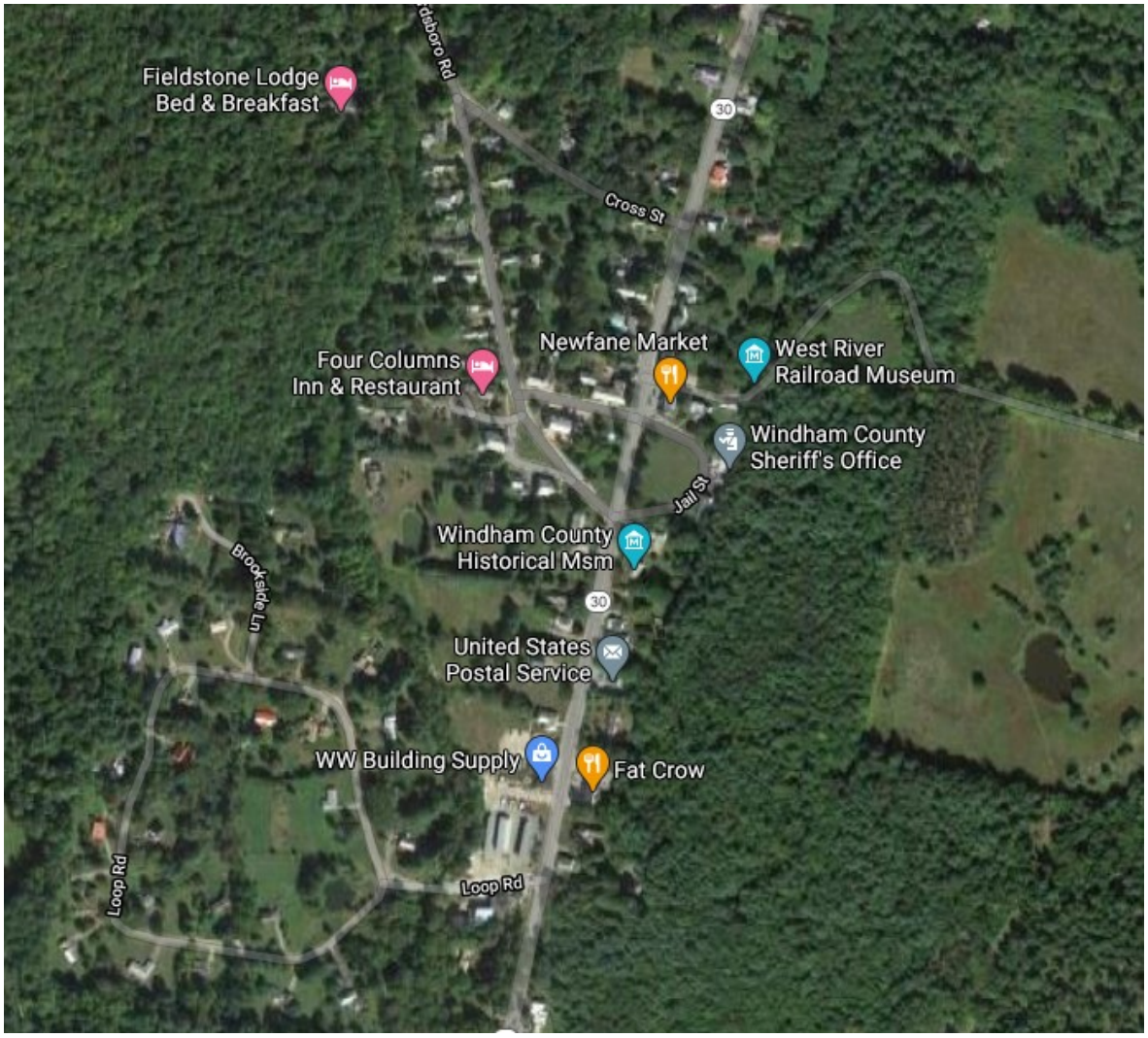
Road Safety Audit Review

VT 30, Newfane Village

September 22, 2020

Vermont Agency of Transportation
Operations & Safety Bureau



Operations & Safety Bureau

Road Safety Audit Review

RSAR Process

A road safety audit review (RSAR) is a formal examination of an existing road in which an independent, multi-disciplinary team (the Audit team) reports on potential safety issues. According to the Federal Highway Administration (FHWA), the purpose of a RSAR is to determine which elements of the road may present a safety concern, to what extent and under what circumstances as well as to identify opportunities to mitigate the identified safety concerns.

The RSAR process starts with a commencement meeting during which the Audit team reviews data and gathers community concerns. A site inspection is then performed by the Audit team. The site visit involves the identification of safety deficiencies as seen in the field by driving and walking the location. Following the site inspection, the Audit team holds a post inspection meeting**.** It is during this meeting that the team members discuss their observations and identify safety issues. The team is to reach a consensus on the importance of each safety issue mentioned. Only those issues for which a consensus is reached are included in the RSAR findings which are presented in a written report.

The written report identifies safety concerns and proposes guidance. These issues and solutions are presented in a tabular format associated to a responsible entity for ease of reporting. The responsible entities are any groups who own a roadway feature or who are responsible for making an improvement or for initiating further studies. These could include for example, the VTrans design section, the local town, the local police or the local RPC.

Location

The location of this RSAR is the section of VT 30 within the boundaries of Newfane Village. This corresponds to mile points 2.740 to 3.280. VT 30 is a minor arterial. A second location of interest within Newfane Village is South Wardsboro Rd which becomes West St, and which runs through the Village west of VT 30 (South Wardsboro Rd is discussed separately in Appendix A).

Purpose of the RSAR

This RSAR was conducted at the request of the Incorporated Village of Newfane. The main safety issues that are of concern include speeding through the Village on VT 30 and in particular at the north end of the Village, north of Cross St, and the safety of pedestrians while crossing VT 30 or while walking during winter.

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

RSAR Participants

Mario Dupigny-Giroux from the Operations & Safety Bureau Data Unit, VTrans, was the RSAR coordinator.

The other participants were:

Chris Campany,	WRC
Bill Jenkins,	Operations & Safety VTrans
Marc Pickering,	Dist 2 VTrans
Mandy White,	Operations & Safety VTrans
Aaron Naparstek,	Village of Newfane (Resident)
Patricia Johnson,	Village of Newfane (Resident)
Jay Wilson,	Town of Newfane (Road Foreman)
Margot Zalkind,	Village of Newfane (Traffic Calming Committee Chair)

Other collaborators included:

Ian Degutis,	Operations & Safety VTrans
Jon Kaplan,	Bicycle and Pedestrian Program (MAB) VTrans
Marcos Miller,	Operations & Safety VTrans

Information Reviewed

Geometry

VT 30 has 11-foot travel lanes and 3-foot shoulders. The roadway width varies within the Village between 26.5 ft and 40 ft.

A sidewalk is located on the west side of VT 30 from the Newfane Town Office to West St and from Court St to Cross St. On the east side of VT 30, a crosswalk is located from north of the post office to Jail St and then, from Cemetery Hill St extending north to about 638 VT 30.

There is a 4.8-degree downgrade in the southbound direction at about mile point 3.158.

Paved Surface

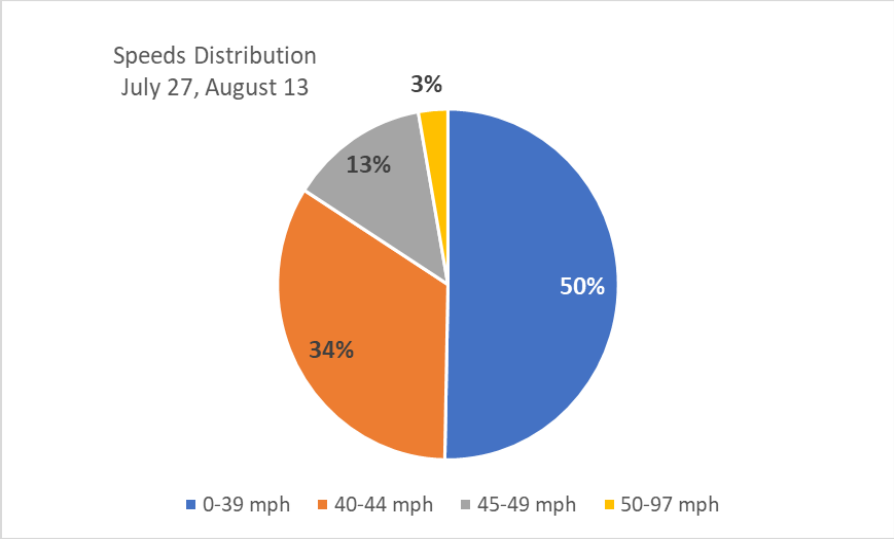
The paved surface condition on VT 30 is rated as poor from the north end of the village to just south of Cross St, and as fair from that point on south (VTransparency September 2020).

Speed Limit

The speed limit on VT 30 within the Village is 30 mph. From the north, the speed limit transitions from 40 mph at mile point 3.296. Motorists are warned of this change by a reduced speed limit ahead sign at mile point 3.396. Traveling from the south, the speed limit changes from 40 mph to 30 mph at mile point 2.527. Motorists are warned of this change by a reduced speed limit ahead sign located at mile point 2.430.

Additional 30 mph speed limit signs are located, in the southbound direction, at mile points 3.021 and 2.525, while in the northbound direction, additional speed limit signs are located at mile points 2.724 and 3.018. These intermediate signs are spaced at about 1500 ft.

The Village of Newfane reported that during the month of July, the Windham County Sherriff's Office placed a speed cart at the north end of the Village on VT 30, across from 638 VT 30, by Kennett & Son's Auto Repair, and that between July 27, and August 13, 10,306 vehicles passed the cart heading south of VT 30 with the following results: Of the 10,306 vehicles, 291 vehicles (2.8%) registered speeds of 50 MPH to 97 MPH, 1,363 vehicles (13.2%) registered speeds between 45 MPH and 49 MPH, 3,448 vehicles (33.8%) registered speeds between 40 MPH and 44 MPH with the remaining vehicles (50.4%) traveling under 39 MPH.



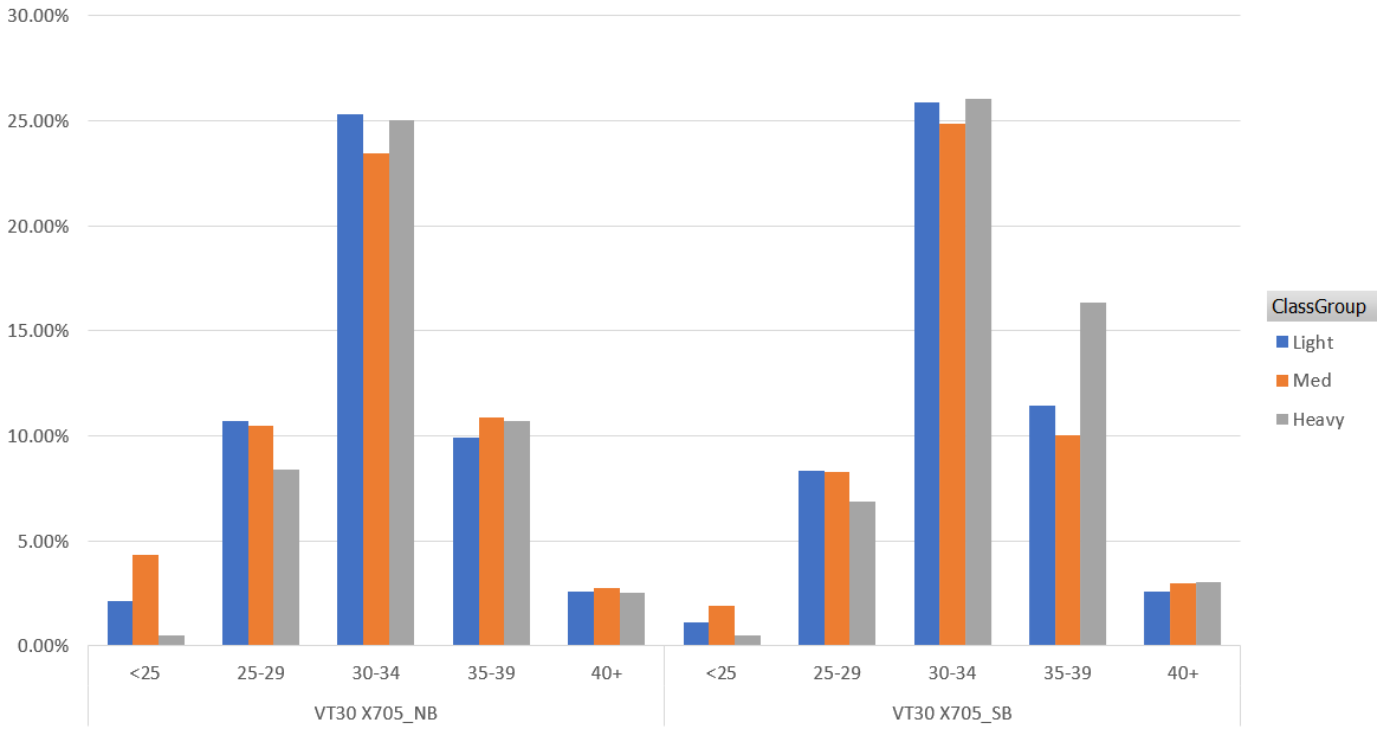
From this speed distribution, the speed that 85% of the southbound motorists are driving at or below (the 85th percentile speed) on VT 30 by Kennett & Son's Auto Repair (that is, just north of the crest of the hill) can be estimated to be at least 44 mph.

