Road is 24,000 pounds, which would restrict access by Class 7 (fuel trucks, larger dump trucks, and beverage delivery) and Class 8 (tractor trailer trucks) heavy duty vehicles. Larger vehicles are allowed to use the roadway after obtaining an overweight vehicle permit from the Town.

Figure 4-2 shows the locations of weight limit signs in the northbound and southbound directions on North Williston Road.

Figure 4-2: Weight Limit Signs on North Williston Road

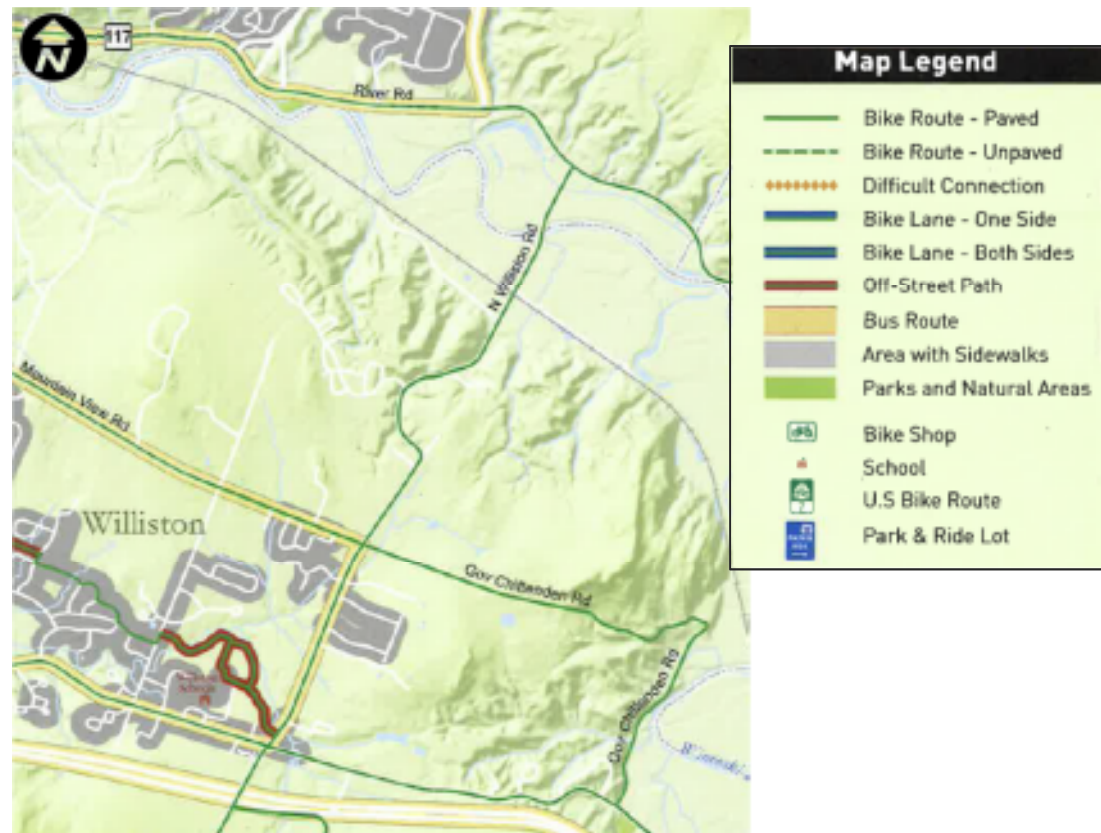


BICYCLE AND PEDESTRIAN NETWORK

Bicycle Accommodations

As one of few crossing opportunities of the Winooski River, North Williston Road is a common on-road bicycle route. The route is identified on the Local Motion Burlington Area Walk-Bike Map. However, the road does not have marked bicycle facilities other than occasional “Share the Road” signs. According to recommended best practices, even the wider 3-foot shoulders south of Mountain View Road are not wide enough to serve as informal bike lane alternatives.

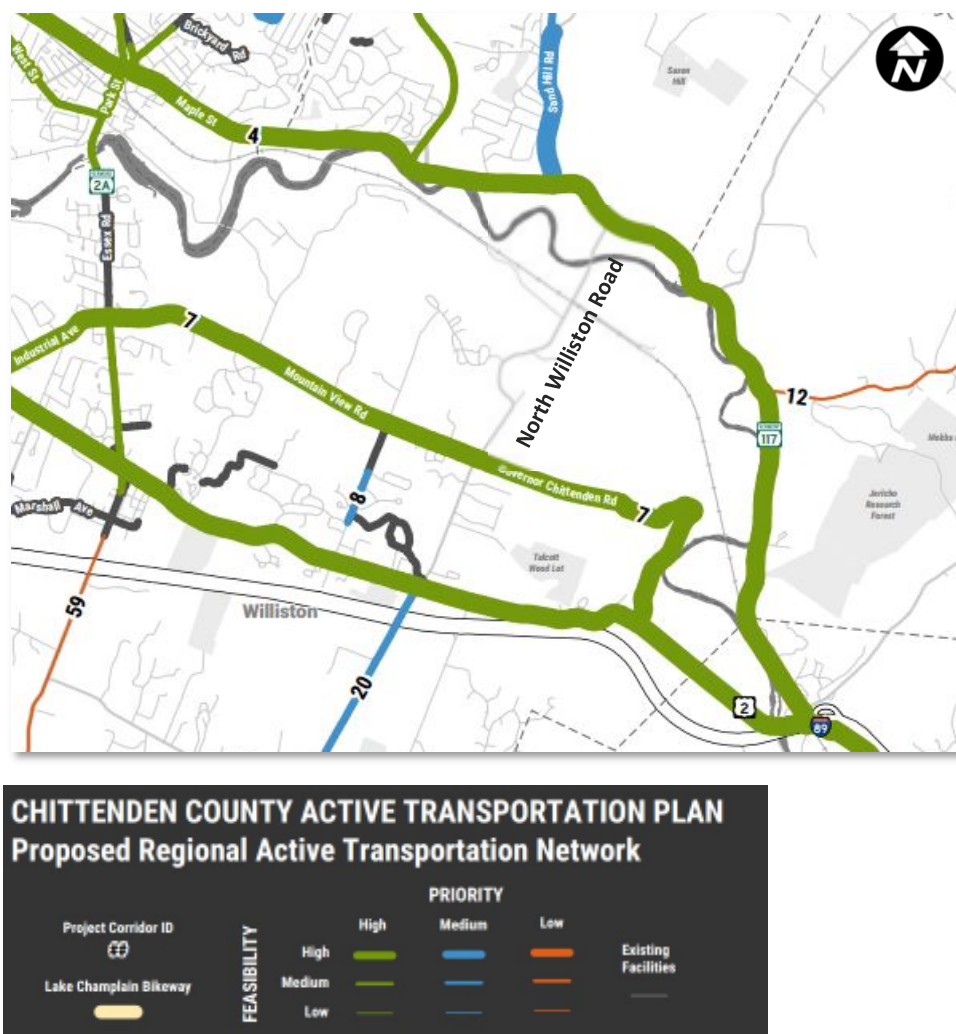
Figure 4-3: Excerpt from Burlington Area Walk-Bike Map (2016).



The CCRPC’s 2017 Regional Bicycle/Pedestrian Plan identifies VT-117, Mountain View Road, Governor Chittenden Road, and US-2 as high priority bicycle routes with high feasibility for future bicycle facilities, but it does not identify North Williston Road as a priority bicycle route. However, just as North Williston Road serves as a key connection for vehicles between these higher volume routes, it may serve bicyclists similarly once bicycle accommodations are installed on these intersecting roads.



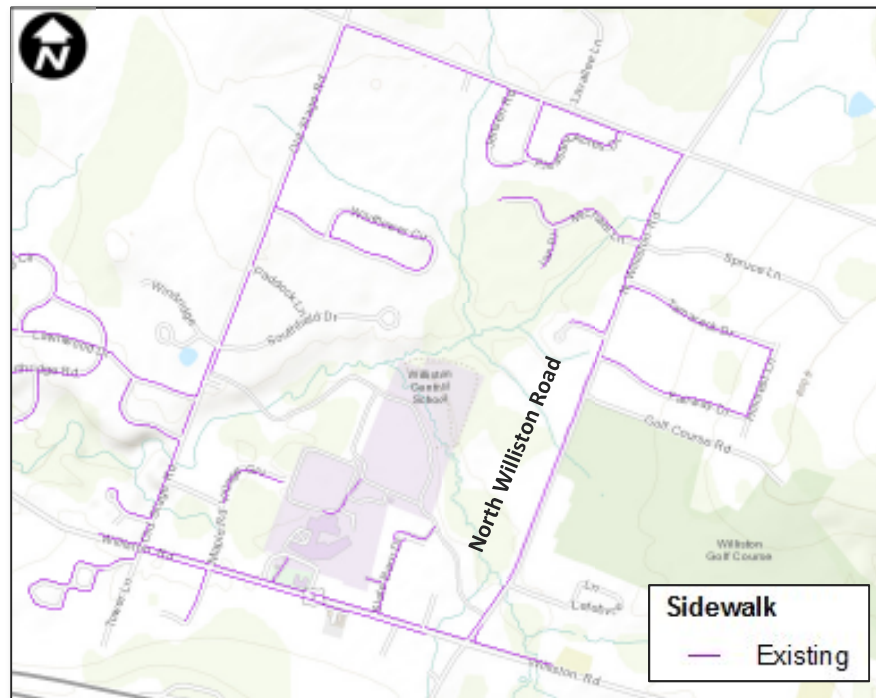
Figure 4-4. 2017 Chittenden County Active Transportation Plan (CCRPC)



Pedestrian Accommodations

A sidewalk runs along the west side of North Williston Road along its residential section between US-2 and Mountain View Road. 90% of it is a six-foot wide asphalt sidewalk. Between the small bridge crossing of Allen Brook (across from Lefebvre Lane) and US-2, it is a five-foot concrete sidewalk. A sidewalk is on both sides of US-2 in Williston Village, and a sidewalk runs on the south side of Mountain View Road just west of North Williston Road. There are no other pedestrian facilities along North Williston Road or intersection roads, except for sidewalks on a few neighborhood streets.

Figure 4-5. Existing Sidewalks



There are six marked pedestrian crossings on North Williston Road, all of which are between US-2 and Mountain View Road. The Mountain View Road intersection has a crosswalk across the southern leg (northbound approach), with rectangular rapid flashing beacons (RRFBs).

Figure 4-6. Pedestrian Crossing at Mountain View Road





Cross Vermont Trail

The **Cross Vermont Trail**, an in-progress recreational path across the state being stitched together by a multitude of local paths, runs along the segment of North Williston Road south of Mountain View Road (unmarked), then veers off to the west on a marked Cross Vermont path. This off-road segment travels past Williston Central School and ends at Old Stage Road. Bicyclists on the segment along North Williston Road might use the asphalt sidewalk on the west side of the road or travel on the road itself.

Figure 4-7. Cross Vermont Trail Map



Figure 4-8. Cross Vermont Trail - Off-Road Segment



TRANSIT SERVICE

Green Mountain Transit serves North Williston Road with the #1V (Williston Village) bus. The #1V bus is a spur of the #1 (Williston) route, which runs seven days a week between the Downtown Transit Center in Burlington and Tafts Corner in Williston. The #1V travels along US-2 between Tafts Corner and North Williston Road, along North Williston Road to Mountain View Road, and along Industrial Ave to US-2. The #1V loop occurs five times in a weekday and does not run on weekends. Along North Williston Road, it stops at the Williston Federated Church and Fairway Drive.

Figure 4-9. Green Mountain Transit Bus Routes and Stops

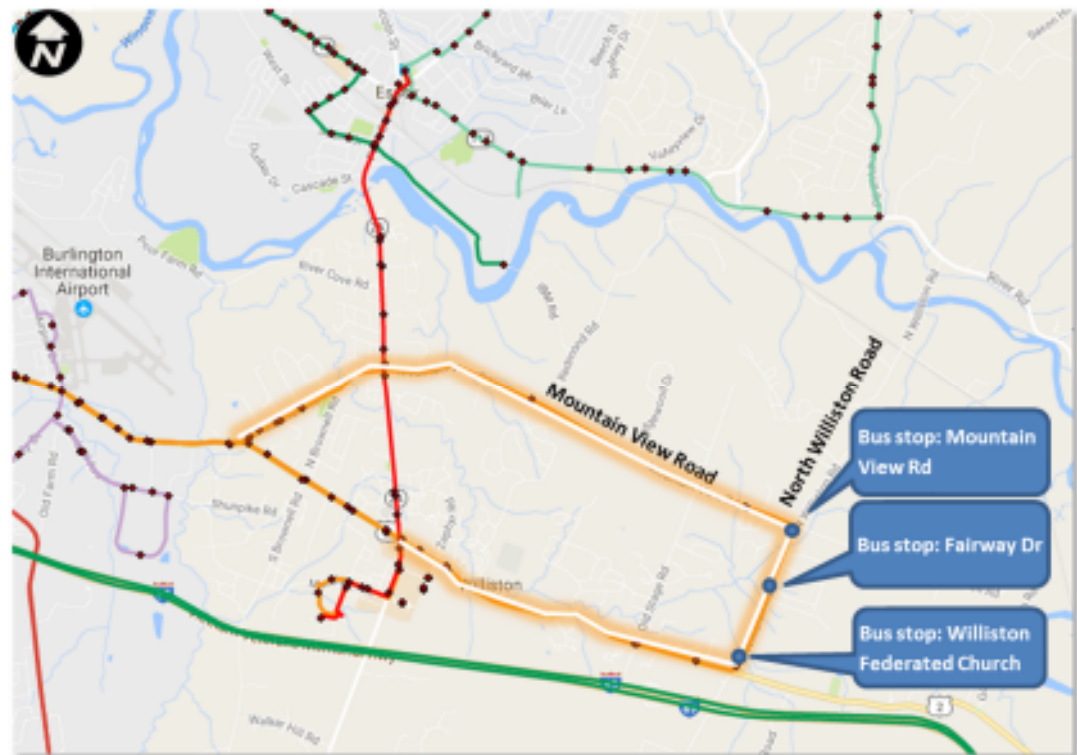


Figure 4-10. Bus Stop Near Williston Federated Church



4.2 | COMMUNITY CONSIDERATIONS

LOCAL DESTINATIONS

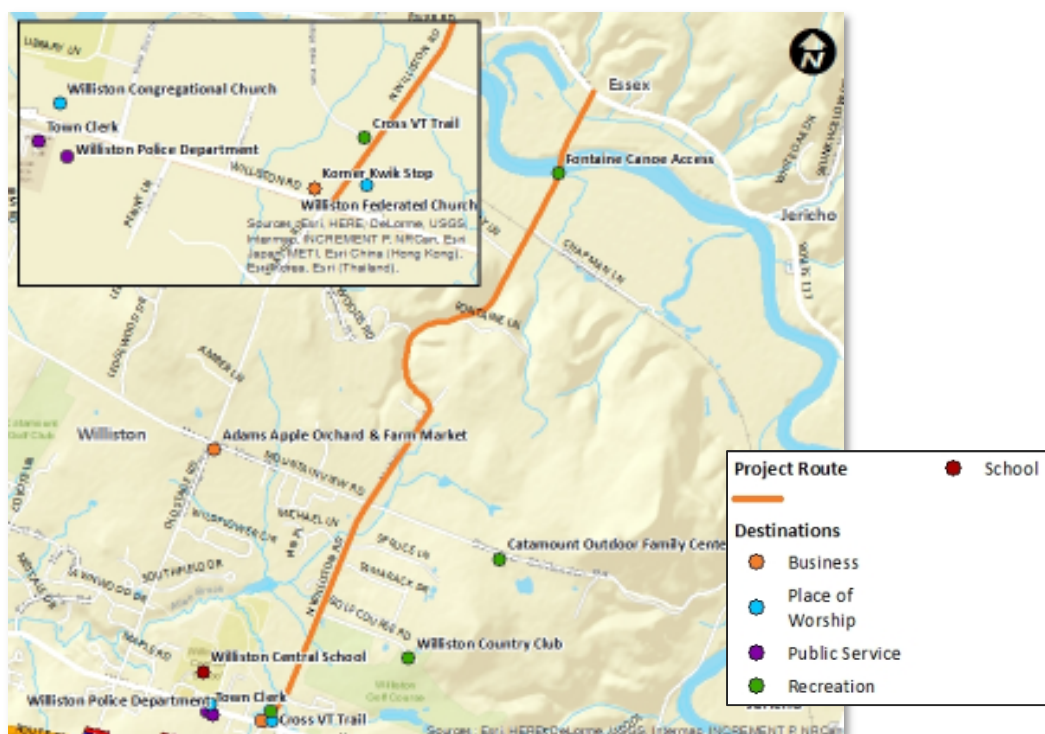
Although North Williston Road is largely treated as a north-south through route, there are many places that Williston residents and visitors travel to along North Williston Road or very close by. It is important to consider these destinations in terms of how they may affect traffic volume and circulation and modes of transportation, as well as how they influence the character of the area and the context of future improvements.

The historical Williston Village along US-2 is home to the town library, the Williston Central School (serving grades 3-8), two churches, and several small businesses. Up North Williston Road are Williston Woods Senior Living Community, access to the Cross Vermont Trail, and the Williston Country Club. Down Governor Chittenden Road is the popular Catamount Outdoor Family Center, which draws people from all over the county to its 20 miles of biking and cross-country ski trails and frequent events.

These local destinations should be considered as both social context to any future improvements, as well as traffic context. In particular, traffic of the following should be considered:

- **Williston Central School:** school bus pick-up and drop-off, students walking and bicycling to school, sporting events
- **Catamount Outdoor Family Center:** Summer camps, Tuesday night trail running series, Wednesday night mountain bike series, larger events

Figure 4-11. Community Destinations



HISTORIC DISTRICTS AND SITES

There are a number of historic sites along North Williston Road, as well as a high concentration along US-2 in Williston Village. Williston Village and the segment of North Williston Road between Fay Lane and the Winooski River - part of the area of town sometimes called North Williston - are both historic districts. Development in North Williston was spurred by construction of a Central Vermont Railroad depot in 1850. The historic sites along North Williston Road shown in Figure 4-12 are largely houses and farmhouses built in the mid-1800s.

Figure 4-12. Historic Sites and Districts





4.3 | WATERSHEDS, DRAINAGE, AND EROSION

North Williston Road lies within two watersheds: the Allen Brook Watershed (approximately south of Peterson Lane) and the Winooski River Watershed (approximately north of Peterson Lane). The Allen Brook Watershed is an urban stormwater impaired watershed. As with other impaired watersheds in Vermont, the Allen Brook Watershed has been assigned a Total Maximum Daily Load (TDML), an EPA-approved document that determines how much a pollutant must be reduced for the water to meet water quality standards.

North Williston Road crosses both the Allen Brook and the Winooski River. It also crosses several smaller seasonal and year-round streams, which can continue their natural path through culverts under the road. There are 14 culvert crossings of North Williston Road, several of which are smaller than VTrans' 18-inch minimum diameter, shown in Figure 4-13.

Figure 4-13. Culverts Across North Williston Road

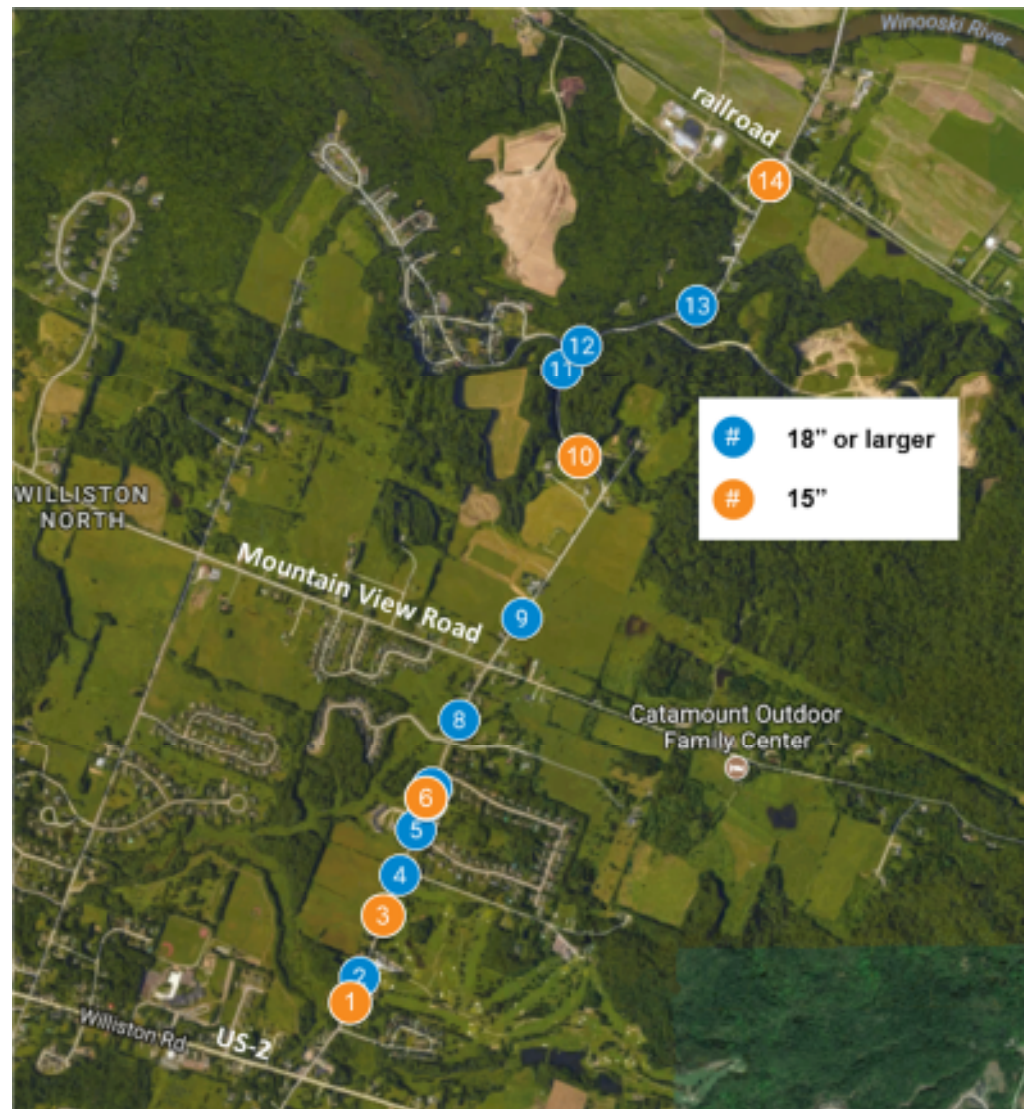
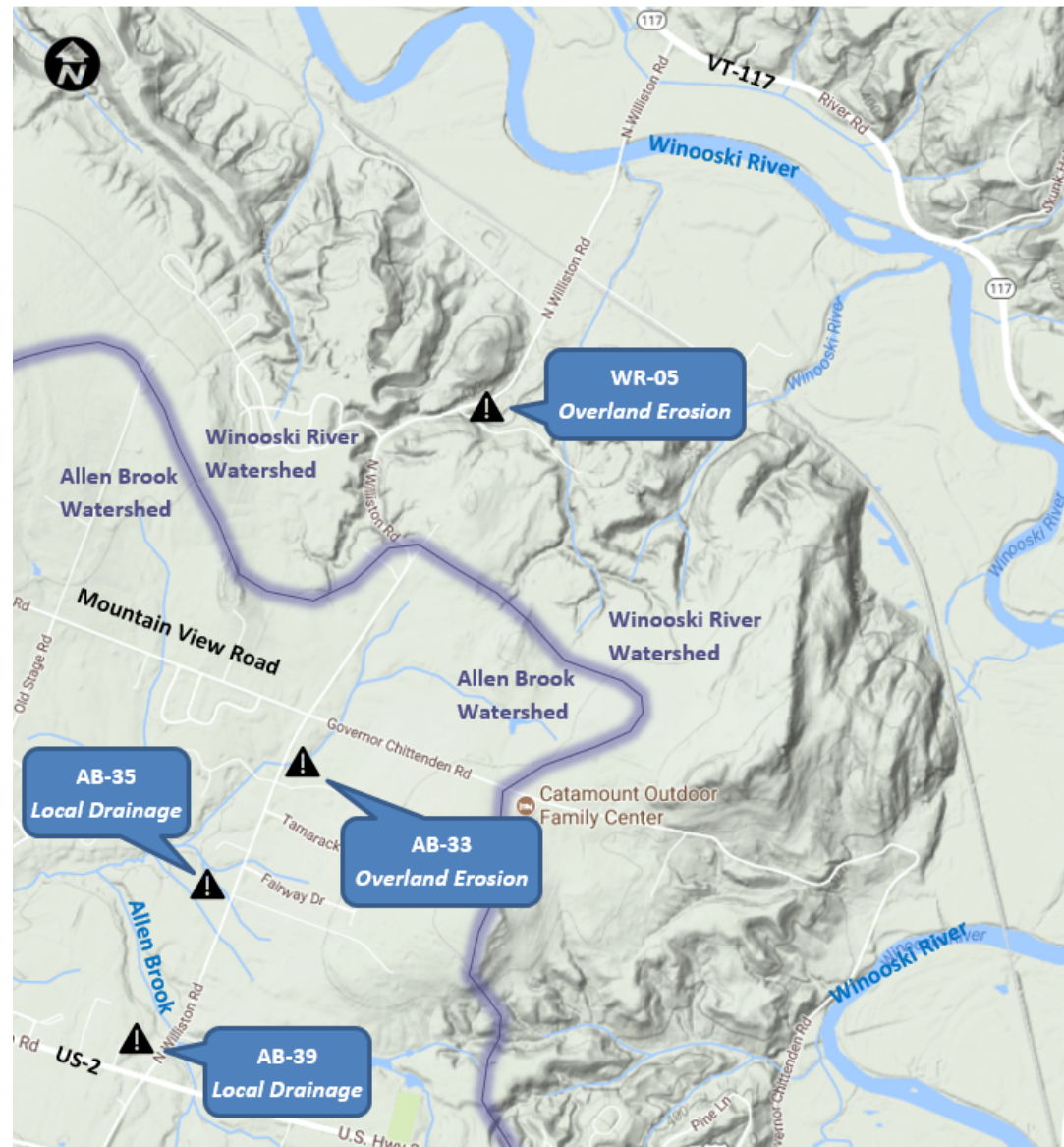


Image source: Google Satellite. Data source: Vermont Gas and VTculverts.org. Graphic source: RSG

Drainage ditches or shallow swales run the length of most of the road and become very steep in certain areas. RSG observed erosion along some of the drainage ditches, which puts the structural integrity of the road at risk. Several problem areas were identified in the Town of Williston's Town-Wide Watershed Improvement Plan (February 28, 2013) and are documented in Figure 4-14 and Table 4-1 below. Of these, only one was determined in the plan to have an impact on public infrastructure - location WR-05.

