
TO: Seth Jensen, Lamoille County Planning Commission
FROM: Lauren Weston and Roy Schiff, Milone & MacBroom
RE: Flood Mitigation Alternatives Evaluation in Wolcott
DATE: June 29, 2018
MMI #: 2911-08

1.0 Introduction

Milone & MacBroom Inc. (MMI) is assisting the Lamoille County Planning Commission (LCPC) and the Town of Wolcott with a flood mitigation analysis along approximately 2 miles of the Lamoille River (Figure 1). This analysis builds on the 42-mile long base Lamoille River model prepared by MMI for LCPC. Refer to the Lamoille River Hydraulic Modeling Memorandum dated October 18, 2016 for details of the base model development. Current project work includes GPS survey, model updates, flood mitigation alternatives analysis, and reporting. The goal of this project is to identify alternatives to further investigate to reduce flood and erosion hazards. Flood Hazard Modeling was completed using funds awarded by the Department of Housing and Community Development through the Municipal Planning Grant Program and the High Meadows Fund's Building Resilience in Vermont's Watersheds Initiative.

2.0 Methods and Model Setup

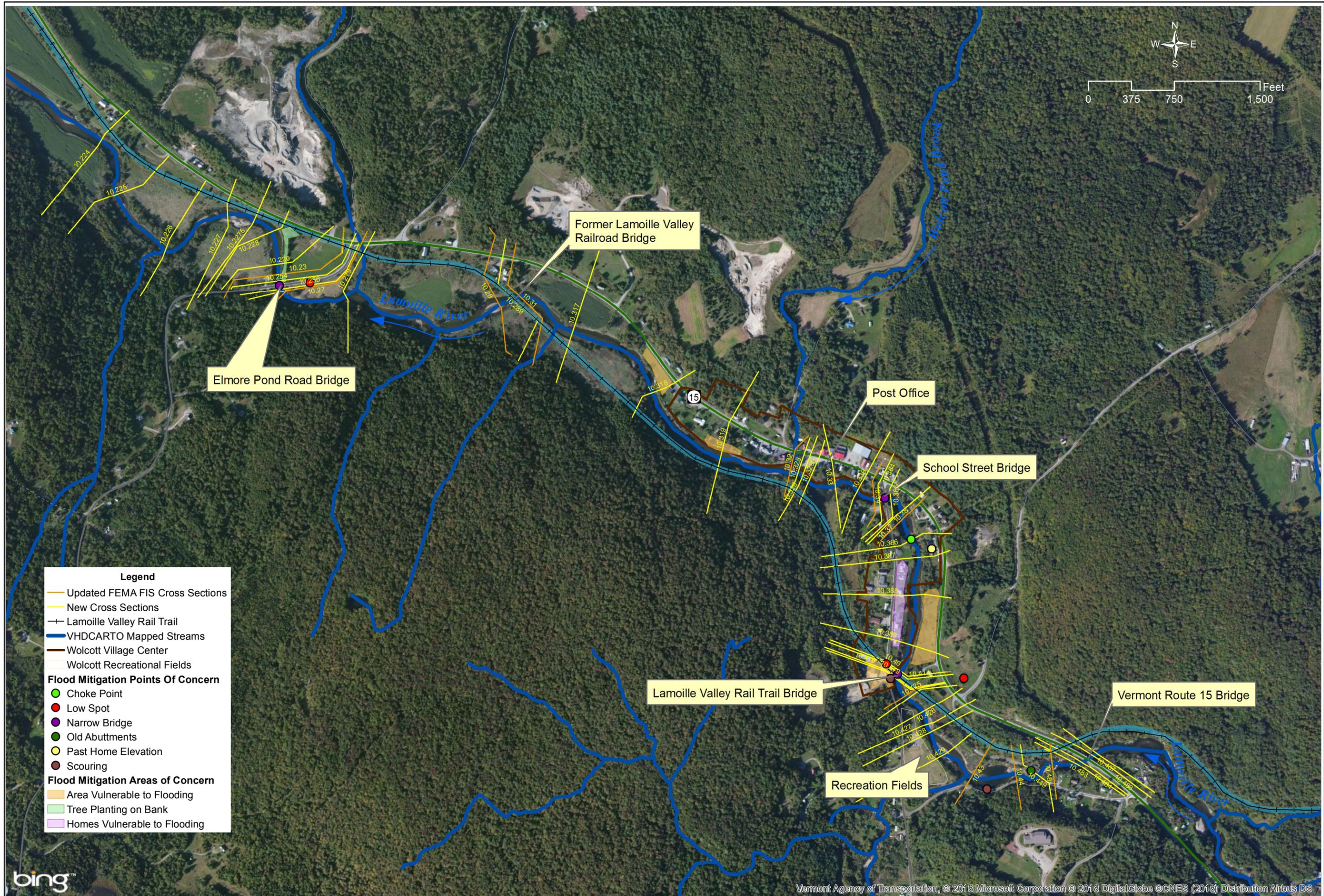
2.1 Windshield Survey

A windshield survey of the project area was conducted on May 4, 2018 with members of the Town and LCPC to verify the geometry of the initially updated hydraulic model, to confirm the location and dimensions of bridges, and to observe flood risk areas identified by the Town.

2.2 Model Geometry Updates

Existing FEMA cross sections were updated using LIDAR-derived floodplain elevation data in the Lamoille River HEC-RAS model in Wolcott. The LiDAR data source is the 2014 Quad Counties LIDAR USGS 0.7 – meter resolution obtained through the Vermont Center for Geographic Information. Some new cross sections were added using the LIDAR data to increase the level of detail in the model at certain locations to test alternatives. The new cross sections have assumed rectangular channel shape with bed elevations that were interpolated from the FEMA channel profile. The bridges in Wolcott were updated (i.e., adjusted, removed, or added) based on plans and observations of infrastructure changes since the original HEC-RAS model was created.

The model was validated by comparing qualitative flood information provided by the Town during the windshield survey with modeled flood levels. Areas that were said to regularly flood typically were inundated during the 5-year modeled flood indicating that the hydraulic model is generally doing a good job representing known flood patterns (Table 1).



Legend

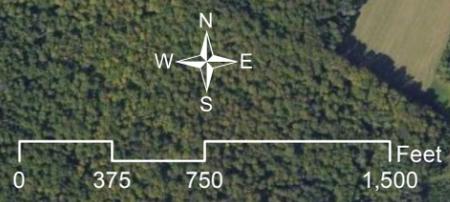
- Updated FEMA FIS Cross Sections
- New Cross Sections
- Lamoille Valley Rail Trail
- VHDCARTO Mapped Streams
- Wolcott Village Center
- Wolcott Recreational Fields

Flood Mitigation Points Of Concern

- Choke Point
- Low Spot
- Narrow Bridge
- Old Abutments
- Past Home Elevation
- Scouring

Flood Mitigation Areas of Concern

- Area Vulnerable to Flooding
- Tree Planting on Bank
- Homes Vulnerable to Flooding



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SOURCE(S):
 MMI Lamoille River HECRAS Model
 Cross section locations - FEMA FIS
 Elevation Data, 2014 Quad Counties
 LIDAR - USGS
 Flood Mitigation Points/Area - LCPC
 LVRT mapping - VTtrans
 Bing Map Aerials

Overview Map
Flood Mitigation Alternatives Analysis
Wolcott, VT

Map By: LAW
 MMID#: 2911-08
 MXD: Wolcott_Overview.mxd
 1st Version: February 20, 2018
 Revision: 6/27/2018
 Scale: See Scale Bar

Figure 1

Table 1. Model Validation

Location	Frequency/Description	
	Qualitative Flood Levels	Modeled Flood Levels
Floodplain northeast of Elmore Pond Road Bridge	Regularly floods	5 year flood extends across floodplain
Elmore Pond Road east of bridge	Regularly floods	25 year flood overtops road at low spot; 5 year flood reaches across floodplain upstream of road
Field east of Old Lamoille Valley Rail Trail Bridge Abutments	Ice flows and flood waters cross field regularly	5 year flood extends across floodplain
Houses on north side of river downstream of lot near Post Office	Floods up towards houses	25 year flood extends into backyards of houses
Houses on east side of School Street	Area floods approximately every 5 years	25 year flood reaches houses
Fire Station and surrounding roads	Fire Station becomes an island in large floods	500 year flood reaches Station, 100 year floods road downstream; 25 year floods road upstream
School Street near Recreation Fields	Floods on west side of road regularly	2 year flood reaches west side of road

2.3 Bridges

A preliminary analysis of the existing model suggests that the existing bridges in Wolcott are undersized. Water backs up during large floods at the upstream bridge face (i.e., backwatering takes place) leading to a drop in the flood water surface at all of the existing bridges. Backwatering elevates upstream flood levels that increase risk to infrastructure and property. Modeling suggests that the Elmore Pond Road Bridge is full of water during just the 10-year flood (Table 2), while the typical design flood for this structure would be the 25- or 50-year flood.

Table 2. Existing Structure Inundation

Structure	Recurrence Interval (Year)	
	Bridge Opening Filled	Floodplains Inundated
Elmore Pond Road Bridge	10	5
Former Lamoille Valley Railroad Bridge	N/A	10
School Street Bridge	500	2
Lamoille Valley Rail Trail Bridge	500	50

3.0 Alternatives Analysis

Flood mitigation alternatives were evaluated by adjusting the existing conditions model geometry for alternatives provided by the Town, LCPC, and field observations. Twenty-eight (28) alternatives were evaluated – twenty-three (23) individual alternatives and five (5) combined alternatives (Table 3). The alternatives were evaluated against the following project objectives:

- Reduce flooding;
- Reduce erosion potential; and
- Improve floodplain access.

A comparison of relative construction cost was also considered to identify high- and low-cost alternatives.

The alternatives analysis focused on six (6) areas (see Figure 1):

- 1) Elmore Pond Road Bridge;
- 2) Former Lamoille Valley Railroad Bridge;
- 3) Parking Lot near the Post Office;
- 4) School Street Bridge;
- 5) Lamoille Valley Rail Trail Bridge; and
- 6) Recreation Fields.

The effectiveness of how each alternative accomplishes project objectives was determined based on modeling results and field observations (Table 3). Reductions to erosion potential and improvements to floodplain access improve instream habitat and water quality. Note that all descriptions of “river right and left” are referring to the viewer looking downstream.

3.1 Elmore Pond Road Bridge

Elmore Pond Road Bridge (Figure 2) is undersized and subject to flooding at the structure and on the eastern approach as Elmore Pond Road sits on the active floodplain. The structure appears to be in good condition. Some earthen fill encroaches into the upstream bridge opening on river right. The floodplains upstream and downstream of the bridge are hay fields or open space. The Elmore Pond Road Bridge alternatives include removing the small encroachment into the bridge, elevating the low spot on the road, widening the bridge, removing the berm on river right downstream of the bridge, and reconnecting the floodplain on river right downstream of the bridge (Figure 3 and see Table 3).

Table 3. Alternatives Analysis Matrix

6/29/2018

ID	Description	Area of Benefits	Reduce Flooding	Reduce Erosion Potential	Improve Floodplain Access	Relative Construction Cost	Notes	Recommended
1A	Remove earth fill at upstream face of Elmore Pond Road Bridge	None	NO	no	NO	Low		
1Bi	Elevate low spot of Elmore Pond Road Bridge approach by 1 foot	Post Office to Elmore Pond Road Bridge	yes	NO	NO	Low	Elmore Pond Road passable for 50-year flood.	√
1Bii	Elevate low spot of Elmore Pond Road Bridge approach by 2 feet	Post Office to Elmore Pond Road Bridge	no	NO	NO	Low	Elmore Pond Road passable for 100-year flood. Flood elevations increase upstream for larger floods.	
1Ci	Widen Elmore Pond Road Bridge by 10 feet on each side (20 feet total)	Post Office to Elmore Pond Road Bridge	yes	no	no	Medium	Increasing height of bridge not possible without extensive road fill that could increase flood and erosion risks.	
1Cii	Widen Elmore Pond Road Bridge by 50 feet on each side (100 feet total)	Post Office to Elmore Pond Road Bridge	YES	YES	no	High		
1Ciii	Widen Elmore Pond Road Bridge by 25 feet on each side (50 feet total)	Post Office to Elmore Pond Road Bridge	YES	yes	no	Medium		√
1Di	Remove berm on the floodplain downstream of Elmore Pond Road Bridge	Elmore Pond Road Bridge Surrounding Area	yes	yes	yes	Low		√
1Dii	Reconnect floodplain downstream of Elmore Pond Road Bridge	Post Office to floodplains downstream of Elmore Pond Road Bridge	yes	yes	YES	Medium	Reconnect historic floodplain to incised channel.	√
2A	Remove existing approaches and abutments at former Lamoille Valley Railroad Bridge	Post Office to former bridge	no	no	yes	Low	Includes removal of approach fill.	
2B	Add bridge to existing abutments at former Lamoille Valley Railroad Bridge	None	NO	NO	no	Medium	Improves recreational access, but increases upstream flood levels.	
2C	Install a 300-foot two-span pedestrian bridge and flood bench at former Lamoille Valley Railroad Bridge	Post Office to former bridge	YES	YES	YES	Medium	Good flood benefits and improves recreational access.	√
3A	Create flood bench at back of lot near Post Office down to bedrock	None	NO	NO	NO	Low	Bedrock limiting depth of cut and tributary limiting extent of bench possible.	
4Ai	Widen School Street Bridge by 20 feet to river left	Route 15 Bridge to School Street Bridge	yes	no	yes	Medium	Will likely require bank armoring to protect road and nearby homes, bridge realignment, and land acquisition.	
4Aii	Widen School Street Bridge by 75 feet to river left	Route 15 Bridge to School Street Bridge	YES	YES	yes	High		
4Aiii	Widen School Street Bridge by 75 feet to river left with a flood bench	Route 15 Bridge to School Street Bridge	yes	YES	YES	High		
4B	Realign and widen School Street Bridge by 50 feet	Route 15 Bridge to School Street Bridge	YES	YES	yes	High		
5Ai	Widen Lamoille Valley Rail Trail Bridge by 50 feet to river left	Route 15 Bridge to Lamoille Valley Rail Trail Bridge	YES	YES	yes	High	A tall retaining wall likely needed on road.	
5Aii	Widen Lamoille Valley Rail Trail Bridge by 50 feet to river right with a flood bench	Route 15 Bridge to Lamoille Valley Rail Trail Bridge	yes	YES	YES	High		
5Aiii	Widen Lamoille Valley Rail Trail Bridge by 25 feet on each side (50 feet total)	Route 15 Bridge to Lamoille Valley Rail Trail Bridge	YES	YES	yes	High	Would require from DFW land and possibly private land acquisition.	
5Aiv	Widen Lamoille Valley Rail Trail Bridge by 50 feet to river right	Route 15 Bridge to Lamoille Valley Rail Trail Bridge	YES	YES	yes	High		√
5B	Create flood chute along Lamoille Valley Rail Trail embankment	Route 15 Bridge to Lamoille Valley Rail Trail Bridge	no	no	yes	Medium	Increases risks to homes.	
6A	Lower floodplain downstream of Town of Wolcott Recreation Fields parking lot	Recreation Fields	no	no	YES	Low	Flood elevations decrease upstream of the reconnected floodplain, and increase downstream at the recreation fields.	
6B	Lower floodplain opposite Town of Wolcott Recreation Fields	Upstream of Recreation Fields	no	YES	YES	Low		
7A	Widen Elmore Pond Road Bridge by 50 feet and elevate the road by 1 foot; remove the berm on the floodplain downstream (Alts 1Bi, 1Ciii, 1Di)	Post Office to Elmore Pond Road Bridge Surrounding Area	YES	yes	no	Medium	Combination alternative.	
7B	Elevate the low spot on Elmore Pond Road by 1 foot and reconnect the floodplain downstream (Alts 1Bi, 1Dii)	Post Office to Elmore Pond Road Bridge Surrounding Area	yes	yes	YES	Medium	Combination alternative.	
8	Widen School Street Bridge by 75 feet to river left and widen the Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 4Aii, 5Aiii)	Route 15 Bridge to School Street Bridge	YES	YES	yes	High	Combination alternative.	
9	Widen Elmore Pond Road Bridge by 50 feet and elevate low spot on road by 1 foot, install 300-foot pedestrian bridge at former bridge; widen School Street Bridge by 75 feet to river left, widen Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 1Bi, 1Ciii, 2C, 4Aii, 5Aiv)	Route 15 Bridge to Elmore Pond Road Bridge	YES	YES	yes	High	Combination alternative. Long-range vision for changes at bridges.	
10	Reconnect floodplain downstream of Elmore Pond Road Bridge, widen Elmore Pond Road Bridge by 50 feet and elevate low spot on road by 1 foot, install 300-foot pedestrian bridge at former bridge; widen School Street Bridge by 75 feet to river left, widen Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 1Bi, 1Ciii, 2C, 1Dii, 4Aii, 5Aiv)	Route 15 Bridge to floodplains downstream of Elmore Pond Road Bridge	YES	YES	YES	High	Combination alternative. Long-range vision for flood mitigation.	√

Key

- YES** = Objective achieved with good risk reduction benefits.
- yes = Objective achieved with moderate risk reduction benefits.
- no = Objective achieved with minor risk reduction benefits.
- NO** = Objective not achieved or made worse.
- √ = Alternatives recommended for implementation either now or in the future to reduce flood and erosion risks.