WRC collected speed data on VT 30 with pneumatic tubes in November 2020 in front of the county courthouse. The data showed similar results for both directions of travel with the overall

mean speed being 32 mph, the 85th percentile speed being 36 mph and the 95th percentile speed being around 39 mph. In addition, the range of speeds that encompasses the highest proportion of vehicles, called the 10-mph pace, was found to be between 25 to 34 mph in the northbound direction with 72% of the traffic and 26 to 35 mph in the southbound direction with also 72% of the traffic.

The graph below summarizes the proportion of vehicles by speed and class groups by direction of travel on VT 30 in front of the county courthouse. In the graph, the light class group represents motorcycles, passenger vehicles and pick-up trucks, the medium category denotes busses and 2 to 4-axle single unit trucks while the heavy category designates tractor-trailers.

The graph illustrates that the proportions of vehicles for each of the three class groups within a speed category are usually close to each other. The graph shows that there is an exception and that the proportion of heavy vehicles in the 35 to 39 mph speed range for the southbound direction is larger than the other two class groups.



Enforcement

In past years, enforcement was conducted by the Windham County Sheriff under contract to the Village. While the Village no longer has a contract, the Town currently has a contract with the Vermont State Police.

Traffic Calming Devices

The Windham County Sheriff and VTrans District 2 periodically places a speed cart on VT 30 at the request of the Village. A speed cart was installed by the Windham County Sheriff in late July into August. A speed cart was present at the time of the road safety audit (it was located near the crest of the hill at the north end and had been deployed by District 2).

Traffic Volumes

The 2018 Average Annual Daily Traffic was 5700 vehicles per day south of West St and it was 5500 vehicles per day north of West St.

Pedestrian Generators

Pedestrian generators include the Post Office, Newfane Town Office, Newfane Market, the general store, Fat Crow Restaurant and the bank. In addition, Village representatives indicated that school buses were dropping students along VT 30 in Newfane Village.

Crash History

Crashes were reviewed for the period ranging from 2015 to 2019. During this period, a total of eighteen crashes were listed in the VTrans database. Of these crashes, four were reported as non-reportable[1].

The crash rate on VT 30 within the Village for this period in crashes per million vehicles is 2.149. This crash rate is higher than the current available (2012-2016) average crash rate for the

[1] A motor vehicle incident that did not result in an officer's written report. Rather, it is a brief record existing in a CAD/RMS that indicated a vehicle incident occurred and no injury or damage was conveyed.

reference group of similar functional class roads which is 1.249. However, this crash rate is lower than the maximum crash rate that would be expected on this road (taken as the critical rate). The critical rate for this section of road is 2.424.

While the crash rate for the entire section is as expected, the section of VT 30 from West St to the north (between mile points 2.915 to 3.215 was identified as a high crash location in the most recent available HCL report (2012-2016).

The available crash data for 2015 to 2019 indicates that overall, 77% of the crashes happened during daylight compared to 23% of the crashes during dark conditions and that 56% happened between 3:00 and 5:00 pm while 19% took place between 7:00 and 9:00 am. The data further shows that most of the crashes (86%) happened on a dry road surface.

The crash data is further reviewed within smaller sections below.

There were two crashes between Loop Rd and the Town Office during the review period. There was one more crash reported in July 2020. There is no specific crash pattern in this section of VT 30.

There were seven crashes in the area bounded by the Post Office and Court St during the review period. There are no known crashes for 2020.

This section does not display a significant crash pattern. There were, however, two instances of read-end crashes (including a crash that resulted in an attempt to avoid the rear-end crash). One of these two rear-end crashes was related to a pedestrian crossing the road (in the area of the historical museum).

The data show that there was only one crash at the Newfane Market during the five-year period. The driver at fault indicated that he did not see the oncoming vehicle as he was pulling out (the report does not say if other parked vehicles were blocking his view).

There were four crashes on VT 30 between Cross St and the north end of the Village during the review period with no significant crash patterns. There were two instances of rear-end crashes. There are no known crashes for 2020.

During the commencement meeting, it was mentioned that there had been a fatal crash in the Village on VT 30 that involved a pedestrian. An October 2002 newspapers article from the Associated Press mentioned that the operator at fault was drinking, speeding and driving in the wrong lane (heading north in the southbound lane) of VT 30 when he struck and killed a pedestrian who was said to be waiting for the vehicle to pass. This crash took place at dusk on September 22, 2002.

A summary table of the crash data is presented in Appendix B along with collision diagrams.

Past Studies

Newfane Village Sidewalk Feasibility Study, October 1999: This effort conducted a feasibility study to identify appropriate solutions, designs, schedules, costs and funding sources for the implementation of selected improvements in support of the Village of Newfane receiving funding from the VTrans' Enhancement Grant Program to investigate improvements to the pedestrian system within the Village. Selected pages from the study can be found in Appendix C.

Vermont Route 30 Traffic Calming Project, September 2001: This study built upon a 1999 corridor management study by WRC and sought to develop a traffic-calming program along VT 30. Specifically, for Newfane Village, the study suggested that the following primary traffic calming measures be deployed: Raised Median Gateways, Curb Extensions and Dynamic Striping. Selected pages from this study can be found in Appendix D.

Dynamic Striping in Four Towns Along Vermont Route 30, October 2007[2]: This study evaluated the efforts of an experimental series of pavement markings known as “Dynamic Striping” roadway treatment on VT 30 within speed reduction zones located at the entrance of four villages (including Newfane) during the summer of 2005 and 2006. The study concluded that the dynamic stripes appeared to be marginally effective in reducing traffic speeds with an average decrease in speed of 1.0 mph four months following application. Public perception revealed that the dynamic stripes acted more as a signal that the village was coming up.

[2] https://vtrans.vermont.gov/sites/aot/files/highway/documents/materialsandresearch/completedprojects/AOT_DynamicStripingiInFourTownsAlongVTRoute30FinalReport2007.pdf

Past Projects

Recent past projects were Project STP 2401(1) for the resurfacing of VT 30 (substantially completed in October 2010), and Project STP SIGN (31) for the replacement of signs on VT 30 (substantially completed in August 2011).

Future Projects

Project STP CRAK(39) is for crack sealing along VT 30 with a project schedule of July 2020 to Summer 2021.

Another project which is currently underway is the VT 30 - Brattleboro to Winhall Corridor Management Plan Development by VTrans.

Identified Safety Concerns

The areas of safety concern identified by the audit team along with the potential safety enhancements suggested by the team are summarized in the table below. These concerns and remedial actions are further discussed in the section following the table.

In the table, the entities listed under the column called “Potential Responsibility” are suggested groups that could possibly implement some of the countermeasures. These groups (or any other entities not listed) are not obligated to implement the suggestions mentioned in this report.

For each suggested countermeasure, its safety effectiveness is mentioned in the table if an industry measure is available or a brief description of its purpose is provided.

In formulating suggested remedial actions, time frames and costs were qualified as follows: Short term, < 1 year; mid-term 1-3 years; long term > 3 years; low cost, < $15,000; medium cost, $15,001 - $75,000; high cost, > $ 75,001.

The following safety concerns were identified by the audit team (the concerns are not necessarily listed in order of importance):

VT 30

1. Traveling speeds are high at times
2. Crossing VT 30 could be hazardous at times
3. Walking amenities are old and discontinuous
4. Some road hazards are present

Potential Safety Enhancements Summary Table -- VT 30

	Safety Concerns						Potential Responsibility	Purpose/ Safety Payoff[3]	Time Frame	Cost
Safety Enhancement	1 High Speed	2 Cross-ing	3 Walk-ing	4 Haz-ards	5	6				
Consider installing a 30 mph speed limit sign on the left-hand side at mp 3.296	X	X					VTrans (Traffic Ops)	Increase awareness of the speed change	Now to Short	Low
Evaluate the need for Hidden Drive signs in the area of 638 to 631 VT 30	X						VTrans (Traffic Ops)	Slow traffic by crest of hill, Warn of drives	Now to Short	Low
Recurring enforcement of the high-risk drivers	X	X					Village/Town via contracts	Serve as deterrent	On-Going	Medium to High

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

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Potential Safety Enhancements Summary Table -- VT 30										
	Safety Concerns						**Potential Responsibility**	**Purpose/ Safety Payoff[3]**	**Time Frame**	**Cost**
Safety Enhancement	1 High Speed	2 Cross-ing	3 Walk-ing	4 Haz-ards	5	6				
Continue the periodic use of a speed cart	X	X					Village/Town via Sheriff or District 2	45-73% reduction # of vehicles traveling 5 and 10 mph over the speed limit[4]	Now to Short	Low
Consider modifying the gateway village signs	X	X					Village	Increase awareness of change in setting	Now to Short	Low
Manage speeds using a portable speed radar feedback sign	X	X					Town	45-73% reduction # of vehicles traveling 5 and 10 mph over the speed limit	Short	Medium

[4] https://safety.fhwa.dot.gov/speedmgt/ref_mats/rural_transition_speed_zones.cfm

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Safety Enhancement	1 High Speed	2 Cross-ing	3 Walk-ing	4 Haz-ards	5	6				
Apply for a VTrans grant for the conduct of a pedestrian facilities scoping study[5]	X	X					Town (with help from WRC)	Update past studies, assess new needs	Short	Medium
Apply for a demonstration project for crosswalks[6]	X	X	X				Town (with help from WRC)	Gauge demand & access manage-ment	Mid	Low
Develop a mechanism to finance the plowing of sidewalks			X				Village	Improve walkability during winter	Short	Low

[5] VTrans bike/ped grants could be used for this purpose. These grants are available every year and the application deadline is usually in June.
[6] VTrans has a process by which a town can apply to do a demonstration project on the state system.
https://vtrans.vermont.gov/sites/aot/files/planning/documents/permittingservices/AOT%20Demonstration%20Project%20Guidance.pdf

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Safety Enhancement	1 High Speed	2 Cross-ing	3 Walk-ing	4 Haz-ards	5	6				
Consider repairing the sections of sidewalks that are prone to ponding			X				Town	Improve walkability	Short to Mid	Medium to High
Relocated the monument at corner of Jail St				X			Town	Eliminate a hazard	Now to Short	Low
Raise the area around the inlet at corner of West St				X			VTrans (via future paving project)	Improve bike safety	Mid to Long	Low to Medium

Discussion of Safety Concerns

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

Concern: Traveling speeds are high at times (VT 30)

Discussion:

The speed data collected via the speed cart installed in July indicates that the 85th percentile speed on VT 30 would be above 44 mph. This is at least 14 mph above the speed limit.

It is reported that, the types of vehicle that speed through the Village, not only include passenger vehicles but also large semi-trailer trucks. The speed data collected in the southbound direction on VT 30 by the courthouse show that the proportion of tractor-trailers within the 35 to 39 mph speed range is larger than the proportions of light and medium vehicles.

The area near the top of the hill (near residences 638 and 631) as well the area down the hill near Cross St in the southbound direction have been reported as dangerous by residents. One specific issue at the top of the hill is the difficulty of entering VT 30 from residential drives.

The risk of severe injury to pedestrians increases significantly with higher traveling speeds and is said to be 50% at speeds near 30 mph, 75% at speeds near 40 mph and 90% at 45 mph[7].

Visually, the roadway appears wide open and could incite higher speeds.

The placement of the reduce speed limit ahead signs, and of intermediate speed limit signs are appropriate as per the Manual Uniform Traffic Control Devices (MUTCD) and guidance from Vermont Local Roads[8] (the Vermont Local Roads guide suggests placing intermediate signs every 0.3 to 0.4 miles in 25 mph and 30 mph speed zones).

[7] https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/

[8] https://localroads.vermont.gov/sites/localroads/files/files/resources/materials/Setting%20Speed%20Limits%20Guide%20Update%20August%202016.pdf

Safety Enhancements:

Signage Related

Immediate to Short Term

- Consider installing an additional 30 mph speed limit sign (30"' x 36") on the left hand side at the beginning of the southbound 30 mph zone at mile point 3.296 across from the existing speed limit sign on the right as to gatepost the signs.
- Evaluate the need for Hidden Drive signs in both directions in the area of 638 and 631 VT 30 to alert drivers of drives for which sight distance may be limited.

Enforcement related

- Conduct recurring speed limit enforcement campaigns for the high-risk drivers.

High risk drivers are normally those who travel at or above the 90th percentile speed (about 5 mph above the 85th percentile speed) when considering the speed differential of vehicles.

On VT 30 in the southbound direction, at the crest of the hill near Kennett & Son's Auto Repair, the high-risk drivers are those who travel at or above 54 mph.

On VT 30 near the county courthouse, the 85th percentile speed is 36 mph and the high-risk drivers are those driving at or above 41 mph. However, because of the presence of pedestrians and the increasing risk of serious injuries at speeds above 30 mph, consideration should be given to target the motorists who travel above the 85th speed of 36 mph.

Traffic Calming Related

Now to Short Term

- Continue the periodic use of speed carts.
- Consider modifying the gateway village signs at both ends of the Village to make them more prominent (As per the Vermont Statutes, the sign should not exceed 64 square feet in area).

Short Term

- Consider installing a portable speed radar feedback sign that could be moved at two or three locations within the Village (the Town will have to make the request to VTrans and would be responsible for acquiring and maintaining the equipment).