Figure 4-14. Watershed Problem Areas Along North Williston Road



Source: Town-Wide Watershed Improvement Plan, 2013



Table 4-1. Watershed Problem Area Descriptions

Problem Area ID	Problem Type	Date of Field Data Collection	Description of Observed Conditions
WR-05	Overland Erosion; impacts public infrastructure	5/14/2012	Erosion occurring on both sides of No. Williston Road near intersection with Fontaine Lane, due in part to heavy weight vehicles turning in/out. Ditches are eroding across from drive for #1923/1925.
AB-33	Overland Erosion; no impact to public infrastructure	7/11/2012	Ponding of water before entering marsh area. Pond is 8' by 12' about 8" deep. Signs of small dam/blockage at one point with rebar in stream; obstruction has been breached.
AB-35	Local Drainage; no impact to public infrastructure	7/11/2012	Loose gravel around underground pipe is eroding. Pipe end is filling in with material and channelization occurring immediately after outfall. Pipe appears to drain field and house area upstream. Problem caused by piping and burying the natural drainage which conveys runoff from the golf course.
AB-39	Local Drainage; no impact to public infrastructure	7/11/2012	Run-off from gravel parking lot flows to natural area/wetland between gas station parking lot and bike path parking lot. Sediment has built up along north side of parking lot. No catch basins in area.

Source: Town-Wide Watershed Improvement Plan, 2013

The following photographs document existing drainage and roadside slope conditions in various sections of North Williston Road.

Figure 4-15. Drainage Ditch - Looking North from Spruce Lane



Figure 4-16. Culvert Across Williston Woods Road





Figure 4-17. Steep Roadside Slopes in the Hollow



4.4 | ENVIRONMENTAL CONSIDERATIONS

A number of environmental resources were reviewed. Relevant resources and impacted segments of North Williston Road are described below.

- **Habitat blocks** (Figure 4-18): The section of roadway between Peterson Lane and Fontaine Lane, in the “hollow”, is part of a habitat block.
- **Deer Wintering Areas** (Figure 4-18): The section of roadway between Peterson Lane and Fontaine Lane, in the “hollow”, is part of a deer wintering area.
- **Wetlands:** Several wetlands, as identified by the Vermont Significant Wetlands Inventory, are scattered near the roadway. Only one wetland crosses the roadway; the Allen Brook crosses North Williston Road at its southern end (see Figure 4-19).
- **Conserved Lands:** There are no conserved lands along North Williston Road.
- **Rare, Threatened, and Endangered Species and Significant Communities:** There are no plant or animal species or natural communities along North Williston Road.
- **Core Forest Areas:** There are no core forest areas along the roadway.

Figure 4-18. Habitat Blocks and Deer Wintering Areas

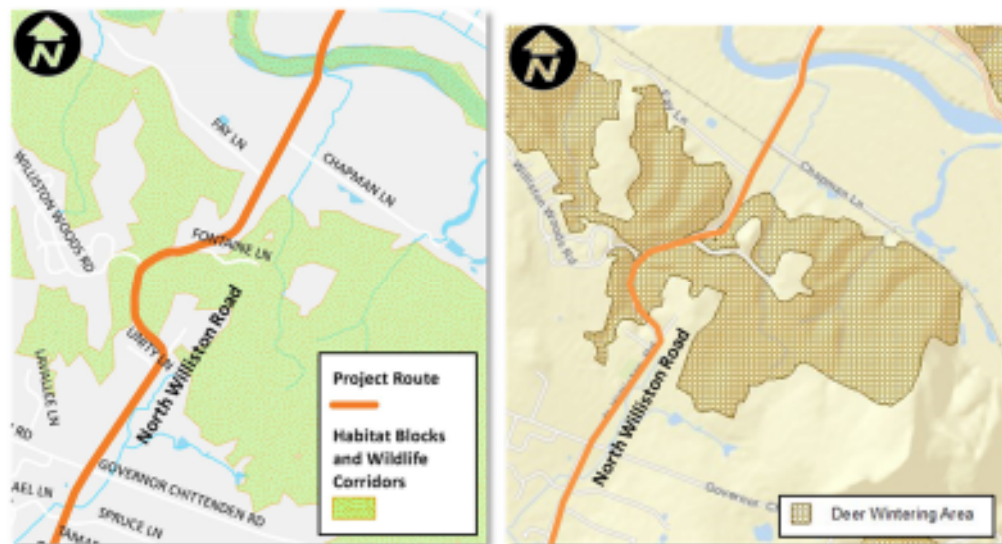




Figure 4-19. Allen Brook View from Pedestrian Bridge Along North Williston Road



4.5 | OTHER LAND USE CONSIDERATIONS

- **Prime Agricultural Soils** (not pictured): Nearly the entire length of North Williston Road is on prime agricultural soils.
- **Utilities** (Figure 4-20): Water and gas lines are along North Williston Road between US-2 and Williston Woods Road. Sanitary sewer service is located underneath the northbound travel lane, south of Mountain View Road.
- **Special Flood Hazard Areas** (Figure 4-21): Along North Williston Road, the areas around the Winooski River and the Allen Brook are classified as special flood hazard areas. They both have a 1% chance of flooding annually. The Winooski River floodway extends from VT-117 to just north of Chapman Lane. The Allen Brook floodway is more localized due to the narrow width of the Allen Brook at this point.
- **Hazardous Waste Sites** (Figure 4-22): There are three hazardous waste sites along North Williston Road. None of them are priority sites. All three are located at the southern end of North Williston Road.
 - **Korner Kwik Stop**
 - **Site #:** 880188
 - **Land Use Restriction:** No
 - **Priority:** NFAP - No further action planned
 - **Source of contamination:** Underground storage tank - Gasoline
 - **Williston Country Club**
 - **Site #:** 951765
 - **Land Use Restriction:** Yes

- **Priority:** SMAC - site management activity completed
- **Source of contamination:** Underground storage tank - Gasoline
- **Alden Bryan Residence (69 North Williston Road)**
 - **Site #:** 921345
 - **Land Use Restriction:** Yes
 - **Priority:** SMAC - site management activity completed (SMAC'd with the Williston Country Club)
 - **Source of contamination:** Underground storage tank - Gasoline

Figure 4-20. Utilities

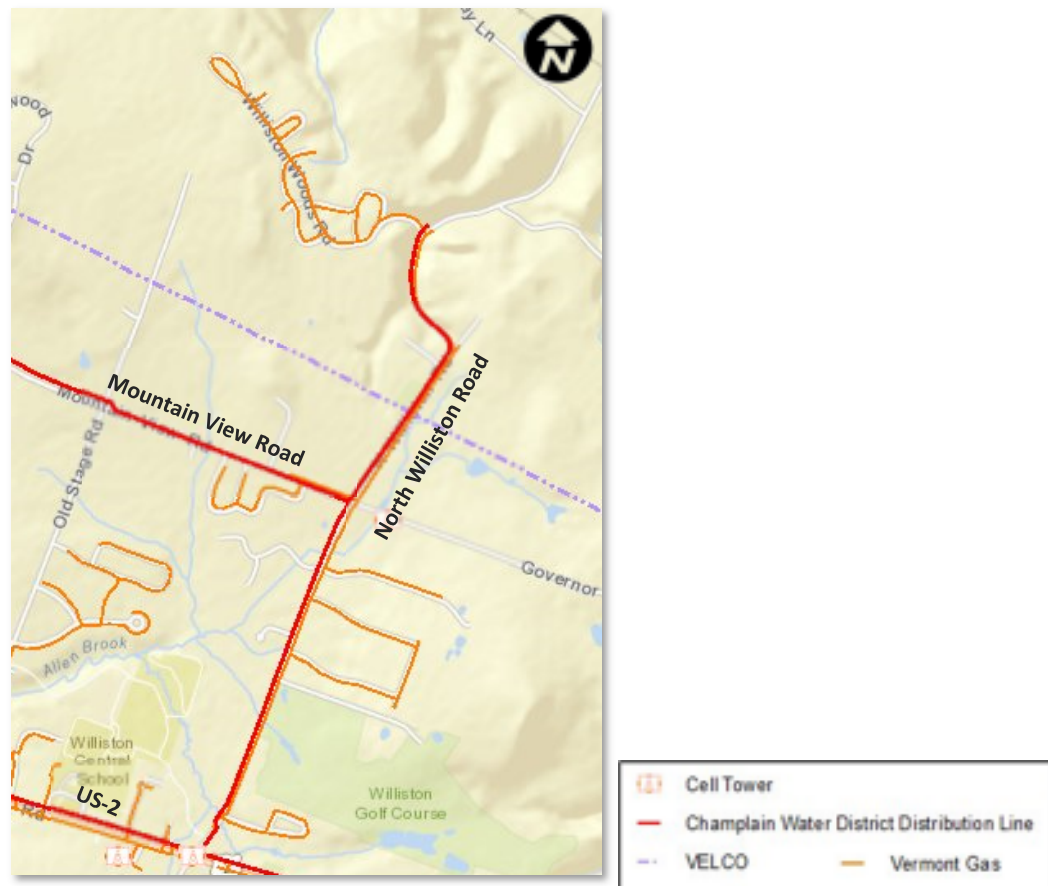


Figure 4-21. Flood Hazard Areas

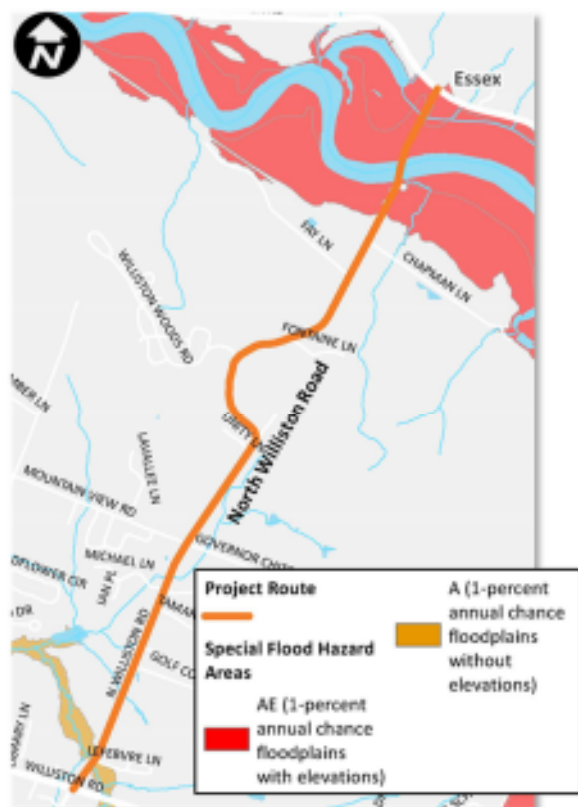


Figure 4-22. Hazardous Waste Sites



5.0 TRAFFIC AND SAFETY

5.1 | AVERAGE DAILY TRAFFIC

There are three automatic traffic recorder (ATR) locations along North Williston Road with recent data. Two of them have historic data that shows an increase in traffic of 6 to 18 percent between 2005 and 2013. The nearby continuous traffic counter (CTC) on VT Route 289 also shows an increase in traffic over this time period. Contrary to these increases, a nearby CTC along US-2 just east of Industrial Ave experienced a 6% decline in traffic between 2005 and 2013, and other nearby ATRs have also experienced a decline in traffic.

Figure 5-1. Automatic Traffic Recorder Locations and Data



Source: VTrans Transportation Data Management System and the VTrans 2013 Route Log for Federal Aid Urban Streets

5.2 | SPEED

The posted speed limit on North Williston Road is 35 mph. The speed limit remains the same throughout the entire corridor - including along the flat, straight sections of the road and through the narrow and curved hollow. An adequate number of speed limit signs are posted throughout the corridor in both directions. The northbound speed limit sign prior to the hollow is co-located with a curve warning sign (Figure 5-2). The MUTCD recommends separate installation for separate, unrelated signs. Additionally, both signs appear to be placed below recommended installation height.

Figure 5-2 Low-Sitting Signage

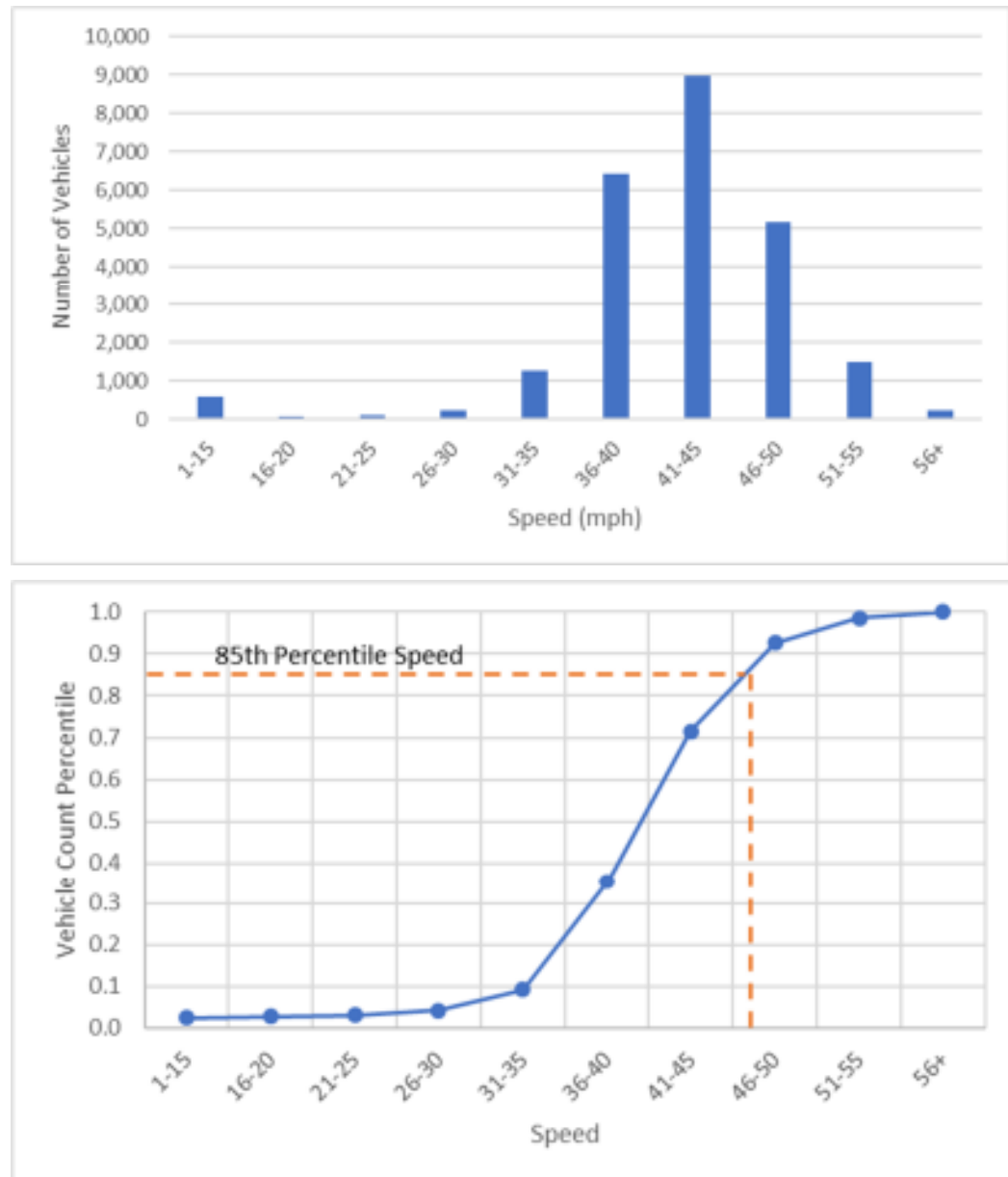


SPEED DATA

The CCRPC collected speed data on North Williston Road in both 2016 and July 2017. As shown in Figure 5-1, the 2016 data was collected north of Mountain View Drive with automatic traffic recorder (ATR). In July 2017, a 4-day count, including the weekend, was conducted south of Fay Lane with ATR WILL70. In both data collection periods/locations, the 85th percentile speed was determined to be over 10 miles over the posted speed limit of 35 mph. In 2016, north of Mountain View Road, the 85th percentile speed was in the **46-48**

mph range. In 2017, south of Fay Lane, the 85th percentile speed was in the **46-50 mph** range. The data from 2017 is illustrated in Figure 5-3.

Figure 5-3 Speed Data South of Fay Lane in July 2017



Data Source: CCRPC



5.3 | EXISTING TRAFFIC AT KEY INTERSECTIONS

Recent turning movement counts at the three key intersections along North Williston Road were reviewed and adjusted. The US-2 intersection and VT-117 intersection both had turning movement counts completed in 2016 and were found on the VTrans online Transportation Data Management System. The VTrans tool did not have data for Mountain View Road / Governor Chittenden Road, but because of a study completed this intersection in 2011, RSG had archives of two counts there: in 2011 (just during the PM peak hour), and 2009 (a twelve-hour count). Analysis for the Mountain View Road intersection was based on the more complete 2009 data, but was compared to the more recent 2011 data and the adjusted peak hours were very close.

Table 5-1. Turning Movement Count Metadata

Intersection	Year	AM Count	PM Count	Source
US-2 (Williston Road)	2016	Friday, August 5. 6am-12pm	Thursday, August 4. 12pm-6pm	VTrans (#30417755)
Mountain View Road / Governor Chittenden Road	2011	n/a	Friday, May 6. 4:45pm-5:45pm	RSG Previous Study
	2009	Thursday, July 9, 7am-7pm		RSG Previous Study
VT-117 (River Road)	2016	Friday, July 8. 6am-12pm	Thursday, July 7. 12pm-6pm	VTrans (#30406888)

The observed evening peak hours of motorized traffic were determined to be 4:45 pm-5:45 pm for all intersections, except for the 2009 count at Mountain View Road, the peak hour of which was 4:30 pm - 5:30 pm.

Following VTrans traffic study guidelines, observed peak hour traffic volumes were adjusted to represent the design hour volume (DHV)¹. Design hour adjustment factors for each of the three intersections are based on the same automatic traffic recorders that were identified earlier in this report to determine annual average daily traffic (AADT) along segments of the road.

¹ The DHV is the 30th highest hour of traffic for the year and is used as the design standard in Vermont.

- The count at US-2 was adjusted to ATR D345, just north of US-2.
- The counts at Mountain View Road were adjusted to ATR WILL59, just north of Mountain View Road.
- The count at VT-117 was adjusted to ATR D323, just south of VT-117.

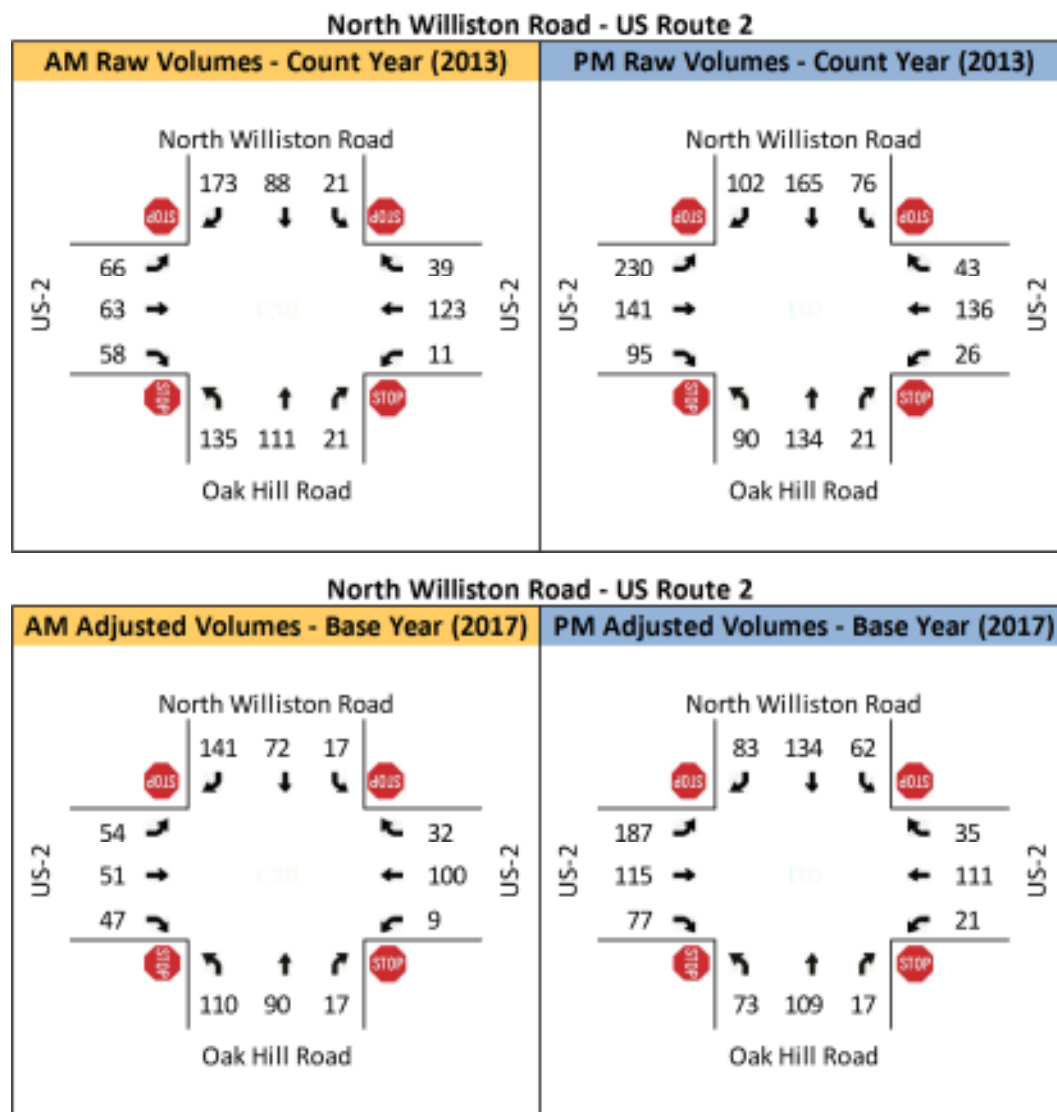
The calculations to adjust observed traffic volumes to the DHV are as follows:

1. The AADTs from the ATRs were adjusted to 2016 volumes (the year of the most recent turning movement counts). At Mountain View Road, because the AADT from ATR WILL59 is from 2016, a growth factor was not applied. Growth at US-2 and VT-117 (from the AADT year of 2013 to the turning movement count year of 2016) was based on Continuous Traffic Counter (CTC) D531, located on Route 289.
2. The DHV was found by multiplying the VTrans k factor for urban areas, 0.1061, by the adjusted AADTs found in Step 1.
3. Depending on where the ATR is relative to the intersection, the relevant entering and exiting volumes of the peak hours of the turning movement counts were added together. For example, because ATR D345 is north of US-2, vehicles exiting to the north and vehicles entering from the north in the peak hour were added together. In this case, this sum of actual vehicles was greater than the DHV.
4. DHV adjustment factors for the turning movement counts were found by comparing the sum of actual vehicles (from Step 3) to the DHV.
5. At this point, all turning movement counts have been adjusted to 2016. To adjust to present day (2017), a growth factor of 1.0 was applied.
6. The final adjustments for each of the intersections are as follows:
 - a. US-2: 0.81
 - b. Mountain View Road (based on 2011 turning movement count): 1.03
 - c. Mountain View Road (based on 2009 turning movement count): 0.94
 - d. VT-117: 0.85

The raw and adjusted volumes are shown in Figure 5-4, Figure 5-5, and Figure 5-6 on the following pages. The figures show a decrease in volumes; rather than this being a sign of decreased traffic between the count years (2009 and 2016) and present day (2017), this is likely a sign that the turning movement counts were conducted on days with higher traffic than average. Another possibility is that the increase in traffic along North Williston Road was greater than the increase in traffic along VT-289, where the CTC is located that informed the growth rate of the ATRs (which only had data as recent as 2013 for two of the intersections).