Figure 2: Elmore Pond Road Bridge

1A- Remove earth fill at upstream face of Elmore Pond Road Bridge

This alternative consists of removing the small piece of land that extends into the river right edge of the bridge opening. Approximately 1,800 cubic yards of earth would be removed. Although this alternative would be easy to construct and inexpensive, it does not produce any flood reduction benefit. This alternative is not recommended.

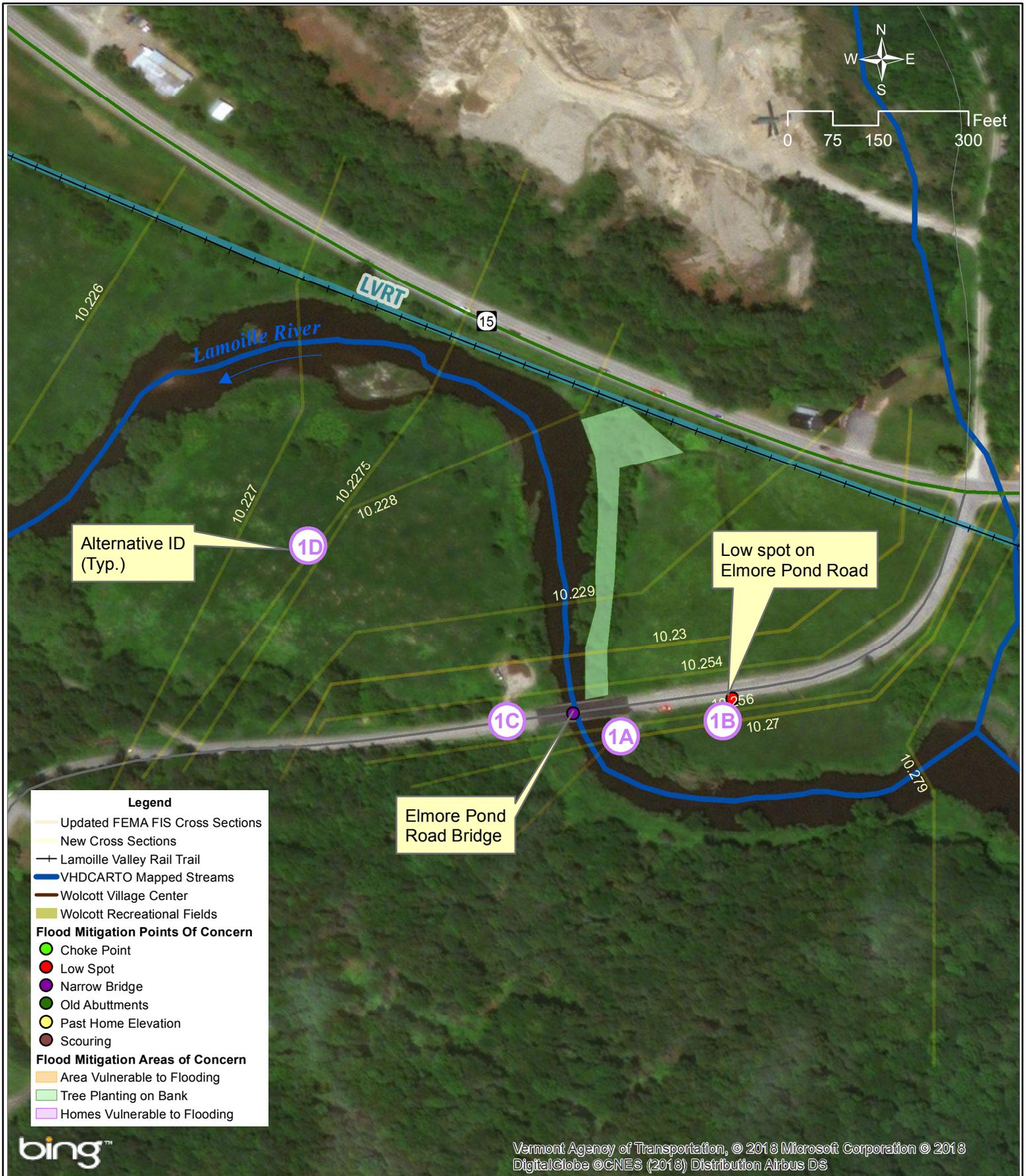
1B – Elevate the low spot on Elmore Pond Road

1Bi - Elevate the low spot of Elmore Pond Road 1 foot

This alternative involves adding 1 foot of road fill at the low spot on Elmore Pond Road northeast of the bridge. The road will no longer overtop during the 25- and 50-year floods that improves travel. Flood levels generally remain the same with the increased road elevation. If improvements to travel on this road during flooding are desired, this alternative is recommended as it will accomplish that goal without increasing upstream flooding.

1Bii - Elevate low spot of Elmore Pond Road 2 feet

This alternative involves adding 2 feet of road fill at the low spot on Elmore Pond Road. Model results suggest that the road will not overtop during the 25-, 50-, and 100-year floods that improves travel during flooding. The modeled flood elevations increase by 0.4 feet for the 500-year flood between the Post Office and Elmore Pond Road Bridge if the road is elevated 2 feet. Elevating the road 2 feet as opposed to 1 foot reduces the frequency of road overtopping, but increases upstream risk during large floods, and thus this alternative is not recommended.



SOURCE(S):
 HEC-RAS Model Sections - MMI
 Cross section locations - FEMA FIS
 Elevation Data, 2014 Quad Counties
 LIDAR - USGS
 Flood Mitigation Points/Area - LCPC
 LVRT mapping - VTrans
 Bing Map Aerials

Figure 3: Elmore Pond Road Bridge

Flood Mitigation Alternatives Analysis

MXD: Y:\2911-08\Maps\Wolcott_Alts_EPRBridge.mxd

LOCATION:
 Wolcott, VT

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1C – Widen Elmore Pond Road Bridge

1Ci – Widen Elmore Pond Road Bridge by 10 feet on each side (20 feet total)

This alternative involves expanding the existing bridge and channel cross section on both sides of the river channel by 10 feet to gain 20 horizontal feet of bridge hydraulic opening. Flood elevations are reduced for medium to large floods (i.e., 10- to 500- year) by a maximum of 0.6 to 1.8 feet upstream between the Post Office and Elmore Pond Road Bridge due to a partial release of bridge backwatering (Figure 4). Flood levels during small floods are not changed under this alternative. This alternative is not recommended as additional reduction of the existing backwatering is desired to reduce flood levels.

1Cii – Widen Elmore Pond Road Bridge by 50 feet on each side (100 feet total)

This alternative is to expand the existing bridge and channel cross section on both sides of the river by 50 feet to gain 100 horizontal feet of bridge hydraulic opening. Flood elevations would be reduced for medium to large floods (i.e., 10- to 500- year) by a maximum of 0.6 to 3.0 feet upstream between the Post Office and Elmore Pond Road Bridge (see Figure 4). Flood reductions take place for all floods. Backwatering is nearly eliminated by increasing the bridge span by 100 feet. This alternative would be costly to implement as it would require building a 200-foot long bridge span, and thus is not recommended.

1Ciii - Widen Elmore Pond Road Bridge by 25 feet on each side (50 feet total)

This alternative consists of extending the existing bridge and channel cross section on both sides of the river by 25 feet to gain 50 horizontal feet of bridge hydraulic opening. Flood elevations would be reduced for medium to large floods (i.e., 10- to 500- year) by a maximum of 0.6 to 2.4 feet upstream between the Post Office and Elmore Pond Road Bridge (see Figure 4). Increasing the bridge width by 50 feet leads to comparable flood reduction benefits as increasing the width by 100 feet, and thus is recommended as a cost-effective way to reduce flood levels. This alternative is recommended for future bridge upgrades.

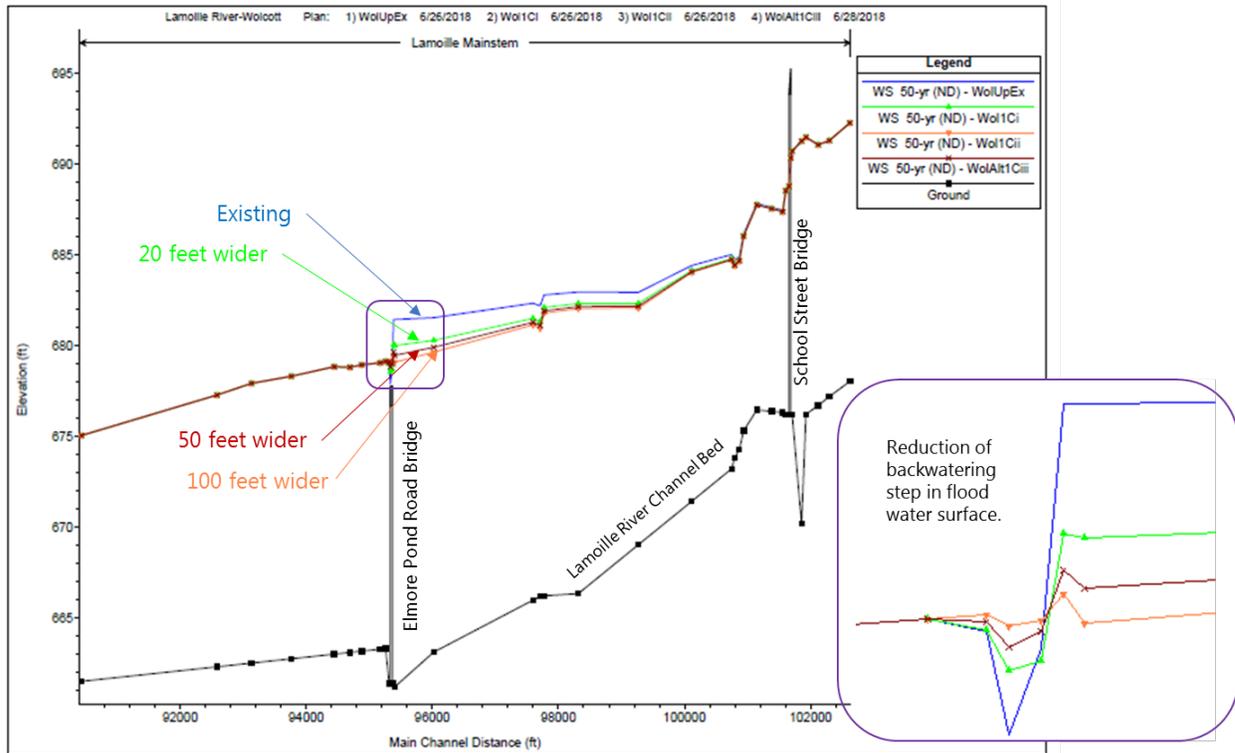


Figure 4: 50-year flood profiles between Elmore Pond Road Bridge and School Street Bridge for Elmore Pond Road Bridge widening alternatives. (WolUpEx = Existing; Wol1Ci = Widen 20 feet; Wol1Cii = Widen 100 feet; Wol1Ciii = Widen 50 feet)

1D – Reconnect Floodplains Downstream of Elmore Pond Road Bridge

1Di - Remove berm on the floodplain downstream of Elmore Pond Road Bridge

This alternative involves removing the 1- to 2-foot tall berm on the river left floodplain downstream of Elmore Pond Road Bridge. The 10- and 25-year floods can inundate (i.e., access) the river left floodplain following berm removal. Modeling results show a decrease in flood elevations of 0.1 feet. A small flood reduction benefit takes place that is likely coupled with increased sediment deposition and nutrient uptake due to improved floodplain access during the moderate sized floods. This alternative is recommended for flood reduction and water quality benefits. The berm removal could serve as a first step in floodplain reconnection given its lower cost relative to the full floodplain restoration.

1Dii - Reconnect floodplain downstream of Elmore Pond Road Bridge

This alternative involves lowering the floodplain surface between 1 and 7 feet to allow the 2-year flood to inundate approximately half of the new floodplain area. Flood elevations of medium to large floods (i.e., 10- to 100-year) are reduced by a maximum of 0.3 to 0.5 feet upstream between the Post Office and the floodplains downstream of Elmore Pond Road Bridge. This alternative is recommended as it would reduce

flood levels, reduce local erosion, and improve water quality through sediment deposition and nutrient uptake.

Summary of Recommendations

The frequency of flooding of Elmore Pond Road can be reduced by increasing the elevation of the road, widening the bridge, and reconnecting the downstream floodplain. Widening the bridge is the best way to decrease flood levels, yet this is costly and the Elmore Pond Road Bridge is fairly new and in good condition. The bridge should be widened approximately 50 feet during its next replacement.

Floodplain reconnection reduces flood and erosion risks, yet a lot of earth would need to be removed for a relatively small benefit. This alternative is recommended as opportunity arises as it provides many benefits through restoring natural systems that tend to be low maintenance over the long term. Berm removal could be the first step of floodplain reconnection.

Elevating Elmore Pond Road by 1 foot can reduce the frequency of road overtopping and not change upstream flood levels. This alternative should be implemented in the near term if improved travel during flooding is desired.

3.2 Former Lamoille Valley Railroad Bridge

The remaining abutments and approaches of the former Lamoille Valley Railroad Bridge contribute to upstream flooding due to the constricting the channel and reducing floodplain inundation. The existing bridge does not have a superstructure or deck, and it is reported that these bridge elements may be installed in the future for use on the Lamoille Valley Rail Trail (VHB, 2011). The former Lamoille Valley Railroad Bridge alternatives include removing the remaining abutments and approaches, restoring a deck on top of the remaining abutments, and building a longer bridge (Figure 5 and see Table 3).

2A – Remove existing approaches and abutments at former Lamoille Valley Railroad Bridge

This alternative consists of removing the approaches on both floodplains down to the elevation of the surrounding areas and removing the remaining abutments. Flood elevation reductions of 0.1 to 0.3 feet occur upstream between the Post Office and existing abutments during large floods (50- to 500-year). Flood elevations during smaller floods are not changed under this alternative. This alternative is not recommended due to its small flood reduction benefits and the loss of recreation along the LVRT.

2B – Add bridge to existing abutments at former Lamoille Valley Railroad Bridge

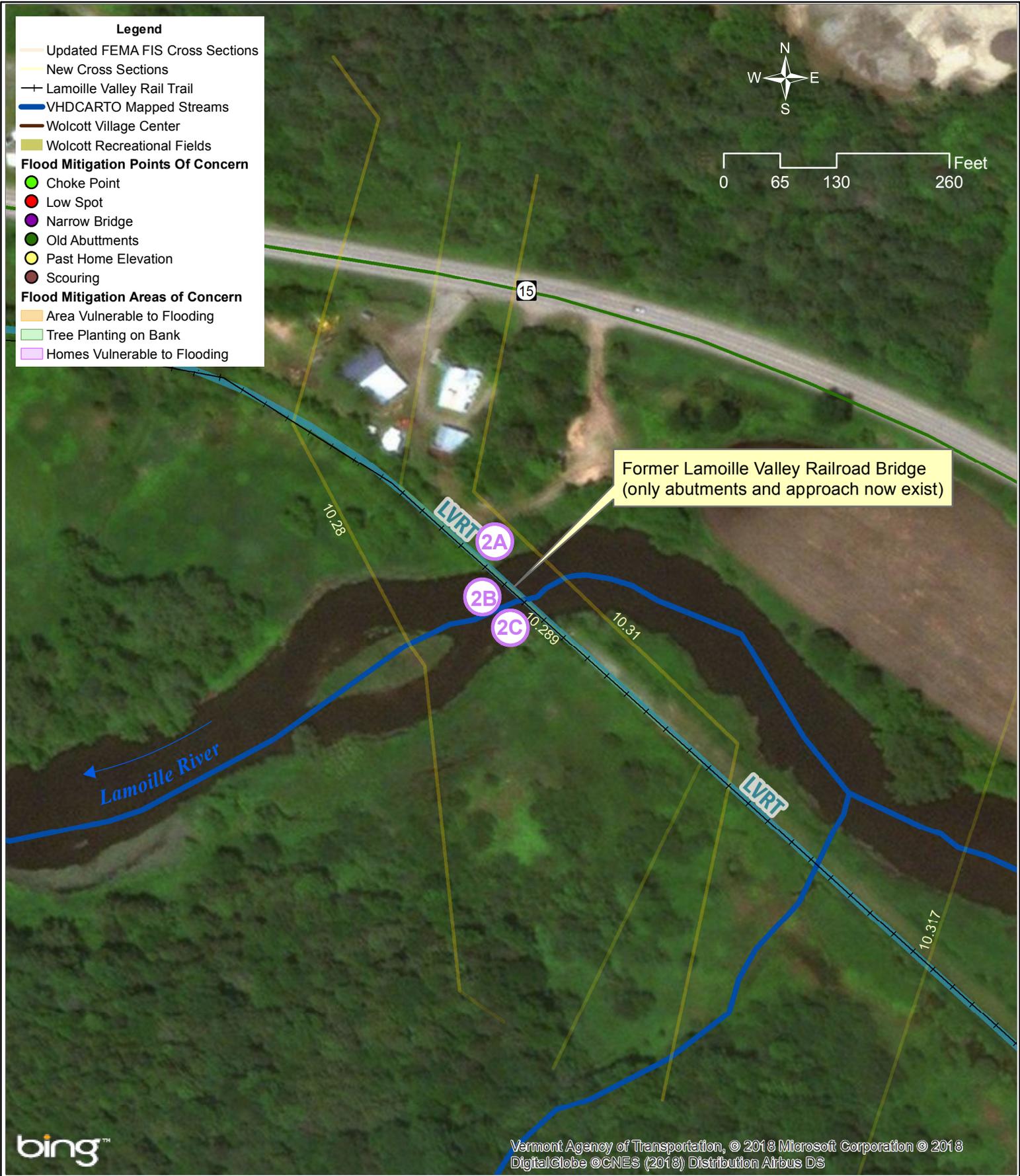
This alternative consists of adding a 3-foot tall bridge deck to the existing abutments to restore the connection on the Lamoille Valley Rail Trail across the Lamoille River. Flood elevations increase 0.1 feet during medium floods (i.e., 10- to 50-year) upstream between the Post Office and the existing abutments. Flood elevations during small floods are not changed under this alternative. If this bridge is to be used in the future for the Lamoille Valley Rail Trail, it is not recommended to use the existing abutments as it will increase flooding upstream.