Mid to Long Term

- The Town should consider taking this portion of VT 30 as a Class 1 Town Highway. Doing this would provide more flexibility and would permit the implementation of other traffic calming measures such as the small curbed median island at each end of the Village that was proposed in the Traffic Calming Study.

Concern: Crossing VT 30 could be hazardous at times (VT 30)

Discussion:

Residents and visitors are currently crossing VT 30 at different locations to go to places of interest. Residents feel that, because the traveling speeds are sometimes significantly above the speed limit, crossing VT 30 is hazardous.

The VTrans Guidelines for Pedestrian Crossing Treatments (August 2019)[9] indicates that in areas such as a village center, it may be determined based on engineering judgement[10], that pedestrian safety would be enhanced by installing a marked crosswalk to help channelize pedestrians and that in these cases, minimum pedestrian or vehicular volume requirements are not considered but that the other criteria listed in the guidance must be met.

During the road safety audit, local participants pointed to three specific places where they felt that a crosswalk would enhance pedestrian safety. These locations were evaluated for their physical suitability by the audit team and other collaborators. The assessment of the three locations is presented in the next table.

Site #	Location	Destination	Assessment	Additional Enhancement	Outcome
Site #1	End of sidewalk on east side by house # 566	Post Office	This site is a good candidate for a crosswalk. However, compliant ramps with DWS on both sides of the crosswalk are needed; need to avoid any driveways; if there is on-street parking going on in this area, new markings to define a 20-foot "no parking" area adjacent to the crosswalk, on either side, will be needed.	Safety could be further enhanced with access management at the post office and with providing a pedestrian facility from the end of the existing crosswalk to the post office building.	Could be suitable, but with modifications
Site #2	North of Court St	Newfane Market	A crosswalk is only viable with access management at the market in place.		Could be suitable, but with modifications

[9] https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/VTrans%20Ped%20Crossing%20Guide%20August%202019%20Update.pdf

[10] Determination would be made by VTrans (Traffic Operations Unit) upon receipt of a letter by the Town.

Site #	Location	Destination	Assessment	Additional Enhancement	Outcome
Site #3	Cross St		The demand for a crosswalk here is questionable. The southbound line of sight coming down the hill is an issue.		Not suitable

A permanent crosswalk near the Post Office would require the Town to construct at a minimum compliant ADA ramps with a detectable warning surface (DWS). In addition to ADA compliant ramps, a permanent crosswalk at the Newfane Market would also require the provision of access management measures such as curbing to reduce vehicular and pedestrian conflicts.

A suggested enhancement to a crosswalk on VT 30 (if one is approved by VTrans in the future), as determined from the crosswalk enhancement options listed in the VTrans Guidelines For Pedestrian Crossing Treatments manual, would be to use an In-Street Pedestrian Crossing sign (R1-6). This suggestion is based on the current AADT on VT 30 of 1800 vehicles per day and on the estimated 85th percentile speed of 36 mph (shown in red in the table below). A permanent crosswalk may not be allowed without this enhancement. The cost and maintenance of this enhancement would be the responsibility of the Town.

Roadway Type	3000 ≤ AADT ≤ 9,000			AADT >9,000 and ≤ 12,000			AADT > 12,000		
	≤ 30 MPH	35 MPH	40 MPH	≤ 30 MPH	35 MPH	40 MPH	≤ 30 MPH	35 MPH	40 MPH
2 Lanes	In-street sign	In-street sign	In-street sign, RRFB	In-street sign, RRFB	In-street sign, RRFB	In-street sign, RRFB	In-street sign, RRFB	In-street sign, RRFB	In-street sign, RRFB
3 Lanes	Ped Refuge	Ped Refuge	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB, PHB
4 or more Lanes with Raised Median*	AYL	AYL	AYL, RRFB	AYL, RRFB	AYL, RRFB	AYL, RRFB, PHB	AYL, RRFB	AYL, RRFB	AYL, RRFB, PHB
4 or more lanes without raised median	Ped Refuge, AYL	Ped Refuge, AYL	Ped Refuge, AYL, RRFB, PHB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, RRFB	Ped Refuge, AYL, PHB	AYL, RRFB	Ped Refuge, RRFB, AYL, PHB	Ped Refuge, AYL, PHB

Safety Enhancements:

Short Term

- Apply for a VTrans grant[11] for the conduct of a pedestrian facilities scoping study that could include additional amenities in support of providing crosswalks and that could also include access management as appropriate.

- Upon completion of the scoping study, apply for a short-term demonstration project to evaluate the crosswalks and access management measures identified by the scoping study at the post office and at the Newfane Market.

  VTrans has a new process by which a town can apply to do a demonstration project on the state system. This could be an opportunity to test some of the measures identified in the scoping study. The cost of doing the experimental project would be on the Town (including signs and posts and other materials). In these demonstrations, the Town could use cones to simulate access management measures such as curbing and pathways, or traffic calming measures such as bulbouts.

Concern: Walking amenities are old and discontinuous (VT 30)

Discussion:

The past sidewalk study indicated that there were long stretches of sidewalk that needed to be reconstructed and new portions added. The current sidewalks are narrow, cracked and uneven. Some portions are prone to pounding.

Residents reported that, during the winter months when the snow was plowed along VT 30, the sidewalks were no longer visible or usable and pedestrians had to walk in the highway.

[11] Grants will be awarded in July 2021. Contact Jon Kaplan for more information on how to apply (jon.kaplan@vermont.gov).

Safety Enhancements:

Short Term

- As suggested previously, apply for a VTrans grant for the conduct of a pedestrian facilities scoping study to update past studies and identify new needs.

  Once the scoping study is completed, the Town could apply for a second grant for design and construction.

- Develop a mechanism to finance the plowing of sidewalks on VT 30 within the Village.

Short Term to Mid Term

- Consider repairing the sections of sidewalks that are prone to ponding.

Concern: Some road hazards are present (VT 30)

Discussion:

The monument on the southeast corner of Jail St (south of Newfane Market) is within the clear zone and is a hazard to motorists (as well as pedestrians as it is near the sidewalk). This monument was hit in one of the crashes reviewed for this road safety audit. One of the participants further mentioned that it seemed that the monument was hit at least once a year.

The drop inlet at the northwest corner of West St is significantly recessed. One of the participants commented that it had caused incidents with bicyclists in the past.

Safety Enhancements:

Now to Short Term

- Relocate the monument.

Mid Term to Long

- Raise the area around the inlet.

  This issue could likely be addressed within a future paving project since it has been identified as a safety concern and is relatively minor work. However, for this to be further remediated with a paving project, all grading would have to be completed within the State's right-of-way.

Appendix A
South Wardsboro Rd Assessment

Safety Issues

The main safety concern is vehicles traveling above the speed limit.

Current Conditions

South Wardsboro Rd is a Class 2 Rd that changes to West St east of Cross St. The road is mostly residential.

View of West St

West St is characterized by sidewalks separated by grassy curbed islands, crosswalks and crosswalk extensions.

As West St becomes South Wardsboro Rd the character of the road changes. The sidewalk on the south side of the street continues for a short distance up to the house located at 9 South Wardsboro Rd. From that point west, the road becomes more rural.

Google Maps view of S Wardsboro Rd

Speed Data

The posted speed limit in the area of concern is 25 mph. The posted speed limit is 25 mph from after Bridge #11 on South Wardsboro Rd near house #32 to the intersection of VT 30 on West St. On South Wardsboro Rd, west of Bridge #11, the posted speed limit is 35 mph.

WRC collected speed data, in August 2019 and November 2020, on West St between Cross St and Court St, in front of house #40. WRC also collected speed data on South Wardsboro Rd, 400 ft west of Cross St but in August 2019 only (400 ft west of Cross St is about at the “ROAD NARROWS” sign that is mentioned below).

The data showed that, for both data collection periods on West St, the average speed was 26 mph and the 85th percentile speed was 32 mph. The 2019 data also showed that on South Wardsboro Rd, the average speed was 33 mph and the 85th percentile speed was 38 mph.

Traffic Data

The counts performed by WRC in 2019 revealed that the average daily traffic on West St was 660 vehicles per day and that it was 630 vehicles per day on South Wardsboro Rd. The average daily traffic generated from the 2020 count on West St was 557 vehicles per day.

Crash Data

No crashes have been reported on South Wardsboro Rd during the period covering 2015 to 2019.

Traffic Control Devices

Since South Wardsoboro Rd is a class 2 road, the double yellow centerline on this road is maintained yearly by VTrans. The road also has white edgelines and these are repainted every other year by a contractor for the Town. The white edgelines currently end a short distance after the speed zone transition at which point there is a recent overlay on which there are no edgelines.

A reduced speed ahead sign is present on South Wardsoboro Rd before the speed transition from 35 mph to 25 mph.

The first 25 mph speed limit sign is near house #32 at the beginning of the 25 mph speed zone. There is a speed feedback radar sign below this 25 mph speed limit sign.

Continuing east towards VT 30, there is a warning sign with the words “SLOW STRICKLY ENFORCED”, followed by another warning sign with the words “ ROAD NARROWS”. At this location (just before house #9), there are also two sets of white 25 mph word pavement markings.

<u>Identified Safety Concerns</u>

The primary safety concern identified was vehicles traveling above the posted speed limit.

Potential safety enhancements are summarized in the table below. These are further discussed in the section following the table.

Potential Safety Enhancements Summary Table -- Wardsboro Rd										
	Safety Concerns						**Potential Responsibility**	**Purpose/ Safety Payoff[1]**	**Time Frame**	**Cost**
Safety Enhancement	1 High Speed	2	3	4	5	6				
Review the speed limit on S Wardsboro	X						Town (with help from WRC)	85th percentile speed is often indicative of appro-priate speed	Now to Short	Low
Review the locations of intermediate speed limit signs	X						Town	Remind motorists of speed limit	Now to Short	Low
Use an oversized (30" x 36") speed limit sign for the first sign at the beginning of a zone	X						Town	Improve the conspi-cuity of sign and beginning of zone	Now to Short	Low

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

Potential Safety Enhancements Summary Table -- Wardsboro Rd

	Safety Concerns						Potential Responsibility	Purpose/ Safety Payoff[1]	Time Frame	Cost
Safety Enhancement	1 High Speed	2	3	4	5	6				
Consider using 6-foot heigh num/let for 25 mph markings	X						Town	More visible, Meet MUTCD standards	Mid	Low
Recurring enforcement of the high-risk drivers (>= 5 mph above 85th percentile speed, 43 mph)	X						Town via contracts	Serve as deterrent	On-Going	Medium
Evaluate the appropria-teness of longer-term traffic calming measures	X						Town	Force motorists to slow down	Mid to Long	Medium

Concern: Traveling speeds are high at times

Discussion:

The speed data collected in the 25 mph zone on South Wardsboro Rd in 2019 by WRC indicated that the 85th percentile speed was 38 mph.

The posted speed limit changes at Bridge #11 from 35 mph to 25 mph. This transition occurs at the village limits. Up to that point, a motorist would have been traveling on a road mostly boarded by trees on both sides of the road with a few houses here and there. Once within the village limits, for the next 800 to 900 ft, the character of the road remains very similar. The character of the road changes at the beginning of the crosswalk near house #9 and then drastically at Cross St.

The Manual on Uniform Traffic Devices (MUTCD) indicates that if a speed limit within a speed zone is posted, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic. The MUTCD also stipulates that other factors that may be considered when establishing or reevaluating speed limits are the following: Road characteristics, shoulder condition, grade, alignment, and sight distance; The pace; Roadside development and environment; Parking practices and pedestrian activity; and Reported crash experience for at least a 12-month.

Given the above information, it may be appropriate to reevaluate the speed limit within the short stretch from Bridge #11 to house #9. It may be appropriate to consider moving the beginning of the 25 mph zone to just before house #9 and to evaluate if an advisory speed is needed for the horizontal curve that is just west of that house (#9).

Safety Enhancements:

Speed Limit Related

Immediate to Short Term

- Review the speed data and road characteristics and reevaluate the speed limit.
- If no changes are made, review the locations of intermediate speed limit signs. For 30 and 25 mph zones, intermediate signs are usually placed every 0.4 mile. The current spacing seems fine, however, an additional 25 mph speed limit sign may be needed after the curve (east of the curve) as a reminder.