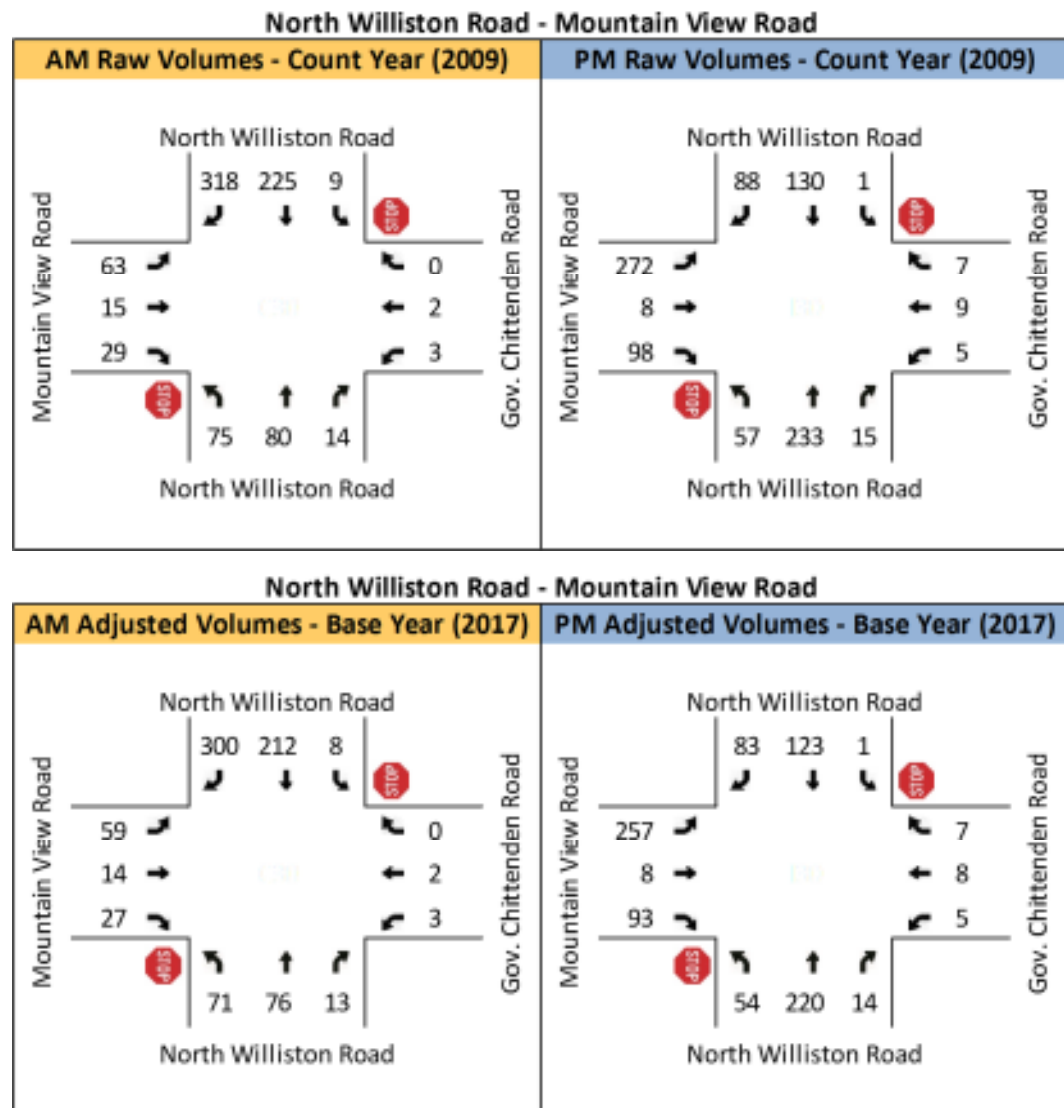


Figure 5-4. Turning Movement Counts at US Route 2



ATR Data Year: 2013

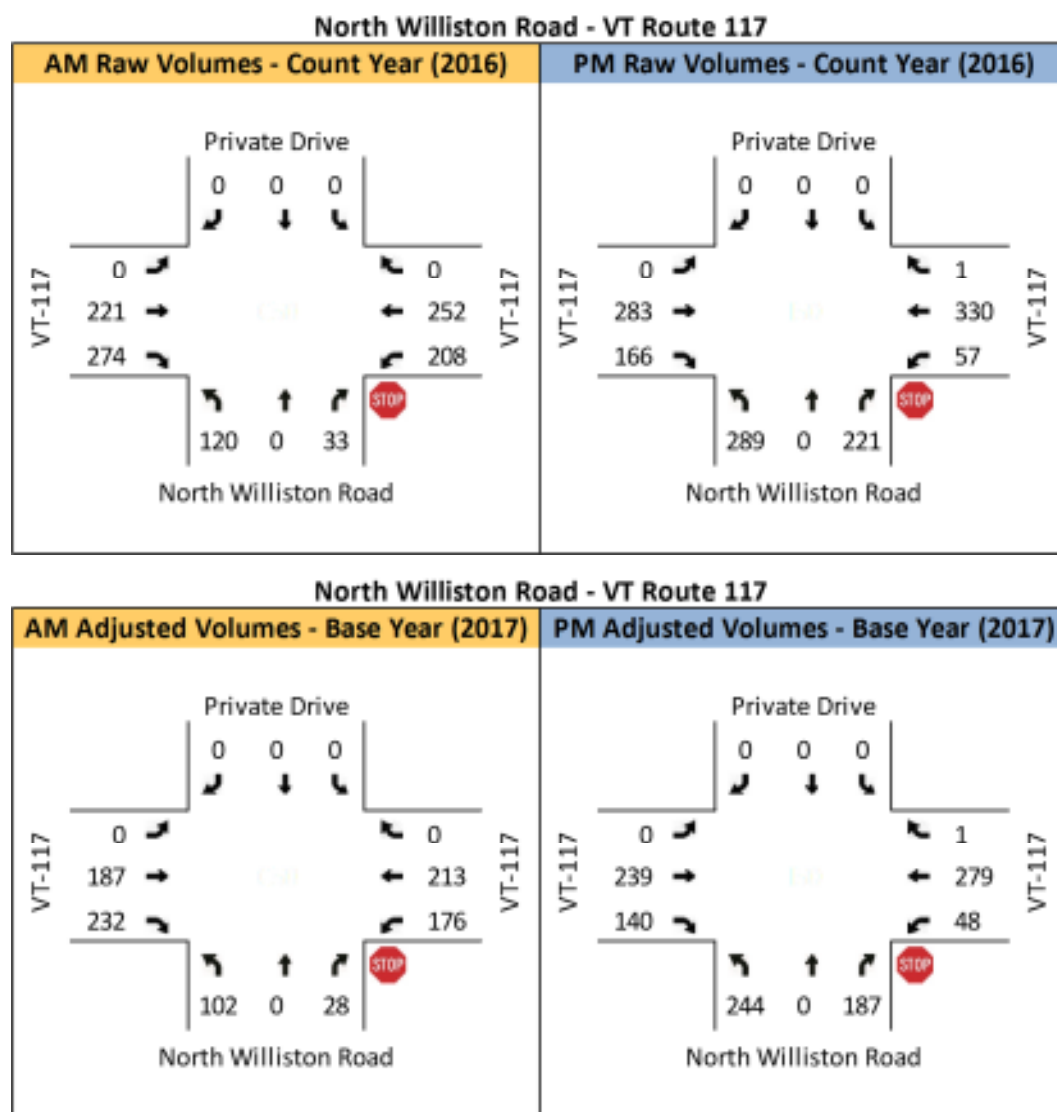
Figure 5-5. Turning Movement Counts at Mountain View Road



ATR Data Year: 2016



Figure 5-6. Turning Movement Counts at VT Route 117



ATR Data Year: 2013

5.4 | SIGHT DISTANCES

Stopping sight distance is the distance required for a vehicle, traveling at the design speed, to stop before reaching a stationary object in its path, such as a stopped vehicle. Intersection sight distance is the distance required for drivers to stop or adjust their speed, as appropriate, to avoid colliding with a potentially conflicting vehicle leaving an intersection.

STOPPING SIGHT DISTANCES

Stopping sight distances were measured along North Williston Road in areas where it was unclear if vehicles would have adequate sight distance. The three areas measured are shown in Figure 5-7. They include one crest curve in the residential section of the road and two horizontal curves in the hollow. Only one of the measurements was less than the recommended minimum sight distance of 250 feet - in a horizontal curve of the hollow, caused by the sharp turn coupled with the presence of a bank on the sides of the road with dense vegetation (see Figure 5-8).

Figure 5-7. Stopping Sight Distances (Measured on Site)





Figure 5-8. Restricted Stopping Sight Distance in the Hollow



INTERSECTION SIGHT DISTANCES

Intersection sight distances (from Policy on Geometric Design of Highways and Streets) were found in the previous studies for each of the three major intersections along North Williston Road.

- **At US-2:** All approaches to this intersection meet the minimum intersection sight distances; however, a crest curve limited sight distance to pavement markings.
 - US-2 approach minimum: 440 feet (Met)
 - North Williston Road minimum: 440 feet (Met)
 - Oak Hill Road minimum: 495 feet (Met)
- **At Mountain View Road:** Intersection sight distance was not provided in the past study. However, from observations in the field, the eastbound and westbound approaches may have intersection sight distances less than the minimum required due to large trees in the corners of the intersection. The desirable intersection sight distance would be 390 feet from Mountain View Road and from Governor Chittenden Road.
- **At VT-117:** Sight distance to the east of the intersection meets the minimum intersection sight distance criteria, but sight distance to the west does not.
 - **Minimum sight distance to the east:** 500 feet (Met)
 - **Minimum sight distance to the west:** 500 feet (Not Met. Measured = 430 feet)

5.5 | CRASH SUMMARY

Crash records were found using the VTrans Public Crash Data Query Tool and by requesting crash records from the Town of Williston Police Department to determine the number, type, and location of reported crashes along North Williston Road **between April 1, 2012 and April 1, 2017**. In total, there were **76 reported crashes** over this time period, 12 (16%) of which resulted in injury. This equates to at least 15 crashes per year on average, with at least two resulting in injury. Figure 5-9 shows the location and number of all crashes in this time period, both at intersections and along the road.

During this time period, one reported crash involved a motorcyclist; this crash occurred at the intersection of North Williston Road and Unity Lane, at the south end of the hollow, and resulted in injury. None of the crashes involved pedestrians or bicyclists.

Notably, following the 2013 partial implementation of safety recommendations at the Mountain View Road and North Williston Road intersection, crashes have reduced from 18 collisions in a five-year period (January 1, 2006 – December 31, 2010) to 11 collisions in the most recent five-year period (April 1, 2012 – March 31, 2017).



Figure 5-9. Crash Locations



Figure 5-10 shows the details of crashes at the intersections with the highest number of crashes, and Figure 5-11 shows the proportion of crashes during each type of road condition (dry, wet, snow, etc.). Not all crash reports included this information; the charts only include crash records with information for these.

Figure 5-10. Types of Crashes at Intersections with High Crash Rates

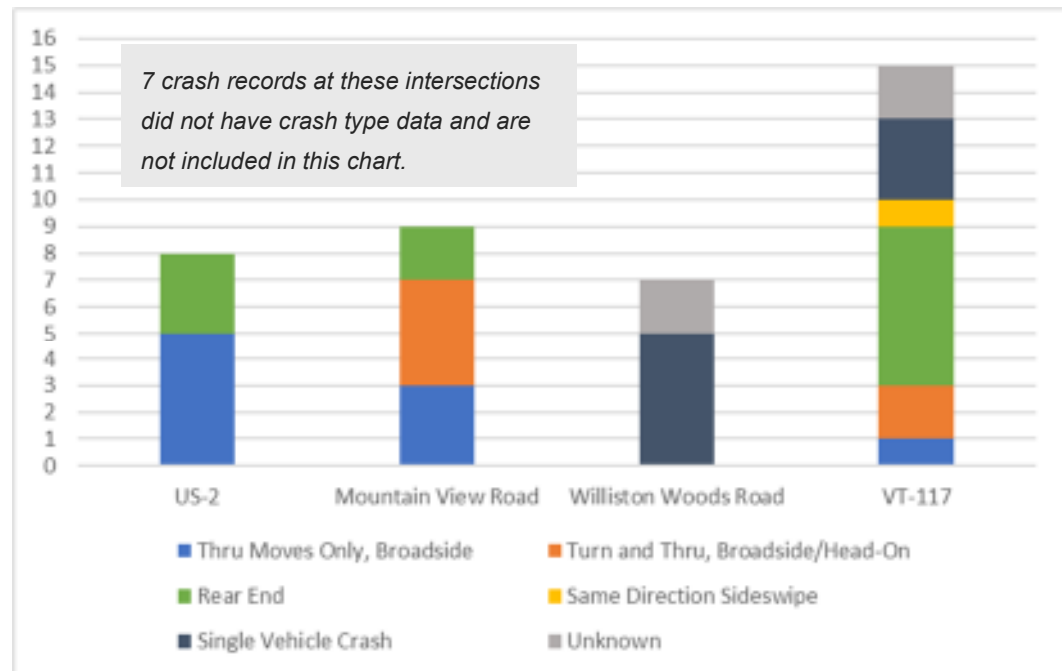
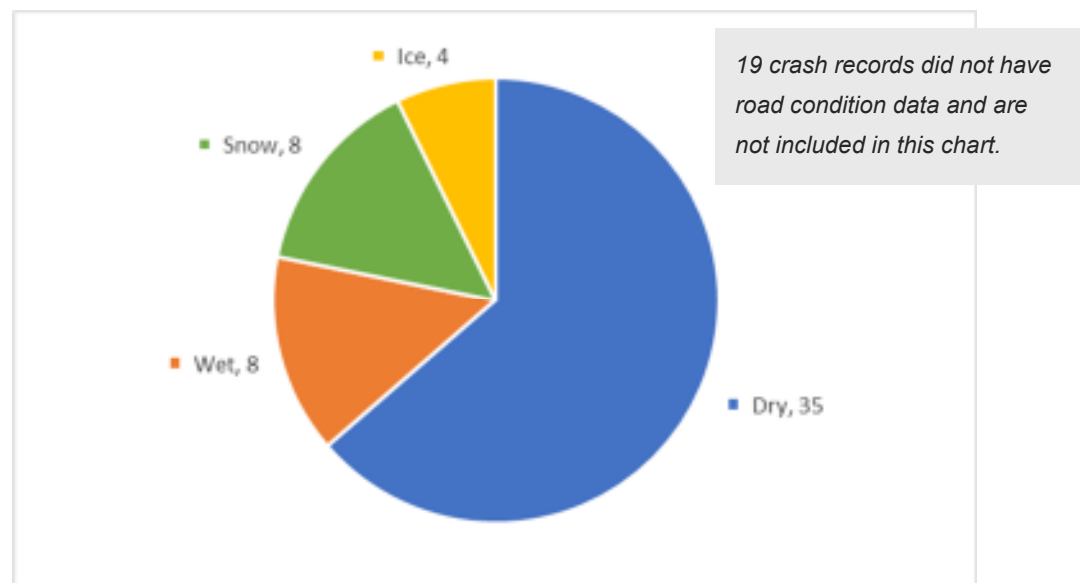


Figure 5-11 Road Conditions for All Crashes



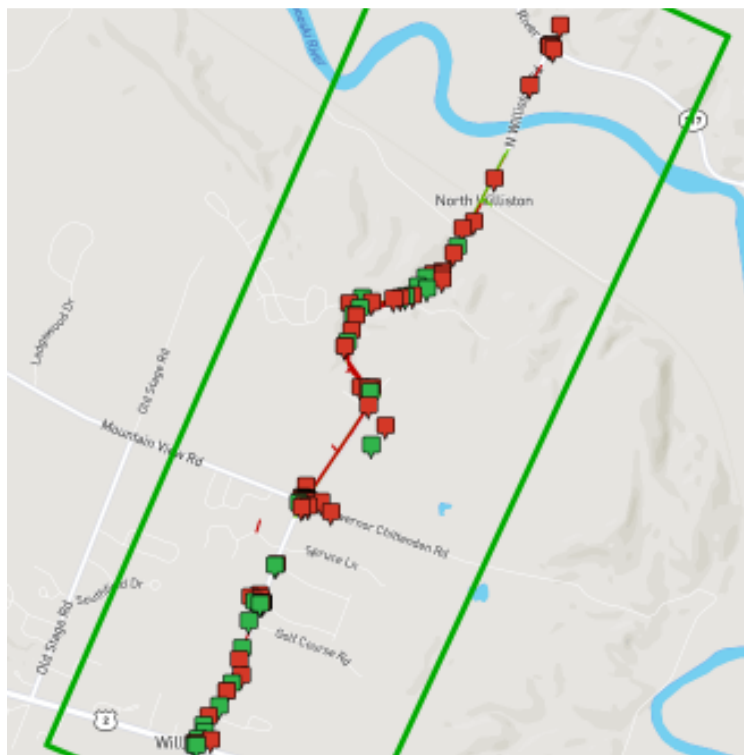
6.0 PUBLIC INPUT

6.1 | SOURCES OF PUBLIC INPUT

As part of this study's Public Participation Plan, the project team has sought public input through several channels in order to receive feedback from as many people as possible. As of the end of May, sources of public input have included:

- **Local Concerns Meeting** on May 2 as part of the Town of Williston Selectboard Meeting
 - 33 sign-ins from the general public
 - The project team took notes of the discussions and comments that took place at this meeting
 - Worksheets were distributed for attendees to take notes and optionally submit with comments and questions (one was submitted)
- **Wikimapping** webpage open April 12 - May 25
 - Approximately 90 people commented
 - Total of 137 comments (see Figure 6-1 Wikimap with All Drawn Features)
- **Individual Contact**
 - 14 emails were sent to the project team

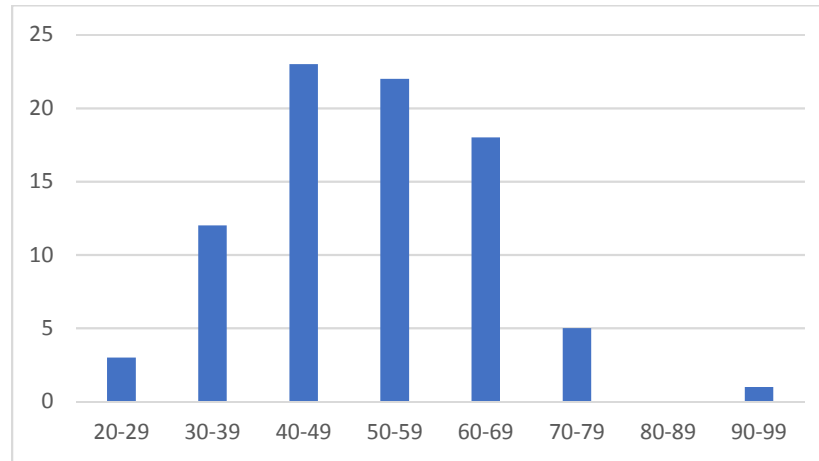
Figure 6-1 Wikimap with All Drawn Features



DEMOGRAPHICS FROM THE WIKIMAP

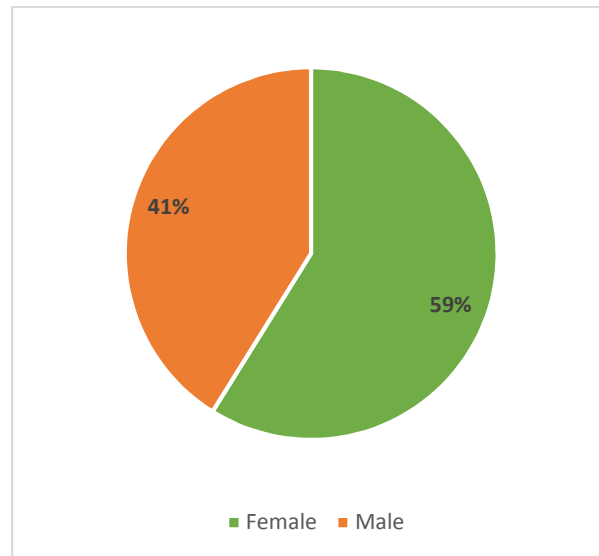
To understand who participated in the Wikimapping exercise and to have context for the responses, each participant was required to take a survey to gather basic demographic information. The following charts summarize findings from this survey.

Figure 6-2 Age Ranges of Participants



Source: Wikimap Survey Results

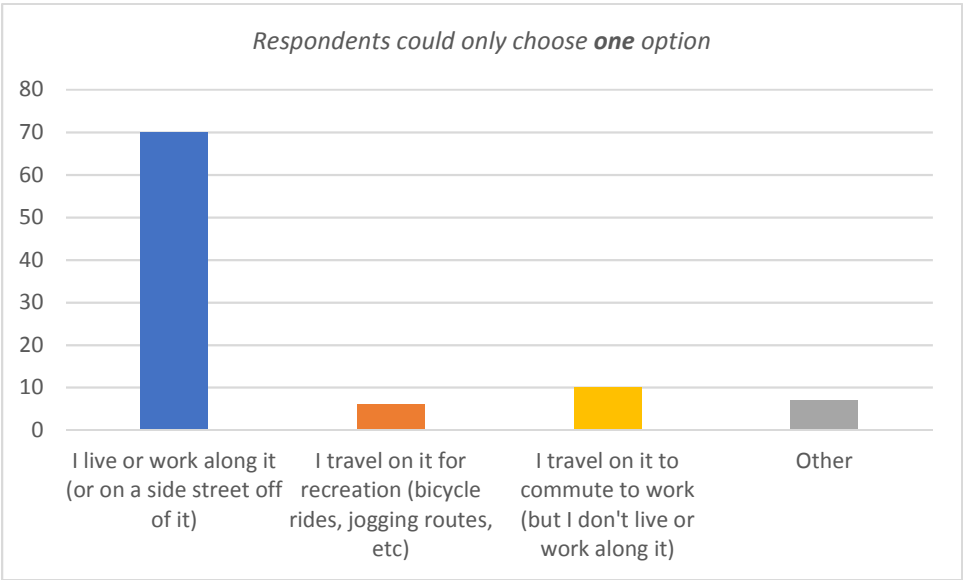
Figure 6-3 Gender Split of Participants



Source: Wikimap Survey Results

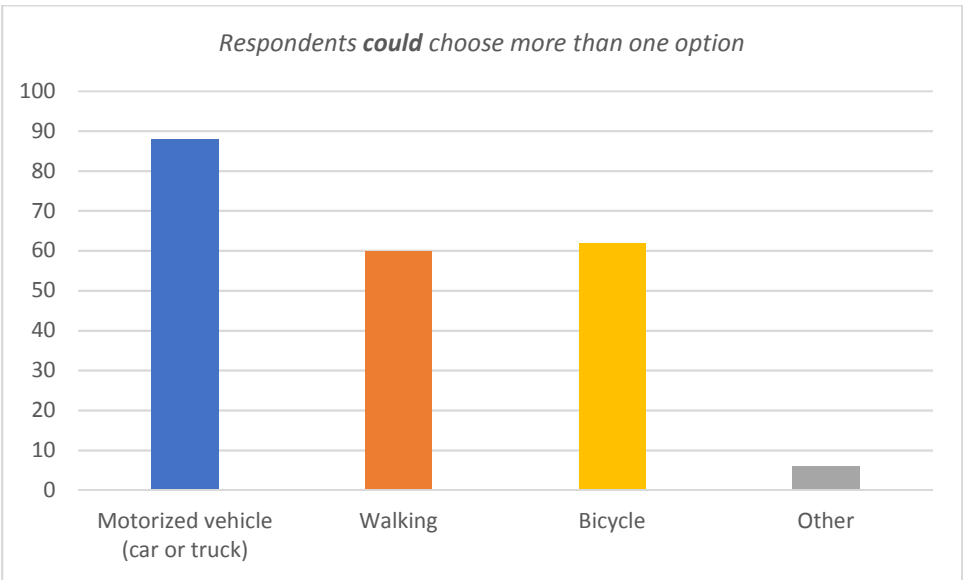


Figure 6-4 Participants' Relationship to North Williston Road



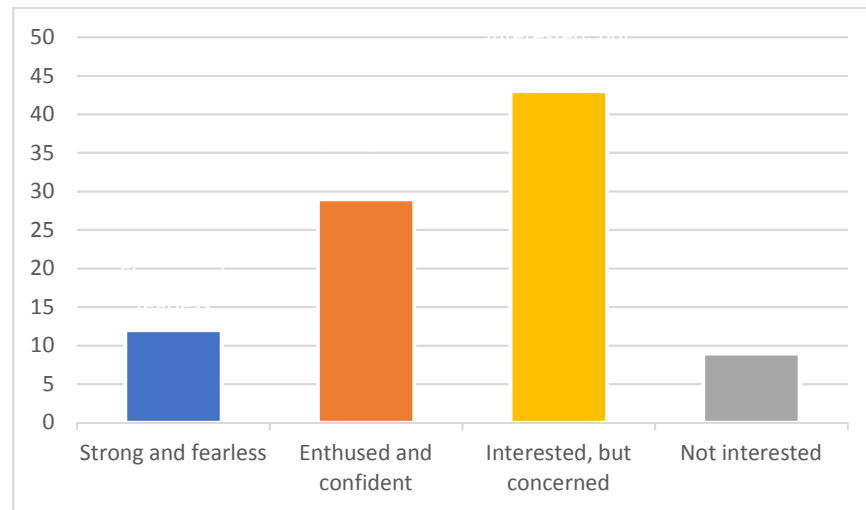
Source: Wikimap Survey Results

Figure 6-5 Forms of Transportation Used on North Williston Road



Source: Wikimap Survey Results

Figure 6-6 Bicycle Level of Confidence/Interest



Source: Wikimap Survey Results

6.2 | SUMMARY OF INPUT

OVERALL FINDINGS

- Speeding is the biggest corridor-wide concern, especially as it relates to pedestrians, bicyclists, and neighborhood children. There are also a number of reports of drivers illegally passing other vehicles that are turning onto a side street or driveway.
- The hollow is considered the most dangerous segment - for all modes - due to the minimal sight distances, the lack of bicycle and pedestrian facilities, and speeding.
- Pedestrian and bicycle facilities are desired north of Mountain View Rd, where there currently are none.
- A 4-way stop is desired at the Mountain View Road / Gov. Chittenden Road intersection.
- Other than the three largest intersections (US-2, Mountain View Rd, and VT-117), Fairway Drive and Williston Woods Road are intersections of highest concern.
 - The most common concern at Fairway Drive is safety for pedestrians - especially children and students - crossing the street to access the side path. There is a crosswalk, but cars often do not stop for pedestrians.
 - The most common concern at Williston Woods is driver safety when cars are turning in and out of Williston Woods, due to high speeds and restricted sight distance.