2C – Install a 300-foot two-span bridge and flood bench at former Lamoille Valley Railroad Bridge

This alternative involves removing the existing abutments and approaches and installing a prefabricated 300-foot two-span pedestrian bridge over the existing channel and a new flood bench, similar to the design of the Cambridge Greenway Trail Bridge recently installed in Jeffersonville, Vermont. Modeling results suggest that installing this bridge reduces all flood elevations 0.2 to 0.4 feet upstream between the Post Office and the existing abutments. This alternative would reduce local erosion and improve water quality by providing space for sediment to be deposited and nutrients to be taken up at the new flood bench underneath the bridge. This project would improve the Lamoille Valley Rail Trail in Wolcott. This alternative is recommended for the flood reduction, environmental, and recreation benefits.

Summary of Recommendations

When the time arrives for the Lamoille Valley Rail Trail Bridge to be restored, a 300-foot wide pre-fabricated structure is recommended to reduce flood levels upstream to the Post Office. Final dimensions will be determined in the future, but the bridge should be widened to reduce backwatering and upstream flood elevations. If the bridge is not replaced, the remaining abutments and approaches should be removed to achieve a smaller amount of flood reduction.



SOURCE(S):
 HEC-RAS Model Sections - MMI
 Cross section locations - FEMA FIS
 Elevation Data, 2014 Quad Counties
 LIDAR - USGS
 Flood Mitigation Points/Area - LCPC
 LVRT mapping - VTrans
 Bing Map Aerials

Figure 5: Former Lamoille Valley Railroad Bridge

LOCATION:
 Wolcott, VT

Flood Mitigation Alternatives Analysis

MXD: Y:\2911-08\Maps\Wolcott_Alts_FormerBridge.mxd

Map By: LAW
 MMI#: 2911-08
 Original: 06/28/2018
 Revision: 6/29/2018
 Scale: See Scale Bar

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3.3 Parking Lot near the Post Office

The gravel parking lot near the Post Office (Figure 6) is located immediately upstream of the confluence of the Lamoille River and Wolcott Pond Brook. Field observations indicate that bedrock exists approximately 7.5 feet below the existing parking lot elevation. The removal depth to create a flood bench is thus limited to 7.5 feet as bedrock will not be removed. The alternative for this location is to create a flood bench on top of the bedrock (Figure 7 and see Table 3).



Figure 6. Parking Lot near the Post Office

3A – Create flood bench at back of lot near Post Office down to bedrock

This alternative consists of creating a 40-foot wide, 7.5-foot tall flood bench along the river bank at the back of the parking lot near the Post Office. The depth of fill removal is limited by the existing bedrock. Flood reductions of 0.2 feet take place for just the 500-year flood. This alternative is not recommended as it does not reduce flood levels for most floods.

Summary of Recommendations

This alternative is not recommended as it provides very little benefits due to site constraints.



SOURCE(S):
 HEC-RAS Model Sections - MMI
 Cross section locations - FEMA FIS
 Elevation Data, 2014 Quad Counties
 LIDAR - USGS
 Flood Mitigation Points/Area - LCPC
 LVRT mapping - VTtrans
 Bing Map Aerials

Figure 7: Post Office and School Street Bridge

LOCATION:
 Wolcott, VT

Flood Mitigation Alternatives Analysis

MXD: Y:\2911-08\Maps\Wolcott_Alts_PO_SSBridge.mxd

Map By: LAW
MMI#: 2911-08
Original: 06/28/2018
Revision: 6/29/2018
Scale: See Scale Bar

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3.4 School Street Bridge

School Street Bridge (Figure 8) is located immediately downstream of 90-degree bend in the river and near a curve on Vermont Route 15. The right side of the bridge cannot be readily extended outward because of its proximity to Route 15, homes, and infrastructure. The left side of the bridge has approximately 85 feet of road between the existing bridge abutment and the closest driveway. The bridge is undersized and causes backwatering upstream through Wolcott Village and past the Lamoille Valley Rail Trail Bridge. The river right bridge abutment is founded on bedrock. Some areas of rust were noted in the field on the bridge beams. The School Street Bridge alternatives include widening the bridge to river left, creating a flood bench, and realigning the bridge (see Figure 7 and see Table 3).



Figure 8: School Street Bridge

4A – Widen School Street Bridge

4Ai - Widen School Street Bridge by 20 feet to river left

This alternative to extend the existing bridge and channel cross section on river left by 20 feet would reduce flood levels throughout the area from the Route 15 Bridge to School Street Bridge (Figure 9). Modeled flood elevations were reduced by a maximum of 0.2 to 0.5 feet. Although widening the bridge by just 20 feet may reduce the level of land acquisition required, the small flood benefits in the floodprone Village likely do not justify this approach. This alternative is not recommended.

4Aii - Widen School Street Bridge by 75 feet to river left

This alternative involves adding a 75-foot span of bridge to the existing bridge on river left. Earth would be cut down to the channel bed. Widening the bridge by 75 feet results in greater flood reductions throughout the area than widening the bridge by 20 feet (Alt 4Ai) (Figure 9). The improvement is due to a greater release of backwatering for the wider bridge. Modeled flood elevations were reduced by

a maximum of 1 to 2 feet upstream to the Lamoille Valley Rail Trail Bridge. Modeled flood elevations were reduced by approximately 0.2 to 0.4 feet further upstream to the Vermont Route 15 Bridge. This alternative would likely require coordination with the adjacent property owner and a land acquisition. This alternative is recommended given the flood reduction benefits in the Village.

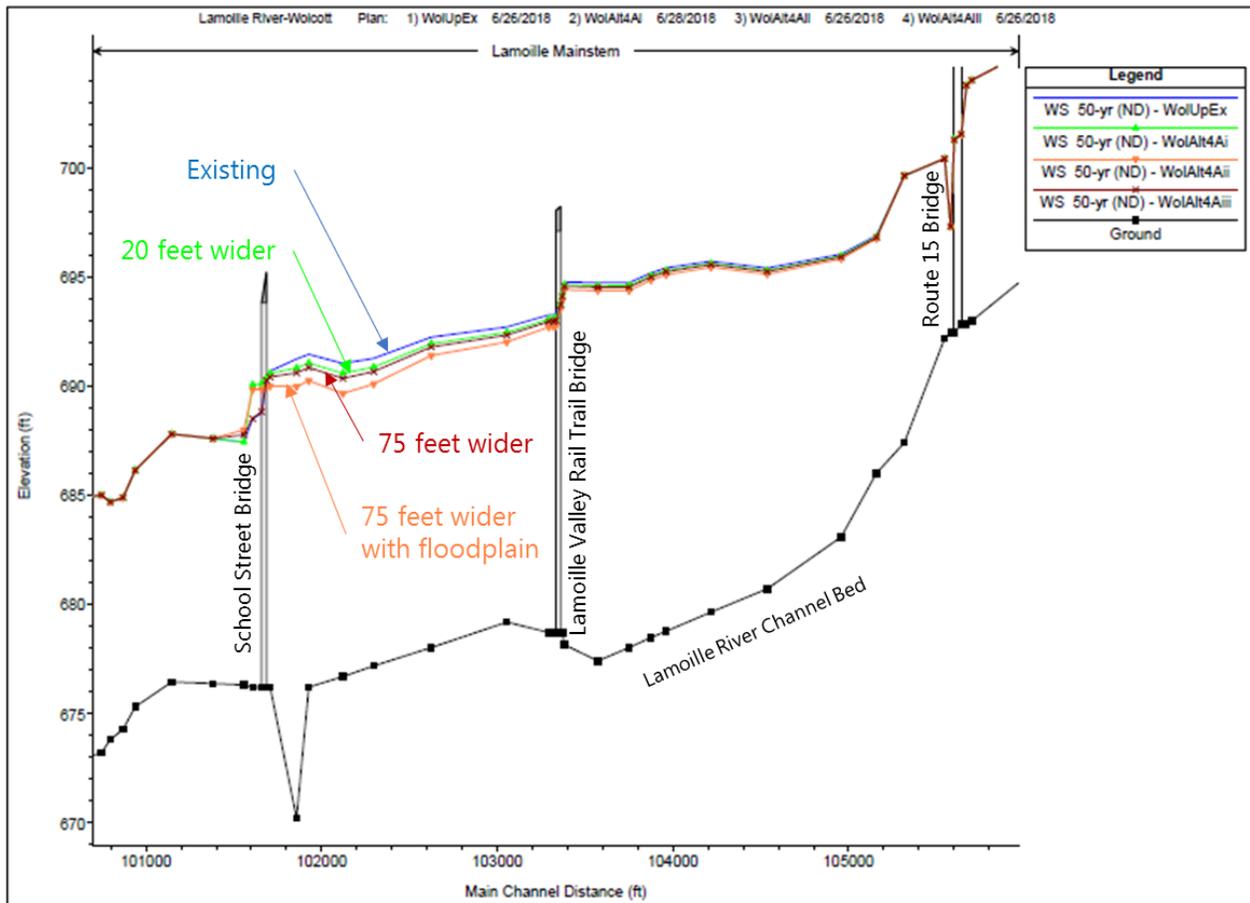


Figure 9: Profile of 50-year flood elevations in area between Lamoille Valley Rail Trail Bridge and School Street Bridge for School Street Bridge widening alternatives. WolUpEx = Existing; WolAlt4Ai = Widen 20 ft to river left; WolAlt4Aii = Widen 75 ft to river left; Wol4Aiii = Widen 75 ft to river left with flood bench

4Aiii - Widen School Street Bridge by 75 feet to river left with a flood bench

This alternative is to increase the bridge width by 75 feet on river left. Earth would be cut down to the existing floodplain elevation. Widening the bridge by 75 feet and creating a flood bench would result in flood reductions throughout the area from the Route 15 Bridge to School Street Bridge (Figure 9). Modeling results suggest that the flood bench at the bridge could negate some of the flood reduction benefits associated with widening the structure alone (Alt 4Aii). Modeled upstream flood elevations were reduced by a maximum of 0.2 to 0.5 feet. This alternative would require coordination with the adjacent property and likely land acquisition. This alternative is not recommended as initial modeling results suggest that the flood bench does not improve flood reduction benefits in this location.

4B – Realign School Street Bridge

4B – Realign and widen School Street Bridge by 50 feet

This alternative would realign School Street Bridge across the corner of the existing upstream river bend that requires widening the span by 50 feet. Modeled upstream flood elevations were reduced by a maximum of 0.5 to 0.9 feet. It is not clear that placing the bridge at the river bend will increase scour as the locations of existing bedrock are not known. The existing bridge is founded on bedrock. This alternative would require coordination with VTrans and the adjacent property owners and likely land acquisition. Although not recommended in isolation as shown here, a small bridge realignment should be considered as part of the above bridge widening alternatives.

Summary of Recommendations

Increasing the span of School Street Bridge will reduce flooding in the area from the Route 15 Bridge to School Street Bridge throughout the Village Center. This is an important flood benefit given the large amount of infrastructure and private property in the Village that is susceptible to flooding and erosion damage. It is recommended to widen the bridge 75 feet during its next replacement. Land acquisition and landowner coordination will be essential to implement this alternative.

3.5 Lamoille Valley Rail Trail Bridge

The Lamoille Valley Rail Trail Bridge (Figure 10) is a former railroad bridge near the Town of Wolcott Fire Department. The bridge is undersized and causes backwatering upstream to the Route 15 Bridge and onto the Recreation Fields. The bridge may require repairs or replacement for potential future use along the Lamoille Valley Rail Trail (VHB, 2011). The alternatives considered for the Lamoille Valley Rail Trail Bridge include replacing the existing bridge with a longer pedestrian bridge, creating a flood bench, and creating a flood chute along the Lamoille Valley Rail Trail (Figure 11 and see Table 3).



Figure 10: Existing Lamoille Valley Rail Trail Bridge

5A – Widen Lamoille Valley Rail Trail Bridge

5Ai - Widen Lamoille Valley Rail Trail Bridge by 50 feet to river left

This alternative is to extend the existing bridge 50 feet on river left. A retaining wall would be required to hold up the edge of the road embankment. Modeled flood elevations reduce by a maximum of 0.6 to 1.1 feet upstream to the Route 15 Bridge (Figure 12). This alternative is not recommended given the conflict with the road embankment on river left.

5Aii - Widen Lamoille Valley Rail Trail Bridge by 50 feet to river right with a flood bench

This alternative is to extend the existing bridge 50 feet on river right towards Vermont Fish & Wildlife Department lands. Earth would be cut down to the floodplain elevation to allow the 2-year flood to access approximately half of the new floodplain. Modeled flood elevations reduce by a maximum of 0.2 to 0.9 feet upstream to the Vermont Route 15 Bridge (Figure 12). The flood bench reduces some of the flood reduction benefits associated with widening the bridge. This alternative is not recommended as the flood bench reduces modeled benefits and the bench is likely to wash away based on initial modeling results.

5Aiii - Widen Lamoille Valley Rail Trail Bridge by 25 feet on each side (50 feet total)

This alternative involves extending the bridge 25 feet on both sides of the river to increase the bridge width to 50 feet. Model results illustrate a reduction in flood levels of 0.7 to 1.3 feet upstream to the Vermont Route 15 Bridge (Figure 12). This alternative is not recommended as there does not appear to be space to extend the bridge towards the road at river left.

5Aiv - Widen Lamoille Valley Rail Trail Bridge by 50 feet to river right

This alternative is to extend the existing bridge 50 feet on river right towards Vermont Fish & Wildlife Department lands. Modeled flood elevations reduce by a maximum of 0.7 to 1.3 feet upstream to Vermont Route 15 (Figure 12). This alternative is recommended when bridge replacement is needed as this layout appears to match the site best of all the alternatives explored here.