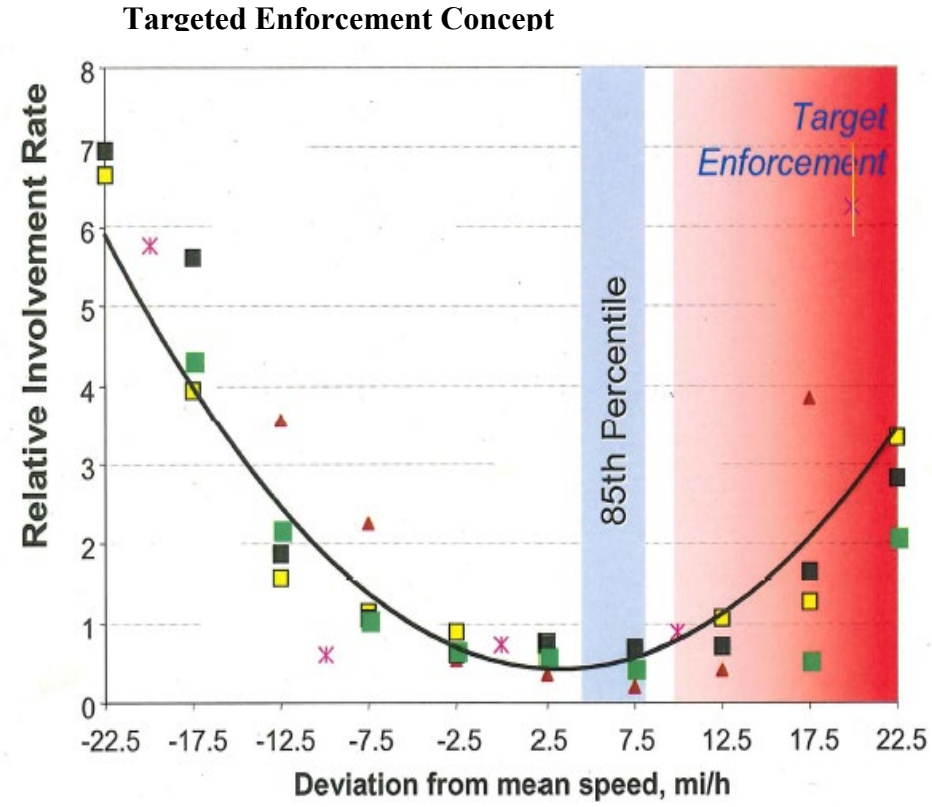
- Consider using an oversized (30” x 36”) speed limit sign for the first speed limit sign at the beginning of a zone (alternatively, could also add a sign on the left-hand side of the road).
- Consider using six-foot numerals and letters the next time the 25 mph word pavement markings are refreshed (The white 25 mph word pavement markings are undersized. The MUTCD states that letters and numerals should be six feet or more in height).

Guidance for setting speed limits is available in Setting Speed Limits: A Guide for Vermont Towns, which was produced by Vermont Local Roads[2].

Enforcement related

- Conduct recurring speed limit enforcement campaigns for the high-risk drivers (target drivers at or above 5 mph above the 85th percentile speed 43 mph).

The next graph shows that the crash involvement rate increases as traveling speeds deviate from the 85th percentile speed. This means that targeting motorists that are traveling above the 85th percentile speed will apprehend motorists that are more likely to cause a crash. Crash involvement starts to increase more drastically 5 mph above the 85th percentile speed or around the 90th percentile speed.



2 https://localroads.vermont.gov/sites/localroads/files/files/resources/materials/Setting%20Speed%20Limits%20Guide%20Update%20August%202016.pdf

Traffic Calming Related

Mid to Long Term

- Review the corridor for the appropriateness of longer-term vertical deflection measures such as speed tables to physically force motorists to slow down.

A speed table is a raised area placed across the roadway designed to physically limit the speed at which a vehicle can traverse[3].

Speed tables are appropriate on roads when the posted speed is 35 mph or less (most applications are on roads with posted speed limits of between 30 mph and 25 mph). They are generally not appropriate when the pre-implementation 85th percentile speed is 45 mph or more.

Speed tables usually have a height of between 3 and 3.5 inches and an overall travel length of 22 feet. The most common speed table consists of a 10-foot plateau with 6-foot approaches on both sides. Speed tables with heights up to 6 inches, ramps of up to 10 feet,

[3] https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

and plateaus between 18 and 23 feet in length have been found to better accommodate large vehicles with long wheelbases such as fire trucks.

A single speed table reduces 85th percentile speeds to the range of 25 to 35 mph. Speed reduction effects decline at the rate of approximately 0.5 to 1 mph every 100 feet beyond the 200-foot approach and exit of a speed table as motorists tend to accelerate after passing over the speed table. A series of speed tables could be used to retain slower speeds over a longer distance.

Other vertical deflection measures would include speed humps, speed cushions and raised intersections. The following table was taken from the resource listed under footnote 3 in this appendix and presents a summary of the potential applicability of vertical deflection measures and the likelihood of their acceptability for a particular setting.

Traffic Calming Measure	Segment or Intersection	Functional Classification			Street Function	
		Thoroughfare or Major	Collector or Residential Collector	Local or Local Residential	Emergency Access	Transit Route
Vertical Deflection						
Speed Hump	Segment	1	5	5	1	3
Speed Cushion	Segment	1	5	5	5	5
Speed Table	Segment	3	5	5	1	3
Offset Speed Table	Segment	3	5	5	5	3
Raised Crosswalk	Both	3	5	5	1	3
Raised Intersection	Intersection	3	5	5	3	3

Legend:

5 – traffic calming measure may be appropriate
3 – caution; traffic calming measure could be inappropriate
1 – traffic calming measure is likely inappropriate

Traffic calming measures are often initially of concern for snow removal operators when traffic calming measures are proposed.

The FHWA resource listed under footnote 3 discusses the following issues and workable solutions based on the experience gained in several jurisdictions.

- Potential for damage to traffic calming measures: Some jurisdictions mark traffic calming measures or ensure maintenance crew are familiar with their locations on streets they plow.

- Potential for damage to snow removal equipment: Potential solutions include using rubber tipped plows, installing gently sloped vertical measures, slightly raising the plow at vertical measures, and using salt (and/or sand) to melt the snow at the measure.

- Snow storage: Design horizontal traffic calming measures to accommodate the storage of snow from the roadway, where needed.

In addition, prefabricated vertical measures such as speed humps and speed cushions represent an alternative that provide the option of being removed prior to the snow season.

The FHWA resource recommends that the group responsible for snow removal be included in the planning and design of a traffic calming measures.

Appendix B

Crash Data

Crash Data 2015-2019

Crash #	Incident #	Date	Time	Weather	Contributing Circumstances	Collision Type	# Injuries	# Fatalities	Narrative
1	18B100298	01/13/18	8:36	Cloudy	Driving too fast for conditions- Failure to keep in proper lane	Single Vehicle Crash	0	0	OP1 said that he was traveling south and that the vehicle in front of him slowed down to turn left onto Loop Road. He said that when he began to cross the centerline he lost control and then went off the roadway. At the time a of the crash the roadway was covered with a thin layer of ice. V1 was at a position of final controlled rest off the west side of the road and down a 20 foot embankment. The vehicle was partially in the stream and was facing south.
2	16D201346	06/02/16	7:23	Clear	Fatigued- asleep- Failure to keep in proper lane	Single Vehicle Crash	0	0	Op1 entered the Village of Newfane, he was traveling at approximately 30 MPH when he fell asleep. After impacting the edge of the ditch, V1 rolled over and came to an uncontrolled position of rest on its roof facing north.
3	18B103449	06/12/18	15:22	Cloudy	Followed too closely- No improper driving	Rear End	0	0	OP1 was traveling south behind V2, V2 stopped because the car in front of her stopped. OP2 saw a child who was crossing the road and she brought her car to a gradual stop behind the car in front of her. She said that V1 then rear ended her.
4	19B103516	06/22/19	15:42	Clear	Operating vehicle in erratic- reckless- careless- negligent- or aggressive manner- Fatigued- asleep	Single Vehicle Crash	1	0	Op 1 was traveling northbound on VT Route 30, crossed over the solid double yellow line and continued to travel northbound while in the southbound travel lane. Vehicle #1 continued off the roadway, over a sidewalk, and into the front yard of 577 VT Route 30. Vehicle #1 first struck a maple tree, followed by a street sign, a mailbox, a stone post, and a second maple tree before striking the third and final maple. reported that she was falling asleep.
5	17B102872	05/12/17	15:45	Clear	Failure to keep in proper lane- No improper driving	Head On	2	0	As Op1 was traveling north, though the Village of Newfane, Op1 began choking on a Frito's potato chip. While Op1 continued to cough, Op1's vision began to tunnel vision. In the area of the Windham Historical Society, V1 exited northbound lane and began entering the southbound lane while continuing to travel north. In the area of the intersection of VT RT 30 and West Street, V1 and V2 collided.
6	15D203380	12/29/15	8:05	Sleet- Hail (Freezing Rain or Drizzle)	Followed too closely- Driving too fast for conditions	Single Vehicle Crash	0	0	Roadway was snow covered and it was snowing / freezing rain. OP 1advised that he was traveling northbound on Route 30 at approximately 15-20 miles per hour. He realized that he was likely going to rear end the vehicle which was in front of him stopped, preparing to turn left onto Court Street. Advised that instead of rear ending the stopped vehicle, he intentionally drove his vehicle off the roadway.
7	15D201125	04/29/15	14:24	[No Weather]		[No Direction of Collision]	0	0	VT 30 Cemetery Hill Rd

Crash #	Incident #	Date	Time	Weather	Contributing Circumstances	Collision Type	# Injuries	# Fatalities	Narrative
8	17B102662	05/03/17	10:06	Clear	Failed to yield right of way- Visibility obstructed- No improper driving	Other - Explain in Narrative	0	0	Op 1 advised he was backing out of a driveway onto VT Route 30. He advised he observed a box truck, Vehicle # 2 and waited for it to pass by before entering the travel lane. Operator # 1 advised he assumed that Vehicle # 2 would have moved on past in that amount of time, but he later discovered that Vehicle # 2 had slowed down to yield to traffic in front of the People's United Bank.
9	17B106725	10/16/17	18:33	Clear	Inattention	Single Vehicle Crash	0	0	OP 1 was traveling approximately 5 miles per hour and looking at the decorations he installed on his windows in his new business at 598 RT 30 when he miscalculated and struck the green mountain telephone pole at the edge of the road.
10	15D200022	01/03/15	12:20	Cloudy	Failed to yield right of way- No improper driving	No Turns- Thru moves only- Broadside ^<	0	0	OP 1 advised that he was trying to pull out of the parking lot of the Newfane Market to travel south on Route 30 when he struck vehicle #2 which was traveling northbound. Advised that he didn't see her coming.
11	17B104630	07/21/17	17:00	[No Weather]		[No Direction of Collision]	0	0	600 Block VT 30
12	16D002510	10/09/16	11:53	Rain	No improper driving- Followed too closely- Inattention	Rear End	0	0	OP1 was following V2 NB and wasn't paying attention and rear ended his vehicle.
13	19B101812	04/03/19	22:53	Clear	Fatigued- asleep- Not Distracted	Single Vehicle Crash	0	0	Op 1 fell asleep while operating the vehicle NB. The vehicle drifted across the opposite lane of travel and impacted a stone wall and coming to an uncontrolled stop in the ditch on the south side of the road. 625 VT 30.
14	17B103865	06/20/17	15:29	Clear	Manually Operating an Electronic Communications Device (texting- typing- dialing)- Driving too fast for conditions- No improper driving	Rear End	1	0	Op 1 was traveling north on VT 30 when she came upon stopped traffic. While driving Op1 a was using her smartphone to send and receive test messages. When Op1 looked up from the last text message, she observed that the line of traffic in front of her was stopped. Op1 applied her brake and then rear-ended a white pickup truck stopped in front of her. Traffic was stopping for school bus.
15	17B107913	12/10/17	17:17	[No Weather]		[No Direction of Collision]	0	0	1 Block Loop Rd
16	15D200493	02/14/15	16:01	[No Weather]		[No Direction of Collision]	0	0	TH-16 Loop Rd, VT 30

Crash #	Incident #	Date	Time	Weather	Contributing Circumstances	Collision Type	# Injuries	# Fatalities	Narrative
17	20WHC002293	07/06/20	16:20	Clear	Failed to Yield Right of Way	Same Direction Sideswipe	0	0	July 2020 crash. No Narrative. 555 VT Route 30, Town Office. Southbound same direction sideswipe
18	17B104630	07/21/17	17:00	[No Weather]		[No Direction of Collision]	0	0	600 Block VT 30
19	19B106418	11/06/19	16:47	Clear	Mechanical	Single Vehicle Crash	1	0	Crash started at the parking lot of Newfane Auto Care, which is located at 639 VT 30. Operator #1 was trying to leave the parking lot of Newfane Auto Care. The gear shift was the problem that caused this crash, as well as many errors made on Operator #1's part. Operator #1 was leaving the garage when his car was not done being fixed and as mechanic stated was not driveable. As well as leaving his car door open, which led him to fall out of the vehicle.


Town Clerk
30
17
07/06/20
1620
Field to Yield
Dry
WW Building Supply
Home improvement store
30
Fat Crow
Takeout
Smith Brook
30
2
06/02/19
0736
Asleep
Dry
Loop Rd
Loop Rd
1
01/13/18
0836
Passing
Ice


8
05/03/17
1006
Backing Out
Dry
Village Yoga
Temporarily closed
People's United Bank
30
Fayetteville Corner
Antique store
9
10/16/17
1833
Missed Turn
Distracted
Dry
Railroa
Newfane Market
10
01/03/15
1220
Did not see
Dry
Windham County
Superior Court
Jail St
6
12/29/15
0805
Off to Avoid
Snow
30
Jail St
West St
Jail St
5
05/12/17
1545
Coughing
Dry
Windham County
Historical Msm
4
06/22/19
1542
Asleep
Dry
3
06/12/18
1522
Stopped for
Ped
Dry

14
06/20/17
1529
Texting
Dry

19
11/6/19
1647
Mechanical
Dry

13
04/03/19
2253
Asleep
Dry

12
10/09/16
1153
Distracted
Dry

Appendix C

Selected Pages

Newfane Village Sidewalk Feasibility Study
October 1999

NEWFANE VILLAGE SIDEWALK FEASIBILITY STUDY

A Conceptual Alignment Analysis for Pedestrian Improvements
Newfane, Vermont

Prepared for:
Newfane Village Trustees
Village of Newfane, Vermont

Submitted by:
Stevens & Associates, P.C.
Brattleboro, Vermont

in association with

The Office of Robert A. White, ASLA
Norwich, Vermont

October 26, 1999

A. Route 30--Southern Gateway

The "Southern Gateway" stretch of Route 30 begins at a culvert crossing approximately 200 feet north of Loop Road and continues northward to the entrance drive which serves the Town Office. This stretch is intended as the transition point from rural highway to village street.