DISCUSSION FROM THE LOCAL CONCERNS MEETING

At the Local Concerns Meeting, topics of greatest concern were speeding and cut-through traffic. The following is a summary of the discussions and questions posed at the meeting.

Comments from the public with the most consensus:

Speeding

- There was a strong desire by many to slow down traffic on North Williston Road. Frequently, vehicles driving fast along the straight sections continue their speed when entering the hollow or just do not realize that the road will curve so suddenly. Motorcycles in particular were noted as speeding through the hollow.
- There were several reports that aggressive drivers may pass other cars that are slowing to turn onto a street or driveway, or pass vehicles that were traveling at a slower speed through the hollow as they enter the flatter portions of North Williston Road in the river valley or rural areas.
- Families with children would like to walk or ride bicycles along the road but are concerned about the speed of traffic.

Cut-through traffic:

- There was a common frustration from residents that much of the traffic is due to non-Williston residents. This was seen not only as a traffic volume issue but as a fair tax-paying issue.

General Planning:

- Important to identify a horizon year for planning purposes, and ensure the horizon is realistic.
- Impacts to residents need to be weighed, not just impacts to through travelers.

Comments from the Selectboard

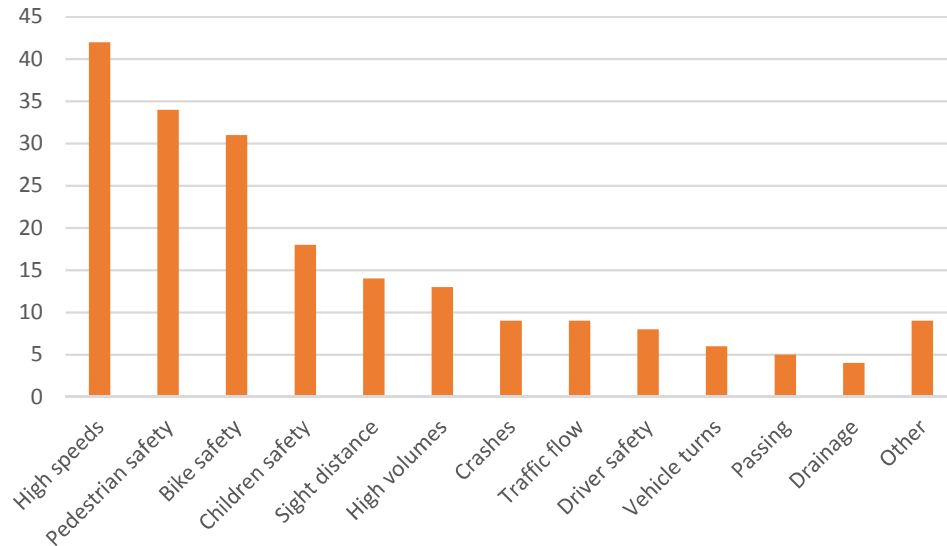
- One Selectboard member summarized the overarching challenge of this study: Can we both maintain/increase livability *and* accommodate traffic needs? These may be competing interests. He is concerned that by trying to meet both, we will meet neither.
- One Selectboard member emphasized the importance of having mutual respect between drivers and bicyclists.

COMMENTS FROM THE WIKIMAP AND EMAILS

The following charts summarize the combined comments from the Wikimap and individual emails. Comments were searched for key terms (partly automated and partly manual) to tally the locations, concerns, and desires of each comment. Because Wikimapping allows upvotes and downvotes, upvotes were considered an additional comment, and downvotes were

subtracted from the total; the totals below are the net agreement (= original comments + upvotes - downvotes). (There were only 8 downvotes throughout the entire corridor.)

Figure 6-7 Common Concerns (Sum of All Locations)



Examples of "Other" include driveway access, road condition, and flooding.

Figure 6-8 Common Segments of Concern

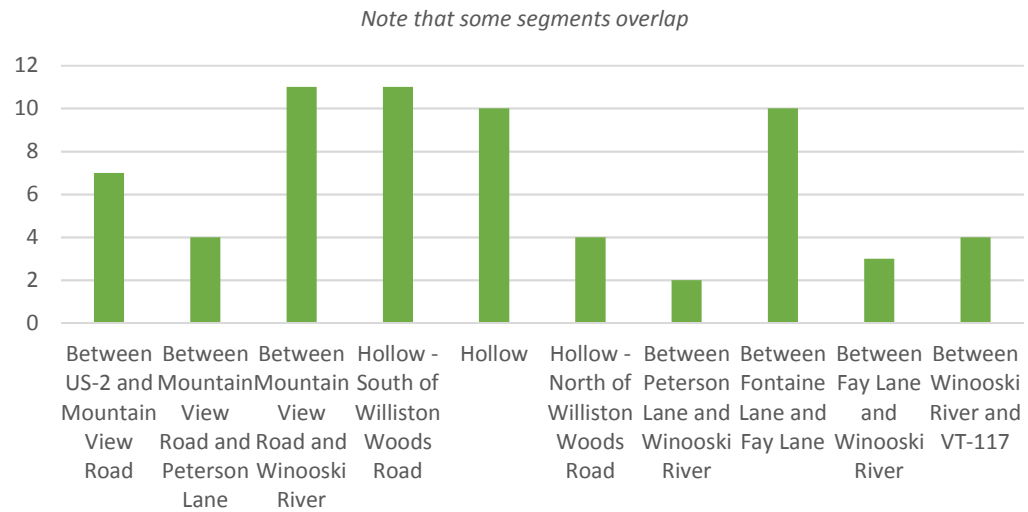
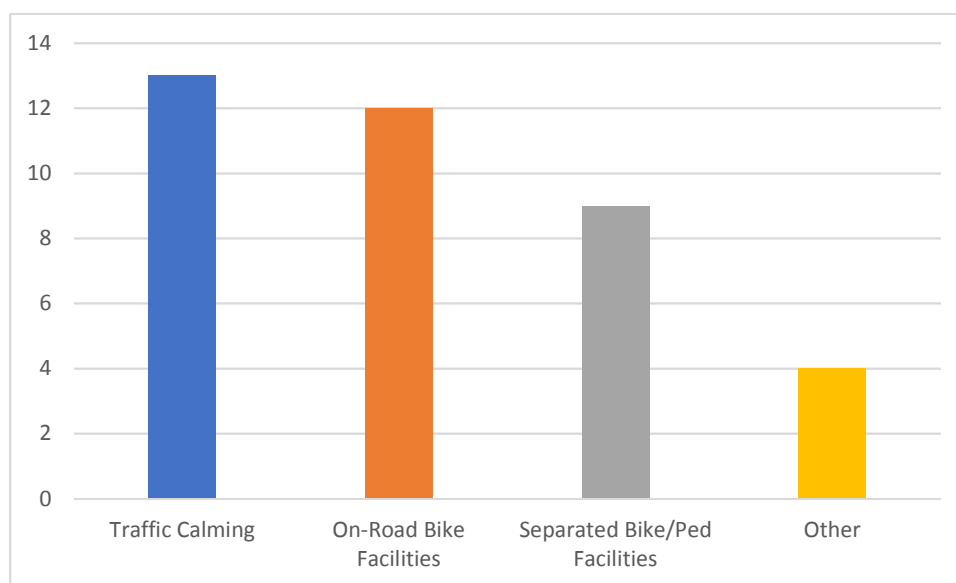




Figure 6-9 Desired Improvements for Road Segments



Examples of “Other” include police presence and restricting engine braking.

Figure 6-10 Common Intersections of Concern

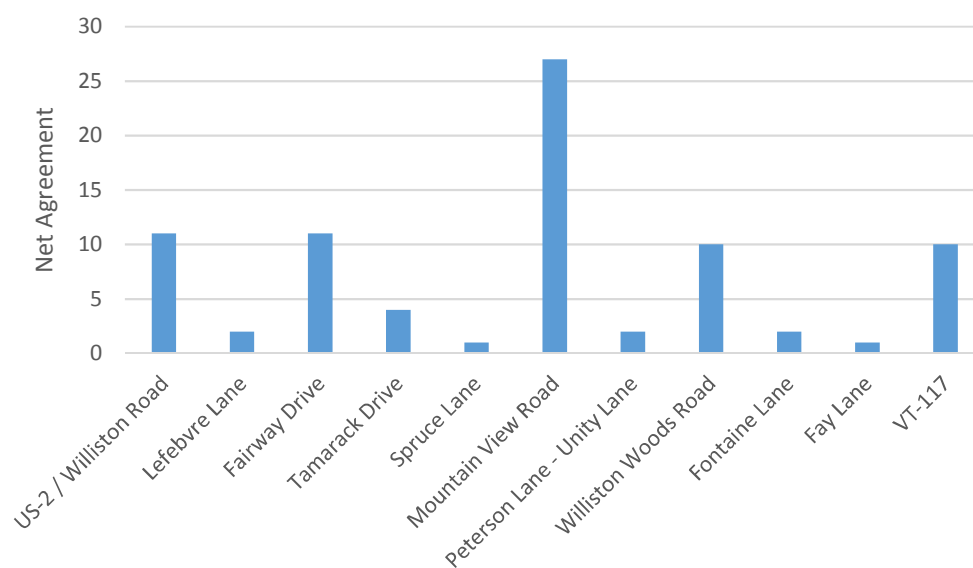


Figure 6-11 Intersection-Specific Concerns

Intersections	Sum of Original Comments	Sum of Net Likes	Net Agreement	Most Common Concern(s)	Most Common Desire(s)
US-2 / Williston Road	8	3	11	traffic flow, pedestrian safety	Roundabout
Lefebvre Lane	1	1	2	pedestrian safety	
Fairway Drive	6	5	11	pedestrian safety, childrens safety	Pedestrian Signal
Tamarack Drive	3	1	4	pedestrian safety, childrens safety	Pedestrian Signal
Spruce Lane	1	0	1	pedestrian safety	Crosswalk
Mountain View Road	23	4	27	traffic flow	4-Way Stop
Peterson Lane - Unity Lane	2	0	2	sight distance	
Williston Woods Road	4	6	10	high speeds	
Fontaine Lane	2	0	2	sand buildup, pedestrian safety	
Fay Lane	1	0	1	childrens safety	
VT-117	6	4	10	safety for all modes	Signal/Roundabout



APPENDIX

APPENDIX B: ALTERNATIVES ANALYSIS REPORT





FINAL VERSION

NORTH WILLISTON ROAD SCOPING STUDY ALTERNATIVES ANALYSIS

2.6.2018



180 Battery Street, Suite 350
Burlington, VT 05401
802.383.0118
www.rsginc.com

PREPARED FOR:
TOWN OF WILLISTON
CHITTENDEN COUNTY PLANNING COMMISSION

SUBMITTED BY:
RSG



NORTH WILLISTON ROAD SCOPING STUDY ALTERNATIVES ANALYSIS

PREPARED FOR:
TOWN OF WILLISTON
CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION

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1.0 INTRODUCTION

This report highlights specific transportation-related issues along North Williston Road, revisits the overarching goals for the study area, proposes design alternatives, and identifies the costs and impacts of each alternative. This report will serve as a guide for the project team, the Town, and the public to determine a preferred alternative for implementation.

PROJECT PURPOSE

The purpose of this project is to ensure that North Williston Road is a resilient travel corridor and that all travelers - including vehicles, pedestrians, and bicyclists - can travel safely and efficiently along the corridor.

CHALLENGE: CAPACITY AND LIVABILITY

A key challenge of this study is to meet the needs and desires of people who live and recreate along the road, while also supporting the needs of the regional transportation network, which relies on this road to support through traffic.

Residents along and adjacent to North Williston Road desire a neighborhood with slower speeds, that feel safe to walk and bicycle along, and with ease of access to their driveways. If North Williston Road was located in a different context, alternatives may attempt to reduce the amount of through traffic to help create a more livable neighborhood. However, because plans for the Circumferential Highway (the “Circ”) were discontinued, North Williston Road continues to be one of the few connections between VT-117 and VT-289 to the north and US-2 and I-89 to the south. For this reason, North Williston Road will continue to serve both local and regional traffic needs.

The alternatives that have been identified in this report aim to reduce vehicle speeds and increase roadway safety and neighborhood livability in ways that adapt to increasing traffic volumes.

STUDY AREA OVERVIEW

The project study area is a 2.8-mile segment of North Williston Road between US-2 in Williston Village and the Winooski River. North Williston Road continues across the Winooski River into Essex for an additional 0.3 miles until it reaches VT-117.

North Williston Road contains four distinct roadway segments: Residential, Rural, Hollow, and River (Figure 1-1). The **Residential** segment, part of the Williston Village Historic District, is between US-2 and Mountain View Road and is characterized by a denser development pattern. The **Rural** segment, extending north to Peterson Lane, has less dense development and relatively level terrain. The **Hollow** segment is between Peterson Lane and Fay Lane and is characterized by the relatively steep and winding descent northbound from the rural plateau to the Winooski River floodplain. The **River** segment, located north of Fay Lane in the North Williston Historic District, has a similarly level terrain and rural context as the Rural segment.

There are three significant intersections along North Williston Road: US-2 (Williston Road) / Oak Hill Road at its southern end, VT-117 (River Road) at its northern end, and Mountain View Road / Governor Chittenden Road where the landscape changes from Residential to Rural. There are no signalized intersections along North Williston Road.

FIGURE 1-1: NORTH WILLISTON ROAD SEGMENTS



Source: RSG



2.0 ISSUES AND CONCERNS

A comprehensive list of transportation issues and concerns along the study corridor has been informed by background research, site visits, and public feedback. Below is a matrix of specific issues and the overarching concerns that these issues fall into.

These issues and concerns were identified in earlier project development stages and documented in the existing conditions report.

TABLE 2-1: ISSUES AND OVERARCHING CONCERNS

Issues	Overarching Concerns			
	Safety for All Modes	Pedestrian and Bicycle Mobility	Traffic Flow	Stormwater Management
85th percentile speeds 10-15 mph over the limit	x			
At least 15 crashes per year on average, with at least 2 resulting in injury	x			
Limited intersection sight distance at Williston Woods Road	x			
Limited stopping sight distance in the Hollow	x			
Aggressive passing of slowing or slower cars	x			
Safety and traffic flow concerns at Mountain View Road intersection	x		x	
No pedestrian or bicycle facilities north of Mountain View Drive	x	x	x	
Pedestrian crossings at Fairway Drive and Tamarack Drive ignored by drivers	x	x		
Paved sidewalk in Residential area only 6 feet wide		x	x	
Overland erosion				x
Undersized culverts				x

3.0 DESIGN CRITERIA

To develop appropriate design alternatives, the following design criteria have been established.

FUNCTIONAL CLASSIFICATION

North Williston Road is a major collector, as identified by VTrans and more recently by the CCRPC. Designs will not attempt to reduce traffic volumes along the corridor (see the discussion of capacity and livability in the Introduction of this report).

ROADWAY GEOMETRY

Design Speed = 35 mph

The existing speed limit on North Williston Road is 35 mph.

Proposed Width of Design Features on Roadway

- Driving lane: 10 feet
- Minimum shoulder width for bike lane: 5 feet
- Minimum shoulder: 2 feet
- Sidewalk: 5-6 feet
- Shared use path: 10 feet preferred, 8 feet in constrained locations
- Shared use path separation from roadway: 5 feet preferred, but no buffer is acceptable as long as path is curbed

Stopping Sight Distance

Minimum stopping sight distances are shown for design speeds of 35 mph on level terrain, 9% upgrades, and 9% downgrades. Grades of up to 9% can be found in the hollow along North Williston Road.

Design Stopping Sight Distance (Feet)

Grade	35 mph
Level Grade	250
9% Downgrade	287
9% Upgrade	222

Clear Zone = 14 feet (fill locations); 12 feet (cut locations)

STORMWATER INFRASTRUCTURE

Culvert diameter = 18" minimum (VTrans standard)

Culverts should be at least as wide as culverts upstream of them.

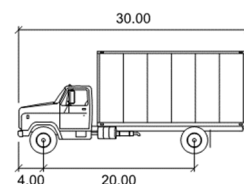


DESIGN VEHICLES

North Williston must continue to accommodate the dimensions and turning radii of the following vehicles. Proposed roadway features shall allow for the passage of these design vehicles with minimal inconvenience.

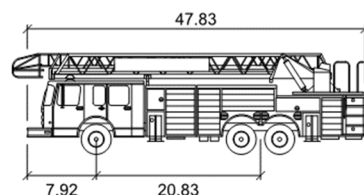
SU-30

The SU-30 single unit truck represents a typical local delivery truck. With the road being restricted to vehicles over 24,000 lbs, larger trucks will not be regularly traveling the corridor.



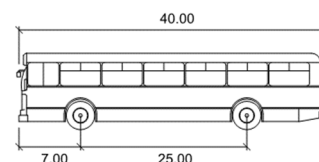
Typical Ladder Fire Truck

The ladder truck is a custom vehicle approximating the Town of Williston's largest fire fighting vehicle.



City Bus

The city bus represents a typical local route vehicle operated by Green Mountain Transit.



ROAD USERS

Road user groups include pedestrians, bicyclists, motorists, transit, freight, and emergency vehicles. Each road user group has a set of needs and goals related to roadway and intersection characteristics, which may conflict at times (see Figure 3-1); for example, motorists want to move quickly and without interruption, while pedestrians prefer slower traffic and safe crossing locations. Individual people generally identify with more than one of these groups, though not always for the same roadway. Within each group, there may be different types of users; for example, the bicyclist group could include children on bikes, experienced and confident riders, and less confident riders.

The National Association of City Transportation Officials (NACTO) summarizes the goals and perspectives of different road user group well in its Urban Street Design Guide, as shown in Figure 3-1.

On North Williston Road in particular, the competing demands of local and regional travelers is also apparent. As one of few bridges over the Winooski river, the road is a common route for through-travelers interested in getting to their destination as quickly as possible. At the same time, many people who live along North Williston Road desire less traffic and slower speeds. The bridge, coupled with a relatively low volume of traffic, attracts bicycle commuters and cyclists and athletes on long distance training routes.

Specific to North Williston Road are residents along different segments of the road, children and families, older people living in Williston Woods, through commuter traffic, and

bicyclists of varying skill and confidence. All of these groups will be considered when comparing alternatives and determining recommendations.

FIGURE 3-1: MULTIMODAL GOALS AND PERSPECTIVES

<p>PEDESTRIANS</p> <p>1 People crave activity and variety at street level. Streets with active storefronts, foot traffic design, and human scale design contribute toward an active and economically vibrant community. While activity is of paramount importance to the pedestrian realm, public safety, sidewalk width adequately spaced and apportioned, protection from rain, and shade from the sun together make the difference between a successful street and a barren one.</p>	<p>BICYCLISTS</p> <p>2 Bicycle facilities should be direct, safe, intuitive, and cohesive. Bicyclists desire a high degree of connectivity and a system that functions well for cyclists of all skill levels, with minimal detour or delay.</p> <p>Bicyclists benefit from feeling safe and protected from moving traffic. Bikeways that create an effective division from traffic and are well coordinated with the signal timing and intersection design of the traffic network form the basis of a accessible bicycle network. See Cycle Tracks</p>	<p>VEHICLES</p> <p>3 Motorists want to get to their destination as quickly and safely as possible with limited friction, interruption, or delay. Vehicles typically benefit from limited access, higher speed roads with limited chance of conflict or surprise.</p> <p>Due to their high speeds and overall mass, drivers feel safest when buffered from other moving vehicles, bicyclists, buses, trucks, and crossing pedestrians. Especially when making decisions at high speeds, motorists need adequate lighting and signage, as well as adequate parking provisions at their destinations.</p>
<p>TRANSIT</p> <p>4 Transit service may be measured by its speed, convenience, reliability, and frequency of service. Trains and buses should permit easy loading and unloading, and be comfortable and not overcrowded. The overall level of access and scope of a transit network should be aligned to actual demand, meeting service needs without sacrificing service quality.</p>	<p>FREIGHT</p> <p>5 Freight operators want to move goods from their origin to their destination as easily, quickly, and conveniently as possible. Trucks benefit from high, but not unsafe speeds, curb access or docks for easy loading and unloading, and overall safety throughout the traffic system.</p>	<p>EMERGENCY VEHICLES</p> <p>Emergency responders are responsible for attending to crimes, crashes, fires, and other dire scenarios as quickly as possible. They benefit from safety and predictability along their routes, with minimal conflicts with vehicles, bicyclists, or pedestrians, and direct curb access at their destinations.</p>

Source: National Association of City Transportation Officials. *Urban Street Design Guide*, "Performance Measures" <https://nacto.org/publication/urban-street-design-guide/design-controls/performance-measures>



4.0 ALTERNATIVES CONSIDERED BUT NOT ADVANCED

Several alternatives were proposed by members of the public or the Project Team that the Project Team discussed but ultimately decided not to advance in this analysis. These alternatives are identified here, with justification as to why they are not being studied further.

1. Shared Use (Bicycle and Pedestrian) Bypass of Hollow

Proposed by: Project Team

Description: Construct a shared-use path for bicyclists and pedestrians starting at Peterson Lane in the south and meeting North Williston Road north of the hollow. This would allow pedestrians and bicyclists to avoid safety risks along North Williston Road in the hollow.

Why Not Advanced: The cost and work associated with this project would far outweigh the benefits. A secondary reason is that people living in Williston Woods Village would not see any improvement in bicycle or pedestrian mobility.

2. Roadway Bypass of Hollow

Proposed by: Project Team

Description: Construct a new road segment for travelers on North Williston Road to bypass the hollow. Access to Williston Woods Road would still be available on the existing roadway through the hollow. A bypass road would make sense to have in place if new development is constructed between Chapman Lane and Fay Lane.

Why Not Advanced: Investing in this bypass would be too great a risk. New development between Chapman Lane and Fay Lane is possible but is not likely enough to construct a road at this time. If development does not come, the cost and work associated with this project would far outweigh the benefits. Even if the development does come, the cost of this project may be prohibitive.

3. Use Williston Woods emergency access as the primary access

Proposed by: Member of the Public

Description: Develop the existing emergency access from Williston Woods, via Old Stage Road, to become the primary access. Restrict access via North Williston Road for emergencies only.

Why Not Advanced: Williston Woods is privately owned; we cannot recommend that change. In addition, the current residents of Old Stage Road would likely resist the change.

5.0 IMPROVEMENTS FOR CONSIDERATION

This section identifies, describes, and evaluates **traffic calming measures**, **pedestrian crossing enhancements**, and **cross-section alternatives** considered for implementation along North Williston Road. These improvements aim to address the issues and concerns identified in Section 2.0 of this report. They have been modified based on public feedback from the December public meeting and a public comment period that was open through January 2018. 21 people/families provided feedback through email; all of them were residents along North Williston Road or on a street off it.

Recommendations for implementation of these improvements are in the following section (Section 6.0), which also addresses stormwater management, maintenance and upgrades, and the intersection at Mountain View Road.

5.1 | TRAFFIC CALMING MEASURES

Traffic calming aims to make streets more livable and safer for pedestrians, bicyclists, and motorists by either reducing the speed or volume of vehicular traffic. The following are traffic calming options that would be suitable on North Williston Road and aim to **reduce vehicle speeds**. Traffic calming measures can have significant positive impacts for relatively affordable costs, and if determined unsuccessful after a trial period, most can be removed or relocated without great consequence.

CURBED MEDIANS

Description/Benefits: Used as a traffic calming measure, curbed medians make driving lanes feel narrower. They force drivers to slow to deflect their path to pass through the length of the median. When installed at intersections, the curbed medians may also restrict certain turns or act as refuge islands for pedestrians when paired with crosswalks. The medians may be hardscaped with bricks, concrete, or asphalt, or landscaped. The size of the median should be designed relative to the context of the roadway; along North Williston Road, the median could be 10-feet wide and 100-feet long with approach tapers around 125 feet long.