5B- Flood chute

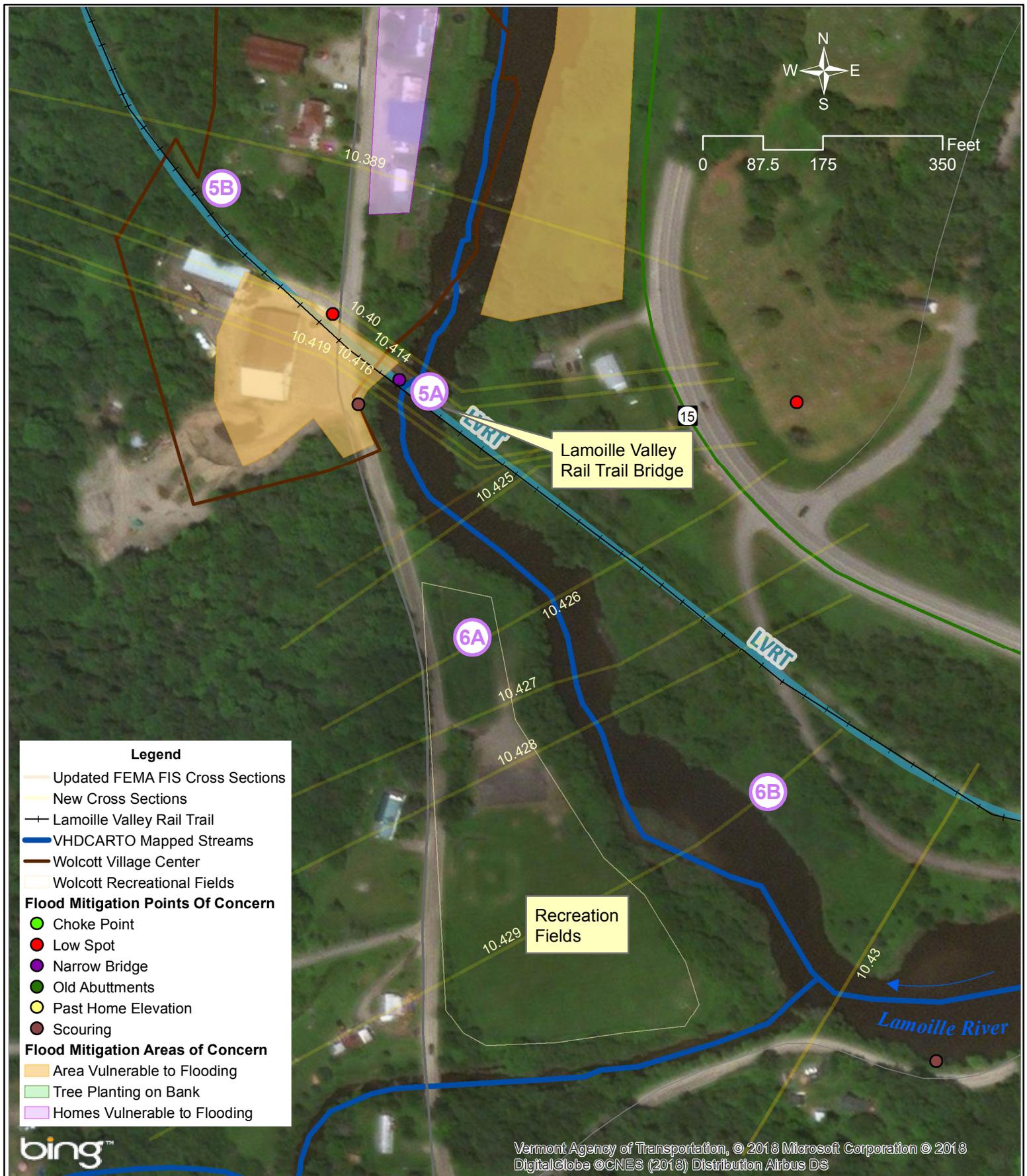
5B - Create flood chute along LVRT embankment

This alternative consists of installing a flood chute along the Lamoille Valley Rail Trail embankment extending from the Lamoille Valley Rail Trail Bridge to an outlet downstream of the School Street Bridge. This would require changing the slope of the flow path north of the Fire Station and west of existing houses. Small tributaries and drainage currently flow east to the Lamoille River.

According to the LIDAR data, the excavation to create a food chute for the 10-year flood would need to be approximately 5-15 feet deep at the height of land on the LVRT embankment. It is important to note that there is currently a small channel from the Fire Department to an outlet immediately downstream of the Lamoille Valley Rail Trail Bridge that flows into the river; this would need to be reversed if a flood chute were installed. Based on existing elevations, the excavation of the flood chute would likely bring more flood water to the back of existing houses east of the LVRT, and thus this alternative is not recommended.

Summary of Recommendations

Increasing the width of the Lamoille Valley Rail Trail Bridge by 50 feet towards river right would reduce flooding in Wolcott Village, and thus this alternative is recommended. This alternative would reduce flooding at the recreation fields and make School Street more passable during flooding.



<p>SOURCE(S):</p> <p>HEC-RAS Model Sections - MMI Cross section locations - FEMA FIS Elevation Data, 2014 Quad Counties LIDAR - USGS Flood Mitigation Points/Area - LCPC LVRT mapping - VTrans Bing Map Aerials</p>	<p>Figure 11: Lamoille Valley Rail Trail Bridge and Recreation Fields</p>	<p>LOCATION:</p> <p style="text-align: center;">Wolcott, VT</p>
	<p>Flood Mitigation Alternatives Analysis</p> <p>MXD: Y:\2911-08\Maps\Wolcott_Alts_LVRTBridge_RecFields.mxd</p>	<p>Map By: LAW MMI#: 2911-08 Original: 06/28/2018 Revision: 6/29/2018 Scale: See Scale Bar</p> <p> MILONE & MACBROOM 1 South Main Street Waterbury, VT 05676 802.882.8335 www.miloneandmacbroom.com</p>

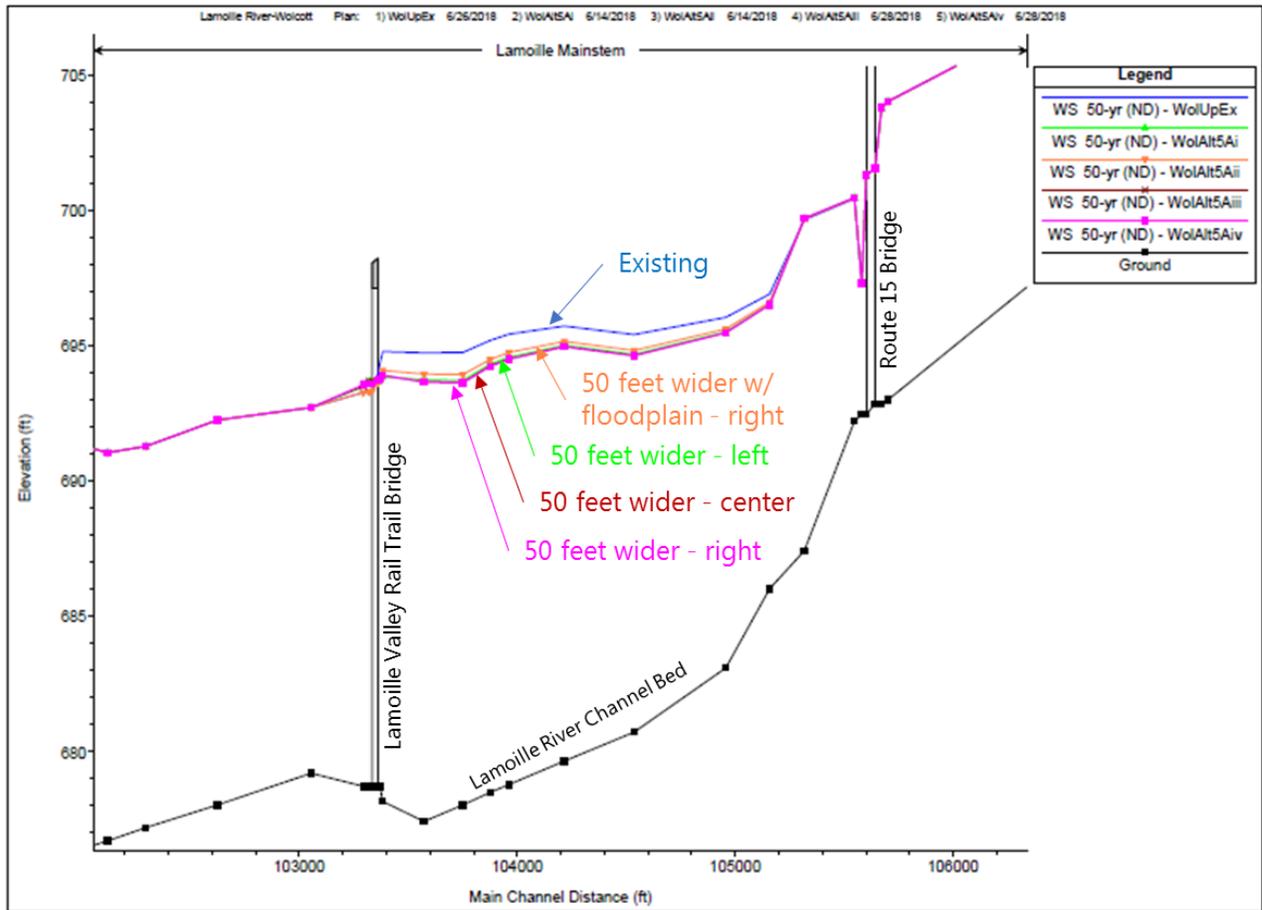


Figure 12: Profile of 50-year flood elevations in area between Route 15 Bridge and Lamoille Valley Rail Trial Bridge for Lamoille Valley Rail Trail Bridge widening alternatives. WolUpEx = Existing; WolAlt5Ai = Widen 50 ft to river left; WolAlt5Aii = Widen 50 feet to river right with flood bench; WolAlt5Aiii = Widen 25 ft on both sides; WolAlt5Aiv = Widen 50 feet to river right

3.6 Recreation Fields

The recreation fields consist of a baseball field and a parking lot that are reported to be subject to flooding. The alternatives considered at this location include lowering the floodplains surrounding the fields (see Figure 11 and see Table 3).

6A - Lower floodplain downstream of Town of Wolcott Recreation Fields parking lot

This alternative consists of reconnecting the floodplain in the area immediately downstream of the parking lot to allow the 2-year flood to inundate approximately half of the floodplain. A retaining wall along the road may need to be installed to support the edge of the embankment. This alternative reduces flood elevations by 0.1 feet. This alternative is not recommended given its limited benefits.

6B - Lower floodplain opposite Town of Wolcott Recreation Fields

This alternative consists of reconnecting the floodplain across the river from the recreation fields to allow the 2-year flood to inundate approximately half of the floodplain. Reconnection is needed as the river has incised and no longer can regularly inundate the floodplain. This alternative would increase flood elevations at the area surrounding the recreation fields by approximately 0.3 feet in elevation due to a reduction in channel velocity. This alternative is not recommended.

Summary of Recommendations

Reconnecting the small floodplains will not reduce flooding at the recreation fields. The best approach to reduce flooding at the fields is to widen the bridges downstream of the fields to reduce backwatering onto them (Alts 4Aii and 5Aiv). These alternatives are thus not recommended.

3.7 Combinations of Alternatives

Modeling was performed to explore several combinations of alternatives.

7A – Widen Elmore Pond Road Bridge by 50 feet and elevate the low spot on the road by 1 foot; remove the berm on the floodplain downstream (Alts 1Bi, 1Ciii, 1Di)

Performing these alternatives in combination produces similar results to only widening Elmore Pond Road Bridge (Alt 1Ciii). Elevating the road by 1 foot does not affect flooding upstream. Removing the berm has much smaller flood benefits than widening the bridge so those benefits are not noticeable when the combination modeling is performed. This combination alternative is not recommended as it does not address upstream bridges.

7B – Elevate the low spot on Elmore Pond Road by 1 foot and reconnect the floodplain downstream (Alts 1Bi, 1Dii)

Performing these alternatives in combination produces similar results as only lowering the floodplain downstream (1Dii) for floods less than the 100-year flood. Flood levels are increased for larger floods. This combination alternative is not recommended as it does not address upstream bridges.

8 - Widen School Street Bridge by 75 feet to river left and widen the Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 4Aii, 5Aiv)

Performing these alternatives in combination reduces flood elevations in the area from the Vermont Route 15 Bridge to the School Street Bridge. In the area from the Lamoille Valley Rail Trail Bridge to School Street Bridge, flood elevations are reduced by a maximum of 1.0 to 1.4 feet. In the area from the Vermont Route 15 Bridge to the Lamoille Valley Rail Trail Bridge, flood elevations are reduced by a maximum of 1.0 to 1.7 feet. Increasing the spans of these bridges benefits the Village Center and recreation fields by reducing backwatering caused by undersized bridges. This combination alternative is not recommended as it does not address downstream floodprone locations.

9 - Widen Elmore Pond Road Bridge by 50 feet and elevate low spot on road by 1 foot, install 300-foot bridge at former bridge; widen School Street Bridge by 75 feet to river left, widen Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 1Bi, 1Ciii, 2C, 4Aii, 5Aiv)

Modeling shows that performing these alternatives in combination reduces flood elevations from the Vermont Route 15 Bridge to Elmore Pond Road Bridge by 0.5 to 2.3 feet (Table 4). The combined alternative leads to better flood reduction than each individual alternative alone. This combination alternative is not recommended as it does not include the beneficial floodplain lowering downstream of Elmore Pond Road Bridge.

Table 4. Flood Reductions of Combination Alternatives

Location	Alternative 9 Flood Reductions (feet)	Alternative 10 Flood Reductions (feet)
<i>Downstream</i>		
Elmore Pond Road Bridge to new bridge at the former Lamoille Valley Railroad Bridge	0.6 to 2.3	1.2 to 2.5
New bridge at the former Lamoille Valley Railroad Bridge to School Street Bridge	0.5 to 1.6	0.7 to 1.8
School Street Bridge to Lamoille Valley Rail Trail Bridge	0.9 to 1.5	0.9 to 1.5
Lamoille Valley Rail Trail Bridge to Route 15 Bridge	1.0 to 1.7	1.0 to 1.7
<i>Upstream</i>		

10 - Widen Elmore Pond Road Bridge by 50 feet and elevate low spot on road by 1 foot, install 300-foot bridge at former bridge; widen School Street Bridge by 75 feet to river left, widen Lamoille Valley Rail Trail Bridge by 50 feet to river right (Alts 1Bi, 1Ciii, 1Dii, 2C, 4Aii, 5Aiv)

Modeling shows that performing these alternatives in combination reduces flood elevations from the Vermont Route 15 Bridge to floodplains downstream of the Elmore Pond Road Bridge by 0.7 to 2.5 feet (see Table 4). The combined alternative leads to better flood reduction than each individual alternative alone. This combination alternative is recommended as it addresses all of the flood issues observed during this study. These alternatives constitute a long-range vision for bridge replacement and floodplain reconnection. We anticipate that these projects will be implemented over time, and perhaps during future bridge replacements as bridge life cycles come to an end.

4.0. Conclusion

An initial flood mitigation study has been completed for Wolcott, Vermont. Existing hydraulic modeling was updated with LIDAR and used to test a wide range of alternatives. A windshield survey was conducted to observe flood mitigation sites provided by the Town and LCPC, and collect data.

The alternatives analysis shows that widening undersized bridges provides flood benefits across the project reach. Bridge widening should take place as life cycles come to an end. Bridges should not be replaced with structures that are the same size.

A combination alternative (10) is the vision for flood reduction in Wolcott. The alternative includes widening of existing bridges, reconnection of a floodplain downstream of Elmore Pond Road, and installation of a new Lamoille Valley Rail Trail Bridge that is much wider than the existing abutments at the former railroad bridge.

5.0 Citations

Vannesse Hangen Brustlin (VHB). Conceptual Bridge Engineering Report: Lamoille Valley Rail Trail from Swanton to St. Johnsbury. January 28, 2011

Town of Wolcott 2018-2026 Municipal Development Plan

**Adopted by Wolcott Selectboard on March 21, 2018
Approved by Lamoille County Planning Commission on April 24, 2018**

Prepared by Wolcott Planning Commission

**Wolcott Town Plan was developed using funds awarded
by the Department of Housing and Community Development
through the Municipal Planning Grant Program**

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SECTION 1.

INTRODUCTION

In many ways, Town Plans are a place where communities have an opportunity to reflect on past accomplishments, take stock where they are, and set a course for the future. For Wolcott, this is our opportunity to reflect on our present challenges and opportunities and chart our course for the twenty-first century. The success or failure of this, or any other planning effort, rests with the community. A bold plan needs inspired persons to support it.

This plan is not intended to be a plan for only some of the community or of a certain special interest, but instead a plan that reflects the aspirations and values of all of the residents of Wolcott. The Planning Commission has made every effort during the development of this plan to reflect the values and ideas of the entire town. Of course, it would be foolhardy to imply that this plan is a consensus opinion of the town's residents - it is impossible to draft a plan of this magnitude without disagreement by some. However, the Wolcott Planning Commission has listened to and considered all of the comments and viewpoints posed during the drafting of the plan. What follows is a reflection of our common history, the present status of our town's facilities and services, an expression of the views of the residents of Wolcott, and the direction proposed for the Town of Wolcott over the next eight years and into the future.

How is a Town Plan useful to the people of Wolcott?