1. Condition Assessment

- The wide, straight road section allows, rather than discourages, high vehicle speeds as vehicles enter the village.
- There is no clear transition from rural highway to village street.
- Shoulders and parking area on west side are poorly defined.
- The former Cray Oil property (currently owned by Newfane Redevelopment Corporation) located on the east side of the street (#550 Route 30) has an excessively wide curb cut.
- No protection (sidewalk or curb) exists for pedestrians on either side.

2. Recommended Improvements

- Construct "islet" (small curbed median island) or other similar traffic-calming device to serve as the primary "gateway" feature and slow traffic as it enters the more densely developed area of the village.
- Narrow roadway and add granite curb for street definition and pedestrian protection.
- Extend concrete sidewalk from Town Office to Nu-tiques Shop (#551 Route 30).
- Tighten curb cut to former Cray Oil property.
- Install additional drainage as may be required by curb installation.

3. Other Alternatives Considered

Consideration was given to eliminating the "islet" and using a simple narrowing of the roadway (wider paved shoulders transitioning to narrower curbed street) to mark transition into village. Residents did not think this measure would reduce travel speeds through the village as effectively. It was also felt that the "islet" created a stronger, more visible and potentially more attractive gateway feature. Residents and Steering Committee requested that the "islet" be the preferred gateway alternative.

B. Route 30--Town Office to West Street

This more densely developed residential stretch of roadway also contains the Newfane Town Offices, U.S. Post Office and Windham County Historical Society.

1. **Condition Assessment**

   - Wide paved shoulders accommodate parking along entire west side.
   - Much of the sidewalk along the west side is cracked and in poor condition; one small portion of the sidewalk on the west side has been or reconstructed.
   - Beveled pavement against portions of the sidewalk on the west side makes it mountable for vehicles.
   - Drainage system is in place along the west side of Route 30.
   - Much of the sidewalk along the southern section of the east side is lower than the roadway and subject to ponding and icing.
   - The exceptionally wide curb cut at the Post Office poses a safety concern.
   - Narrow shoulders (graveled and paved) on east side are often used for parking; vehicles will frequently mount the adjacent sidewalk.

2. **Recommended Improvements**

   - Reconstruct new concrete sidewalk in place and add protective granite curb along entire west side.
   - Create curb extensions on each side of Route 30 at West Street/Jail Street intersection to facilitate pedestrian crossing.
   - Extend concrete sidewalk on east side to Post Office.
   - Reconstruct new concrete sidewalk in place along east side of Route 30. Certain stretches may need to be raised in order to properly accommodate drainage.
   - Install granite curb and add new drainage along east side of Route 30 from Jail Street to Post Office. Tie new catch basins into existing drainage system on west side.
   - Create a 6'-8' grassed strip between curb and sidewalk from Historical Society to Post Office.
   - Add a curbed, widened paved shoulder that can be used for parking on the east side along northernmost 150 feet or so in front of the Windham County Historical Society.

3. **Other Alternatives Considered**

   Consideration was given to installing curb extensions for sidewalks on each side of Route 30 to facilitate pedestrian crossing between the Town Office and the Post Office. However, village residents were uncomfortable with the extension on the west side, felt that the frontage could be better utilized for parking and requested that the western curb extension be removed.

   Consideration was also given to two other potential parking configurations on the east side of Route 30. The first would eliminate parking altogether along the east

side. The other would create wide paved shoulders (with curb) to provide parking along the entire eastern length from Jail Street to the Post Office. Residents and trustees felt that it would be advisable and appropriate to provide parking in the vicinity of the Historical Society, thus eliminating the no-parking configuration. The more expansive parking configuration was eliminated due to projected high costs and the questionable need to provide parking along that particular southerly segment.

C. Route 30--Court Street to Innes Residence (#638 Route 30)

This stretch runs from the center of the village to the northern edge of the village and encompasses both residential and commercial uses.

1. Condition Assessment

- The block-long curb cut in front of the General Store creates a significant gap in the sidewalk system and poses a safety hazard for pedestrians.
- The block long stretch between Court Street and Cemetery Hill Road appears to be the most heavily-used pedestrian crossing in the village. Due to the expansive parking in front of the General Store, no protected landing area exists for pedestrians on the east side of the crossing.
- Wide paved shoulders accommodate parking on the west side from Court Street northward for approximately 250 feet.
- Wide paved shoulders accommodate parking on the east side from Cemetery Hill Road northward for approximately 200 feet.
- With one short exception between the Newfane Inn and Vermont National Bank, the sidewalk on the west side from Court Street to Cross Street is in reasonably fair condition.
- The sidewalk on the east side of Route 30 from Cemetery Hill Road to the northern edge of the village varies widely in both condition and material.
- An enclosed drainage system is in place on much of Route 30 between Cemetery Hill Road and Cross Street. However, from Cross Street southward approximately 200 feet, stormwater runoff from the street drains onto the sidewalk rather than into the drainage system.
- An excessively depressed catch basin on the east side of Route 30 in the vicinity of Cross Street poses a safety hazard for vehicles and pedestrians.
- Surface drainage along the east side of Route 30 north of Cross Street is inconsistently handled in inadequate open channels.
- North of Cross Street all pedestrian activity is focused on the east side where a sidewalk is present. (Low density development, narrow shoulders and a roadside drainage ditch discourage pedestrian activity on the west side.)

- Portions of the original concrete sidewalk on the east side have been repaved with asphalt. However, where original concrete panels were left in place rather than removed, the sidewalk continues to show signs of cracking and heaving.

2. Recommended Improvements

- Give consideration to either closing or reducing the size of the block-long curb cut at the General Store.
- If an appropriate landing can be created in front of the General Store, give consideration to placing a crossing or crosswalk across the northern leg of the Route 30 intersection with Court Street/Jail Street.
- Retain wide paved shoulders where they currently exist to accommodate on-street parking needs in the vicinity of the bank, the country store and the adjacent antique shops.
- Reconstruct the sidewalk on the east side of Route 30 from a point approximately 200 feet north of Cemetery Hill Road to the end of the existing village system; replace all asphalt segments with concrete.
- Reconstruct the concrete sidewalk on the west side of Route 30 from Court Street to Cross Street.
- Install granite curb along the west side of Route 30 from Court Street to Cross Street.
- Install granite curb along the east side of Route 30 from a point approximately 200 feet north of Cemetery Hill Road to the drive at the Innes residence.
- Install granite curb along the west side of Route 30 from the southern entrance of the Newfane Service Center (#637-39 Route 30) to the drive at the LaMoria residence (#631 Route 30).
- Reconstruct catch basin on east side of Route 30 opposite Cross Street and extend drainage system northward to include newly-curbed stretches.
- Eliminate all roadside ditches and swales on east side of Route 30.

D. Route 30--Northern Gateway

The "Northern Gateway" stretch of Route 30 begins at a point approximately 900 feet north of Cross Street and continues for approximately 300 feet southward. This stretch is intended as the transition point from rural highway to village street.

1. Condition Assessment

- There is no clear transition from rural highway to village street.
- Shoulders and parking area on west side are poorly defined.
- The Newfane Service Center property on the west side has an excessively wide curb cut.
- No protection (sidewalk or curb) exists for pedestrians on either side.

2. Recommended Improvements

- Construct "islet" (small curbed median island) or other similar traffic-calming device to serve as the primary "gateway" feature and slow traffic as it enters the more densely developed area of the village.
- Narrow roadway and add granite curb for better "street" definition.
- Add granite-curbed islands along Newfane Service Center frontage to better control access and reduce pedestrian hazard posed by excessively long curb cut.
- Install additional drainage as may be required by curb installation.

3. Other Alternatives Considered

Due to questionable sight distances along the crest of the hill at the northern edge of the village, no "islet" was initially proposed at this location. However, village residents felt that it was equally important to slow travel speeds of southbound vehicles entering the village. At the request of village residents, an "islet" was reconsidered. An acceptable location with adequate sight distances in each direction was found several hundred feet north of the village limits.

E. West Street/Church Street

West Street and Church Street , while primarily residential in nature and character, support much pedestrian associated with the inns, the library, the church, Union Hall, the courthouse and numerous small shops which are shared with residences.

1. Condition Assessment

- The sidewalk segment from Route 30 to West Street is badly cracked, has little vertical separation from the roadway surface and is in generally poor condition and need of replacement.
- The entire segment of concrete sidewalk along Church Street is badly cracked, has little vertical separation from the roadway surface and is in generally poor condition and need of replacement.
- Due to inadequate vertical separation, cars frequently park on the sidewalk along Church Street, blocking pedestrian passage.
- Along Church Street, the roadway surface is actually higher than the sidewalk, resulting in runoff onto adjacent downhill properties.
- Severe ponding occurs in the vicinity of the Congregational Church.
- The curb cut for the drive which serves the Four Columns Inn is excessively wide.
- The street crossing from the Four Columns Inn to Court Street is excessively long.

- Parking is allowed along both sides of West Street; cars sometimes pull onto the sidewalk, blocking pedestrian passage.
- The sidewalk on both sides of West Street from Church Street and Court Street northward are badly cracked and heaved, with inadequate vertical separation due to beveled pavement on the adjacent roadway.
- Utility poles on the east side extend out into the pavement.

2. Recommended Improvements

- Reconstruct entire sidewalk along Church Street and both sides of West Street.
- Install new granite curb along west side of West Street from Route 30 to the Mayor residence (#9 South Wardsboro Road) at the northern edge of the village.
- Install new granite curb along south and west side of Church Street.
- Install new catch basin at low point on Church Street.
- Install new granite curb along east side of West Street from Court Street to Cross Street, creating 4-foot grass strip between curb and sidewalk to accommodate utility poles.
- Install additional drainage as may be required by curb installation.
- Remove asphalt sidewalk at corner of Court Street and replace with concrete.
- Create 2'-12' wide grass strip between curb and sidewalk by bumping curb outward in front of Four Columns Inn in order to shorten crossing distance and better define vehicular traffic flow on street.
- Create 4'-8' wide grass strip between proposed curb and sidewalk from Bates' driveway northward approximately 100 feet.

3. Other Alternatives Considered

Consideration was given to several alternative street/sidewalk configurations along West Street from Court Street to Cross Street: 1) allow parking on both sides with pavement from sidewalk to sidewalk; 2) eliminate parking on both sides and replace with grass strip or tree lawn between curb and sidewalk; 3) allow parking on west side adjacent to sidewalk and create grass strip on east side between curb and sidewalk. The latter option was chosen in order to allow on-street parking on the west side for existing small shops associated with residences on that side. The 4-foot grass strip on the east side will accommodate utility poles while maintaining the ability to park on-street as well.

F. Courthouse/Common

Proposed improvements include sidewalk construction/reconstruction along both sides of Route 30; new sidewalk construction along the south side of Court Street between Route 30 and the Courthouse; new sidewalk linking both Court Street and West Street

with the Courthouse; and new sidewalk along a portion of the northeast side of West Street.

1. Condition Assessment

- No all-season connection exists between parking on West Street and the Courthouse.
- One of two significant gaps in the village pedestrian system is the absence of a sidewalk on the west side of Route 30 along Courthouse/Common frontage from Court Street to West Street.
- Erosion is occurring along the unpaved shoulder on the west side of Route 30.
- Paved swale/shoulder on east side of Route 30 encourages vehicles to park on shoulder of inadequate width and also enables vehicles to park on sidewalk.
- The catch basin at the south end of the paved swale on the east side of Route 30 is excessively depressed and creates a hazardous condition.

2. Recommended Improvements

- Construct new concrete sidewalk along Courthouse frontage on west side of Route 30 from Court Street to West Street.
- Install new granite curb along west side of Route 30 from Court Street to West Street.
- Create 8'-10' wide grassed strip between curb and sidewalk on west side of Route 30.
- Install additional drainage or reconstruct existing drainage as may be required by curb installation.
- Construct curb extensions for pedestrian crossings of Route 30 at both the intersection with West Street and the intersection with Court Street.
- Reconstruct concrete sidewalk along east side of Route 30; sidewalk will need to be raised to adequately accommodate drainage and may need to be relocated slightly eastward to accommodate on-street parking.
- Provide widened curbed shoulder for parking on east side of Route 30 adjacent to Common.
- Construct new concrete sidewalk with curb and 6'-8' green strip along south side of Court Street from Route 30 sidewalk to Courthouse parking.
- Construct new all-season concrete pathway from West Street parking to Courthouse entrance.
- Construct new concrete sidewalk along north side of West Street parking to connect above pathway with Route 30 sidewalk.

3. Other Alternatives Considered

A total of four different parking configurations were considered along the Common frontage of Route 30: 1) parking on both sides; 2) parking on west side only; 3) parking on east side only; 4) no parking on either side. After much public discussion, the first two options were eliminated for aesthetic purposes--it was felt that parked cars on the west side of Route 30 would significantly diminish the public view to the Common and the Courthouse. However, the Village Trustees felt that some parking along this stretch of Route 30 was desirable, if not necessary, and opted for the alternative that provided parking on the east side only.