Effectiveness: Speed reduction of 1 to 8 mph.

Cost: Approximately \$20,000 per installation.

FIGURE 5-1: CURBED MEDIANS IN DANVILLE, VT



Source: Google StreetView

Use on North Williston Road: Curbed medians were proposed on North Williston Road at Mountain View Road in the 2012 intersection scoping study. Mid-block medians may be suitable along straight sections of North Williston Road where drivers have long sight distances; they would prevent improper passing of cars and reduce vehicle speeds. Curbed medians should not be located in front of driveways.

Disadvantages/Limitations: Curbed medians may cause vehicles to infringe on bike lanes; they make plow operations more difficult; and they require a wider roadway and may impact right-of-way.

Public Feedback: Mostly positive.

Local Example: Mid-block medians were recently installed on Skunk Hollow Road in Jericho, a road similar to North Williston Road in its use, character, and context.

Proposed Advancement: **Advance.**

EDGE LINE RUMBLE STRIPS

Description/Benefits: Rumble strips are milled sections of pavement that alert drivers they are crossing into a part of the roadway they should not be entering without a high level of awareness. They are primarily intended to alert distracted, drowsy, or otherwise inattentive drivers who unintentionally stray from their lane.¹ Edge line rumble strips are placed on the painted edge of the shoulder to alert drivers of lane departures and to prevent drivers from running off the road. Gaps in segments of edge line rumble strips should be included for bicyclists to enter and exit, as well as at driveways. Note that edge line rumble strips are different from shoulder rumble strips, often used inside the shoulder on interstate highways.

Effectiveness: Edge line rumble strips can reduce run-off-road crashes by 33%.²

¹ FHWA, Technical Advisory T 5040.40, Revision 1 (November 7, 2011), https://safety.fhwa.dot.gov/roadway_dept/pavement/rumble_strips/t504040.

² CMF Clearinghouse, CMF ID 3394, cmfclearinghouse.org

Cost: Approximately \$5,000 per installed mile.

FIGURE 5-2: EDGE LINE RUMBLE STRIP



Source: Crossroads, <https://mntransportationresearch.org/2014/06/10/rumble-strips-vs-mumble-strips-noise-comparison-video/>

Use on North Williston Road: Edge line rumble strips could be installed on straight sections of North Williston Road north of Mountain View Road to deter vehicles from passing slowed or stopped left-turning vehicles. However, edge line rumble strips are effective for unintentional run-off road crashes but may not be effective when drivers are deliberately driving far into the shoulder.

Disadvantages/Limitations: Rumble strips should only be used where bicyclists have sufficient designated space (5-foot minimum); bicycling over the strips could cause bicyclists to lose control and put them in danger of crashes. Rumble strips also create noise when traversed by vehicles, which may affect neighborhood livability.

Public Feedback: Residents are concerned about the noise associated with rumble strips, particularly near adjacent houses and in the Hollow where the sound might reverberate.

Proposed Advancement: **Do not advance.**

CENTERLINE RUMBLE STRIPS

Description/Benefits: Centerline rumble strips are rumble strips placed across roadway center lines to deter cars from crossing into the opposing lane. Like edge line rumble strips, they are primarily meant for distracted and drowsy drivers.

Effectiveness: Centerline rumble strips can reduce head-on and sideswipe crashes by 37 percent.³

Cost: Approximately \$4,000 per installed mile.

³ CMF Clearinghouse, CMF ID 3355, cmfclearinghouse.org.



FIGURE 5-3: CENTERLINE RUMBLE STRIP



Source: Connecticut Department of Transportation, <http://www.ct.gov/dot/cwp/view.asp?a=3199&q=526532>

Use on North Williston Road: Centerline rumble strips would be appropriate in the Hollow of North Williston Road to deter vehicles from crossing the center lines when traveling along curves. Keeping vehicles in their lanes around curves may both prevent crashes and reduce speeds. Centerline rumble strips are expected to be more effective than edge line rumble strips in keeping vehicles in their lanes since drivers in the hollow are not making as conscious of a decision to float into the centerline as drivers on flat sections may be when passing other cars.

Disadvantages/Limitations: As with edge line rumble strips, there should be gaps in front of driveways and side streets. Rumble strips also create noise when traversed by vehicles, which may affect neighborhood livability.

Public Feedback: Residents are concerned about the noise associated with rumble strips, particularly near adjacent houses and in the Hollow where the sound might reverberate.

Proposed Advancement: **Advance.**

SPEED TABLES

Description/Benefits: Speed tables are raised areas of pavement (or other materials) with a flat top in the center, typically at least 22 feet long in total and 3-4 inches high. They are located between intersections as a mid-block measure. They can be built with a crosswalk over the flat top to make pedestrians more visible; with that combination, they are called raised crosswalks.

Effectiveness: Speed reduction of 4 to 11 mph. No crash reduction data is available for speed tables, but speed humps (similar) have been shown to reduce serious and minor injury crashes by 40-50 percent.⁴

⁴ CMF Clearinghouse, CMF IDs 132 and 134, cmfclearinghouse.org

Cost: Approximately \$4,000 per installation.

FIGURE 5-4: RAISED CROSSWALK IN SEATTLE, WA



Source: Seattle Greenways, <http://seattlegreenways.org/blog/2016/04/29/raise-the-crosswalks>

Use on North Williston Road: A series of speed tables would be appropriate along the flat, straight sections of North Williston Road, where a physical impediment may be necessary to slow down drivers. They must be spaced properly to keep vehicles moving at consistent speeds and should avoid being placed in front of houses; a 500-foot spacing would be appropriate along North Williston Road where possible.

Upgrading existing crosswalks along North Williston Road into raised crosswalks has been considered but is not recommended since the existing crosswalks are all located at the intersection of side streets.

Disadvantages/Limitations: Speed tables make plowing more difficult and can affect emergency vehicle response times by up to 3 seconds for firetrucks per table.⁵ Drainage must be paid careful attention to when the tables cross the entire roadway. They also create some noise when driven over.

Public Feedback: In feedback received through email, speed tables were the most commonly mentioned traffic calming measure. Of the 11 responses, seven were positive. A concern cited from people both in support and not in support of them was the noise associated with them.

Proposed Advancement: Advance.

RADAR SPEED FEEDBACK SIGNS

Description/Benefits: Radar speed feedback signs are dynamic signs that display an oncoming vehicle's speed. They are placed in conjunction with static speed limit signs so

⁵ Institute of Transportation Engineers, "Traffic Calming Measures - Speed Table", <https://www.ite.org/traffic/table.asp>

that drivers are alerted of their behavior and induced to slow down to reach the speed limit. Studies have shown these to be effective in speed reduction, though the reduction depends on the roadway context; they are most effective in urban and village contexts.⁶

Effectiveness: Speed reduction of 1 to 8 mph. These are most effective in urban/village environments where the context supports their message.

Cost: Approximately \$10,000 per installation.

FIGURE 5-5: RADAR SPEED FEEDBACK SIGN



Source: Richard Drdul, Creative Commons

Use on North Williston Road: There is currently one radar speed feedback sign on North Williston Road, located south of Mountain View Road facing northbound traffic, which should be appended with a static speed limit sign. An additional sign could be located across the street from this one, facing southbound traffic. Additional signs could also be in North Williston facing southbound traffic as part of a gateway treatment. These should not be located in the Hollow, where they may distract drivers taking sharp curves.

Disadvantages/Limitations: It is possible that these would become less effective over time, or that drivers may speed up to see how fast they can go. The latter can be remedied by not displaying speeds when exceeding the speed limit by a certain amount.

Public Feedback: All written feedback received was positive.

Proposed Advancement: **Advance.**

WARNING SIGNS WITH YELLOW FLASHING BEACON

Description/Benefits: A yellow flashing warning beacon in conjunction with signage gives an enhanced indication to drivers that they should drive carefully. These can be used for

⁶ FHWA, A Desktop Reference of Potential Effectiveness in Reducing Speed, July 2014, https://safety.fhwa.dot.gov/speedmgt/ref_mats/eng_count/2014/reducing_speed.cfm.

many purposes, such as ahead of school zones, traffic signals, curves in the road, and potential wildlife crossings. They can be linked to in-pavement sensors (or similar) so that they only flash if a certain speed is met or if queues are present.

Effectiveness: Speed reduction of 1 to 4 mph.

Cost: Approximately \$10,000 per installation.

FIGURE 5-6: WARNING SIGNS WITH YELLOW FLASHING BEACON FOR CURVES



Source: FHWA; left: <https://www.fhwa.dot.gov/publications/research/safety/15030/009.cfm>, right: https://safety.fhwa.dot.gov/roadway_dept/horcurves/fhwasa15084/ch4.cfm

Use on North Williston Road: A warning beacon would be suitable and most useful facing northbound traffic at Peterson Road to warn drivers of the upcoming steep curve in the Hollow. The beacon could be paired with a curve warning sign and an advisory speed sign (shown in Figure 5-7), to indicate the upcoming curve in the road and the speed limit.

FIGURE 5-7: ADVISORY SIGNS FOR CONSIDERATION



Source: *Manual on Uniform Traffic Control Devices (MUTCD)*

Disadvantages/Limitations: None identified.

Local Example: A flashing beacon is currently located on the northbound approach of North Williston Road ahead of the Mountain View Drive intersection; a vehicle-actuated warning sign is located at the intersection VT-30 and South St / Rice Willis Road in Castleton.



Public Feedback: There was not much feedback about a warning beacon, but those that did respond were mostly positive, and all public responses to increased signage in general were positive.

Proposed Advancement: **Advance.**

CHEVRON CURVE SIGN

Description/Benefits: Chevron curve signs (“Chevron Alignment” sign, W1-8) can be used on curves in the roadway to emphasize the presence of the curves. They are especially helpful when visibility is low, such as at night and with sun glare.

Effectiveness: Speed reduction of 0 to 2 mph; reduction in crashes by four to 16 percent and reduction in night-time crashes by 25 percent.

Cost: Approximately \$250 per sign.

FIGURE 5-8: CHEVRON CURVE SIGNS



Source: Texas Transportation Institute

Use on North Williston Road: Chevron curve signs would be suitable along curves in the Hollow where sight distance is limited.

Disadvantages/Limitations: None identified.

Public Feedback: There was not much feedback about these signs specifically, but those that did respond were mostly positive, and all public responses to increased signage in general were positive.

Proposed Advancement: **Advance.**

INTERSECTION WARNING SIGNS

Description/Benefits: Intersection warning signs are placed ahead of intersections to warn drivers that intersections are present and that vehicles may be turning or entering.

Effectiveness: No data available.

Cost: Approximately \$250 per sign.

FIGURE 5-9: INTERSECTION WARNING SIGN



Use on North Williston Road: An intersection warning sign could be placed ahead of Williston Woods Road for northbound and southbound traffic (two signs total). Seven crashes occurred at or near Williston Woods Road in the past five years, and this improvement may reduce that crash rate.

Disadvantages/Limitations: None identified.

Public Feedback: There was not much feedback about these signs specifically, but those that did respond were mostly positive, and all public responses to increased signage in general were positive. This specific suggestion was added in response to public input.

Proposed Advancement: **Advance.**

GATEWAY TREATMENTS

Description/Benefits: Gateway treatments mark a transition into a community or a slower-speed area. They may comprise traffic calming measures and/or placemaking features (such as a welcome sign and landscaping) that help drivers understand more about the community. Common gateway treatments include the use of curbing to narrow the roadway, special materials (such as brick), roundabouts, and signage with a literal or implied message to drive carefully.

Effectiveness: No data available.

Cost: Varies by the treatment.

FIGURE 5-10: GATEWAY SIGNAGE ON CURBED MEDIAN IN WESTWOOD, MA



Source: BETA Group

Use on North Williston Road: Three locations that may be appropriate places for gateway treatments have been identified:

- Facing southbound traffic just south of the Winooski River bridge, a sign saying “Entering Williston” could be installed. It could be combined with a speed limit sign or a sign with language such as “Traffic Calmed Corridor”. There is currently no sign identifying the Town to southbound drivers until south of the railroad.
- Facing southbound traffic between Fay Lane and the railroad, the existing “Welcome to Williston” sign could be upgraded and paired with a physical traffic calming measure. The existing sign could be made more visible by trimming foliage around it, raising it higher, and adding plantings that are maintained throughout the year. With greater investment, a curbed median could be installed to deflect traffic, and the sign could be placed on top of it. A speed table would be an appropriate alternative to a median here.
- Facing northbound traffic just north of Fontaine Lane, where drivers may begin to pick up speed after exiting the hollow, a gateway treatment could include a “Welcome to Our Neighborhood, Please Drive Carefully” (or similar) sign alongside either a speed table or radar speed feedback sign. The benefit of a speed table here is that it would calm traffic traveling in both directions - both those entering North Williston and those entering the hollow.

Disadvantages/Limitations: None identified.

Public Feedback: There were no specific responses to a gateway treatment, but many residents talked about how close-knit the North Williston neighborhood is and their wish for slower traffic, which a gateway treatment would support. Several people also called for identification of North Williston’s historic significance.

Proposed Advancement: **Advance.**

BANNERS (PLACEMAKING)

Description/Benefits: According to Project for Public Spaces, placemaking “capitalizes on a local community’s assets, inspiration, and potential, and it results in the creation of quality public spaces that contribute to people’s health, happiness, and wellbeing.” Using features such as pedestrian-scale lighting, public art, signage, and landscaping, it strengthens communities and indicates to visitors and passersby that they are traveling through a community that is cared about. Because of the latter, placemaking can have a traffic calming effect; drivers will have indication that complex roadside activity may be present. (Gateway treatments, discussed earlier, are also a form of placemaking.)

Banners are a literal and noticeable form of placemaking. They are typically placed on light posts in urban and village settings and have the name of the community on them using the community’s branding and logo, if available. Sometimes, a local business will sponsor the cost of a banner and have their name represented on one banner.

Effectiveness: No data available; they may also have benefits beyond potential traffic calming.

Cost: Less than \$100 per banner installation. Local businesses could sponsor a banner, too.

FIGURE 5-11: BANNER ON UTILITY POLE, RURAL HALL, NC



Source: Town of Rural Hall, <http://www.ruralhall.govoffice.com/>

Use on North Williston Road: There are no light posts on North Williston Road, but if permitted on utility poles, banners could identify Williston Village and North Williston Historic Districts, display images reflecting the rural character of the area, or show images of pedestrians and bicyclists along the roadway.



Disadvantages/Limitations: Permission would need to be obtained from Green Mountain Power. In addition, banners may only make sense to design and create if there is a Town-wide logo/identity.

Public Feedback: The two responses regarding banners were positive, and as mentioned above, many residents have talked about how close-knit the North Williston neighborhood is and want the roadway to feel more like a neighborhood than just a commuting route.

Proposed Advancement: Advance if community supports and takes lead.

SUMMARY OF TRAFFIC CALMING MEASURES

The effectiveness, public feedback, and cost estimates associated with each considered traffic calming measures are shown in Table 5-1. Edge line rumble strips are crossed out to show that they have been removed from consideration.

TABLE 5-1: SUMMARY MATRIX OF TRAFFIC CALMING MEASURES

	Approximate Speed Reduction	Crash Reduction	Public Feedback	Cost Estimate
<i>Curbed Medians</i>	1 to 8 mph	No data available	Positive	\$20,000 each
<i>Edge Line Rumble Strips</i> (not advanced)	None	Reduce run-off road crashes by 33%	Negative; noise concerns	\$5,000 / mile
<i>Centerline Rumble Strips</i>	None	Reduce head-on and sideswipe crashes by 37%	Negative; noise concerns	\$4,000 / mile
<i>Speed Tables</i>	4 to 11 mph	No data available, but data for speed humps show significant reduction	Positive	\$4,000 each
<i>Radar Speed Feedback Sign</i>	1 to 8 mph	No data available	Positive	\$10,000 each
<i>Warning Beacons</i>	1 to 4 mph	No data available	Positive for improved signage	\$10,000 each
<i>Chevron Curve Signs</i>	0 to 2 mph	4-16% overall; 25% for nighttime crashes	Positive for improved signage	\$250 each
<i>Intersection Warning Signs</i>	No data available	No data available	Positive for improved signage	\$250 each
<i>Gateway Treatments</i>	Depends on treatment(s)	Depends on treatment(s)	Positive	Depends on treatment(s)
<i>Banners (Placemaking)</i>	No data available	No data available	Positive	Less than \$100 each

5.2 | ENHANCED PEDESTRIAN CROSSINGS

Existing crosswalks can be enhanced to increase pedestrian visibility and to increase driver awareness of and conformance to pedestrians' rights of way. Typical forms of enhancements include raised crosswalks (as discussed earlier), pedestrian activated beacons, refuge islands, curb extensions, advance yield pavement markings, and traditional in-road signage.

North Williston Road does not meet VTrans' threshold for pedestrian crossing treatments beyond an in-street sign (shown to the right) due to its speed limit, volume, and number of lanes,⁷ but the threshold is flexible within reason. In response to requests from the public over the course of this study to increase pedestrian safety, pedestrian beacons are a form of enhancement offered for consideration at existing crosswalks.



PEDESTRIAN BEACONS

Description/Benefits: Pedestrian beacons are warning lights placed at each end of a crosswalk that pedestrians can activate with a push button when they cross the road. They alert drivers that a pedestrian is about to cross or actively crossing. Yellow flashing beacons and LED enhanced crossing signs (Figure 5-12) are two available types of beacons. Rectangular rapid flashing beacons were suggested in an earlier draft of this report as an effective crossing enhancement, but the FHWA has since rescinded its approval of new installations due to their patent status.

FIGURE 5-12: TYPES OF PEDESTRIAN BEACONS: LED BEACONS (LEFT) AND IN-SIGN LED ENHANCEMENT (RIGHT)



Source: Left: <http://k-ksystems.com/>; Right: <https://www.accuform.com/>

Effectiveness: LED-enhanced STOP signs were found to reduce the number of vehicles not fully stopping by 29 percent and approach speeds by an average of 2.7 mph.⁸

⁷ Vermont Agency of Transportation, *Guidelines for Pedestrian Crossing Treatments*, January 2015, http://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/Crossing%20Treatment%20Guidelines%20January_2015.pdf.

⁸ Federal Highway Administration, *Embedded LEDs in Signs (FHWA-SA-09-006)*, May 2009, https://safety.fhwa.dot.gov/intersection/conventional/unsignalized/tech_sum/fhwas09006.



Cost: \$15,000 per installed pair

Use on North Williston Road: RRFBs are currently located on North Williston Road just south of the Mountain View Road intersection. Additional locations to consider for pedestrian beacons may include Fairway Drive, Tamarack Drive, Lefebvre Lane, and the Williston Federated Church. Comments from the public showed the crosswalk at Fairway Drive to be a high priority for pedestrian crossing improvements.

Disadvantages/Limitations: Overuse of beacons could decrease drivers' likelihood to stop for pedestrians at all pedestrian crossings, with or without beacons. They should only be used at critical locations.

Public Feedback: Most responses were positive.

Proposed Advancement: **Advance.** Install yellow flashing beacons or LED enhanced crossing signs on either side of the crosswalks at Fairway Drive, Tamarack Drive, Lefebvre Lane, and at the Williston Federated Church. The installations may be phased and installed at the request of residents.

5.3 | CROSS-SECTION ALTERNATIVES

Because of differences in development, terrain, and roadside features of North Williston Road between the residential section south of Mountain View Road and the rest of the road, cross-section alternatives have been split into two segments: south of Mountain View Road (the residential section), and north of Mountain View Road. The two segments have different issues to address, and they have different limitations for potential improvements.

Each of the alternatives in consideration propose widening the existing cross-section, either to the roadway, adjacent to the roadway with a path, or both. The localized constraints along the roadway imply that there may be impacts due to the implementation of these alternatives. These include impacts to steep slope embankments, rights of way, existing utility poles, trees, landscaping, and drainage systems. The extent of these impacts is quantified on the evaluation matrix in Section 6.0.

None of the alternatives in consideration would preclude or impact the implementation of the past preferred alternatives identified in their respective intersection scoping studies.

Stormwater Management

Any cross-section alternative that disturbs more than one acre of land will be subject to stormwater construction and stormwater operational permits. These permits outline specific stormwater treatment best management practices (BMPs) to address stormwater impacts due to construction activities, new impervious area, and the associated stormwater runoff. These BMPs may result in considerable impacts. It is assumed that all alternatives will result in implementation of these BMPs.

SOUTH OF MOUNTAIN VIEW ROAD

There are two alternatives for consideration south of Mountain View Road: Alternative 0 (Do nothing) and Alternative 1 (Widen sidewalk to create 10-foot path).

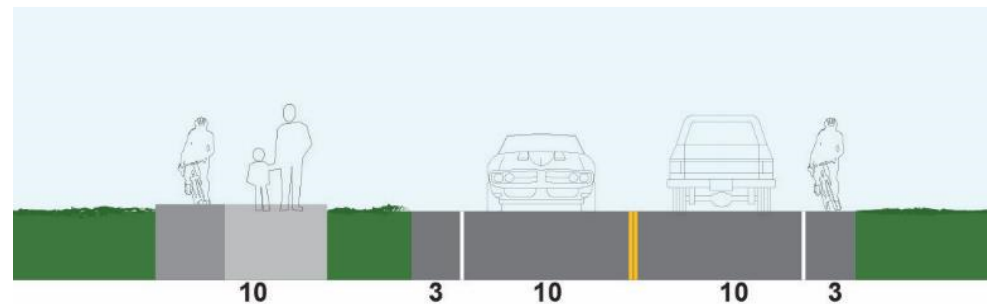
Alternative 0: Do Nothing

The existing cross-section of North Williston Road south of Mountain View Road has ten-foot travel lanes, three-foot shoulders, and a six-foot asphalt sidewalk on the west side. With these dimensions, every road user group has reasonably safe and comfortable facilities, even if the sidewalk and shoulder are not wide enough to be a true shared-use path and bike lanes, respectively. The sidewalk is used as a shared-use path by people of all ages walking, jogging, and riding bicycles.

Alternative 1: Widen Sidewalk to Create 10-Foot Path

True shared use paths are at least 10 feet wide (or 8 feet wide in constrained areas) so people can comfortably walk, jog, and bicycle alongside each other and past each other. There are many challenges to widening the sidewalk to 10 feet, but if the cross-section south of Mountain View Road was to be widened, a wider path (as opposed to bike lanes, for example) would have the greatest positive impact. The additional 2 to 4 feet would be installed on the west side of the path or on the east side (in the green belt) when constrained on the west side.

FIGURE 5-13: CROSS SECTION OF ALTERNATIVE 1 SOUTH OF MOUNTAIN VIEW ROAD



Source: RSG

The existing sidewalk is shown in light gray, and the proposed widening is shown in a darker shade of gray.

The cross-section of the paved roadway would remain the same. The travel lanes are already at the 10-foot minimum for truck and bus use, and the three-foot shoulders give road bicyclists a basic level of comfort. In addition, because of the density of the residential section, drivers are generally more aware of bicyclists than they would be in rural areas.

Challenges to widening the path include wetlands and steep slopes, large trees, fences, and right-of-way limitations; these features are why the path was constructed at its current width. To avoid impacting some of these areas, the path would need to either be widened to the east side (in the green belt) or have a constrained width in these areas, neither of which are ideal. Fortunately, utility poles in the residential section are on the opposite side of the road as the existing path.

Public Feedback

South of Mountain View Road, the public prefers to leave the roadway as is (**Alternative 0**) by a large margin. The existing path and roadway shoulder offer sufficient options for



pedestrians, bicyclists, and families in the neighborhood and avoids impacts to front yards, trees, and more. It was designed at six-feet wide because of these potential impacts.

NORTH OF MOUNTAIN VIEW ROAD

Despite variations in the roadway's geometry and physical constraints north of Mountain View Road, this entire section is proposed to have a consistent cross-section. One exception is the separation between the road and the shared use path if a path is constructed, due to terrain, utility pole, or drainage limitations. All alternatives will extend north to the Winooski River bridge. For alternatives with a path, the path will be on the west side of the road to be consistent with the sidewalk south of Mountain View Road, and serving the greatest number of residents, particularly at Williston Woods.

There are four alternatives for consideration north of Mountain View Road, as shown in Figure 5-14.

FIGURE 5-14: CROSS-SECTION ALTERNATIVES NORTH OF MOUNTAIN VIEW ROAD



Source: RSG

Alternative 0: Do Nothing

The existing cross-section of North Williston Road north of Mountain View Road has eleven-foot travel lanes, one-foot shoulders, and no bicycle or pedestrian facility. The Do-Nothing Alternative proposes no improvements to roadway resilience.

Alternative 1: Widen Road for Bike Lanes

Alternative 1, illustrated in Figure 5-15 **Error! Reference source not found.**, includes five-foot bike lanes or shoulders intended for use by people riding bicycles. The roadway would need to be widened by six feet in total, and the travel lanes would be reduced from 11 feet to 10 feet. Pedestrians would not have designated facilities. This alternative could first be implemented with just shoulder striping on each side, and bike lane symbols and signage could be added later depending on the outcome of the shoulders.

This is the lowest-cost and least impactful alternative. However, there are several areas along the corridor where this alternative would impact roadside features or need to be narrowed to avoid those features. A possible downside to this alternative is that the wider overall roadway may encourage greater motor vehicle speeds and improper passing.