There is a range of ways in which a town plan can be used - from simply a source of information to a foundation for regulations. Ultimately, the residents of Wolcott determine the uses of the Wolcott Town Plan. Among the potential uses of the municipal plan are the following:

1. **A source of information:** The plan is a valuable source of information for local boards, commissions, citizens and businesses. The information in a plan could serve to familiarize residents, potential residents, and development interests with Wolcott and its resources.
2. **A basis for community programs and decision-making:** The plan is a guide for the recommendations contained in a capital budget and program, for any proposed community development program, and for the direction and content of local initiatives such as economic development, recreation planning and housing.
3. **A source for planning studies:** Few plans can address every issue in sufficient detail. Town Plans not only record and discuss what is known about the resources and residents of the town but also what is not known. Therefore, many plans will recommend further studies to develop courses of actions on a specific need.
4. **A standard for review at the state and regional levels:** Act 250 and other state regulatory processes identify the municipal plan as a standard for review of applications. Municipal plans are important to the development of regional plans and regional and inter-municipal programs. In addition, state proposals must comply with town plans including the purchase of state land for parks and recreation.
5. **A long-term guide:** The plan is a long-term guide by which to measure and evaluate public and private proposals that affect the physical, social, and economic environment of the community.

6. **An eligibility requirement and/or positive factor for state and federal grants:** In 2000, the state began requiring towns to adopt plans in order for communities to be eligible for most grants and low interest loans. Planning grants, water and wastewater grants, community development grants, and other key sources of funding all now require the municipality to have an adopted plan. While many other public and private funding sources do not require town plans in order to be eligible, having a town plan that documents the need for funding will generally strengthen the application.
7. **A basis for regulatory action:** The plan serves as a foundation and guide for the creation or amendment of the zoning regulations, subdivision regulations, the official map, shoreland bylaws, flood hazard bylaws and for the decisions made under these regulations.

What is required in a town plan?

Vermont municipalities are authorized to create municipal development plans under 24 V.S.A. §4381. All local plans in Vermont, regardless of whether they are for rural or urban municipalities, must include the following twelve components:

1. A statement of objectives, policies, and programs of the municipality to guide the future growth and development of land, public services and facilities, and to protect the environment;
2. A land use plan and map;
3. A transportation plan and map;
4. A utility and public facility plan and map;
5. A statement of the municipality's policies for the preservation of rare and irreplaceable natural areas, and scenic and historic resources;
6. An education facilities plan and map;
7. A recommended program for implementing the plan's objectives;
8. A statement of how the plan relates to adjacent municipalities' plans and the regional plan;
9. An energy plan, including an analysis of energy resources, needs, scarcities, costs, and problems within the municipality, a statement of policy on the conservation of energy, a statement of policy on the development of renewable energy resources and a statement of policy on patterns and densities of land use likely to result in conservation of energy.
10. A housing element, including a recommended program for addressing low and moderate-income persons' needs as identified in the regional plan.
11. An economic development element that describes present economic conditions and the location, type, and scale of desired economic development, and identifies policies, projects, and programs necessary to foster economic growth.
12. A flood resilience plan that identifies flood hazard and fluvial erosion hazard areas and designates those areas to be protected including floodplains, river corridors, lands adjacent to streams, wetlands, and upland forests, to reduce risk of flood damage to infrastructure and improve property and recommends policies and strategies to protect the areas identified above and to mitigate risks to public safety, critical infrastructure, historic structures and municipal investments.

How was the Town Plan developed?

This Plan was developed by Wolcott Planning Commission. The Commission updated data, documented achievements, and expanded flood resiliency policies in order to bring plan to compliance with statutory requirements. The Planning Commission also rewrote the energy segment of the plan. The new energy element was drafted to meet the state Energy Planning Standards and with the goal to seek “substantial deference”, or a greater say, in state decisions regarding the siting of energy generation facilities.

Implementation actions for next eight years incorporate ideas developed during 2015 community visioning workshops as well as input from a 2017 survey regarding siting of energy generation facilities. The actions also reflect new priorities, as formulated by the Planning Commission and the Selectboard.

As required by Vermont Statute, all Planning Commission and Selectboard meetings at which the plan was discussed were publicly warned. Energy surveys were distributed at Town Meeting and via Front Porch Forum.

During the previous planning period of 2013-2017:

The Town developed a new municipal web page <http://www.wolcottvt.org> (2013)

Wolcott applied for and received “Village Center Designation Status” for Wolcott Village from the State of Vermont. The designation makes property owners within the designated district eligible for historic, code improvement and technology tax credits. (2014)

Residents engaged in nine community-wide workshops to re-envision Wolcott’s future (2015)

The Town constructed a trailhead kiosk to improve accessibility to the Lamoille Valley Rail Trail on Railroad Street. The trailhead includes parking, a picnic area, bicycle racks and an information booth. (2016)

The Town completed a feasibility study to develop a solar project at former landfill. (2016)

The Planning Commission revised Wolcott’s subdivision and zoning regulations, and unified the previously separate documents into a single unified bylaw. Changes to the bylaw were prompted by the 2015 re-envisioning workshops and include provisions that provide more flexibility to landowners and applicants, and more clearly describe unique purposes of each land use district. (2016)

The Town completed a bicycle and pedestrian study for North Wolcott Road. (2017)

Priority Implementation Actions for 2018-2026

With Selectboard's leadership:

Advance development of a ground mounted solar array at former landfill site and other potential sites.

Appoint Energy Coordinator to promote energy awareness and energy efficiency in usage of electricity, space heating fuels and transportation fuels.

Install a municipal system for wastewater treatment in Wolcott Village and North Wolcott.

Improve walkability and streetscape appeal in Wolcott Village, with priority for area between the Wolcott Store and School Street.

Implement priority culvert projects on East Hill and Brook Road, and priority bridge projects on School Street and North Wolcott Road (more information on page 30 of plan)

Relocate Fire Station out of the floodplain.

Evaluate possibility of hiring a Town Administrator.

Support efforts to augment broadband and cellular coverage.

Improve town web site to enable online submittal of municipal permit applications.

With Planning Commission's leadership:

Apply for Village Center Designation for North Wolcott.

Develop a comprehensive plan for Lamoille Valley Rail Trail. This includes amenities for Rail Trail users, improved connectivity between Rail Trail, Wolcott Village and Wolcott Elementary School, and improved recreational access to Lamoille River.

Develop a plan for flood hazard areas – especially along Lamoille River. This plan should be informed by findings of the Lamoille River Hydraulic Model that outlined alternatives for flood mitigation in the triangular area delineated by School Street, Flat Iron Road and Route 15, and the area along Elmore Pond Road Bridge.

Review recommendations in this plan for future updates to zoning and subdivision regulations (p. 86-87 of this plan) and update the regulations accordingly.

With leadership from entrepreneurs and local residents:

Open a café or an eatery where neighbors can socialize and get a bite to eat.

Improve Wolcott's town park on School Street per proposal developed in 2013.

Increase availability of locally produced foods, e.g. by establishing a community garden.

SECTION 2.

POPULATION & GROWTH

Population information is some of the most basic and important data needed in order to plan for a community. Historical growth trends, the age structure, and future predictions are just a few pieces of information which can help decision makers in guiding the future of Wolcott. Knowing the number of residents in Wolcott, for example, is necessary in order to evaluate the amount of services required. Forecasting future changes in the population, meanwhile, allows the town to look ahead and prepare for the next eight or ten years. This is especially important when preparing for the number of students expected in the Wolcott Elementary School in the next few years.

Summary of Trends in Wolcott Population and Growth

1. The most recent population figure for Wolcott is an estimate of 1,676 people in 2010.
2. Wolcott's population has been increasing since 1970, far surpassing the population peak of the late 1800's.
3. Current and projected trends show this population increase continuing, yet slowing down.
4. Older age groups are likely to increase as a proportion of Wolcott's population, in line with statewide trends.

Goals, Policies, and Recommendations of this Section

In order to accomplish the Primary Goal of this Town Plan – to provide guidelines for the development of Wolcott in the best interest of its residents – the town will need to monitor growth rates in order to anticipate situations that may have a negative impact on the community.

It is not the intention of Wolcott to stop growth. The Town expects to accommodate its 'fair share' of the county's population growth rate, which is anticipated at around 20% for the decade from 2010-2020. The Planning Commission and Selectboard intend only to moderate growth to prevent the need to increase taxes to provide new or expanded services. New growth and development should not place an undue burden on services and facilities.

GOAL

- For Wolcott's population to have a balanced growth rate so not to place an excessive burden on the existing facilities and services. Growth should be balanced with the Town's ability to provide services to support the population.

POLICY

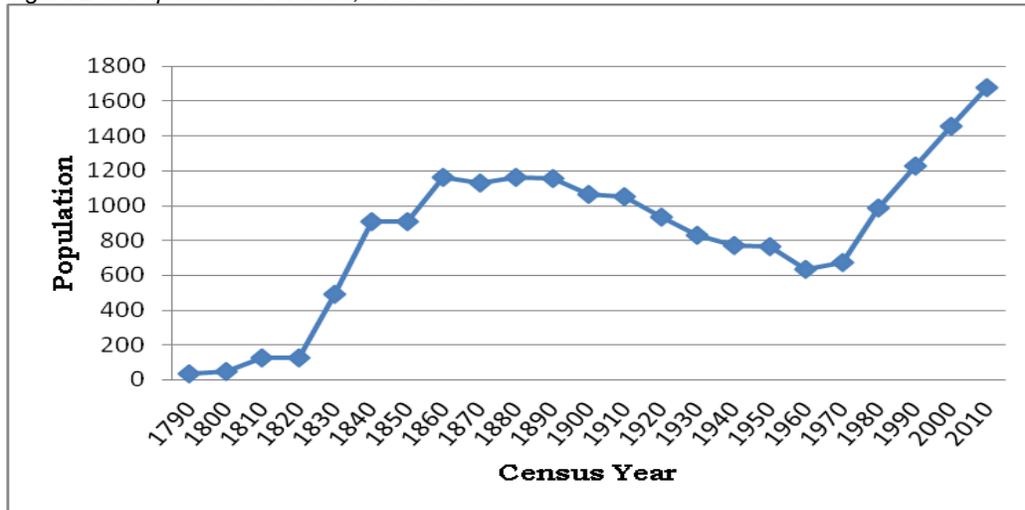
- Large developments should be phased over a few years so as to not overburden the town's services and facilities. The Wolcott Development Review Board is given this authority in Town Zoning and Subdivision Regulations.

Historic Census Counts

Since 1791 the U.S. Census Bureau has conducted an actual count of persons living in each town in the country. The historical data in Figure 2-1 tells a story of our past. After rapid growth between 1820 and 1860, there was a relatively stable population of around 1,150 for the next forty years. Beginning just before the turn of the twentieth century, the number of residents in Wolcott slowly declined until the 1960 Census, after which the Town's population

began an increase that continues to this day. It is interesting to note the new trend that has followed. During the decade of 1970 to 1980, Wolcott experienced a 46% increase in population, its highest rate of growth since the early 1800's. In the decades since, Wolcott's population has continued to grow but the rate of growth is slowing with each passing decade. The linkage between the surrounding economy and residential increases and decreases in Town are likely strong.

Figure 2-1. Population of Wolcott, 1790-2010



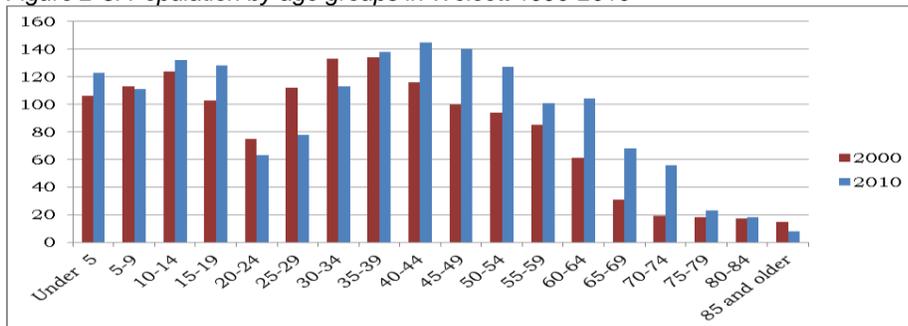
Sources: US Census Bureau, Decennial Census of Population and Housing (1790-2010).

Current Population and Age Distribution

The most recent Census count for Wolcott was 1,676 persons in 2010. The median age for the town in 2010 was 38.4 years, which was 6.3 years younger than the state average and 3.2 years younger than Lamoille County as a whole.

Age distribution information is important in order to predict future service needs, especially schools. Breakdowns by age categories in Figure 2-3 depict the trends between 2000 and 2010. Two important observations are the increase in high-school age children, the marked decrease in the 25-35 age group, and the dramatic increase in the middle to older age groups (40 to 75).

Figure 2-3. Population by age groups in Wolcott 1990-2010



Source: U.S. Census Bureau, Census of Population and Housing (1990-2010)

Future Population Projections

State population projections released in 2013 forecast Wolcott's population through 2030. There are two sets of projections; each based on past rates of population migration. During the 1990s (Scenario A), the national economy was generally healthier than during the 2000s (Scenario B) and Vermont saw greater rates of net in-migration. As a result, Scenario A using 1990s migration rates generally, shows higher populations than Scenario B using the migration rates of the 2000s.

Table: Wolcott Population Projections

	2010 Census Count	2020 Projections	% change from 2010	2030 Projection	% change from 2010
Scenario A	1,676	2,011	20%	2,321	38.0%
Scenario B	1,676	1,805	7.7%	1,884	12.4%

Source: U.S. Census Bureau, Vermont Population Projections 2010-2030 (<http://dail.vermont.gov/sites/dail/files/documents/vt-population-projections-2010-2030.pdf>)

SECTION 3.

HOUSING

Wolcott's population is growing, but the number of people in each household seems to be decreasing. This means that more housing units may be necessary to house the same amount of people in town. The expectation, therefore, is for an overwhelming need for single-family homes and two-family and mobile homes as Wolcott grows. There is less need for apartments although some smaller one to two bedroom units could fill the needs of many persons living alone. As would be expected from the needs stated above, nearly 81% of Wolcott's occupied housing units in the 2010 Census were owner occupied while the remaining 19% were rentals. It is also no surprise, therefore, that just over 1% of homeowner units were vacant while just over 8% of rental units were vacant.

There is more to Wolcott's housing picture than simple supply. The nature and cost of housing and its ability to provide opportunities for a spectrum of means and needs must also be measured. Wolcott is no different from other locations in the fact that housing affordability is a major concern. Home prices and housing costs have been increasing at much higher rates than regional income. In addition, a future need for more housing options for senior and disabled residents is expected.

Goals, Policies, & Recommendations of this Section

GOALS

To ensure that Wolcott has safe and affordable housing available in a variety of types for all incomes, ages, and for those with special needs.

POLICIES

Safe housing

- Residential development is not permitted within Flood Hazard Overlay area (defined as 100-year floodplain) and existing housing in the floodplain should be flood-proofed for the safety of the residents and the town as a whole.
- Consider obtaining Hazard Mitigation Grants or other funds to aid residents in relocating out of the floodplain if their homes are damaged by flooding.
- Ensure that potential buyers are notified if a property is in a 100-year floodplain or the 500-year floodplain or the Fluvial Erosion Hazard Zone. Generate a list of vulnerable residents and give them notice with their tax statements.
- All housing must have approved wastewater treatment to ensure the health of the residents and public at large.

Affordable housing

- Sites for manufactured homes are allowed in locations similar to those generally used for single-family conventional dwellings.
- Affordable housing should minimize long-term living costs through high quality design, efficient construction, energy efficiency, and proximity to employment. The Planning Commission should work with Lamoille Housing Partnership to find ways to ensure working residents have housing they can afford.
- Wolcott encourages land use patterns that are inherently more affordable by the nature of cost efficiencies associated with their construction (e.g. shorter access roads, smaller lots, proximity to utilities).

Variety of types

- Vacation homes are encouraged where appropriate.

- Accessory apartments are encouraged as they provide needed income for the homeowner and needed small apartments for residents living alone.

Special needs housing

- Wolcott supports efforts to assist elderly and disabled residents who wish to “age in place” in their homes and to partner with community based health care systems that enable elderly and disabled people to remain in the community.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- Improve wastewater treatment capabilities in Wolcott Village and North Wolcott per recommendations of 2004 sewer feasibility study.
- Pursue partnerships and funding to develop senior housing near the village center.

Household and Family Characteristics

Housing needs differ based on household types. Of the 641 households in 2010, 451 (or 70.4%) were family households.¹ The Census breaks families into three groups:

- married couples,
- female householder with no spouse present, and
- male householder with no spouse present.

Over half of all households in Wolcott (53.4%) were married family households in 2010. Data show that married couple families overwhelmingly live in home-ownership situations. In 2010, 89% of Wolcott’s married couple families owned their homes, versus renting. Nearly half (46%) of Wolcott’s married couple families had children in 2010. In single head of household families, there are more female householders than male householders. In the 2010 Census there were 63 female householders without a husband and 46 had children. There were 46 male householders without a wife and 37 had children. These groups also desire home-ownership but generally have more difficulty than married couples.