An additional alternative, which suggested the use of a median along Route 30 for the length of the Common, was presented at the Steering Committee's final meeting by a representative of the Newfane Planning Commission. This alternative was not among those presented to the public or evaluated by the Steering Committee. However, the Steering Committee and consultant felt the suggestion had much merit and should be considered during subsequent phases of project development.

G. Court Street (north side only)

Court Street is a short street which extends from Route 30 to West Street in the center of the village. The Newfane Inn is located on the north side of the street and the Windham County Courthouse and Newfane Common is on the south side. Parallel on-street parking is allowed on the north side of the street and perpendicular parking serves the Courthouse on the south side. Currently there is only a sidewalk on the north side of the street.

1. Condition Assessment

- The sidewalk is badly cracked and does not have adequate vertical separation from the roadway.
- The sidewalk is slightly narrower (3.5 feet) than other sidewalks in the village.
- The westernmost 100 feet consists of a short stretch of recently installed asphalt sidewalk and granite curb. This sidewalk and curb wraps around the corner onto West Street.
- Some ponding occurs in the vicinity of each of the two drives which cross the sidewalk on the north side.

2. Recommended Improvements

- Reconstruct concrete sidewalk and install granite curb.
- Consider drainage improvements to alleviate ponding conditions at driveway crossings.
- Remove recently installed asphalt sidewalk and replace with more historically compatible concrete sidewalk.

H. Cross Street

Cross Street is a one-way (westbound) residential street. A sidewalk runs the entire length of the street on the south side. Four of the five residences on the street, however, are situated on its north side.

1. Condition Assessment

- Virtually the entire sidewalk is heavily cracked and broken up. This sidewalk constitutes the worst segment of sidewalk in the village.
- Due to lack of use and maintenance, the central segment is being reclaimed by poison ivy and other vegetation.
- No vertical separation exists between the sidewalk and the roadway surface; street runoff flows onto and across the sidewalk.

2. Recommended Improvements

- Reconstruct the easternmost 220' of concrete sidewalk from Route 30 to a point opposite the walkway to the Sievers' residence.
- Reconstruct concrete sidewalk from West Street to a point approximately 200 feet eastward.
- Install granite curb along proposed reconstructed sidewalk segments at each end of Cross Street.
- Install additional drainage as may be required by curb installation.

I. Cemetery Hill Road (a.k.a. Depot Street)

The sidewalk is situated on the north side of Cemetery Hill Road and historically extended from Route 30 to the old railroad depot, a distance of a little over 300 feet. Currently only the westernmost 200 feet or so is in evidence.

1. Condition Assessment

- The 100-foot stretch of sidewalk from Route 30 to the parking lot on the north side is in fair condition.
- The stretch of sidewalk which extends across the parking lot is in poor condition.
- The sidewalk which once extended to the depot is no longer in evidence east of the parking lot. It appears to be buried and no longer serviceable.

2. Recommended Improvements

- Reconstruct concrete sidewalk and add granite curb between Route 30 and parking area on north side of street.
- End public sidewalk at the edge of the parking area and remove the portion of existing sidewalk which crosses the parking area.

J. Jail Street

This extremely old stretch of sidewalk runs along the north side of Jail Street from Route 30 to the Windham County Sheriff's Office.

1. Condition Assessment

- Most of the sidewalk is in fair condition, given its age. The stretch nearest the Sheriff's Office is in poor condition.
- The face of vertically exposed sidewalk along a portion of Jail Street is excessive and poses a potential safety problem to users.

2. Recommended Improvements

- Add gravel to Jail Street as required to reduce the amount of exposed sidewalk face to six inches.
- Replace segments which are in poor condition.

3. Other Alternatives Considered

Consideration was given to extending the sidewalk along the Jail Street Loop to connect with Route 30 at West Street. Residents, trustees and county officials felt this would have little value given the light use it would probably have.

K. South Wardsboro Road

South Wardsboro Road is the rural extension of West Street and is frequented by residents and visitors taking leisurely walks into the countryside.

1. Condition Assessment

- The narrow roadway, narrow shoulders and poor sight distances create safety problems for pedestrians who are relegated to walk on the narrow grass shoulder or roadway edge.

2. Recommended Improvements

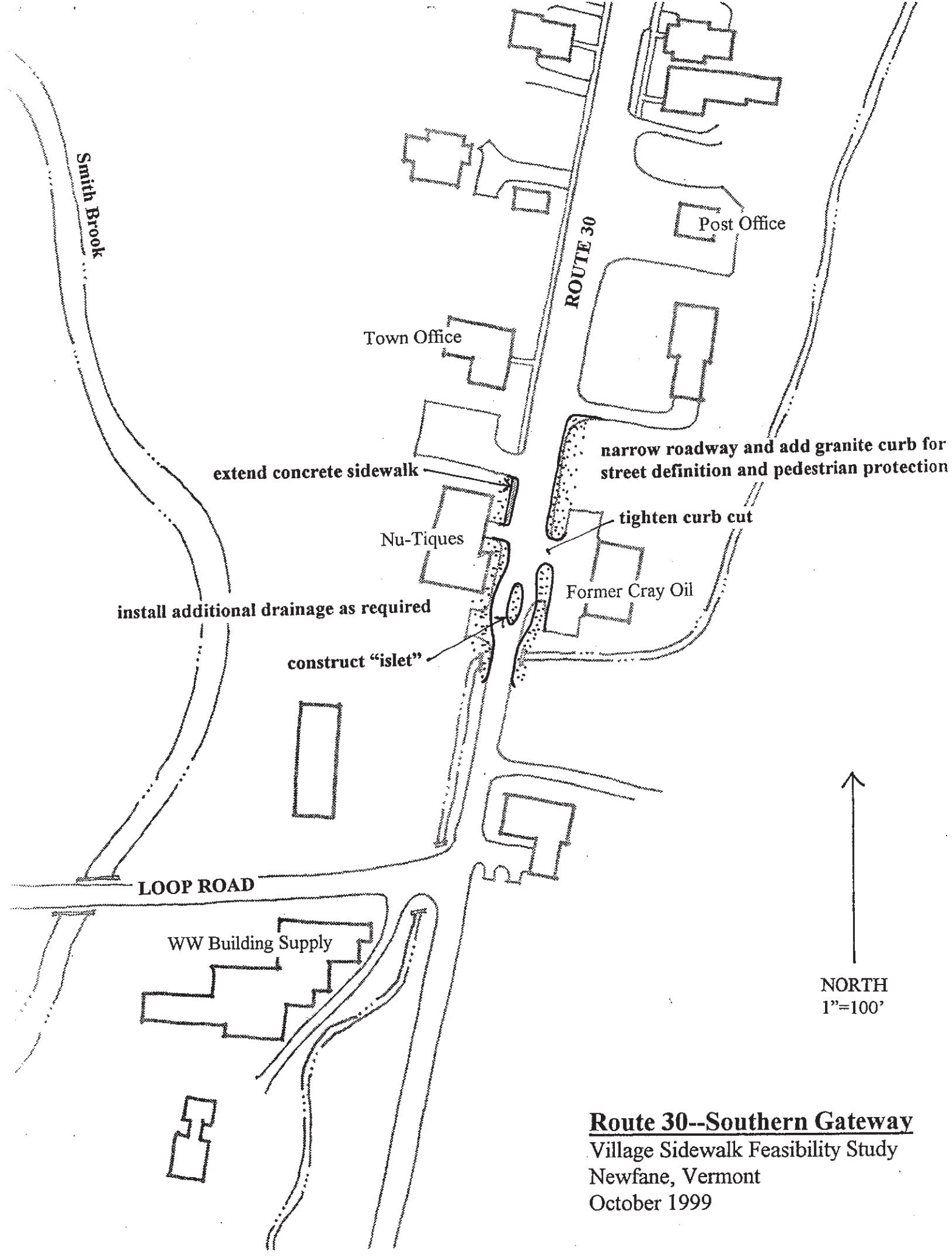
- Consideration should be given to providing a sidewalk or path on the west side of South Wardsboro Road from the Mayor residence (#9 South Wardsboro Road) to a point opposite the driveway to the Crispe residence (#32 South Wardsboro Road), a distance of approximately 600 feet.

IV. ISSUES AND CONSIDERATIONS

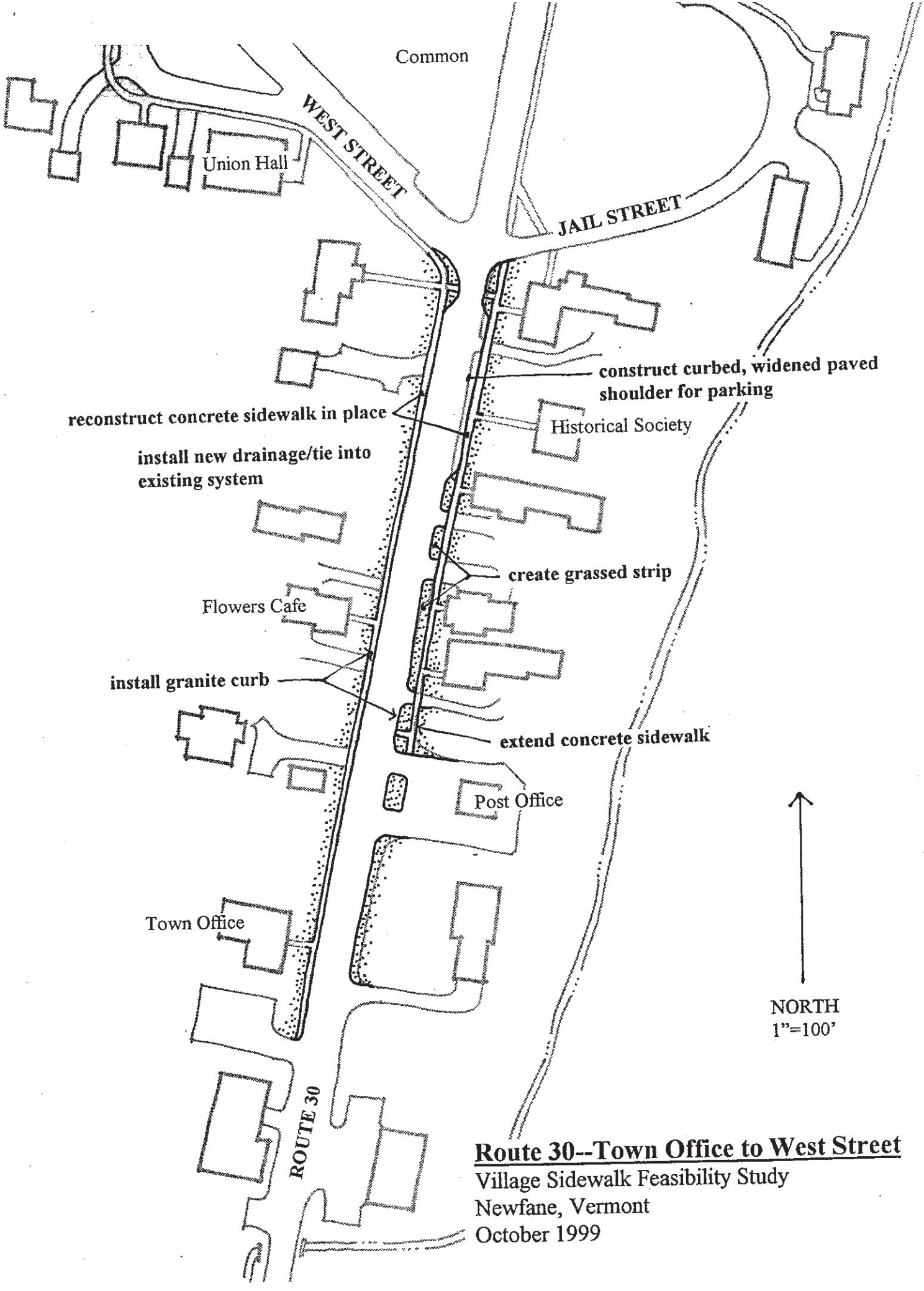
A. Municipal Concerns

The following concerns were expressed by Village Trustees, the Town Road Commissioner and the Newfane Planning Commission:

1) Maintenance. The Village has limited financial capacity to maintain the existing sidewalk system. The present maintenance budget is approximately



Route 30--Southern Gateway
Village Sidewalk Feasibility Study
Newfane, Vermont
October 1999