FIGURE 5-15: ALTERNATIVE 1 NORTH OF MOUNTAIN VIEW ROAD



Source: RSG

Alternative 2: Construct a Shared-Use Path

Alternative 2, illustrated **Error! Reference source not found.**, includes a separated 10-foot shared-use path intended for use by all non-motorized road users who do not want to travel on the roadway. The roadway would not be widened, but travel lanes would be reduced from 11 feet to 10 feet to be consistent with the roadway south of Mountain View Road, to encourage slower traffic, and to give on-road bicyclists slightly more space.

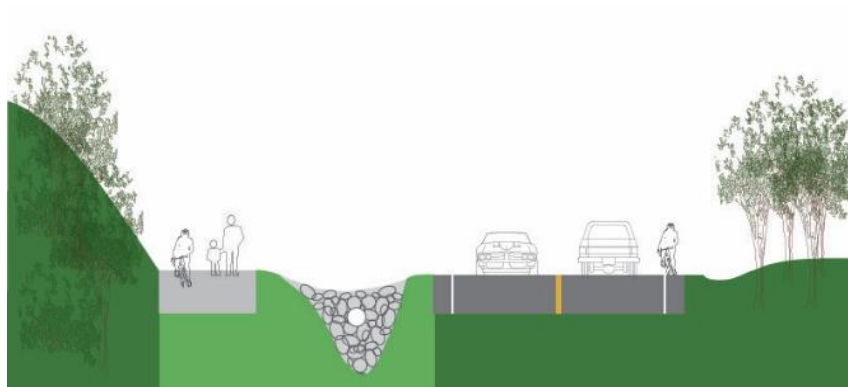
FIGURE 5-16: ALTERNATIVE 2 NORTH OF MOUNTAIN VIEW ROAD



Source: RSG

The distance between the path and the roadway would change depending on the road segment. The typical condition would be a five-foot green strip, on flat and straight segments of the roadway, but the green strip may be widened or narrowed to avoid impacting certain localized roadside features (see Figure 5-17).

FIGURE 5-17: SCHEMATIC CROSS-SECTION OF ALTERNATIVE 2 IN THE HOLLOW, LOOKING NORTH



Source: RSG

Why a shared use path north of Mountain View Road?

A shared use path can benefit a large variety of users, and it would be a particularly appropriate facility for North Williston Road. Because of the width, smooth surface, and separation from traffic, shared use paths can be used by:

- *Pedestrians, including joggers/runners*
- *Bicyclists who don't feel comfortable riding on the road, whether they are commuting or recreational riders*
- *Groups of people walking, or walking and biking together*
- *Families with strollers*
- *Children accessing school, visiting neighbors' houses, or exploring their neighborhood, whether on foot or bicycle*

On North Williston Road, residents along the roadway might enjoy a path for recreation or to visit neighbors. While the section north of Mountain View Road is rural, Williston Woods Village is home to many senior residents who could take advantage of such a facility. The path would also be accessible to the denser part of the roadway south of Mountain View Road. In addition to residents, the path would act as a spur off the Cross Vermont Trail.

Accessible from the path would be views across farmlands, the woods of the hollow, the fishing spot and seasonal farm stand near the bridge, and homes.

Alternative 3: Bike Lanes and a Shared-Use Path

Alternative 3, illustrated in Figure 5-18, includes five-foot bike lanes or shoulders for road bicyclists and a separated 10-foot shared use path for all non-motorized road users who do not want to travel on the roadway. While a shared use path can accommodate pedestrians and bicyclists, many bicyclists prefer riding on the road to keep their speed up and not impede or be impeded by slower travelers on paths.

FIGURE 5-18: ALTERNATIVE 3 NORTH OF MOUNTAIN VIEW ROAD



Source: RSG



This alternative provides a high level of comfort for all road user groups, but it is the highest cost and has the most impacts to roadside features; it is a combination of the benefits and the disadvantages of Alternatives 1 and 2.

Public Feedback

North of Mountain View Road, residents have mixed feelings between Alternative 1 and Alternative 2.

Creating a shared-use path (**Alternative 2**) is widely supported as a means of providing sufficient facilities for people walking and bicycling along the road, but there are concerns that is not worth the investment for the number of people who would use it.

As for widening the roadway to add bike lanes/shoulders (**Alternative 1**), an equal number of people support and oppose this. One of the concerns is that a wider roadway, even if striped for shoulders or bike lanes, would allow vehicles to drive faster.

Alternative 3 (both bike lanes and a path) was not mentioned in any emailed comments; people seem to view bike lanes and path in this area as mutually exclusive due to the costs and challenges associated with their individual installations.

Three respondents also suggested installing a marked crosswalk across North Williston Road at Fay Lane, even if a path is not installed. They would appreciate a designated crossing in this area to safely visit neighbors and walk around their neighborhood.

EVALUATION SUMMARY OF CROSS-SECTION ALTERNATIVES

The dimensions, impacts, cost, and public support for each cross-section alternative are shown in **Error! Reference source not found.**

5.4 | STORMWATER MANAGEMENT STRATEGIES

Two strategies to improve stormwater management are to replace small culverts crossing the road with ones that meet VTrans' minimum size and to address existing erosion areas. These both apply to specific locations; as described earlier, stormwater management BMPs are recommended for entire segments of the roadway. The implementation of the BMPs depends on the cross section, as discussed in the previous section.

REPLACE UNDERSIZED CULVERTS

Replace culverts smaller less than 18 inches in diameter to be 18 inches or greater. 18 inches the VTrans' minimum width for culverts crossing roads, and five culverts crossing North Williston Road are 15 inches wide. There is also one culvert that is 18 inches wide, and the remaining eight culverts are 24 inches wide.

ADDRESS EROSION AREAS

Four erosion areas along North Williston Road, based on the Town of Williston's Town-Wide Watershed Improvement Plan (February 28, 2013), were summarized in the Existing Conditions assessment for this study. Based on that plan, location WR-05 is the only

TABLE 5-2: SUMMARY MATRIX OF CROSS-SECTION ALTERNATIVES

	Metric	South of Mountain View Road		North of Mountain View Road			
		0	1	0	1	2	3
		No Build	Widen Path	No Build	Widen Road, No Path	New Path, Existing Road	New Path, Widen Road
Public Support							
Public Support	Positive:Negative	n/a	1:7	n/a	2:2	5:3	0:0
Cross-Section Elements							
Travel Lanes	Width, Number	Two 10-foot Lanes	Two 10-foot Lanes	Two 11-foot lanes	Two 10-foot lanes	Two 10-foot lanes	Two 10-foot lanes
On-Road Bicycle Facilities	Yes/No	3-foot shoulders	3-foot shoulders	1-foot shoulders	Yes	2-foot shoulders	Yes
Total Pavement Widening	Distance	0 ft	0 ft	0 ft	6 ft	0 ft	6 ft
New Asphalt Area	Acres	0.0	0.42	0.0	1.3	2.1	3.3
Shared Use Path	Yes/No	6-ft path	Yes; 10 ft	No	No	Yes; 10 ft	Yes; 10 ft
Total Cross-Section (typical)	Distance	37	41	24	30	39	45
Impacts							
Right of Way	Each	0	16	0	0	16	23
Large Specimen Trees ¹	Number	0	25	0	1	30	30
Utility Poles	Number	0	2	0	9	3	13
Stone walls and fences	Length (LF)	0	420	0	100	50	100
Clearing / Slope Impacts	Area (1000 SF)	0	0	0	0	23	28
Stream / Ditching Impacts	Length (LF)	0	0	0	6600	3300	6600
Cost							
Cost Estimate ²	(Range, \$)	\$0	\$450,000 - \$680,000	\$0	\$1.5 - 2.4 million	\$3 - 4.9 million	\$3.9 - 6.3 million
Permits							
Act 250	Yes/No	No	No	No	No	No	No
Stormwater Construction Permit	Yes/No	No	No	No	Yes	Yes	Yes
Stormwater Operational Permit	Yes/No	No	No	No	Yes	Yes	Yes
NEPA Category	Varies	N/A	CE	N/A	CE	CE	CE

¹ - Does not include wholesale clearing of trees in wooded sections

² - Order of Magnitude Cost. Does not include costs associated with Right-of-Way

location with an impact to public infrastructure. At this location, erosion is occurring on both sides of North Williston Road near the intersection with Fontaine Lane, due in part to heavy weight vehicles turning in and out.

One method to prevent this issue from occurring after roadway improvements is to use high-strength pavement at the intersection of North Williston Road with Fontaine Lane. Coupled with slope and soil stabilization techniques, the localized erosion at this location may be mitigated.

The ditches along North Williston Road in the Hollow have been identified as susceptible to erosion during storm events. The existing ditches currently require regular maintenance and armoring to prevent washouts; reconstruction of the ditches to manage the stormwater demand is included in the cross-section alternatives discussed in the next section.

FIGURE 5-19: CULVERTS CROSSING NORTH WILLISTON ROAD; LOCATION OF EROSION SITE WR-05 NEAR NORTH WILLISTON ROAD

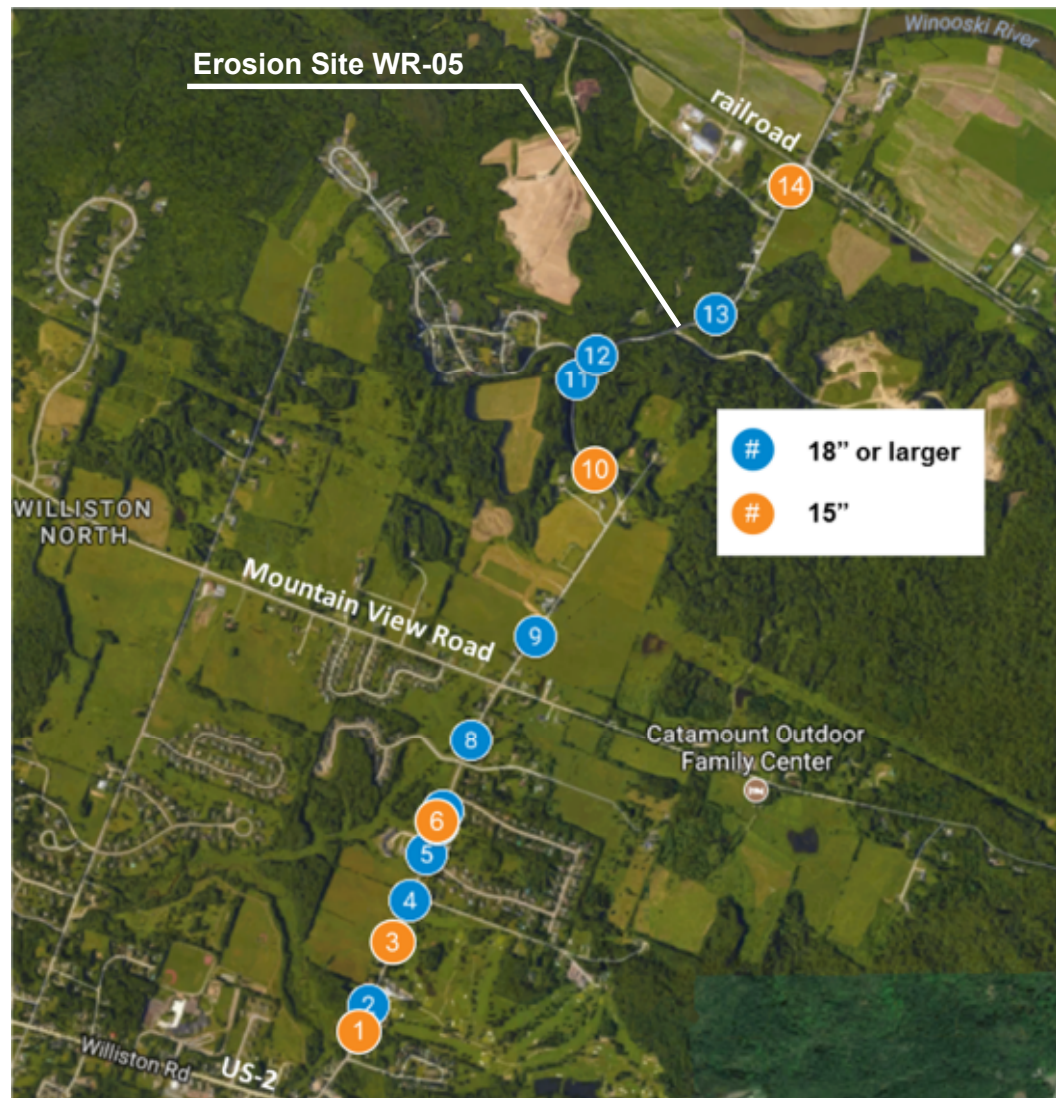


Image source: Google Satellite. Data source: Vermont Gas and VTculverts.org. Graphic source: RSG

5.5 | MAINTENANCE AND UPGRADES

The following are low-cost maintenance measures that may enhance accessibility and safety of the road for all modes. Investment in these features also suggests to through-traffic that the community is mindful about the roadway and its varied users.

- All existing signs along the study corridor should be checked for visibility and conformance to MUTCD standards and fixed or replaced as needed. Observed issues include signs sitting low in the ground, signs without retroreflective backgrounds, and signs blocked from view by overgrown foliage.
- Repaint edge lines and crosswalks when they begin to fade.

- Maintain shoulders and bike lanes to be free of gravel and debris.
- Maintain drainage features, such as catch basin sediment cleaning, ditch debris removal, and tree trimming.

5.6 | MOUNTAIN VIEW ROAD INTERSECTION

Many members of the public have raised concerns over safety and traffic flow at the intersection of North Williston Road, Mountain View Road, and Governor Chittenden Road. In particular, eastbound vehicles on Mountain View Road must wait in long queues during peak hours and have a difficult time turning onto North Williston Road once reaching it. Many residents have requested an all-way stop to address these concerns.

This intersection was studied in a scoping study in 2012, where six alternatives were reviewed in detail, including an all-way stop. At that time, an all-way stop was not recommended. The volumes and crashes did not warrant it, and safety was projected to worsen; stop signs at this location on North Williston Road could increase rear-end crashes and may encourage disobedience to the stop signs. The Selectboard chose to advance a combination of safety and traffic calming measures, which have been partially implemented since then.

At the time of the 2012 scoping study, there had been 18 crashes at Mountain View Road in the previous five years (2006 to 2010). In the previous five years leading to present day (2012 to 2017), there have been 11 crashes at Mountain View Road. This is a reduction of 40 percent.

OPTIONS

- **Conduct a 12-hour turning movement count to determine if an all-way stop is now warranted.** The most recent turning movement count at Mountain View Road was in 2009; the 2012 study had adjusted volumes from that count based on available data from nearby automatic traffic counters. Volumes from nearby traffic counters were reviewed in this study to understand traffic changes in the past five to eight years (to project growth from the last traffic count and the 2012 study), but different traffic counters show varying patterns, so accurately estimating the area's growth rate is not possible with the available data.
- **Implement alternatives from the 2012 scoping study that the Selectboard approved of at that time.** Medians on North Williston Road at the Mountain View Road intersection, discussed in this report, are one of those alternatives.
- **Consider revisiting alternatives from the 2012 scoping study that were determined to have a positive impact but were not approved at the time.** Alternatives with positive outcomes but not approved by the Selectboard at the time include a roundabout and an additional approach lane on Mountain View Road. These could be revisited if there are still issues at this intersection after implementing the approved alternatives.

Comment:			
<p>Thank you also for the comprehensive draft report. It is very well done and presents exciting prospects for making North Williston a more livable and safe community.</p> <p>1. Bike Paths, etc. - While I would absolutely love to have a shared use path all the way from the river to Williston village, it does not seem feasible, given the costs, construction obstacles, and rights of way necessary. Bike lanes seem more feasible and sensible from the River to Petersen Lane. At that point, the shared use path from the "residential" section could connect bike lane(s) to the shared use path via some form. They could also connect at Mountainview, if the shared use path cannot continue through the rural section of north williston road. If bike lanes were introduced, I would want to see rumble strips on the bike lane lines and center lines wherever they are not in front of residential structures.</p> <p>2. Traffic Calming Measures - these are of the utmost importance to me, as I am the homeowner with the one blind driveway in the hollow. Regardless, I know all of my neighbors agree that traffic calming cannot come soon enough. From those who have lived here for 10-15 years, they say the traffic has increased multiple fold, as have accidents and unsafe driving. I will review my thoughts in turn:</p> <p>a. I fully agree that North Williston needs the additional signage, speed tables, and medians listed on Page 16 of the report.</p> <p>b. I prefer to see the speed table near Fay Lane moved south to the other side of the train tracks, or have an added speed table. People tend to speed up after the tracks as they head into the hollow because it is a steep hill. This needs to be stopped.</p> <p>c. Alternatively, if speed tables would cause additional noise or cannot be placed in that area because of the homes, the speed feedback signs should be moved south towards the hollow. If that wouldn't work, we need some form of speed mitigation/traffic calming north of Fay Lane, but south of Fontaine Lane that would not cause disruption to homeowners. Perhaps speed feedback signs that turn off at night (less light pollution)</p> <p>d. In addition, the town should note the historic nature of North Williston and create signs on telephone polls and otherwise, letting drivers know they are going through an historic village community. This would have the added benefit of beautifying and solidifying the community - something we all already strive to do together. The signs could also include "drive like your kids live here" signs too.</p> <p>e. between Fontaine Lane and Williston Woods rd, I believe a curbed median should be added. This would further reduce speed coming down into the hollow, much greater than just have a rumble strip south of williston woods rd. It would also beautify the area, as flowers or plants could be installed. There are no homes along that stretch, so this would be an ideal placement, despite the slight curve in the road.</p> <p>f. At Mountainview Rd intersection, a roundabout seems a bit complicated for the area. I would prefer a four-way stop, or blinking red stop lights only for rush hour times. A median leading into and out of the intersection could also be a good idea to ensure people slow down. It can be difficult to understand the speed of drivers when trying to turn onto North Williston.</p>			

g. If bike lanes are added, it would be great to have a cross-walk (or **blinking pedestrian sign**) installed at **Fay Lane** so crossing is an option somewhere in that area. It would also help connect the community to the trails in the area.

I think a **"no jake brakes" sign** should be installed just after Fontaine Lane heading north. Trucks routinely speed down NW rd, then use loud jake brakes to slow their vehicles to turn onto Fay or Chapman, or for some other reason (school bus stopped in morning, etc.). This could also ensure that large trucks do not speed.

Thank you for the opportunity to comment. I hope the feedback is helpful. I look forward to seeing the final report and advocating for the adoption of traffic calming measures as quickly as possible.

Comment:			
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Likes the RRFB crosswalk at Mountain View Road. Would this be possible at Fairway and Tamarack intersections?

Increase safety when crossing Williston Road.

Likes the sidewalks the width they are. Seems to work fine from what she's seen. Wouldn't like to see more asphalt and concrete via the widening of the roadway or existing sidewalk.

Thinks the **speed limit** should be 30 mph vs the existing 35 mph

River Road speed limit is 25 mph in Essex Junction.

Need more **police presence.**

Comment:			
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I believe that the intersection at the end of Mountain View and North Williston Road is very dangerous. I believe it is as dangerous as the intersection of Oak Hill and Rte 2 had been before a 4- way stop had been added. This signage has prevented accidents from occurring at this previously dangerous intersection. I believe that a **4 way stop at the end of Mountain View** would make this very dangerous intersection much safer. While the Oak Hill intersection does get backed up at high traffic times, traffic still moves and most of us avoid it during these busy times when necessary. On a daily basis, I must turn left onto N. Williston Rd and must say, it is often quite scary.

I also travel Skunk Hollow and through Jericho Center each day. **Speed tables** have been installed in both of these areas, and I believe they have successfully slowed down motorists. The town of Huntington has also installed speed tables, and again, it seems they have slowed down motorists. I don't believe **rumble strips** would be effective, and I believe they would also be highly distressing to those residents who live along the road. I also believe that **islands** strategically placed would not slow down traffic, would be a hazard in bad weather and a danger to bicyclists.

Finally, the hill section of N. Williston is treacherous in bad weather; I sincerely hope that you

do nothing to make it more dangerous in bad weather. Speed bumps or anything else on that bad hill would I believe be a danger to the motorists.

While I agree a **bicycle path** would be helpful as cyclists report is as a very scary section, I'm not sure how that would happen. There does not seem to be much shoulder or room for a path. If a path is installed, I certainly hope that it is not paved but a gravel path.

I hope my input has been helpful. Please don't hesitate to contact me any questions.

Comment:			
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Regarding potential changes to the **'recreation path'**, I feel the town's decision should be to make no further changes. Adequate input regarding pedestrian and biking needs and concerns were obtained when the original recreation path was proposed and built. Residents views were heard than and circumstances have not changed since to warrant any changes to the recreation path.

Short of finding a way to minimize transient pass-through traffic, my concerns regarding traffic revolve around speed and safety. **Speed tables** and **blinking pedestrian lights** at key crosswalks would be a positive addition. Additional reasonable costs improvements to the Mt View/Gov Chittenden intersection are needed to reduce speed and allow safe entry/exit/turns.

Thank you for the opportunity to voice my opinion.

Comment:			
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1. Traffic Calming Enhancements:

I believe that **speed tables** at appropriate intervals is the best alternative. They do slow traffic and are not a serious deterrent for emergency vehicles and snowplows. I use Skunk Hollow Road frequently and they seem to work effectively.

Regarding the other alternatives, my experience with **curbed medians** is that they actually increase the danger by motorists speeding around them. **Rumble strips** will annoy nearby residents and I do not think they abate speeding. Perhaps a **midline rumble strip through the hollow** would be useful to keep vehicles in lanes, and there are no residents nearby in that stretch of road.

Additional **curve signs** with speed limits in the hollow region would help drivers not familiar with the road, particularly at the top curve. I do not think **beacons** are warranted.

2. Cross Section Alternatives:

A. South of Old Stage Road:

Do nothing. The current path is used a lot and seems adequate. I bike it as well as walk it and I see no reason to make changes.

B. North of Old Stage Road

I would like to feel safe walking or biking this section of road. A new **multi-use path** separate from the traffic lanes would be ideal. However the proposed costs are very high. Since there is not a loop nor businesses in North Williston Village as destinations, I think the pedestrian traffic will continue to be minimal. Hence making the **road safer for bicyclists** should be the major goal. This could be accomplished by widening the road and is my choice for road alterations due to the costs of the path alternatives.

Comment:			
<ol style="list-style-type: none"> 1. We have 4 very old maple trees in the front of our property which I believe to be so close to the road that any sort of bike/walk path would severely damage the health of the trees. And if the plan is to keep the proposed path on the west side of the road, then it will impact the trees. Please consider this as the trees are very old and it would be a shame to have this project end their life sooner rather than later. 2. Having lived on North Williston Road for near 25 years, and being fairly observant on the use of the current bike/walk path on the area closer to the village, I usually see the more hard-core cyclists NOT use the bike path. I would expect the same behavior if in fact the path was extended from the Mountain View intersection down through the hollow. Another important aspect to note of the proposed bike path is that the road way from the hollow to the cemetery is very steep. As a runner and biker myself (well I am sort of in recent retirement from those activities) I have run and biked that hill often. It is hard for me to fathom small children or the "over 55" residents generally going out for a stroll or bike up the hill. So I think it is important to consider the projected use of the path before planning and/or expending the funds for that aspect of the project. 3. An outside the box idea might be to create a curve in the roadway in the "rural" area. The land to the east in the "rural" area belongs to the state and I believe was to be used as wetland mitigation for the Circ Highway. Maybe a creative way to calm traffic and reduce the excessive speeds on the current straightaway is to curve the road out to the east and create some sort of a bend in the road. 4. I am not in favor of rumble strips as they make too much noise. I would support a "test" Speed Table in the area by the cemetery, given that it is the furthest away from most houses and can be removed if it does not work. <p>Thanks for allowing me to provide some input.</p>			

Comment:			
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I enjoyed the North Williston Road planning presentation and meeting on December 20th at the Williston Select board meeting.

I am writing to inform you that I do not want to see **rumble strips, speed humps or speed tables** installed on North Williston Road anywhere near my property. I have over 500 feet of road front exposure and I am opposed to any traffic calming solution that increases road noise.

The road noise on our property is bad. Rumble strips and speed humps will only exacerbate the problem and decrease livability.

I have expanded upon my reasoning below.

Currently my family is subjected to the downshifting, engine braking and acceleration of local traffic that wakes us up throughout the sleeping hours. The summer especially, the dump truck traffic is constant and relentless. The current road noise is so bad that we cannot sleep with our windows open and can barely sleep past 6am with the windows closed. The road noise pollution reduces property values and quality of life. The dump trucks from the summer construction season are not the whole problem. There are a slew of loud vehicles, motorcycles and radios. My 500+ feet of road frontage allows us to hear the vehicles race through the curves and then accelerate heavily upon exiting. The northbound traffic is no quieter as they brake hard to enter and then accelerate hard into the gully. I am already concerned about the noise pollution on North Williston Road and believe adding rumble strips will only serve to exacerbate the noise problem and not calm traffic patterns.

Rumble strips: I have driven many roads that have rumble strips. I occasionally touch one of the rumble strips while going around sharp curves. I try to avoid contact, but sometimes it happens. I can also hear the other drivers in front or behind me make contact. Contact happens even with the best drivers behind the wheel. My property borders one of the sharpest curves on North Williston Road. It is my view that the addition of rumble strips will only serve to increase noise pollution and depress real estate values and decrease local livability. Personally, I do not believe rumble strips will calm traffic.