In addition to families, the Census breaks households into non-families.² These groups include individuals living alone or with one or more non-relatives. In Wolcott there were 190 non-family households in 2010, of which 137 were individuals living alone. A lower percentage of non-family households (76%) own their own homes than do family households (83%).

Table 3-1 depicts the trends in the average size of families and all households between 1990 and 2010 for the town, the county and the entire state. While average family and household size across Lamoille County and Vermont appears to be steadily decreasing since 1990, the size of a typical Wolcott family and household has remained fairly stable since 2000 and is generally larger than county and statewide trends.

Table 3-1. Average Size of Families and all Households, 1990-2010

Year	Wolcott		Lamoille County		Vermont	
	Household	Family	Household	Family	Household	Family
1990	2.90	3.27	2.56	3.07	2.57	3.06
2000	2.63	2.99	2.45	2.94	2.44	2.96

¹ A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." Same-sex couple households are included in the family household's category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households.

² "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

2010	2.61	2.99	2.37	2.87	2.34	2.85
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Sources: 1990 - 2010 Censuses of Population and Housing

Housing Stock Characteristics

According to the U.S. Census, the majority (623 units or over 80 %) of the housing units in Wolcott in 2010 were detached single-family homes. The second most common housing unit type in Wolcott in 2010 was mobile homes (122 units).

Compared to other towns in Lamoille County, Wolcott has a relatively young housing stock. Over 46% of the housing units counted by the Census in 2010 were built during or after 1980. About 19% of the housing units in town were constructed prior to 1940. Wolcott's percentage of homes built prior to 1940 is lower than all other towns in Lamoille County except Stowe and Elmore. The Census 2006-2010 estimated median construction date for Wolcott housing units was 1978, which is newer than the countywide median construction date for Lamoille and all other counties in Vermont.

Housing types in Wolcott are fairly homogenous, with single family detached and mobile homes being the most common type. Table 3-2 below shows the housing units in Wolcott in 2000 and 2010 classified by type of structure and occupancy status. The number of owner-occupied single family homes grew by 34.5 % between 2000 and 2010. Conversely, the number of single family rental units and rental units in multi-family buildings each decreased by 40%. Overall the number of single family structures grew by 30.6%, while the number of multi-unit structures (excluding single family attached structures) decreased by 35.9%.

Table 3-2. Units in Structure by Occupancy Type for Wolcott 2010.

	Occupied Housing		Owner Occupied		Renter Occupied	
	Estimate		Estimate		Estimate	
Total Occupied Units	717		641		76	
Single Family Homes	77.4%		83.3%		27.6%	
Single Family Attached Units	0.0%		0.0%		9.2%	
Multi-Unit Homes	4.2%		1.4%		21.1%	
Mobile Homes	19.1%		15.3%		51.3%	

Source: 2006-2010 American Community Survey 5-Year Estimates – Population and Housing

Housing Costs and Affordability

The U.S. Census also collects data on the median housing values for homeowners and the median contract rent costs for those who rent in Wolcott. As of the 2011-2015 ACS estimates, median home values in Wolcott were \$199,700. Seventy-four percent of households had a mortgage.

When households pay more than 30% for housing related expenses, housing is considered unaffordable. In Wolcott, almost a half of households (46%) with mortgage and three quarters (75%) of renting households spent more than 30% of their household income on housing related expenses.

Vermont Department of Taxes collect data on the number of residencies sold. In 2016, 7 primary residences were sold. Three residences were single family homes with less than six

acres of land, three single family residences had more than six acres of land and one sale was a mobile home with land. The median price of a residence with less than six acres of land was \$93,000. Table 3-3 illustrates median home prices in Wolcott, region and the state in 2016.

Table 3-3. 2016 Median price of residence with less than six acres

	Wolcott	Lamoille County	Vermont	Stowe	Morristown	Hardwick
2016 Median Home Price	\$93,000	\$219,000	\$189,900	\$426,500	\$179,100	\$118,500

Source: 2016, Vermont Dept. of Taxes, Property Transfer Data

The Need for Fair and Affordable Housing

It would be ideal for all residents of Wolcott to have fair and equal opportunity to secure affordable housing that meets their needs for shelter and accessibility. Unfortunately that is not always the case. Common barriers to housing include low incomes, high housing costs, accessibility and self-care needs due to age and disability, and possible discrimination based on these factors, race and ethnicity, familial status, and more.

Municipalities have limited opportunities to impact affordable housing. Communities with zoning and subdivision bylaws must be careful not to drive up housing costs by requiring large lots or having other requirements that add costs to the final unit. By state law, municipalities must treat mobile homes the same as other types of housing and must allow mobile home parks, multi-family housing, and accessory apartments in their communities.

One avenue to help provide affordable housing is for the town to support projects that create new affordable units. Lamoille Housing Partnership (LHP) in Morrisville is a regional, non-profit organization serving residents of Lamoille County in funding, managing and developing attractive, affordable housing opportunities.

LHP has developed affordable housing projects in surrounding communities (Morrisville, Stowe and Hardwick) and is available to work with town government, businesses and individuals to discuss developing other affordable housing opportunities.

The land use provisions of this plan can help create the windows and opportunities for others, namely fair housing developers and service providers

Special Needs Housing

Within every community are individuals or families with special housing needs. The elderly and families with children in poverty are examples of groups with special needs that are found in most communities. The disabled or infirmed may also require special arrangements. A final category of special needs housing is group quarters or institutional care. Living arrangements such as college dormitories, nursing homes, group homes, and homeless shelters fall into this category. The American Community Survey of 2011-2015 provides an insight into types of special needs housing that may need to be addressed in Wolcott. For example, the Survey estimates that there are 41 individuals with self-care difficulty and 77 with independent living difficulty. The Survey also estimates that about 7% of people in Wolcott live in poverty. These include children, seniors as well as working age adults.

SECTION 4.

ECONOMIC DEVELOPMENT

The foundation of Wolcott's economy is its resource base. Initially, agriculture and forestry dominated the community's economy, but over the past half century, the economy has increasingly relied on its residents to commute to work into other communities. The resources still exist for agriculture and forestry to be an important component of the community into the future but changes in national and regional economics have forced these types of operations to change to keep up.

Diversifying of Wolcott's economic base is another possibility for enhancing the local economy. A stronger base of local manufacturing, light industry, retail, and tourism in addition to agriculture and forestry would cushion the town in the event one sector experiences a drop. Having so many residents that commute to other towns indicates that Wolcott will likely rise and fall with the regional trends. Creating jobs in Wolcott would stabilize tax bases and make the town more self-reliant.

Finally, economic development is key because residents must have opportunities to earn a livable wage, and there must be opportunities to learn the skills necessary to achieve gainful employment. Town policies must encourage and support, not discourage or hamper business ventures. Land use regulations must be crafted to achieve their objectives while limiting the burden on the applicant.

Goals, Policies, and Recommendations of this Section

GOALS

- For Wolcott to have a balanced and diverse local economy that provides rewarding job opportunities at a livable wage.
- To increase the number of Wolcott residents who live AND work in town.
- To enhance critical infrastructure that supports economic development in Wolcott, such as the Lamoille Valley Rail Trail.

POLICIES

- Support and maintain initiatives to bring the availability of high-speed broadband Internet access to town.
- Support efforts that focus on completing the LVRT segment from Wolcott to Morrisville. Develop trailheads and other trail amenities in town.
- Support replacement of the Wild Branch Bridge on the Lamoille Valley Rail Trail.
- Supports industries which take advantage of our local resources (including local labor force) to produce value-added products. Local-processing of raw materials should be encouraged over exporting these raw materials outside of Wolcott for processing.
- Support proposals which will provide workforce training to improve opportunities for residents in new and existing businesses.
- Economic development at the expense of the environment is not encouraged. Businesses and industries should not degrade or endanger air and water resources.
- Industries that extract renewable resources, such as timber, should do so in a sustainable manner.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- Work with property owner of former Bucks furniture to allow for mixed redevelopment in Village Core.
- Work with property owner and Lamoille Economic Development Corporation to create new “shovel ready” industrial land in the Fisher Bridge Enterprise District.
- Improve wastewater treatment capabilities in Wolcott Village and North Wolcott per recommendations of 2004 sewer feasibility study.
- Develop amenities to support outdoor recreation in Wolcott, including for the Lamoille Valley Rail Trail.
- Develop a boat launch pint along the Lamoille River in Wolcott Village. Consider other ways to enhance use of the Lamoille River for recreation.
- Apply for Village Center Designation status for North Wolcott in order to facilitate infrastructural improvements and economic development.

Wolcott’s Resident Labor Force

In 2016, Vermont Department of Labor, reported that Wolcott’s labor force was 970 people. Of these, 920 people were employed and 50 were unemployed. Most Wolcott workers commute outside of town to their jobs.

According to the American Community Survey 2011-2015, a median earning for Wolcott workers is \$27,350. Median earning for male, full time year-round worker is \$37,000 and female full time year-round worker is \$28,698.

In 2010, about 4% of Wolcott residents worked in Wolcott; 51% of workers commuted to other Lamoille County towns and rest commuted beyond Lamoille County borders. The majority of workers was employed in private businesses (64%), with the reset being self-employed (20%) or employed by the government (16%)

Employment & Wages within Wolcott

In-Town Jobs

Vermont Dept. of Labor figures indicate that in 2016, 25 establishments provided 158 jobs in Wolcott. Thirty-three jobs were provided in the government sector and 125 jobs in private sector. The average annual wage paid by a job in Wolcott was \$37,905. The job and employment figures above cover establishments that pay into Unemployment Insurance (UI). These figures, therefore, do not count all self-employed persons or other businesses that are exempt from UI.

Local Taxes

Another important component of economics, and something against which to compare wages and income, is taxes. Federal, state wide and local taxes are raised to fund services and programs. For areas with larger or more expensive services, tax revenues will need to be higher to pay for them. From an economic development view, taxes need to be predictable and as low as possible. Residents of Wolcott have the most influence on their local tax rates. Rates can be kept steady through good budgeting including a capital budget and program. They can be kept low through efficient spending and by controlling increases in services. As roads and education are, by far, the services with the largest budgets, road policies and education policies (including land use decisions) are important to controlling tax rates.

Wolcott’s fiscal year 2018 municipal tax rate was \$0.6580per \$100. Education property taxes

are set based on a formula developed by the state and based on factors such as per public spending at local schools. Wolcott's education property taxes have been steadily increasing. With municipal and education rates together, a homeowner, in FY 18 pays a total rate of \$2.1937 per \$100, while a business-owner or landlord pays \$ 2.1550 per \$100.

Wolcott has little commercial or industrial property and relies heavily on residential properties to pay property taxes. Residential properties typically use more tax dollars in services than they pay in taxes. An increase in commercial and industrial properties could stabilize or even ease tax rates for homeowners in Wolcott.

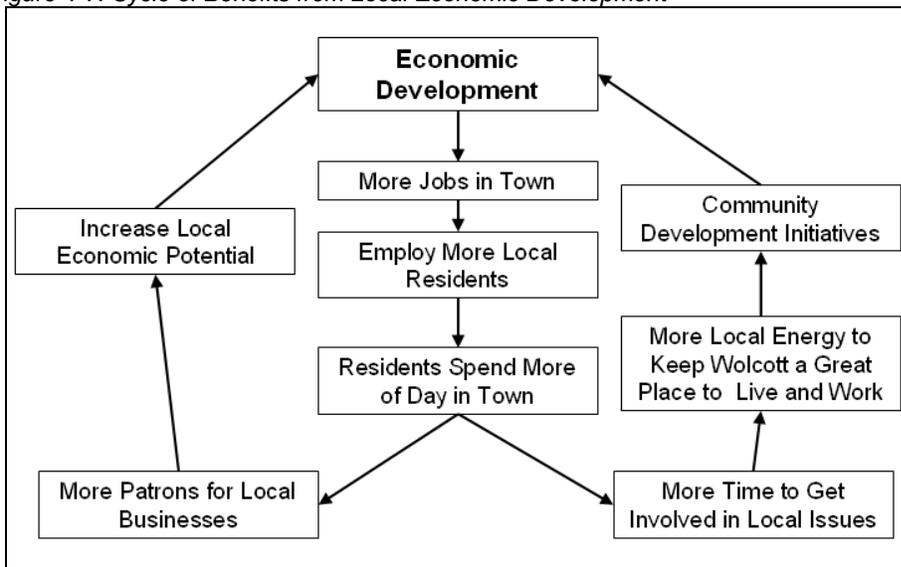
Challenges and Possibilities

Economic development is vital to the future of Wolcott. As we have become increasingly dependent on our neighboring communities for employment, residents are driving more and the town's grand list is becoming more reliant on residential properties to pay taxes. In the future, Wolcott will need more industrial and commercial properties to diversify the tax base. The jobs created will improve local incomes and decrease poverty rates.

More 24/7 Wolcott Residents

Wolcott is enjoying steady population growth, but many town-folk don't actually spend the majority of their day in town. They can potentially stay disconnected from local issues, and they aren't around to contribute to (prospective) local businesses during daytime hours. The vast majority of Wolcott's resident workforce commutes elsewhere to work. Increased economic development and job creation, while good in their own right, could stem the commuting tide and allow more residents to live in Wolcott all day long. Figure 4-7 below depicts a hypothetical cycle of benefits that could come from more local employment.

Figure 4-7. Cycle of Benefits from Local Economic Development



Bring Broadband Internet to Wolcott

If recent initiatives to bring hi-speed broadband Internet access to Wolcott are successful, they could represent an economic boon to the town. The lack of broadband availability in Wolcott represents a divide between the town and the full capacity of the Internet to support access to information, e-commerce and educational resources. Hi-speed internet access is increasingly essential not only for high tech industries, but for all businesses operating in the 21st century. Hi-speed Internet is a vital tool for growing the local economic base, and would make Wolcott more attractive to home-based businesses, telecommuters, the cottage software and web development industry, the creative economy, and even manufacturers, who increasingly rely on broadband for product specifications and advertising.

Potential to Add Value to Exports

One of the keys to a strong local economy in Wolcott is a diverse export segment. Exporting products brings money into the community, where it can be circulated through secondary businesses such as services and retail. For raw materials produced in town such as lumber, having industries that add value to the products increases the value of the export, e.g. timber extracted AND milled in Wolcott. Such value-added functions, and the manufacturing sector that performs them, should be encouraged in Wolcott.

Over the last several decades, many of the large sawmills in the Lamoille County Region has closed, partially due to increased international competition. Currently, much of the timber produced in Lamoille County is exported to Canada for milling. Increasing the amount of forest products processed in Wolcott could provide employment in support industries such as equipment and vehicle servicers and providers, sawmills and other processing facilities such as wood chippers, pellet manufactures, and other value added manufacturing facilities. In addition to traditional sawmills, small “backyard” mills, portable mills, fire wood suppliers, and cottage furniture makers and wood turners all represent potential opportunities to add value to raw materials produced in Wolcott.

Agriculture in Wolcott

Turning around the declining farming sector in Wolcott will be difficult but there are some new small farm products that are beginning to be used in town with some success. There are a few dairy farms left in town, but the future of dairy is uncertain statewide. Local conservation efforts may help sustain the remaining operations into the future but this would need to be explored in detail. Traditional farming products are still being produced in town including Christmas trees, hay, corn and silage, and maple syrup. Some new operations include organic farming, seed production, and specialty products. New and emerging agricultural products like these may become a new avenue for the town to continue to have farming as a part of the landscape. Wolcott should encourage such operations, as well as all types of diversified farming and value added agricultural products. In addition to farm enterprises themselves, a vibrant agricultural economy relies on the availability of appropriate infrastructure, including roads, utilities, processing, and storage capacity.

Much of the prime farm land lies within floodplain areas, which offers both advantages and disadvantages. On the positive side, seasonal flooding over time has contributed to the development of nutrient-rich soils. On the negative side, flooding events can disrupt agricultural activity in a number of ways: the floods can wipe out equipment and crops, water-log soils, erode the soil, and increase plant and livestock disease. Increases in the frequency and intensity of flooding and drought in and beyond the Town could have serious impacts on

the four dimensions of food security: food availability, accessibility, utilization, and systems stability. Nevertheless, due to the abundance of well-drained prime agricultural soils, the Town has an opportunity to take advantage of these currently underutilized resources and thereby enhance the Town's food security and resilience. Furthermore, agricultural uses should be encouraged in floodplain areas as this type of use still allows the river to access the floodplain, thus preventing damage from flooding downstream.

Outdoor Recreation

Outdoor Recreation is a major economic driver within the State of Vermont. The ski industry is clearly a major economic force in nearby communities, and efforts are underway to develop a stronger, four season recreational draw. This provides opportunities for economic development in businesses directly related to recreation, but also for other businesses that might sell products or provide services to visitors.

Wildlife-based activities including hunting, fishing, viewing, and photography are estimated to have brought more than \$383 million dollars to the state's economy (Vermont Forest Resources Plan, 2010).