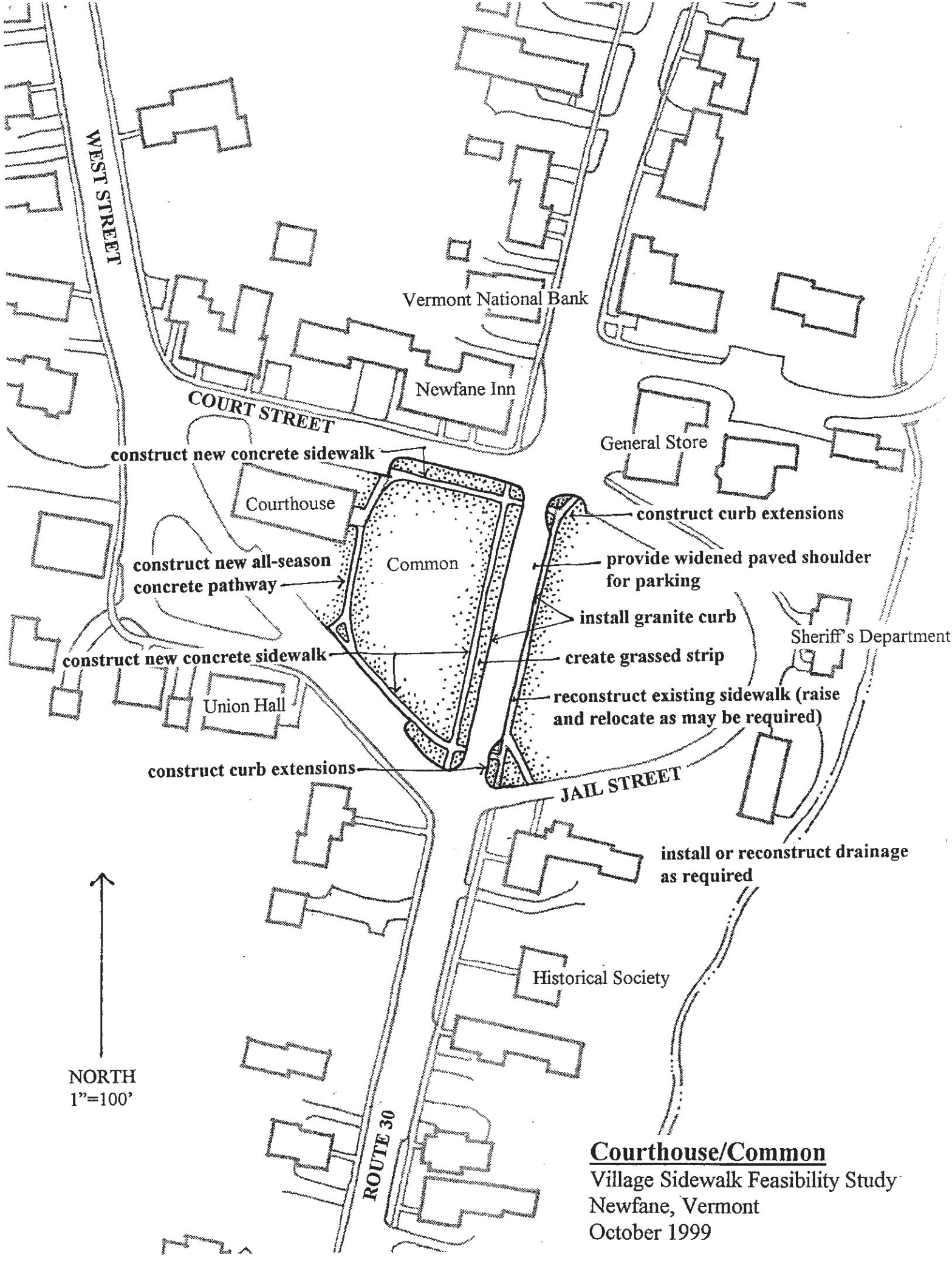


Route 30--Town Office to West Street

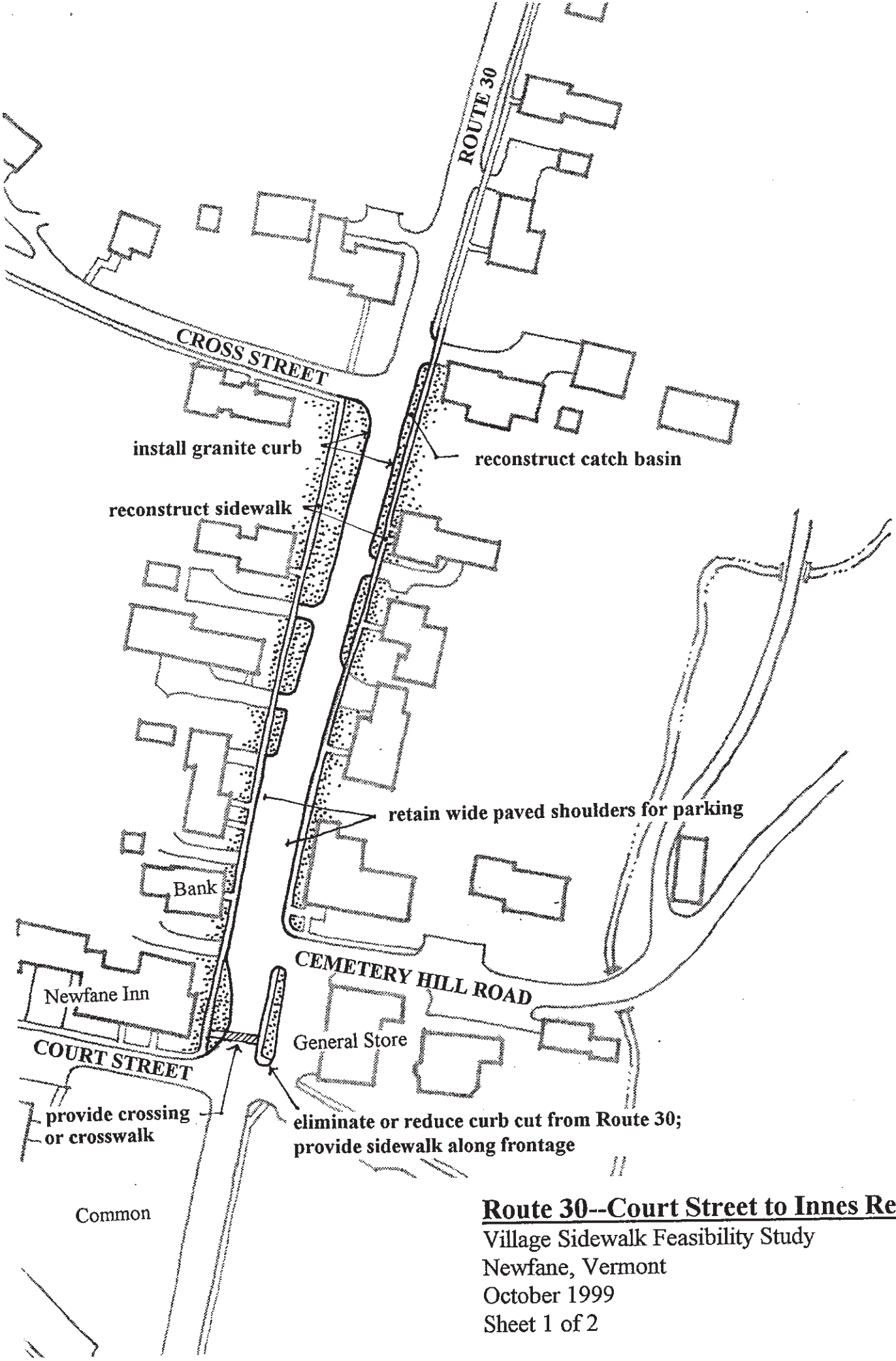
Village Sidewalk Feasibility Study

Newfane, Vermont

October 1999

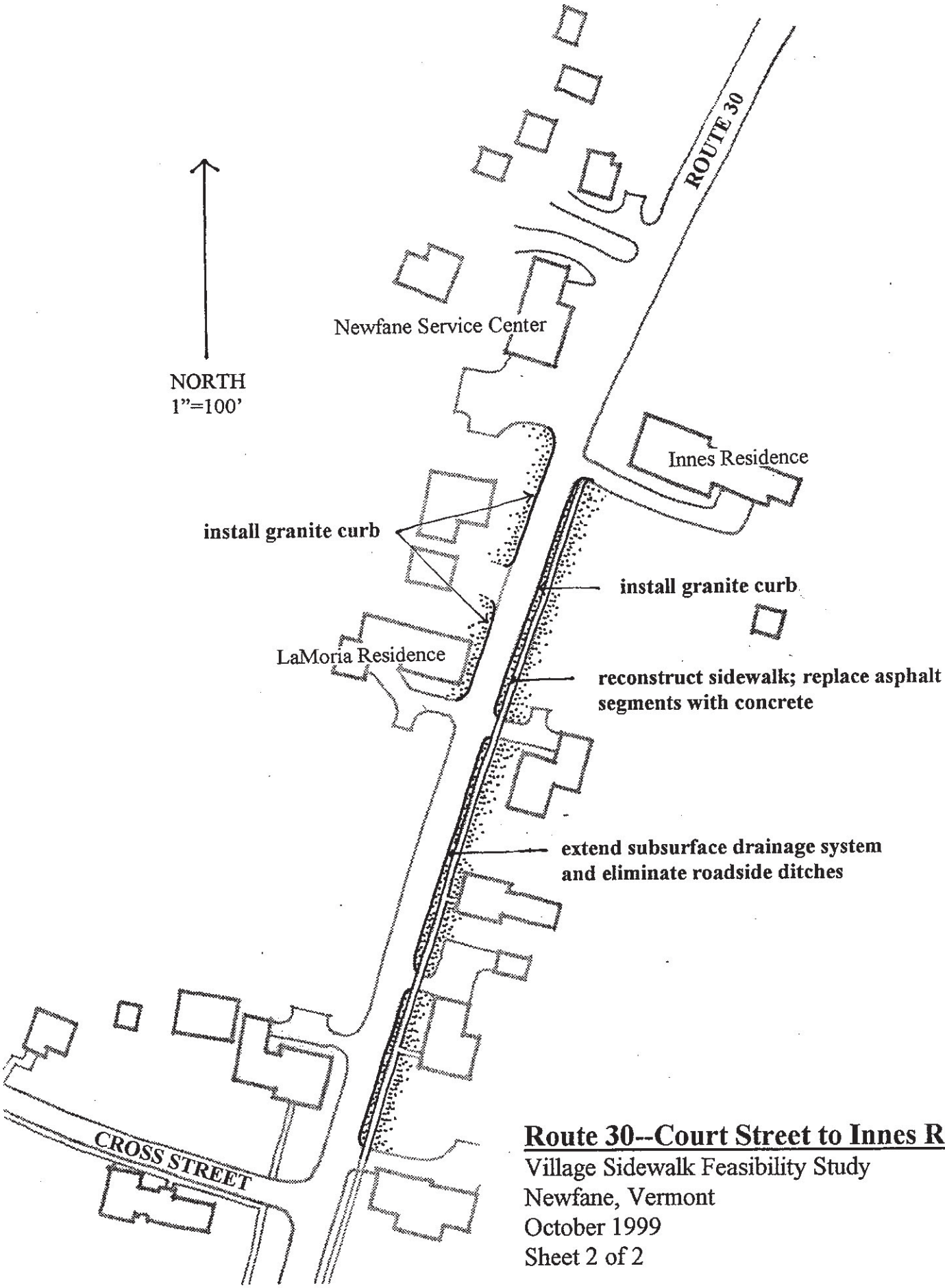


Courthouse/Common
Village Sidewalk Feasibility Study
Newfane, Vermont
October 1999



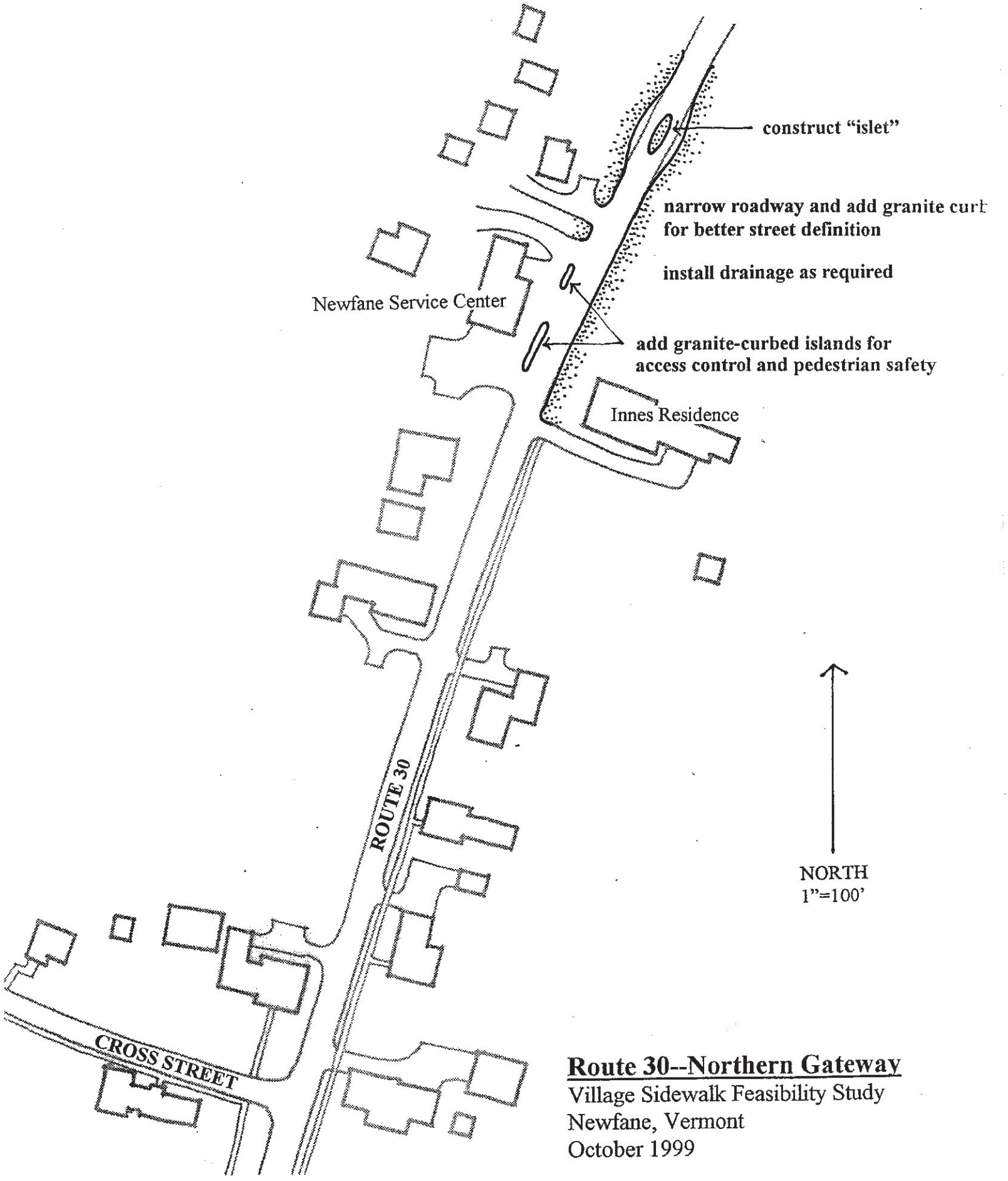
Route 30--Court Street to Innes Residence