Speed Humps: I understand the science behind this traffic technology. However, my concern here is the implementation. The noise pollution associated with my property is already terrible. A steady line of dump trucks begins at 6am Monday - Saturday. Northbound traffic applies heavy engine braking when they approach the humps. Southbound traffic accelerates with a heavy foot entering and again exiting the curve. Every pothole, bump and rock in the road causes unsecured dump gates to slap with a bang, dragging chains to clang, and suspensions to squeak. Not only will the bump increase ambient truck noise, the engine braking leading into the bump and heavy handed acceleration exiting the bump will double the current noise pollution.

If we exclude the dump trucks from the conversation, this road is still heavily used for cars and trucks. Each vehicle accelerates hard upon exiting the curve. Every vehicle will make additional noise through this secondary acceleration point exiting the speed table. Many vehicles are loaded with trash headed to the dump, or they are laden with stuffs purchased at the garden center or home supply stores. Each bump already kicks out enough trash to fill our

garbage canister every few weeks. If the addition of a speed hump does not lead to more trash pollution it will certainly increase the noise pollution by providing cars and pickup trucks the opportunity to smash down on the accelerator twice, within a short distance, upon exiting the hallows. While I understand the benefit to public safety, I would rather watch cars race by at unsafe speeds than be subjected to increased noise pollution.

Comment:

This is to request that the Selectboard and Department of Public Works reconsider the intersection of Mountain View Road and North Williston Road. Five years ago a study was performed and minor modification made to this intersection. These have helped, but not nearly enough. It is extremely difficult and unnerving to enter North Williston Road heading north from Mountain View Road. One has to rely on believing blinkers on cars heading south in order to dodge across, particularly at commuter times. It is equally challenging to try to go south on North Williston Road from Thomas Chittenden Road.

I believe that making this intersection a **4-Way stop** would tremendously improve the situation. It has been a success at the Williston Road-North Williston Road in the village. Yes, traffic backs up during commuting hours, but it at least moves along in a regulated, safe pattern. The same could be true of the Mountain View-North Williston Road intersection.

It was clear at the Selectboard meeting on Dec. 19 to address traffic on North Williston Road that I am not alone in wanting a change to this intersection. I believe a 4-Way stop will be significant improvement at very little cost. Please address this issue, and hopefully action can be taken without a lengthy, costly study.

Comment:

Our comments pertain to the potential option of widening the sidewalk to create a path south of Mountain View Road.

Having lived in our house for over 32 years, we participated in the study, and the construction of the existing recreation path. The initial concept back then proposed a 10 ft. wide path (identical to what is now being proposed in the RSG study). Many of the homeowners, including us, were opposed to the path being this wide, because of its impacts on our properties. **A 10 ft. wide path** would impact existing plantings, and would literally put the path right in our front yards. The Town of Williston acknowledged our concerns, and reduced the path width to the present 6 ft. For this, we have been extremely grateful, and are happy to have the path in front of our property.

There is another impact that should be considered, and that is storm water and ground water. Since the present path was constructed, we have experienced a significant increase in surface water and ground water on our property. We now have five sump pumps handling the ground water inflows. We also have an emergency generator because an extended power outage would most certainly result in basement flooding.

Our concern is that widening the path would only bring the groundwater issue closer to our house, and intensify its impact. We know that our neighbors in the adjacent properties also face water issues.

We thank you for sharing this study, and for providing us with the opportunity to offer our comments and input. We greatly appreciate the Town of Williston's willingness to listen to the residents' concerns, and to work toward mutually acceptable solutions. It is one of the main reasons why we have chosen to live in Williston.

Comment:			
<p>We are resending this original email as our position remains the same. We are unable to attend the Dec. meeting, but feel strongly that the town is taking the wrong direction in their current thinking. Our country's President has stated that in January of 2018 he will begin discussions around repairing the nation's infrastructure. Williston should be all over this in seeking funding for the long overdue and greatly needed circumvential highway completion. The continued study of this need has wasted time and funding. As the town of Williston and surrounding areas have grown exponentially over the years, the need has only increased. The ridiculous "fixes" to this very large traffic problem that is only going to get larger, is absurd and a waste of taxpayers money and everyone's time. Let's get this right once and for all with a highway that actually addresses the problem and meets the needs of Williston and the communities that surround us. Please make our position known. Thank you Jason.</p> <p>Dear Jason:</p> <p>We are most interested in expressing our thoughts and concerns around the future planning of North Williston Road. We have long held interests and concerns around the overall management (or seeming lack thereof) of transportation planning and traffic mitigation in the town of Williston.</p> <p>There are few if any who would disagree with the view that the volume of traffic both pedestrian and vehicular, has increased exponentially over the past decades. There have been minimal transformations that have adequately addressed the matter, resulting in our current state of transportation chaos. So we thank you and the CCRPC for the opportunity to address these issues.</p> <p>We feel the continual rejection of plans for the Circumferential Highway have been in grave error, and consequently a major contributor to the problem we now have with the mass volume of traffic going through Williston from Richmond, Jericho, Underhill and beyond. We do not want this to be a Williston issue, as many towns are contributing to the problem. We are adamantly opposed to North Williston Road and Mountain View Road serving as the "Circ Alternative". This is an absurd suggestion and not realistic. Williston has never pressed hard enough to finish the Circ to address the unbelievable traffic matters at given times of the day. We believe as developments continue to rise in Williston and the surrounding communities, the problem will become more severe.</p>			

Widening the North Williston Road and Mountain View Road to accommodate even more traffic and cyclists is not what we want for Williston. We feel as if the promotion of a route for cyclists is a just a means to widening the road and hence increasing traffic further. Adding cyclists to this already heavily trafficked road is dangerous. It will also be serving the needs of surrounding communities as much as, if not more so than Williston. Why should Williston be the conduit for all surrounding communities? The solution should be a beltline that can move large volumes of traffic; one that goes around towns, not through them. At that point discussions can occur for adding cycling paths to our town roads (once traffic is diverted elsewhere). And the current discussion is for Willistonians to foot the bill? This is all wrong! No more traffic lights, round-about or **pedestrian blinking pillars**. Let us really consider maintaining the historical integrity and natural beauty of Williston, while considering the costs for our town and the transportation solutions for ALL communities without targeting one (Williston).

Comment:

I am writing to provide additional public comment on the current scoping project, as follows:

1. This project has an important overarching regional context, in particular as an unaddressed deficiency realized by the termination of the Circ Highway. Over the time span of that project, traffic on NWR has increased from 1,600 vpd in 1981 to 4300 in 2013 (ATR D026, located near the Fontaine sand pit driveway), and is well over 6,000 today (at ATR will59, near the cemetery). Few improvements or significant changes were made in this time frame, since the Circ was expected to "fix" everything.

As you can imagine, quality of life for those residents living near the road has diminished accordingly, not to mention cyclists wanting to cross the Winooski River for greener pastures on the north side, or work destinations on the south side. I fit all these categories, by the way. I don't know the particulars of the Circ Alternatives funding status, but surely this section of road deserves a portion of the urgent sentiment of that effort, if not actual dollars allocated.

2. Roadway traffic volume is controlled by the adjacent intersections. Without a regional highway like the Circ to carry the heavy load, traffic demand is bound to continue on this upward trend, and this demand will be realized when the congestion at 117/River Rd and US 2 are addressed as planned.

3. The alternatives presented so far do a good job of laying out the options. Now it is up to the Town to choose the correct one(s).

4. Clearly (from the survey, and great turnout at the alternatives meeting) public sentiment wants safety, speed, biking and walking to be the top priorities, and the section referred to as The Hollow garnered more comments than any other in this regard.

5. The clearly specified goal of any scoping project is to address the Purpose and Need while reducing impacts, including cost. This is universal, in any jurisdiction. Projects with fewer impacts and cost get built quicker.

6. **Widening the road** for shoulders will provide space for bikers and pedestrians, but it will also allow drivers to cut/flatten the numerous curves and drive faster.
7. **A separate buffered space (i.e. path or cycle track)**, that doesn't widen the road and facilitate auto speed, is much more appropriate. (I recognize standards dictate that some modest shoulder may be appropriate, but I don't see this as a priority over speed concerns.)
8. Now comes the hard part. This is a very challenging space, as most of you know. Most of these details will be overcome in the preliminary and final design process, but the preferred alternative should minimize impacts by staying as close to the road as possible and providing the minimal space necessary (please consider 8 ft.?..less?, luxury compared to the 6 ft. path to the south).
9. Finally, as a daily user and somewhat informed civil engineer, I've noticed there are many opportunities to shift the road slightly and avoid some of the more serious impacts like the stream, and closest houses in the lower village. This would/could be explored in the design phase if there was some acknowledgement in the scoping phase.

Thank you for your attention in this matter, and happy holidays!

Comment:			
<ul style="list-style-type: none"> • Drainage is very poor in the valley by the river and runoff from the hill has increased immensely in the 30 years we have lived here. The soils are heavy and the water table is high. Storm water runoff from the hill often overwhelms the culverts and pools on the lawn, taking days to drain or dry up (sometimes longer if the season is wet). The water is trapped by the railroad tracks and sits in the ditch forever. Our sump pump in the basement runs year round to move the water out (the basement is the low point so runoff and ground water goes in and we have to pump it out). The trees along the road do some attenuation, but there is just too much runoff to handle and not good drainage. Removing the trees to widen the road or add a path will only exacerbate the situation. • Safety is a concern since there are no road shoulders, the ditches are deep, and drivers tend to exceed the speed limit on a regular basis. There is no wiggle room to maneuver. North Williston Road is a commuter route and most drivers are simply intent on getting to their destination as expediently as possible. Cars are always going into the ditch, both winter and summer. Enforcement by the police has limited effect. All this makes the roadway uninviting and unsafe for pedestrians and bikers. • There are two farms on either side of North Williston Road with very large vehicles using North Williston Road. The farm drivers are great, but the equipment by its nature is big and not very maneuverable. Not a good mix with pedestrians and bikes. • Our house and the companion brick house on the other corner of North Williston Road and Fay Lane along with several other houses on North Williston Road are historic being over 150 years old (North Williston was the original center of town and our houses were there!). Traffic impacts them now with noise and vibrations. Litter 			

and plastic bottles/cans discarded by passing traffic are often found in the ditches along the road. We "green up" year round here!

- The question is whether the town and taxpayers will realize a return on the investment of \$6 million for the proposed bike path amenities when the money might be better spent on other improvements, such as rebuilding North Williston Road and improving the drainage situation. North Williston Road only received a shim coat of pavement to cover the wheel ruts and other degradation of the roadbed. The road should be rebuilt to handle the traffic volume it experiences as the defunct circ highway.
- A suggestion that does not have a huge price tag and might go a long way to help slow traffic speed so bicyclists are safer using the road is to make the intersection of North Williston Road and Route 117 (River Road) a four way stop.

Comment:			
<p>I am not able to make the meeting on the 19th but as a resident of Tamarack Drive I wanted express my opinion regarding the North Williston multimodal scoping study based on the power point presentation I reviewed.</p> <p>I am behind the traffic calming options except for the speed tables/speed humps. Especially the one located in the residential area. But all speed tables I find to be problematic and they are not that much of a deterrent to high speeds as is evident to the ones located on Skunk Hollow road.</p> <p>The Alternative recap for South of Mountain view I would recommend option 0. Currently there is space on the road for bicycles or you can use the existing path which we do when biking with our 10 year old. The cost implications to widen the path to 10 feet doesn't seem to out weigh the benefits in my opinion.</p> <p>For North of Mountain view I would recommend option 2 having the shared use path. Since this is a new path and goes in areas that are more of a traffic concern, having a 10 foot path would be ideal. My one alternative to this option would be to see the cost analysis of option 2 without widening the road? As adding the extra 1 foot to each side of the road does not make bicycle traffic much safer and the shared path could be used for bike traffic.</p> <p>Thank you for your time to review my thoughts and comments.</p>			

Comment:			
<p>I reviewed the presentation for Tues and overall I felt it was very good and easy to understand. I appreciate seeing this ahead of time to think about it.</p> <p>My only concern is that the major intersection of Mountain View and North Williston Rd is not addressed. I live off governor Chittenden Rd and have witnessed near misses and find that intersection horribly difficult to cross during morning and evening commute times. I can wait for minutes just to find a way to shoot across. And with a stockade fence on the east side, it makes seeing traffic coming from the south difficult...especially if they are coming fast. Someone is going to get killed there if nothing is done. I understand it is a busy intersection and putting a stop sign slows traffic and I really don't like to have people stop unnecessarily, but I am just saying, it is not safe there for what it is worth.</p>			

Comment:			
<p>I have experienced significant changes in volume (amount of traffic & noise) and speed of traffic in those years. The traffic noise alone is extremely unsettling, as is the safety factor not only for vehicles & their occupants, but for pedestrians and cyclists as well.</p> <p>I would love to see ways to calm traffic and, ideally, reduce the volume of it (amount & sound). If traffic/speed tables can do that <i>without adding noise</i>, I welcome them. I also think the visual changes with <i>making the road appear more narrow</i> in places is a good idea. I also welcome <i>improving the intersection</i> with Mountain View Road and Governor Chittenden Road. <i>Warning signs with beacons</i> may also help. Please - no rumble strips due to the horrid noise.</p> <p>I would also welcome a reduced speed limit and an increased police presence. I rarely see police on North Williston Road and encourage them to make a regular visit on a weekly basis.</p> <p>As for changes to the rec path, please leave it as it is. I was actively engaged in the process to get that rec path installed at a reasonable size with minimal property damage and know that the residents on this street who were involved at that time are not looking to increase the width of the path. The current rec path meets the needs of the residents. <i>If a bicycle lane could be added to the street pavement</i>, please give that serious consideration.</p> <p>I agree that the section of North Williston Road north of Mountain View and Governor Chittenden Roads is a huge safety concern. I hope the residents in that area will provide feedback regarding how to best slow traffic and allow for safe walking and biking. I do not feel qualified to provide additional comment on that other than to add warning signs & beacons.</p> <p>Thank you for openly inviting residents to participate in the decisions regarding our road. I look forward to further discussion and sharing and hope the traffic will be successfully calmed and made safer for everyone.</p>			

Comment:			
<p>I appreciate the work you and the outside firm are doing and look forward to hear what the town might move forward with. My one comment is to bring up the new neighborhood that is going to be built across from the golf course (Bryan neighborhood, by Snyder). I think it would be helpful for the team to consider the traffic impacts and the placement of any new signs, speed bumps, etc., with this new neighborhood in mind.</p>			

Comment:			
<p>Lowered speed limits and more police presence would be ideal. The idea of curbed medians is acceptable. However, speed humps and rumble strips would be extremely noisy especially when vehicles are towing trailers. Also, I believe the Circ Highway should be reconsidered although I'm sure that is highly unlikely.</p>			

Comment:			
<p>Thank you for the information you've provided our community and for welcoming comments. I attended the meeting in May but was unable to make the December meeting. I did however look over the RSG documents and watch the December presentation/discussion (so happy that town meetings are filmed!).</p>			

Considering the study's scope and reach, I believe it would be reasonable to prioritize the areas of greatest need on North Williston Road. South of Mountain View Road already has a number of improvements in place; please focus your recommendations on the areas that are currently suffering from increased traffic without such improvements--North of Mountain View Road until the bridge. As it will take some time to see structural changes, repainting narrower lanes seems like a cost-effective and simple early step toward bettering the most neglected portions of North Williston Road.

Overall, I am very excited at the prospect of **traffic calming measures**. As obvious as this suggestion may sound, I propose that your final recommendations are based on what will have the greatest impact on speed. Specifically, I believe a **sign that shows a driver's speed** would be well-placed at the bottom of the hollow (just before the Claros' home, East side with boulders in the lawn). The "South of Fay Lane" data collected in July 2017 shows what folks that live in the straight away already know too well. I would love to see speed humps/tables to slow down drivers in this stretch of North Williston Road. I hope that the town will implement a number of measures to increase the probability of reduced speed.

In regards to the width of the road and bike/pedestrian paths, I understand the complexity of the situation, considering the growing commuter demands, differing opinions and immense cost of possible improvements. I would like to express my concern that the river portion of North Williston Rd is not of much importance to anyone other than its inhabitants. I understand that it is a much less populated part of the town, but this road is our literal neighborhood. However spread out it might seem, North Williston is a tight-knit community and the use and condition of our road negatively impacts us.

This study and discussion is largely focused on the thousands of people that enter our neighborhood for minutes a day. We do not have what many others in Williston do--houses in close proximity and safe roads or pathways for our families to walk and bike on. Not only is our neighborhood road unsafe for non-drivers, the large drop-off on either side makes it nearly impossible to use on bike or foot. I ask that **shared bike/pedestrian facilities** are recommended for our corridor whether or not such improvement is feasible from Mountain View Road to the hollow. **Even a limited bike/pedestrian path in the river section would dramatically improve our lives.**

Thank you for your time and consideration of residents whose livelihood is impacted by traffic on North Williston Road.

P.S. If a picture has not been adequately painted for what it's like to live on North Williston Rd, I will try: near-constant noise of traffic, drivers regularly speeding/tailgating/passing on the left when you're turning right, feeling unsafe going to mailbox, pets hit and killed, risking lives of self and children to cross or walk alongside road, difficulty leaving driveway, flooding on your property from runoff, trash in lawn...

Comment:			
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Thanks for this opportunity for community input and for your open and transparent work with the community on this project. Please enter my public comments into the official record of the North Williston Road Multimodal Scoping Study – Draft Alternatives project that ‘seeks to examine the roadway for improvements to the drainage system and transportation network, including motor vehicle, pedestrian, and bicycle travel’ as presented December 19 during the Williston Selectboard meeting. <https://www.cctv.org/watch-tv/programs/williston-selectboard-301#>

And based on the announcement at the meeting, and the website, which said, “Meeting materials will be made available on the project website following the meeting (<https://www.ccrpcvt.org/our-work/transportation/currentprojects/scoping/north-williston-road-scoping-study/>) **and will remain available for comment through the month of January.**” I want to point out that this letter meets the deadline.

Clearly evidenced by the strong turnout at the two meetings, comments to the interactive map and letters from townspeople, the public and Selectboard remarks, our **top priorities are safety, reduced speed, bicycling and walking space.** Making the right decisions affects the many residents of the full length of North Williston Road and those who live on its neighborhood roads: Chapman Lane, Fay Lane, all of Williston Woods, and all the others from Governor Chittenden Lane to Lefebvre Lane. For many of us, the recent dramatic changes in the number, size and speed of vehicles, the build-up of the road and changes in land use affect our safety and health; maintenance of houses, outbuildings and land; property value; tax rate; daily travel; stormwater; noise; dust; fumes; and ability to become a more closely knit, active community.

So we applaud the decision to take the first steps to what you promise will be **“a holistic corridor plan.”** You are so right. Prior decisions about North Williston Road paving, cable, power lines, clearing trees and stormwater fixes often have been **short-term choices** that add up to major long-term problems and do not reflect coordinated efforts or regard for overall impact. For example the proposal of a Route 117/River Road round-about and the building of the bridge were made on the assumption that traffic load determines the need for increased size and width of road and state and federal funding determines the what and when it is built. A third example is the study and solutions made about the North Williston Road/Mountain View Road intersection. I hope that RSG heard loud and clear that the Selectboard wants that study to be part of this study.

With its natural features of steep hills, sharp curves, streams, river and sandy soil, North Williston Road was never meant to be *the* major commuter route between Burlington and several outlying towns, was never meant to be a major fully loaded dump truck and logging route and while it is certainly must serve the agricultural practices all along the roads, those vehicles are now larger and more frequent. **That is not to say they cannot all share the road. And there are many good solutions well below \$6.3 million.**

ABOUT THE SCOPING STUDY ASSUMPTIONS & APPROACH

I feel strongly that an underlying limitation of this initial \$50,000 study is that is just a vehicular version of landscape plan built from maps, rather than a plan that looks beyond the road’s shoulders, ditches, trees and stone walls that line the road. The proposed Skunk-Hollow-like asphalt solutions address the road itself, no more. Like any landscape plan, it lacks that all-important third dimension and the big picture. Here are some examples.

1. “With the Circumferential Highway discontinued, traffic volumes along the road are expected to grow and further strain the roadway.”

Studies show it is challenging at best to predict Vermont population and economic growth at all through 2030. Various sources agree that if there is growth, it will be in the over-50 age population. Not commuters. Worries about a migrating younger population and lack of jobs are well known. See the Governor's recent January 2018 state of the budget report.

Also Legislative Joint Fiscal Office 2015

http://www.leg.state.vt.us/jfo/issue_briefs_and_memos/Projecting_Vermont's_Population_.pdf
https://addisoncountyedc.org/uploads/documents/VermontPopulationProjections2010_2030%201.pdf

That is just one of a number of considerable variables that are not even footnotes in this study. What if a regional job/commuter center shifts to, say, Waterbury/Waitsfield? What if self-driving cars get a significant share of the road in the coming decade? There are many what if's, not to mention serious competing fiscal needs that give pause to spending hundreds of thousands to millions of dollars on a short span of road.

2. The scoping study foundation is rebuilding and expanding North Williston Road for multi-modal traffic.

Why not look beyond the existing road at the large acreage of land that does not cut through the circa 1800s village? You talk about **separate off-road paths**, why not at least create light-on-the-land bicycling and walking paths off road? Or at the most **redirect North Williston Road** through the hollow altogether from the sharp curve at the hilltop all the way to Chapman Lane and then back to the bridge?

Why not calculate whether it would cost less than \$6.3M to build a bridge from the Colchester Essex highway to Redmond Road?

Why not at least discuss alternative methods of reducing traffic in number or timing, alternative modes of transportation – all of which could reduce the car traffic on North Williston Road?

3. How many residents are there on North Williston Road? And feeder roads? The report says, *the upper portion of the Hollow is relatively undeveloped*. The population of North Williston Woods neighborhood? That's the minimum number of cars that feed into North Williston Road at that intersection alone. I think it's important to at least quantify the number of people directly affected by these decisions, in addition to the commuters and haulers.

4. The study's approach of relying on past statistics means that traffic counts do not differentiate between heavy commercial vehicles and passenger vehicles. This is key. Especially with major landowners: Running two sand-hauling businesses. At least two farms running trucks, manure spreaders, herbicide sprayers, tank trucks hauling tankers of feed and milk. This affects not only the numbers and residents' experience of the traffic, but impacts road damage, speed, weight limits and certainly the crux of your solutions – tables, rumble strips, and medians.

5. RSG shall document existing resources from observable site features, online mapping resources, historic maps and reports, and past studies. Consideration will be given to: **Rights of Way, Utility Impacts, Natural and Cultural Resources:** i. Wetlands ii. Lakes / Ponds / **Streams / Rivers Floodplains** iv. Endangered Species v. Flora / Fauna vi. **Stormwater & Drainage** vii. **Hazardous Wastes** viii. Forest Lands ix. Public Lands x. Agricultural Lands.... RSG shall use readily available information to identify **archaeological sensitive and historical structures**....

Where are these addressed in the December 19 report? During the past seven months while the study was being conducted, there were significant power outages, accidents, and two significant and

unseasonal episodes of flooding that closed the road. Factors dismissed during the public meeting or not considered that need to part of the report and conversation are:

- The railroad (Stormwater may only reach the Winooski River via one small stream or across North Williston Road itself.)
- The power lines which criss-cross North Williston Road and are a major factor in car accidents and power outages affecting areas far beyond the neighborhood.
- Stormwater run-off has grown torrential due to less forested land, the town's wider mowing along the road and dumping of gravel in ditches and the increase of intensity and frequency of storms,

NORTH WILLISTON ROAD TOP 10 QUICK, LESS EXPENSIVE INITIAL FIXES

1. Reduce the speed limit. It costs only the signs and installation and actually generates revenue for the town. Do not dismiss Jay Diaz's meeting suggestion to reduce the speed to 25 or 30 or make light of when people said that they'd still go 5 mph over the limit. This would make a significant difference.

2. Pay for the installation for look-alike fences, low stone walls or hedges all in a line in front of homes 50-feet or closer to the center line of North Williston Road. This uniform visual will cause drivers to slow down and will create a sound and dirt buffer for residents.

3. Add another solar, digital speed sign at the straightaway north of the hollow.

4. Add lights at North Williston Road/Route 117 that activate only during peak commuter times. Why build a costly roundabout when a stoplight will do?

5. Prohibit the use of engine/jake brakes on North Williston Road and Fay Lane.

6. Even without widening the road, paint the road-edge strips to create a visually narrower road through the hollow to the river and a wider shoulder. Match it with what is on the southern portion of North Williston Road. This has been discussed for a number of years with the highway department. It costs nothing.

7. Paint a crosswalk from Fay Lane to the field across the road.

8. Divert stormwater run-off all along the hollow and into some of the non-agricultural fields with swales and seeps running perpendicular to the roads, not ditches parallel to the roads.

9. Work with the sand pits to actually plant their required reclamation areas with proper native trees, shrubs and pollinator plants and solar fields to underplant with mixed pollinator plants rather than grass.

10. Thwart erosion all along the ditches with plantings not gravel.

Thanks for reading all the way to the end. And thanks again for all the work you do for Williston. I'm happy to answer questions, discuss, organize neighbors and do what needs to be done to have an outcome that the town, your organization and the community is proud of and that will be used as an example for others. Let's have Vermont lead the way.