The Lamoille River bisects the Town of Wolcott, and is currently an under-realized resource for both recreation and economic development. Boaters, kayakers, canoers, swimmers, and anglers all use portions of the River. In order to encourage these diverse recreational users to begin or end their journeys in Wolcott, and hopefully to frequent Wolcott based businesses, the Town could consider developing a boat launch-point along the Lamoille River in Wolcott Village. Passage of the river is impeded by falls near Wolcott Village. Incorporating a formal portage with the Lamoille Valley Rail Trail could address this issue, and make the area more attractive for recreation use. Formal launch-points and portages would provide safe access to the River without degrading the stream bank.

The Lamoille Valley Rail Trail

The Lamoille Valley Rail Trail will be a four-season, multi-use recreation path running from Swanton to St. Johnsbury built on the corridor of the former St. Johnsbury and Lamoille County Railroad. At this time, two segments of the future 93-mile trail are open for year round use; a seventeen-mile segment between Cambridge and Morristown, and a fifteen-mile segment between Danville and St. Johnsbury. In Wolcott, the the Rail Trail will pass through Wolcott and includes a trailhead on School Street near the Town Hall. Given Wolcott's location on the Trail between Hardwick and Morristown, this represents an unprecedented economic opportunity for the Town. Residents and visitors alike will be brought into Wolcott Village via the Rail Trail, creating a customer base for both new and existing businesses. Further, the Rail Trail may make Wolcott and the surrounding area more attractive to home businesses and telecommuters, who are not tied to a particular place, and may consider their locations based on "quality of life" decisions.

Ahead of the Rail Trail construction by VAST and VTrans, in 2016 Wolcott completed an attractive trailhead facility in the vicinity of the Town Offices. It includes amenities such as: parking for 10 vehicles including 2 with long trailers and 2 ADA, rain garden and landscaping, community informational resources, modest lighting, access to potable water and restrooms during town office hours, bicycle racks, and a covered pavilion with picnic tables and benches. There could be a future sidewalk connection between the LVRT and the Town's school and library. Wolcott could also consider creating a WiFi servicing the school street area and areas of Wolcott Village within walking distance of the Rail Trail. Wolcott could also consider the specific types of businesses to encourage that would benefit the Town and Rail Trail users.

Village Areas

The village areas of Wolcott Village and North Wolcott have been the center of social, commercial, and governmental functions since the town’s founding. These are areas where the town’s highest residential densities are expected along with services to support the small commercial and service industry businesses expected in village settings. Future developments in wastewater treatment options may enable even higher densities than are currently allowed.

In 2014, Wolcott Village applied for and received “Village Center Designation Status” from the State of Vermont. The designation makes property owners within the designated district eligible for historic, code improvement and technology tax credits. In this planning period, Wolcott intends to apply for the Village Center Designation Status for North Wolcott Village.

One of the primary barriers to increased economic development in Wolcott is the lack of septic capacity in the town’s central areas, including Wolcott Village and the School Street area and North Wolcott. With no municipal sewer service, there is very little potential for dense and/or centralized commercial or residential development. A sewer feasibility study for the Villages of Wolcott & North Wolcott was performed in 2004, and there may be new solutions on the horizon to address the Town’s wastewater needs and enable more economic development.

Despite the limitations created by lack of wastewater, there is still potential for some small-scale businesses in these village areas. Certain commercial uses, such as offices and retail stores, require significantly less wastewater capacity than residential uses, making commercial use of existing structures on small village lots a viable option (see table below).

Table 4-12. Wastewater Capacity for Residential and Non-Residential Use

Business Type	Use equivalent 1-bedroom	Use equivalent 3-bedroom
Office	9 employees	28 employees
Day Care Facility (no meals)	2 care providers, 7 children	4 care providers, 24 children
Day Care Facility (1 meal)	1 care provider, 6 children	3 care providers, 18 children
Doctor’s Office	2 staff, 7 patients	4 staff, 28 patients
Retail store	9 employees	28 employees
Restaurant, Tavern or café	4 seats	12 seats

Source: Vermont Environmental Protection Rules

As a result, property owners could conceivably develop new, small businesses in existing buildings and lots within the villages and other constrained areas, providing local employment for Wolcott Residents. None-the-less, the table also demonstrates the limits of this option. For example, it would be difficult to develop even a moderately sized café on many village lots without additional wastewater capacity. Expanded wastewater capacity would allow for increased development potential in each village center.

Much of the village areas lay within the 500-year and 100-year flood zones. This poses an additional constraint on potential economic development in the village. The Town has experienced flooding over the years that has flooded homes and personal property and resulted in noticeable economic impacts. Thus, the Town seeks to maintain and enhance a disaster resistant community by creating Flood Hazard Areas and by reducing the potential loss of life, property damage, and environmental degradation from floods, while accelerating economic recovery from those floods. The Town should develop in a way that respects environmental limits, protects the high quality built and natural environment of the Town, and minimizes

flood risk. Specifically, uses within the village floodplain areas should be transitioning from residential to commercial uses. This transition offers Wolcott the opportunity to enhance economic development in the village provided it is done wisely.

Route 15

As noted in the Land Use Section of this Plan, the Route 15 Corridor, as the only state highway through Wolcott and only sure source of 3-phased power, is seen as an area where commercial and industrial growth should be concentrated, as it has been in the past. Businesses such as light industrial, warehousing, or commercial uses that rely on trucks and/or heavy equipment are likely to benefit from easy access to Route 15. Encourage people to bring property to “shovel ready” status for new commercial and industrial businesses.

However, the linear nature of the corridor is conducive to sprawl and unmanageable access creation. Numerous access points on a high speed road can create conflicts between through traffic and turning vehicles, especially trucks. The Wolcott zoning regulations have attempted to stem these risks by lengthening Route 15 road frontage requirements to 600 feet with a 100 foot frontage along secondary roads. Additional means to address this challenge include working to develop shared access points and/or internal circulation roads between commercially developed parcels along Route 15. The Fisher Bridge Industrial Park, which includes High Mowing Seeds and the Vermont Food Bank, is an example of a development using this strategy. In 2016, Wolcott created a new Zoning District to explicitly encourage economic development in this area.

The flood plains along the corridor are seen as a very limiting factor for overdevelopment in this district.

Rural

This area includes the balance of the town. Growth is allowed to occur in this district in a similar manner to how it has been over the past 30 years, including low to medium density residential, small and home businesses and industries, and farming and forestry, including value added farm and forestry operations, and small scale hospitality establishments such as bed and breakfasts and agri-tourism.

Shoreland Areas

The goal of delineating these areas is to protect the sensitive shorelines of the large lakes in Wolcott. As a result, development in this area is fairly limited. Activities that encourage people to enjoy the shorelands while respecting their ecological integrity, such as bird watching, swimming, fishing, and other passive recreational activities are appropriate uses in these areas. These areas may attract visitors to Wolcott to enjoy these activities. The visitors should be encouraged to visit or purchase items from businesses located in other parts of Town.

SECTION 5.

HISTORIC, SCENIC & ARCHEOLOGICAL RESOURCES

Wolcott has a history to be proud of, and many structures and sites with connections to the past remain in town. Efforts to inventory and celebrate these windows to the past are underway, but there are even more options for the Town to preserve and catalogue its historic resources.

Likewise Wolcott's scenic beauty is immediately apparent to any visitor, and much more could be done to protect the special areas and vistas in town.

Goals, Policies, & Recommendations of this Section

Our overall goal of preserving Wolcott's heritage can be achieved by accomplishing four objectives – the recording and preservation of the history of Wolcott; the preservation of historic structures; the conservation of scenic resources; and the preservation of Wolcott's archeological record. By achieving these four objectives, our heritage will be recorded, protected, and available for residents and visitors to learn and understand what makes Wolcott what it is today. The Historical Society will play a key role in implementing the goals and policies of this chapter.

GOALS

Overall

- To preserve Wolcott's cultural and natural heritage for current and future generations.

History

- To record and preserve the history of Wolcott.

Historic structures

- To preserve individual buildings, structures, and districts of historical value.

Scenic resources

- To conserve scenic resources without undue burden on property owners.

Archeological resources

- To preserve Wolcott's fragile archeological record.

POLICIES

History

- Support applications for grants to compile a history of Wolcott.
- Support efforts to protect and preserve items and artifacts of historic significance.

Historic structures

- Development within any designated historic districts should be in character with the surrounding architecture.
- Encourage proper maintenance, preservation, restoration and reuse of historic buildings.

Scenic resources

- The provision of telecommunications services is encouraged in Wolcott.
- Telecommunications towers, wind towers, and other large obvious structures should be sited to minimize impacts on scenic resources.
- Development around the natural scenic resources identified should be sited and constructed in such a manner as to retain the natural scenic beauty of the areas. Removal of the natural vegetation on the site should be minimized and structures should be screened or hidden from view with species native to and characteristic of the existing

shoreland area.

- Development should avoid ridgelines, especially those visible from roadways. Any ridgeline development should be set back from the edge of the hill and a forested buffer remain to protect the view from the valley.

Archeological resources

- Projects occurring in the archeologically sensitive area around Elmore Pond Brook should consider the potential impact of their project on archeological sites during the early stages of development. This will offer the best opportunity to mitigate potential impact.
- If at any point in the development of a parcel an archeological site is discovered, the state archeologist should be given a reasonable opportunity to investigate and suggest a means to mitigate the impact.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

History

- Continue to support the Wolcott Historical Society.
- Consider using the old Wolcott Railroad Station and/or a portion of the School Street Center for a historical museum.

Historic structures

- Consider seeking Certified Local Government status.
- Pursue funding options rehabilitate the School Street Center and make it fully accessible.
- Continue to compile and map a comprehensive listing of historical areas and structures within town.
- Keep up to date inventory of structures on State and National Historic Register
- Support conservation of the remaining privately owned shores of Wolcott Pond and Wapanacki Lake, if voluntarily offered by willing landowners.

Archeological resources

- Where an archeological site is discovered on an undeveloped property or part of a property, support the purchase of development rights on the affected portion as a means of compensating landowners for the loss of development rights. Purchases or transfer of development rights are only on a willing seller basis.
- Map and identify old cellar holes and stone walls in Wolcott.

History of Wolcott

Brief History

According to several historic references, the colonial town of Wolcott was chartered in 1781 and named after General Oliver W. Wolcott, a signer of the Declaration of Independence. The first settlers, the Taylor and Hubbell families, arrived in 1789.

The original site location of Wolcott was on a major stagecoach route from Montreal to Montpelier. As a result of its location along the Lamoille River, the Town has had many different industries, including copper mining, saw mills, emery stone mining, grist milling and dairy farming. It is interesting to note that one of the largest and most completely stocked country stores in the Northeastern United States was located in Wolcott.

Since the turn of the century, Wolcott has experienced a steady decline in population so that it is now primarily an agricultural and residential community. However, since 1960 we find that Wolcott has been participating in the growth recorded throughout Lamoille County and indeed the entire State.

Historic Record

The Town of Wolcott has a long and varied past, which is responsible for the values and traditions held by residents today. The Wolcott Historical Society is working to ensure that the history behind the town is available for residents, new and old, to enjoy. Pieces of this history exist in regional and state historical records but a singular compiled history of Wolcott has yet to be prepared. While there are grants available from the state to prepare such a work, the Historical Society has yet to pursue any. Society members do have some local historical artifacts in their possession. They are also currently working to compile information on historic structures in town, identify the subjects in historic photos, and locate ancient roads.

Historic Sites & Structures

Identification of Structures and Districts

Both the federal and state governments maintain registers of historic places. These registers list structures and districts of structures that meet objective and subjective historic criteria, and whose listing was petitioned by their property owners and local residents. Typically structures on the registers are more than 50 years old, are associated with significant local events and people, and embody the distinctive characteristics of a type, period, or method of construction.

Most structures and districts on the Vermont Historic Register are there as a result of the Historic Sites and Structures Survey, based upon a survey process begun in 1971 and strengthened by the 1975 Vermont Historic Preservation Act. Most Lamoille County Survey entries are from the early 1980s.

Listing on the National Register involves the town or owner of a single property hiring a historic preservation consultant to prepare the documentation required by the National Park Service, which administers the Register. There are a number of consultants in Vermont who do this work, and funds can be obtained from a variety of sources.

Being listed in a register does not place restrictions on a structure's property owner, per se; rather the registers provide benefits for the preservation of historic buildings. Table 5-1 below elaborates on some of the details and benefits of the two registers.

Table 5-1. The National and Vermont State Historic Registers

	National Historic Register	Vermont Historic Register
Administered by...	National Park Service	Vermont Division for Historic Preservation
Benefits	Special consideration in permitting and in association with any federally funded project. Tax credits for rehabilitation projects. Access to federal grants (when funded).	Special consideration in permitting and in association with any state funded project.

Historic Structures in Wolcott

The **Fisher Covered Railroad Bridge** in Wolcott is listed on the National Register of Historic Places, primarily because of the unusual cupola running down its entire length. As of this time, the bridge is the only structure in Wolcott on the National Register. The Bridge will become part of the Lamoille Valley Rail Trail.

The **Wolcott School Street Historic District** is listed in Vermont's Historic Survey and Register and includes the School Street Center, the Wolcott Railroad Station and several residences.

The **Railroad Station** is a fine early 20th century example of its building type. It was built in the early 1900s to replace the original 1872 gabled building that was destroyed by fire. In the 1950s, after rail travel was dying out, the American Legion bought the building and moved it from the railroad tracks to its current site. Several years ago the Town bought the building and it was renovated in 2008. Retaining its historic appearance, it now functions as a preschool.

The **School Street Center** marks the north end of the district and is a fine example of mid-19th century schoolhouse architecture.

Below is a list of more identified historic structures and sites in Wolcott, as inventoried by the Wolcott Historical Society. The structure numbers correspond to their position in the **Historic Resources Map** at the end of this Plan. This list includes the names of the structures only. Contact the Wolcott Historical Society for more information.

1. Graves/Gravel House
2. Reed-Taylor House/Thomas Taylor House
3. Seth Hubbell Family Cemetery
4. West Hill Schoolhouse and Cemetery
5. Homer Miller's Farm / Holton House
6. Former North Wolcott Methodist Church
7. Former North Wolcott School
8. Davenport Cemetery
9. The Old Inn at Stagecoach Road (Russell Martin House)
10. Former Town Hill School
11. Pierce Cemetery
12. Former Hampshire Schoolhouse
13. Fisher Bridge
14. The Power Station
15. Fairmount Cemetery
16. Town Hall
17. Methodist Church
18. Nazarene Church
19. Village School House
20. Woods House – School Street
21. Ryder House– School Street
22. Dean House – School Street
23. Harris House – School Street
24. Bardell Lumber Shed – School Street
25. Deuso House – School Street
26. Railroad Station – Railroad Street

Rehabilitating, Using, and Preserving Wolcott’s Historic Structures

To enhance Wolcott’s needs surrounding the use and preservation of historic structures, the State of Vermont offers to towns participation in two programs; Village Center Designation and Certified Local Government Program.

In 2014, Wolcott applied and was awarded the Village Center Designation Status. The designated area contains a relatively dense collection of buildings and that has a significant role in portraying Wolcott’s history and character. Building located within the designated area are eligible to take advantage:

1. state and federal tax credits toward the rehabilitation of historic buildings,
2. tax credits for façade improvements,
3. tax credits for code improvements, and
4. priority consideration for Municipal Planning Grant, Community Development Block Grant (CDBG), Transportation Enhancement Grant and other grant funds.

Village Center Designation does not place any restrictions on what a property owner can and cannot do with their property. Rather, the program is built on the premise that the best way to preserve historic buildings in a manner that depicts their roots is to keep them in use and maintain their relevancy in today’s time. While the Town of Wolcott itself, as a government body, would not be able to apply for the tax credits listed above to rehabilitate the School Street Center or Railroad Station and bring them up to code, Village Center Designation would give the town priority consideration for CDBG funding for the building work.

Wolcott can also apply to become a **Certified Local Government** (CLG). CLG status would benefit the town in many ways:

1. The ability to work more closely with state and federal agencies on identifying and registering historic structures in town.
2. Access to matching grants to:
 - a. produce studies and cultural resource inventories,
 - b. determine property eligibility for local and National Register of Historic Places designation,
 - c. perform building reuse and feasibility studies,
 - d. develop design guidelines and conservation ordinances, and
 - e. create publications to educate the public about the benefits of Wolcott’s historic resources.
3. Access to technical assistance for all of the above.

In order to achieve CLG status, Wolcott would have to

1. enact a historic preservation ordinance for the designation and protection of historic properties³,
2. create a historic preservation commission,
3. maintain in inventory of historic resources in town,
4. ensure the involvement of the public within the process, and
5. successfully apply to the Vermont Division of Historic Preservation.