Village Sidewalk Feasibility Study
Newfane, Vermont
October 1999
Sheet 1 of 2



Route 30--Court Street to Innes Residence

Village Sidewalk Feasibility Study
Newfane, Vermont
October 1999
Sheet 2 of 2



Route 30--Northern Gateway
Village Sidewalk Feasibility Study
Newfane, Vermont
October 1999

Appendix D

Selected Pages

Vermont Route 30 Traffic Calming Project
September 2001

VERMONT ROUTE 30 TRAFFIC CALMING PROJECT

FINAL REPORT

September 2001

Prepared for the

WINDHAM REGIONAL COMMISSION

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Brattleboro, VT 05301
Phone: 802.257.4547
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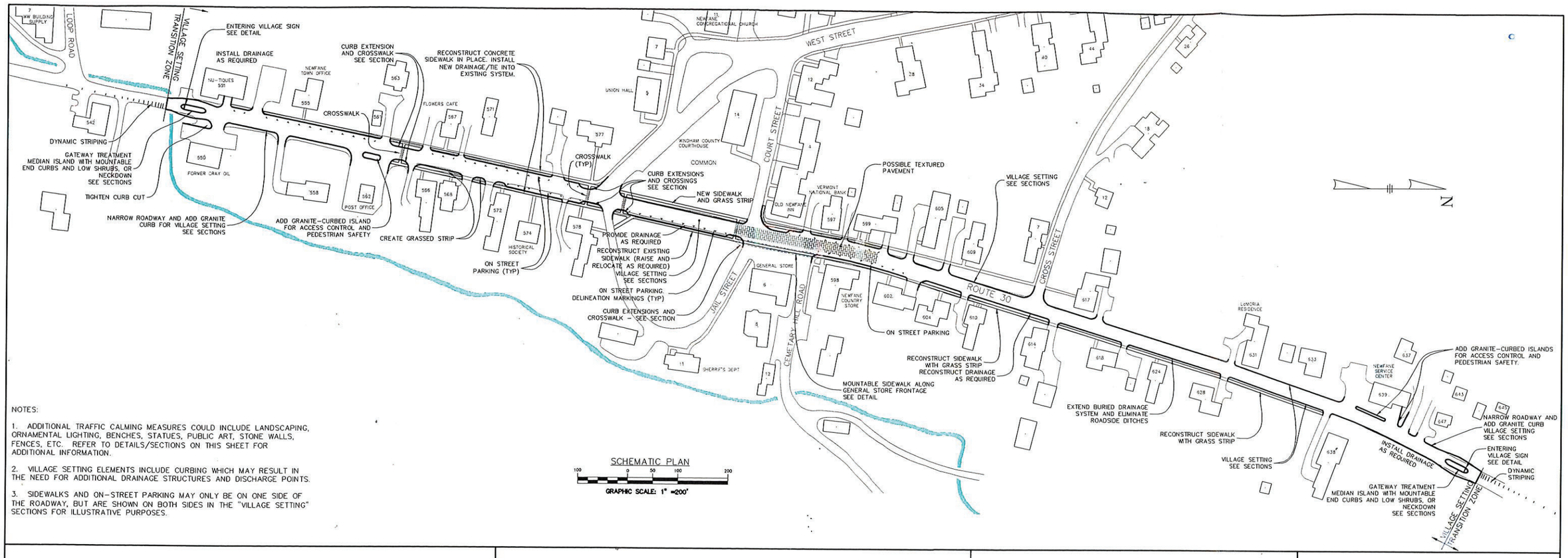
e-mail: wrc@sover.net
www.rpc.windham.vt.us

By

Buckhurst Fish & Jacquemart

In association with

Stevens & Associates, PC



NOTES:

1. ADDITIONAL TRAFFIC CALMING MEASURES COULD INCLUDE LANDSCAPING, ORNAMENTAL LIGHTING, BENCHES, STATUES, PUBLIC ART, STONE WALLS, FENCES, ETC. REFER TO DETAILS/SECTIONS ON THIS SHEET FOR ADDITIONAL INFORMATION.

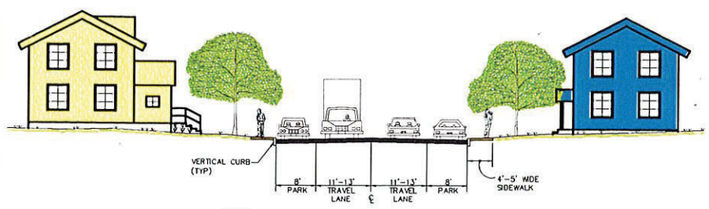
2. VILLAGE SETTING ELEMENTS INCLUDE CURBING WHICH MAY RESULT IN THE NEED FOR ADDITIONAL DRAINAGE STRUCTURES AND DISCHARGE POINTS.

3. SIDEWALKS AND ON-STREET PARKING MAY ONLY BE ON ONE SIDE OF THE ROADWAY, BUT ARE SHOWN ON BOTH SIDES IN THE "VILLAGE SETTING" SECTIONS FOR ILLUSTRATIVE PURPOSES.

SCHEMATIC PLAN

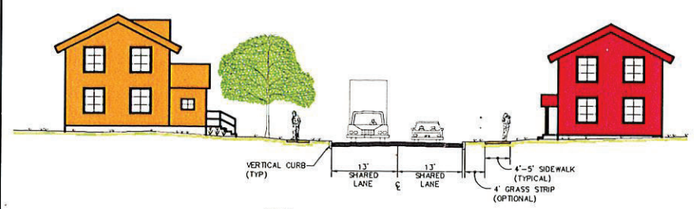
100 0 50 100 200

GRAPHIC SCALE: 1" =200'



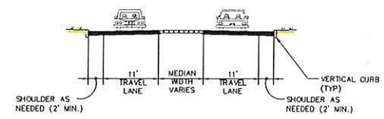
NOTES:
1. SIDEWALKS AND/OR A GRASS STRIP BETWEEN THE CURB AND SIDEWALK IS OPTIONAL DEPENDING ON SPACE CONSTRAINTS, AVAILABLE ROW AND MAINTENANCE ISSUES. USE OF GRASS STRIPS ADJACENT TO ON STREET PARKING MAY RESULT IN DIFFICULT SIDEWALK ACCESS DURING THE WINTER SEASON.

VILLAGE SETTING - TYPICAL SECTION
(WITH ON-STREET PARKING)
NTS



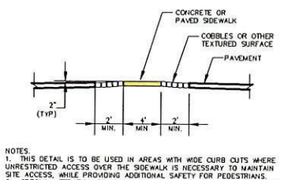
NOTES:
1. A GRASS STRIP BETWEEN THE CURB AND SIDEWALK IS OPTIONAL DEPENDING ON SPACE CONSTRAINTS, ROW AVAILABILITY, AND MAINTENANCE ISSUES.

VILLAGE SETTING - TYPICAL SECTION
(WITHOUT ON-STREET PARKING)
NTS



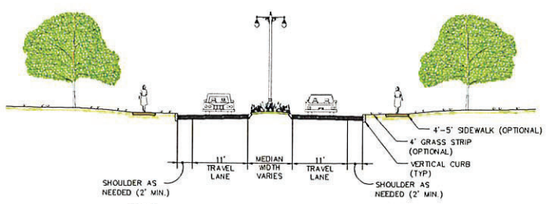
NOTES:
1. MEDIAN TO BE COBBLE STONES RAISED 1 TO 1.5 INCHES ABOVE PAVEMENT, TEXTURED PAVEMENT OR STRIPING.

FLUSH MEDIAN
NTS



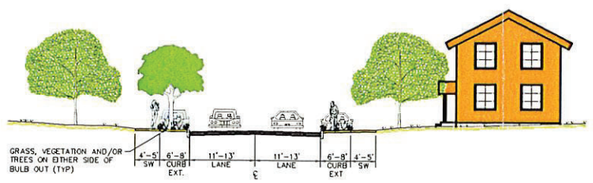
NOTES:
1. THIS DETAIL IS TO BE USED IN AREAS WITH WIDE CURB CUTS WHERE UNRESTRICTED ACCESS OVER THE SIDEWALK IS NECESSARY TO MAINTAIN SITE ACCESS, WHILE PROVIDING ADDITIONAL SAFETY FOR PEDESTRIANS.
2. SPECIAL ATTENTION TO DRAINAGE ISSUES SHOULD BE MADE PRIOR TO USING THIS DETAIL.

MOUNTABLE SIDEWALK DETAIL
NTS



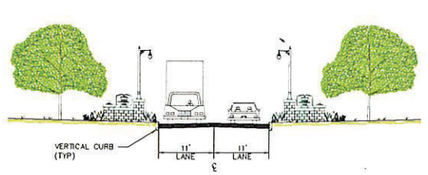
NOTES:
1. MEDIAN SURFACE COULD BE GRASS, SHRUBS, ANNUALS, BARK MULCH, COBBLE STONES, CONCRETE OR PAVEMENT.
2. MEDIAN ADORNMENTS COULD INCLUDE LOW SHRUBS, ORNAMENTAL LIGHTING OR SPECIAL SIGNAGE.
3. SIDEWALK AND/OR A GRASS STRIP BETWEEN THE CURB AND SIDEWALK IS OPTIONAL DEPENDING ON SPACE CONSTRAINTS, AVAILABLE ROW AND MAINTENANCE ISSUES.
4. CURBING AT ENDS OF RAISED MEDIAN TO BE MOUNTABLE.

GATEWAY TREATMENT - RAISED MEDIAN
NTS



NOTES:
1. SIDEWALKS AND/OR A GRASS STRIP BETWEEN THE CURB AND SIDEWALK IS OPTIONAL DEPENDING ON SPACE CONSTRAINTS, AVAILABLE ROW AND MAINTENANCE ISSUES.

CURB EXTENSIONS - TYPICAL SECTION
(IN ASSOCIATION WITH ON-STREET PARKING)
NTS



NOTES:
1. GATEWAY SHOWN IS JUST ONE EXAMPLE OF A GATEWAY TREATMENT. OPTIONS VARY BY COMMUNITY AND MAY INCLUDE SUCH ITEMS AS LIGHTING, LANDSCAPING, BENCHES, STATUES, CLOCKS, AND PUBLIC ART.

GATEWAY TREATMENT - NECKDOWN
NTS

ENTERING VILLAGE DETAIL
NTS

Figure 8
VT ROUTE 30 TRAFFIC CALMING STUDY
CONCEPTUAL SITE DESIGN
Traffic Calming Elements
VILLAGE OF NEWFANE, VERMONT
July 2001 (Rev. 9-20-01)

Prepared For:
Windham Regional Commission
Brattleboro, Vermont

Prepared By:
Stevens & Associates, P.C.
Engineers/Landscape Architects/Planners/Surveyors
122 Birge Street, PO Box 1586, Brattleboro, VT 05302

Buckhurst, Fish & Jacquemart, Inc.
Planning/Urban Design/Transportation
115 Fifth Avenue, New York, NY 10003-1004

Table 2
Summary of Traffic Calming Measures and Costs

Village	Primary Traffic Calming Measures	Preliminary Cost Estimate	Secondary Traffic-Calming Measures	Preliminary Cost Estimate
Newfane	2 Raised Median Gateways 4 Curb Extensions 2 Dynamic Striping	$122,000 $96,000 $5,000	Sidewalks, Textured Pavement, Raised Curbing, Pavement Markings, Landscaping	$639,000
Townshend	2 Gateway Neckdowns Painted Flush Medians 1 Curb Extension 2 Dynamic Striping	$80,000 $4,000 $24,000 $5,000	Sidewalks, Textured Pavement, Pavement Markings, Landscaping	$365,000
Jamaica	1 Roundabout 1 Raised Median Gateway Painted Flush Medians 3 Curb Extensions 3 Dynamic Striping	$360,000 $61,000 $4,000 $72,000 $7,000	Lighting Sidewalks, Landscaping, Textured Pavement, Pavement Markings	193,000 $566,000
Bondville	2 Gateway Neckdowns Painted Flush Medians 2 Dynamic Striping	$80,000 $11,000 $5,000	Lighting Raised Curbing, Sidewalks, Textured Pavement, Pavement Marking, Landscaping	$133,000 $386,000

Preliminary Cost Estimates expressed in 2001 dollars

BFJ, September 2001