Comment:			
Thank you for the opportunity to comment on the North Williston Road report. I am a resident of North Williston Rd and strongly advocate for changes to mitigate the speed and safety issues on the road, particularly in the northern hollow section.			
I believe that the top priority for the road should be the addition of traffic calming measures on the northern part of the road and particularly through the hollow. This area is darker and freezes more easily than the rest of the road, and includes a significant hill and curve that			

cause cars to pick up a lot of speed. Drivers regularly come through at 50-60mph. Our experience is confirmed by the speed data presented in the Existing Conditions report (pg 30). With a significant number of drivers traveling faster than 50mph, it is unsafe to enter and exit the road from the houses in the hollow.

Since moving to the area less than three years ago I have personally stopped to assist numerous drivers who have crashed in the hollow. These accidents have occurred throughout the hollow, not just near the intersection with Williston Woods. There is also no **speed enforcement** in the hollow which further exacerbates the speed issue.

I strongly support the addition of the **signage**, **speed tables**, and **medians** listed on Page 16 of the report. However, these measures will not be sufficient to address the speed and safety issues in the hollow. In addition to these measures, traffic calming measures must be implemented in the hollow. Cars and trucks speed up significantly as they enter the hollow in both directions and I do not believe the proposed speed mitigation measures will address this issue adequately. At a minimum, **speed feedback signs** should be placed on the curve in the hollow and the speed limit in the hollow should be reduced to 30mph for cars and 25mph for trucks. On Route 2 in Williston Village people slow down significantly in the 30mph zone and I believe this could be replicated in the hollow with similar measures.

As noted in the report, North Williston is an historic and community-oriented neighborhood. I ask that the town note the historic and residential nature of the area with additional measures to delineate the neighborhood, such as **curbed medians** and **signs indicating the history** of the area and the presence of children. A curbed median should be added between Fontaine Lane and Williston Woods. This would help with the significant speed issue in the area and would help indicate the residential nature of the neighborhood as cars enter down the hill from the south.

I would support a **four-way stop** or blinking red light at the Mountainview intersection. I do not believe a roundabout will solve the problems with that intersection, as it would still be difficult to enter from Mountainview. A **curbed median** on either side of this intersection would help encourage people to slow down.

Despite the lack of sidewalks, crosswalks, and other safety measures, residents of North Williston regularly walk in the area and need to cross the road. It would be very helpful if even a small **sidewalked or bike laned area and crosswalk could be added (for example, near Fay Lane)**, with a pedestrian sign, so there would be one safer place for us to cross the road in our neighborhood.

Comment:			
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<p>I live on a side street off North Williston Road. I would like to just submit my own preferences on the project. I am hoping you have heard the opinions of many who travel by bike on North Williston Road. My preference would be to increase/place a bike path all along the entirety of North Williston Road. I know that many advanced bikers may have differing opinions, but I am not certain we need to widen the road if the path is wider.</p>
--

<p>I would prefer no speed tables, but the other calming measures I have no objection to. Speed bumps and tables do slow people down, but they are annoying.</p>
--

<p>I am not certain if the 4 way stop from Route 2 to North Williston Road is part of this study, but I would like to see a traffic light added to that location. Many people in Williston do not know how to safely use traffic circles and especially during soccer season the back-up from Williston Central school to the connection of North Williston Road is ridiculously long. Seems to be a simple problem that would be easy to fix. If that is not part of your study, can you please send me the name of whom I need to talk to about the 4 way stop?</p>

I admit that I haven't been living here very long, but by far the congestion at the end of the day at the various stop signs (Mountain View and Williston Rd) I find to be the most troublesome traffic issue. Mountain View is not as bad, but the Williston Road stop is entirely frustrating.

Comment:			
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When we first moved into our house, one of our neighbors brought over a daguerreotype photo of the original owners of our house. We loved the the story of our house and our neighborhood. We thought to ourselves, "*we will always stay.*"

Three months after we moved into our house a car drove through our bedroom, uprooting a tree, leaving a 6ft x 9ft hole, and tearing through our foundation. We were home visiting our folks for Thanksgiving. It was 1:00 am. Had we been home, we would have been in our bed, which was broken and shoved through the opposing wall. *And still we stayed.*



We called the room "the crash room" and promptly turned it into a laundry room. We went to the town for guard rails or something (anything) to protect the house. The gradient wasn't steep enough. We had a friend in stone design who was able to locate boulders to protect that side of the house. The neighbors adjacent to us informed us their house had been lifted up the hill, because it too had been hit by a car. *And still we stayed.*

Our daughters were born (now ages 5 and 9). We no longer hold out hope for the Circ our real estate agent sold us on. Our kids will never ever sleep in the "crash room." They wake up and fall asleep to the sound of rushing traffic each day. We wait up to ten minutes in our driveway to pull out for school. I regularly have cars pass me near the blind s-curve on my way to work. Getting the mail is an exercise in speed and agility. *And still we stay.*

Our neighbors are amazing! We get together for sledding, brunch, camp outs and bonfires. Our kids are all close friends. There are generations of families in this neighborhood who share what our road was once like. I am envious. These are the people, my North Williston neighbors, who make me feel that I am part of a community. *And so we stay.*

In seven years our oldest daughter will be getting her driver's license. The thought of her driving on this road absolutely terrifies me. I can't imagine ever letting her pull out of our driveway. These are our girls, our world. Their safety is our responsibility. Ten years later, after much perseverance, I say with certainty *there will need to be drastic changes to our road for us to stay.*

These our are priorities in order of timing and importance:

1. **Radar speed feedback sign** in "the Hollow," southbound well before the train tracks. Sign should be moved in front of the train tracks once police patrolling becomes less frequent .
2. **Regular patrolling and enforcement** of the posted speed limit in the hollow between River Rd. and the s-curve.
 - a. At least once a day for one month during peak traffic (7-8:00, 4-5:30)
 - b. Then at least once a week randomly during the work week for an entire year
- 3) **Warning sign with beacon**, northbound entering the blind s-curve
- 4) **Speed tables** similar to those on Skunk Hollow Rd
 - a) One between 117 and the train tracks.
 - b) Several between the train tracks and the s-curve, and between the s-curve and Mtn. View

Thank you for your attention to the safety of our neighborhood and our family.



APPENDIX

APPENDIX C: UPDATED MULT-WAY STOP CONTROL ANALYSIS MEMO



MEMO

TO: Lisa Schaeffler, Town of Williston Public Works

FROM: Corey Mack, RSG

CC: Jason Charest, CCRPC

DATE: October 9, 2018

SUBJECT: North Williston Road – Mountain View Road Multi-Way Stop Warrant Analysis

RSG has been retained by the Chittenden County Regional Planning Commission and the Town of Williston to complete an engineering assessment for multi-way stop traffic control at the North Williston Road – Mountain View Road intersection.

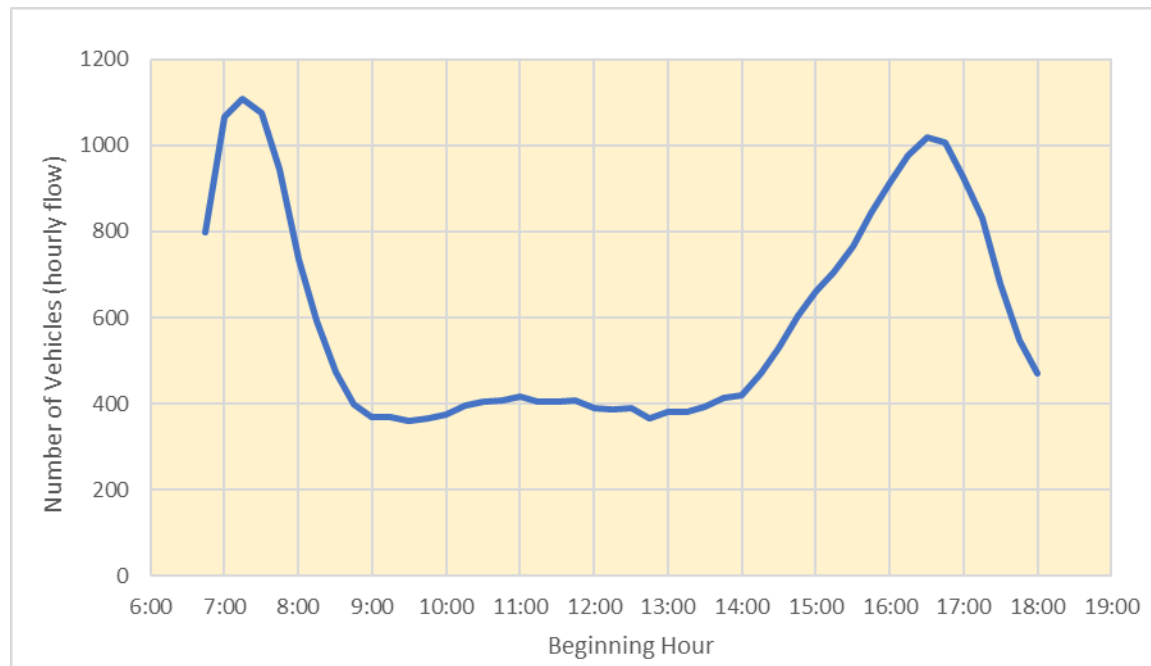
The following tasks were completed as part of this assessment:

- **Traffic Count:** 12-hour traffic count on Tuesday, March 27, 2018 using traffic video cameras. The videos were observed and manually transferred to an excel file.
- **Count Adjustments:** Reviewed and adjusted the observed traffic volumes to represent average day conditions for the analysis.
- **Multi-Way Stop Guidance Assessment:** Applied multi-way stop control warrants to the adjusted traffic volumes. The traffic volume warrants are described in the Manual of Uniform Traffic Control Devices, 2009 edition (current version). Section 2B.07¹ provides the specific reference guidance.

¹ <https://mutcd.fhwa.dot.gov/htm/2009/part2/part2b.htm#section2B07>

Traffic Count

FIGURE 1: HOURLY FLOW IN INTERSECTION (12 HR) – UNADJUSTED 27 MARCH 2018



The heaviest hour during the observation occurred between 7:15 and 8:15 in the morning with 1,109 vehicles passing through the intersection. The PM peak hour occurred between 4:15 and 5:15 with 1,017 vehicles.

Count Adjustments

Section 2B.07 of the MUTCD states that traffic volumes to be used for the analysis of multi-way stop control shall represent average day conditions. FHWA defines the average day as “a day representing traffic volumes normally and repeatedly found at a location, typically a weekday when volumes are influenced by employment or a weekend day when volumes are influenced by entertainment or recreation.”

To adjust to average day conditions, the count was adjusted with a factor from the Seasonal Adjustment Factor Grouping Study from the 2016 Vermont Agency of Transportation Continuous Traffic Counter Report (The Redbook, current version)². The North Williston Road corridor is best described within the “Urban” group of The Redbook. The Monthly Day of Week factor for the Urban group for Tuesdays in March is 0.988.

The observed traffic volumes were multiplied by 0.988 to adjust the short-term count to represent an average day condition.

² <http://vtrans.vermont.gov/sites/aot/files/operations/documents/traffic/Redbook2016web.pdf>



Multi-Way Stop Guidance Assessment

Section 2B.07 of the MUTCD states “multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.” While approximately 41% of the volume approaches from the north, 28% approaches from the west and 29% approaches from the south. It is reasonable to characterize these approach volumes as approximately equal.

The MUTCD provides the guidance for what a multi-stop control study shall consider. The guidance is commonly referred to as a ‘warrant’, whereby the following items are considered. The MUTCD states that the decision to install multi-way stop control should be based on an engineering study. This memo and the analysis summarized herein satisfies this criterion.

The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

- Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
 - Not applicable in this situation. This criterion is not met.
- Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
 - There have been on average approximately two crashes per year occurring at this intersection. The crash and safety criterion is not met.
- Minimum volumes:
 - 1) The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
 - 2) The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
 - 3) If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

The traffic volumes and delays on Mountain View Road were evaluated as it pertains to these criteria. The findings include:

- a) The raw count data, unadjusted, met the average volume and delay threshold for both major and minor streets.
- b) The adjusted “average day” count data met the average volume and delay threshold for both major and minor streets.
- c) As stated in the North Williston Road Draft Scoping Report (CCRPC - RSG, 2016 on page 6), the 85th percentile speed was determined to be over 10 miles over the posted speed limit of 35 mph. The 2016 observations just north of Mountain View Road, the 85th percentile speed was in the 46-48 mph range. The volume warrant threshold for multi-way stop control may be reduced to 240 and 160 vehicles per hour on the major and minor street approaches, respectively.

The reduction of the volume warrant threshold due to the observed speed near the intersection further increases the margin in which the multi-way stop control volume warrants are met.

Additional criteria for consideration in the multi-way stop control guidance includes “the need to control left-turn conflicts”. In the evening peak hours, the eastbound left turning volume often exceeds the major street volume in northbound and southbound approach directions combined. Application of multi-way stop control may reduce this left-turning conflict.

Conclusion

The multi-way stop control guidance defined by the MUTCD, section 2B.07 is met on the basis of the volume warrant criteria:

- The observed and adjusted traffic flows on March 27, 2018 meet the standard volume thresholds warranting multi-way stop control.
- The 85th percentile speeds along North Williston Road have been recorded in the 46-48 mph range, exceeding the 40 mph threshold in the volume warrant. Therefore, the minimum volumes necessary to satisfy the warrant are reduced by 30%. Under this condition, the volume warrant is satisfied to a greater degree.
- Multi-way stop control may reduce the eastbound left turning conflict.


If the Town decides to implement multi-way stop control, the town is advised to implement short-term, high-visibility advance warning devices to alert drivers who may not expect the change in traffic control at this location. These short-term devices may include advance warning “STOP AHEAD” signs with supplementary reflective flagging, changeable message signs, or other devices as approved by the MUTCD.



FIGURE 2: MUTCD R3-1 WITH TEMPORARY FLAGGING.



Other considerations with the implementation of All-Way Stop Control:

- Solar powered red-flashing stop beacons, mounted above the stop sign similar to the beacons installed at North Williston Road and Williston Road, are recommended per MUTCD 4L.05. These beacons would provide additional conspicuity at the new stop condition at the intersection.
- All stop signs, including the new stop sign assemblies on North Williston Road, and the existing stop sign assemblies on Mountain View Road and Governor Chittenden Road, shall be supplemented with an MUTCD R1-3p “ALL WAY” plaque.  **FIGURE 3:
MUTCD R1-3P.**
- The existing crosswalk across North Williston Road at Mountain View Road should be evaluated under the All Way Stop Control. There are at least three issues to be addressed:
 - *Location of the Crosswalk Markings:* Crosswalks are generally placed 4-feet behind the stop bar at stop controlled intersections. If a stop bar were to be placed 4-feet in advance of the existing crosswalk, the stop bar would be approximately 40-feet from the intersection. This distance is too great for drivers to make clear intersection right-of-way decisions. It is recommended to move the crosswalk markings in line with the Mountain View Road sidewalk and place the northbound stop bar 4-feet in advance of the relocated crosswalk.
 - *Existing Rectangular Rapid Flashing Beacon (RRFB):* The existing uncontrolled crosswalk is equipped with an RRFB to warn motorists when pedestrians are crossing. The interim approval for RRFBs³ specifically state “an RRFB shall not be used for crosswalks across approaches controlled by ... STOP signs”. It is recommended to remove the RRFB assembly, possibly for reuse at other locations identified for enhanced crosswalk features in the North Williston Road Multimodal Scoping Study.
 - *Pedestrian Warning Sign:* The existing uncontrolled crosswalk is marked by a W11-2 diamond pedestrian crossing warning sign with W16-7P downward pointing arrow (supplemented by the RRFB). If the crosswalk is moved to be 4-feet in advance of the stop sign, the crosswalk sign may potentially block visibility of the stop sign; even if not directly blocking the stop sign, the diamond pedestrian sign may distract drivers not expecting a new stop sign. At stop controlled intersections, the pedestrian right-of-way is defined by the crosswalk marking, not the W11-2 sign. Lastly, as drivers from all approaches are stopping at the new multi-way stop control intersection, the pedestrian warning sign is redundant and adds to sign clutter at the intersection. This interpretation of the MUTCD

³ https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm

requirements towards application of the W11-2 pedestrian warning sign at multi-way stop controlled intersections was confirmed by Vermont Agency of Transportation staff, also included as an attachment to this memo. It is recommended that the existing W11-2 diamond pedestrian warning sign and W16-7P downward pointing arrow plaque are not relocated to the proposed crosswalk location.

Attachments

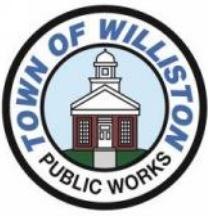
- A. PC-Warrants Multi-Way Stop Warrant Worksheets
- B. Observed Traffic Volumes
- C. Interpretation of Application of W11-2 Signs at Stop Controlled Intersections



APPENDIX

APPENDIX D: WILLISTON DEPARTMENT OF PUBLIC WORKS RECOMMENDATION MEMO TO SELECTBOARD





History of North Williston Road & Mountain View Road Intersection

July 2012 - Resource Systems Group Inc. (RSG) via Chittenden County Regional Planning Commission (CCRPC) finalized the North Williston Road and Mountain View Road Intersection Study. Information obtained from VTrans Traffic Highway Research unit determined that the intersection is considered a High Crash Location (HCL).

The study investigated six proposed alternatives:

1. No build
2. Switch Stop Sign Orientation
3. All-Way Stop
4. Second Lane on Mountain View Road approach
5. Single Lane Roundabout
6. Traffic Calming and Safety Measures
 - a. Transverse rumble strips
 - b. Pavement marking and sign upgrades
 - c. Speed table/Raised intersection
 - d. Radar Speed feedback signs
 - e. Raised Median Islands
7. Flashing Warning Beacons

The preferred alternative chosen by the Selectboard in July 2012 was a combination of alternatives reviewed. A 4-way stop intersection was ruled out then because the studied traffic volumes did not meet the warrant required by the Manual on Uniform Traffic Control Devices (MUTCD) at the time. In 2013 updated MUTCD compliant signage was installed leading up to the intersection.

In 2017 the Selectboard approved a scoping study for all of North Williston Road. The study did not include the North Williston/Mountain View intersection since it had been previously studied. Many citizens requested the 4-way stop be reevaluated based on updated traffic volumes and the Selectboard tasked staff with having that analysis undertaken.

As an amendment to the contract, the CCRPC agreed and was able to fund the additional analysis. The analysis has determined that the traffic volumes and delays now warrant a 4-way stop installation at the Mountain View/North Williston Road Intersection.

Table 1 from the Traffic Study:

Major Street Approaches

Northbound: North Williston Road
Total Approach Volume: 2,277
85% Speed < 40 MPH.

Southbound: North Williston Road
Total Approach Volume: 3,035
85% Speed < 40 MPH.

Minor Street Approaches

Eastbound: Mountain View Road
Total Approach Volume: 2,263

Westbound: Governor Chittenden Road
Total Approach Volume: 134

Warrant Summary

Criteria A - Interim Measure	Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.	
Criteria B - Crash Experience	Not Satisfied
Number of crashes (0) is less than the minimum required (5).	
Criteria C - Minimum Volumes and Delays	Satisfied
Average Delay Per Vehicle (57) is more than minimum required (30). Average of 8 highest hours exceeds volume criteria.	
Criteria D - 80% of Volumes, Delays, and Crashes	Not Satisfied
Average Delay Per Vehicle (57) is more than minimum required (30). Number of crashes (0) is less than the minimum required (4). Average of 8 highest hours exceeds volume criteria.	

Memo

DATE: 5/15/2018

TO: Williston Selectboard

FROM: Department of Public Works

RE: N. WILLISTON ROAD PREFERRED ALTERNATIVE RECOMMENDATION

The North Williston Road Scoping Study has taken place over the past year to examine treatments to calm traffic and improve multimodal transportation on the roadway. Public hearings were held in May and December 2017 and January 2018 to hear local concerns and gather feedback on draft recommendations made by the project consultant Resource Systems Group (RSG). A final draft report was presented to the Selectboard this past February. The Chittenden County Regional Planning Commission (CCRPC) provided project management.

Williston DPW recommends the Selectboard consider accepting the preferred alternatives from the North Williston Road Scoping Study using the following phased implementation approach. These improvements would use capital funds, and State funding will be explored since this is a Circ Alternatives Project. Please see the attached maps for location references for the roadway treatments listed.

Phase 1:

Install proposed signage per the two studies, as shown on included maps:

Qty.	Sign	Price per	Total
4	Stop Signs	\$125	\$500
4	Chevron Signs	\$250	\$1,000
1	Speed Activated Curve warning	\$10,000	\$10,000
2	Pedestrian Signals	\$20,000	\$40,000
TOTAL			\$51,500

Phase 2:

Install additional traffic calming measures per the two studies, as shown on included maps:

Qty.	Measure	Price per	Total
4	Speed Tables	\$4,000	\$16,000
1	Radar Speed Feedback	\$10,000	\$10,000
0.36	Miles of Center Line Rumble Strip	\$4,000/mile	\$1,440
TOTAL			\$27,440







Phase 3:

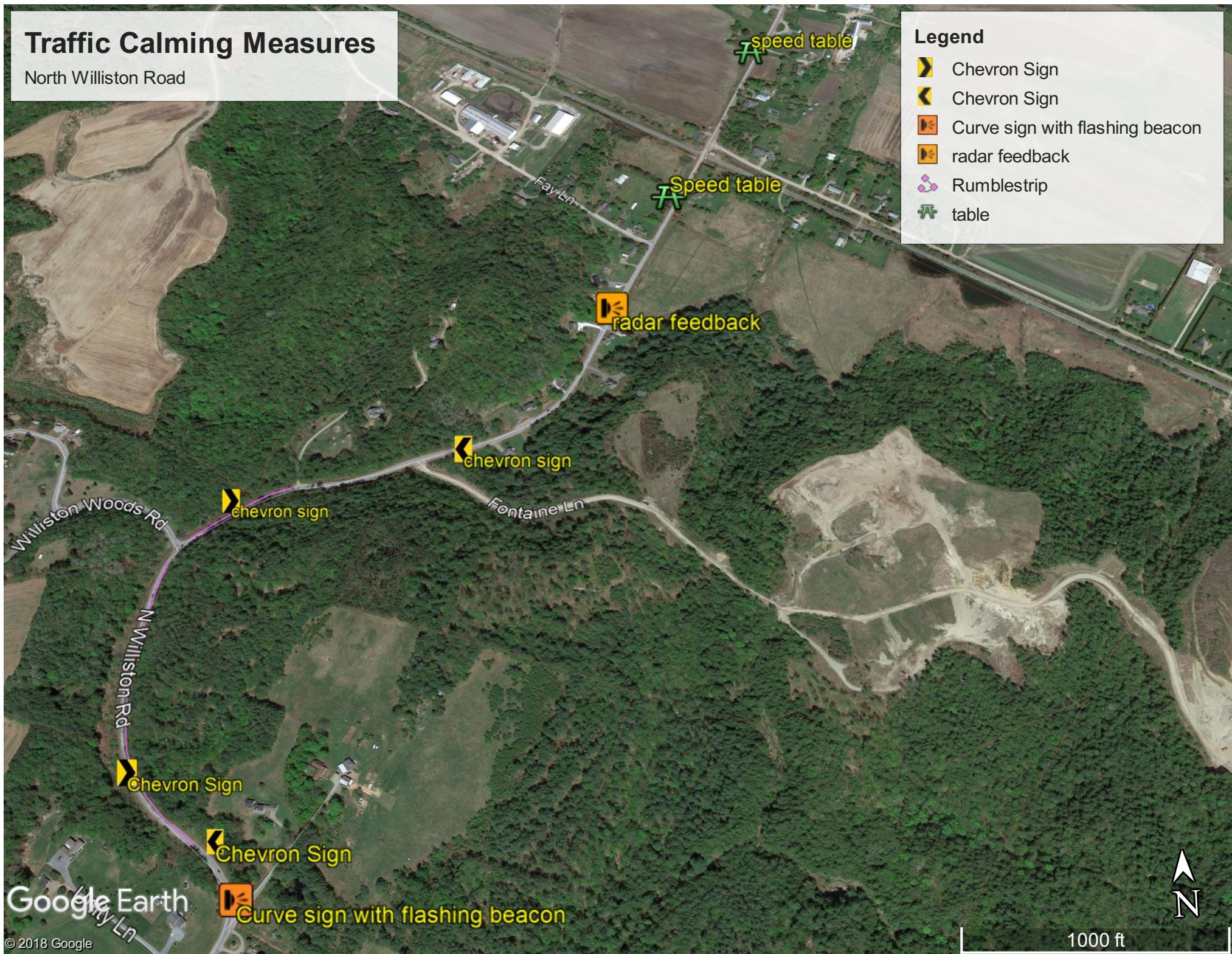
Evaluate additional improvements for future implementation. This includes Alternative 3 from the study which includes a new multi-use path and the widening and rebuilding of North Williston Road. The cost estimate for Alternative 3 is \$3.9 to \$6.3 million.

Traffic Calming Measures

North Williston Road

Legend

-  Chevron Sign
-  Chevron Sign
-  Curve sign with flashing beacon
-  radar feedback
-  Rumblestrip
-  table






Google Earth

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Traffic Calming Measures

North Williston Road

Legend

-  4-Way Stop
-  Speed Table
-  Pedestrian Crossing Signal



Google Earth

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