Cemeteries

Cemeteries offer a personal link to past residents of Wolcott. For some families in town, these are the final resting places for parents, grandparents and great-grandparents. There is perhaps

³ Sample language available through Vermont Division of Historic Preservation.

no stronger connection to our common past than in the cemeteries within Wolcott.

There are six cemeteries in the town of Wolcott, all of which are cared for and overseen by the Wolcott Cemetery Commission - an elected 5 member Board. Their sizes and capacities are listed in Table 5-2.

Table 5-2. Sizes and capacities of Wolcott's Cemeteries

Cemetery name	Size	Capacity status
Davenport Cemetery	0.6 acres	Reportedly sold out
Fairmount Cemetery	20 acres	Some space left in the annex.
Hubbell Cemetery (private)	0.25 acres	Number of lots remaining unknown
Pierce Cemetery (private)	0.5 acres	Lots no longer available for sale
Taylor Cemetery	7 acres	Up to 1000 single grave lots
West Hill Cemetery	0.5 acres	Lots no longer available for sale

Source: 1990. *Wolcott Utilities & Facilities Report* by P. Spear for LCPC with update from Wolcott Town Clerk

Scenic Resources

Scenic resources, while valued by residents and visitors alike, are difficult to regulate. Wolcott values its many beautiful vistas, forested hills, and open fields but it would be unfair to deny the right to develop based on how ones property looks from a roadway. In order to balance the rights of property owners with requirements for attractive and safe development, the town adopted site plan approval for all non-residential development proposals. Overall Wolcott’s Zoning and Subdivision Regulations make multiple references to scenic values.

The purpose of site plan approval is to ensure quality development rather than to prevent development. Poorly designed projects or ones that are inflexible to Development Review Board recommendations may be denied approval, but the intent is for the standards to be flexible. In developing guidelines, the Planning Commission should strive for standards that will ensure quality, attractive developments. Where possible, proposals should protect open space, retain natural vegetation, screen parking lots from view, be of a pleasant appearance, and other similar requirements.

Subdivision regulations should also reflect these principles. Lot and building layout should protect open space and scenic ridgelines, as should conserved areas of any planned unit developments. Telecommunication towers and wind towers are another area of special concern with respect to scenic resources. Towers cannot be barred from town but they can, and should, be regulated to ensure they are sited and constructed appropriately.

While there are abundant scenic areas in town, three natural scenic areas stand out for special consideration – Baldwin Brook Falls, Wapanacki Lake and Wolcott Pond.

Baldwin Brook Falls is located just west of where the brook passes under the North Wolcott Road. The falls are located below a 12-foot dam. Immediately below the dam there is a sheer falls of 50 feet. The aesthetic appeal of these falls was impacted by debris pushed into the gorge during construction of the dirt road. Below these falls is an abrupt gorge about 20 feet wide by 30 feet deep, below which can be found two lower falls of 10 to 15 feet each. This waterfall and gorge is considered to be of statewide significance and deserves special consideration as a scenic resource.

Wapanacki Lake and **Wolcott Pond** are considered scenic as a result of their relatively unspoiled shorelines. In an age of large-scale camp development on nearly every lake

and pond in the state, the scenic beauty of our shorelines stands out a resource worthy of protection. While the state and others have protected much of the shorelines of these water bodies, the remaining shores should be conserved as well. Local regulations have been implemented to help ensure that development is in keeping with the quiet, scenic and pristine nature of these water bodies. This Shorelands zoning district allows development only through conditional use. Other measures should be considered as well, including the purchasing of development rights, to ensure a vegetated buffer area on the shore.

Currently, the Vermont Natural Resources Board has issued rules that set a speed limit of 5 miles per hour and prohibited personal watercraft on Wapanacki Lake and Wolcott Pond. In addition, internal combustion engines are prohibited outright from Wapanacki Lake.

Archeological Resources

Archeological sites contain a fragile, complex and irreplaceable record of past human activities. Archeological sites differ from historic sites in that the information that exists is buried. For 10,000 years Native American persons focused their activities within river valleys and lake basins. Evidence of prehistoric activities and occupations are contained within soil deposits of a cornfield or woodlot or are buried in a floodplain. Any prehistoric archeological sites constitute an essential link to our past. These sites are often the only source of information for the longest part of human history in Wolcott.

A National Park Service study of archaeologically significant riparian areas was done as part of the Vermont Rivers Study in 1986. The Park Service findings concluded that the entire length of Elmore Pond Brook has an expected moderate-to-high archeological sensitivity. This rating does not necessarily indicate that any archaeologically significant resources have been located near the Elmore Pond Brook; it only denotes that the topography, sun exposure, availability of food and other important natural resources exist in the right combination along this stream way to expect that the area could be archaeologically significant. Unlike the large sites found in Highgate and Swanton, any sites, if they exist, will likely be small.

SECTION 6.

TRANSPORTATION

Goals, Policies, & Recommendations of this Section

GOALS

Overall

- To provide a safe and efficient transportation network that utilizes a variety of modes and is maintained in a cost effective manner.

Highways

- To provide a safe and efficient motorized and non-motorized use, as appropriate, and be maintained in a cost-effective manner.

Recreation & Non-vehicular

- To provide safe and effective pedestrian and non-motorized transportation networks, safe and conveniently located access to encourage use.

Transportation services

- To support efforts to provide regional public transportation services for the general public and special transportation services for those who require assistance.

POLICIES

Highways

- Provide for conformance with VTrans Access Management policies and guidelines for roads and driveways intersecting with VT 15 and Town roads, including line of sight and other appropriate engineering principles.
- Any new or upgraded roads will be constructed to town road standards in consultation with the Town Road Foreman and/or Road Commissioner.
- Whenever possible, mitigate river/road conflicts in areas where the natural flow of a river comes into conflict with the transportation network. This may involve upsizing bridges and culverts and/or restoring floodplain areas disturbed by past infrastructure investments while ensuring minimal impacts on rivers and streams.
- Land use and development activity should not adversely impact traffic safety and the condition of town roads and rights of way.
- Driveways and roads in the shoreline district should be built so as to minimize the visual and environmental impact to the surrounding area

Recreational & Non-motorized

- Construct sidewalks within growth areas to provide for safe pedestrian traffic, and consider non-motorized users for all road improvement projects in accordance with Complete Streets principles.
- Support the effort to develop the Lamoille Valley Rail Trail and thereby increase the four-season recreational opportunities available to local residents and visiting tourists.
- Consider additional Lamoille Valley Rail Trail amenities to enhance the usability and accessibility by residents and visitors. Encourage development adjacent to or intersecting the trail to complement or enhance the Rail Trail.
- Prioritize and implement appropriate recommendations from the 2017 North Wolcott Road Bicycle and Pedestrian Study
- Explore cost effective means to improve pedestrian safety and reduce vehicle speed on Route 15 through Wolcott Village; work with VTrans to identify and permit a marked crosswalk

Transportation services

- Support regional public transit and special services organizations.
- Support efforts to provide transportation services to assist elderly and disabled residents.

- Support carpooling and vanpooling to reduce transportation costs and impacts.
- Continue participation in Lamoille Transportation Advisory Committee to provide local input to regional and state transportation planning.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Overall

- Regularly update highway infrastructure inventories including bridge and culvert, erosion road permit, road surface conditions, and signs.

Flood Resilience Actions for Bridges and Culverts

- Upsize East Hill Road Culvert (*listed as no 14-42 in 2017 culvert inventory update*)
- Replace School Street Bridge 4 on School Street near recreation fields to mitigate flooding and improve bike-ped usability
- Replace undersized culvert on Brook Road (*listed as no. 8-2 in 2010 Wild Branch Corridor plan*)
- Using Lamoille Hydraulic Model, evaluate options to reduce flooding within the area delineated by School St, Flat Iron Road and Route 15, and at Elmore Pond Road Bridge
- Replace bridge B1 on North Wolcott Road (*near four wheel drive*) for flood resilience and bike-ped usability

Highway Classification & Function

Vermont's local roads are classified according to their importance and general use. This classification system applies to all town highways, and is used to determine the amount of state highway assistance provided to each community. Class 1 roads are those highways that, while the responsibility of the town to maintain, are extensions of the state highway system and carry a state highway route number. Wolcott currently does not have any Class 1 roads. Class 2 roads serve as important corridors between towns, and consequently carry a large volume of local and regional traffic. Class 3 roads are secondary town highways passable year-round by standard passenger vehicles. Class 4 roads are roads which the municipality is required by statute to only maintain the culverts and bridges. Table 6-1 lists town highway mileage in Wolcott.

Table 6-1. Wolcott Town highway mileage by classification

Classification	Miles
Class 1	0
Class 2	10.65
Class 3	38.19
Class 4	7.42
State Highway Miles	7.02
Total Road Miles	63.28
Legal Trails	4.58

Source: 2017 Town Highway Mileage Summary, VTrans

Traffic

Traffic volumes in Lamoille County have grown steadily in recent years. Table 6-2 illustrates the change over time in traffic volumes on Route 15, Elmore Pond Road, and North Wolcott Road.

Both of these local Class 2 roads have shown traffic increases comparable to those on Route 15. These routes are used by both car and truck traffic moving between Route 15 and Routes

12 & 14. The Elmore Pond and North Wolcott Road are classified by the state as Major Collector routes, meaning they provide vital local connections between inter-community and inter-county traffic.

Table 6-2. Traffic volume changes in Wolcott

Street Name	Count Location	Average Annual Daily Traffic by Year - AADT (yr)				
VT 15	West of East Hill Road	4946 (16)	4854 (15)	4600 (10)	4300 (08)	4700 (04)
VT 15	Morristown Town Line	7272 (16)	7136 (15)	5600 (10)	600 (08)	6600 (04)
North Wolcott Rd	North of VT 15			2000 (04)	1600 (00)	1800 (98)
North Wolcott Rd	South of Sand Hill Road	1700 (12)	1600 (11)	1800 (07)	1600 (03)	1500 (99)
Elmore Pond Rd	North of Corley Road	691 (16)	557 (15)	530 (14)	440 (07)	530 (04)

Source: VTrans Transportation Data Management System, website data retrieval on August 29, 2017, <http://vtrans.ms2soft.com>

The maintenance of these roads are the responsibility of the Town of Wolcott. It is known by transportation experts that increased traffic (especially heavy truck traffic) creates maintenance demands.

Road Maintenance Costs

The 2017-2018 Wolcott town budget allocated \$545,981 for the town highway program, representing 53% of the total town budget. This represents a 0.7% decrease over the previous year's town highway budget.

As residential development continues in Wolcott, it is important that the Town develop and periodically update a written policy toward the maintenance and future construction of roads and access drives onto those roads. The Vermont Local Road Program and the Vermont League of Cities and Towns might be sources for model policies. Such a policy would provide clear information to existing and future landowners as to the level of road maintenance service they can expect from the Town.

Many times roads and driveways constructed on steep hills create poor conditions for managing storm runoff. Heavy rainfall events cause other failures in the road infrastructure, including damage to culverts, bridges, and roadways. The VTrans Better Roads Program and the Vermont Agency of Natural Resources' Ecosystem Restoration Program provide technical guidance to minimize erosion and manage stormwater runoff.

Town Infrastructure Inventories and Highway Standards

Periodically, the Town of Wolcott works with the Lamoille County Planning Commission on several inventories of local highway infrastructure, including culverts and bridges, surface conditions, signs, and road erosion risk locations. These inventories are designed to serve as aids to prioritize maintenance and improvements of town-owned infrastructure.

In 2006 the Town adopted local highway standards including:

1. standards for construction, improvement, and use of public highways so as to ensure the safety of the traveling public, to minimize the long-term costs to taxpayers, and to mitigate negative impacts on water quality
2. a process by which highways are to be laid out, altered, classified, reclassified, discontinued, or accepted by the Town
3. a process by which the public right of way is managed and maintained
4. standards and a process by which access to the town highways may be granted
5. standards and a process by which the town may permit excavation within or under a highway right of way

Both the infrastructure studies and the highway standards have special significance in light of state funding for town highways. As a result of these activities, Wolcott has benefited from decreased match requirements, for example 10% - rather than 20% - with the Town Highway Structures Program and 20% - rather than 30% - with the Town Highway Class 2 Roadway Program.

It should be noted that Wolcott's Highway Infrastructure Study needs to be updated periodically in order to be considered "current" by the Vermont Agency of Transportation.

Bridges and Culverts

Proper sizing, alignment and installation of bridges and culverts is critical to the proper function of a roadway as well as natural resources. Culverts and bridges that are improperly sized, aligned and installed may create risk factors for storms to damage infrastructure, and also create barriers to the movement of aquatic species. Culverts and bridges not properly sized may cause water to accumulate close to the road. This can undermine the roadbed and surface, and increase the velocity of water leaving the culvert or bridge which may damage the stream bank and neighboring properties. Culvert and bridge installations should adhere to the current road and bridge standards. These standards should be periodically reviewed and modified if necessary.

North Wolcott Road

North Wolcott Road has become heavily traveled in recent years. Lamoille County's Regional Plan recognizes the road as significant in the region. It is also identified as a popular bicycle route. The Town of Wolcott and Lamoille County Planning Commission concluded a study of North Wolcott Road in 2017. This effort determined the needs of the road and identified opportunities to meet those needs. Some opportunities for North Wolcott Road include: wider shoulders for bicycle and pedestrian safety; signage and guardrails for vehicle safety; upsizing bridges and culverts for stormwater/flood management as well as public safety; enforce weight and speed limits; improve the intersection with VT15.

Recreational and Non-Motorized Transportation

Pedestrian Safety

Pedestrian safety in village areas on Route 15 and School Street was identified as a major concern at resident forums held in 2015. Many residents expressed they do not feel safe walking along the shoulder of Route 15. This could inhibit redevelopment of underutilized buildings in these areas. Many parents also expressed reluctance to allow their children to

walk to school do to these concerns. Formal sidewalks and marked crosswalks may be needed in the future. The recent formal Designation of Wolcott Village as a Village Center, creates a new opportunity to improve pedestrian safety. Noted areas of concern for pedestrian and bicycle safety include but not limited to: School Street between the Elementary School and the Village on VT15; along the Village on VT15; North Wolcott Road from VT15 to the Craftsbury town line.

Snowmobile Trails

The Vermont Association of Snow Travelers (VAST) maintains a network of snowmobile trails on private and public lands across the state. In Wolcott, VAST trails connect trails from surrounding towns of Craftsbury, Hardwick, Greensboro, Elmore and Hyde Park. VAST trails in Wolcott are maintained and groomed by volunteers, and provide an important link in a statewide recreation network. The construction of Wolcott's segment of the Lamoille Valley Rail Trail will greatly improve the connectivity of existing snowmobile trails in Wolcott and will benefit the economic development of the area through increased recreation tourism. This presents an opportunity for Wolcott to expand its economic base by providing services and hospitality, but also poses challenges in the management and maintenance of transportation infrastructure.

Catamount Trail

The Catamount Trail is a statewide cross-country skiing trail network. In Wolcott, the trail enters the town from Elmore, crosses Rte. 15 at the Leriche Farm and works its way up toward Zack's Pond and Hyde Park before eventually entering Craftsbury. The Town works with landowners along the Catamount Trail wherever possible in order to maintain its important role locally and regionally as a recreational resource.

Bicyclists

Most of Wolcott's local roads were designed for cars and trucks. As individual cyclists and organized cycling tourist groups use these roads, challenges can arise from lack of space and poor shoulders. The growing popularity of bicycling, running, walking, and general concern for health has increased demand for appropriate facilities for these activities. As automobile traffic congestion and fuel prices increase, walking and bicycling for commuting to work and school also becomes more attractive. The development of bicycle and pedestrian routes serves to strengthen ties between local communities and meet their transportation needs. Future road projects will consider to non-motorized users in accordance with Complete Streets principles. Sufficient and appropriate bicycle travel facilities come in many different forms.

Lamoille Valley Rail Trail (cross reference in Economic Development Section)

The Lamoille Valley Rail Trail will be a four-season, multi-use recreation path running from Swanton to St. Johnsbury built on the corridor of the former St. Johnsbury and Lamoille County Railroad. At this time, two segments of the future 93-mile trail are open for year round use; a seventeen-mile segment between Cambridge and Morristown, and a fifteen-mile segment between Danville and St. Johnsbury. In Wolcott, the Rail Trail will pass through Wolcott and includes a trailhead on School Street near the Town Hall. Given Wolcott's location on the Trail between Hardwick and Morristown, this represents an unprecedented economic opportunity for the Town. Residents and visitors alike will be brought into Wolcott Village via the Rail Trail, creating a customer base for both new and existing businesses. Further, the Rail Trail may make Wolcott and the surrounding area more attractive to home businesses and telecommuters, who are not tied to a particular place, and may consider their locations based on "quality of life" decisions.

Ahead of the Rail Trail construction by VAST and VTrans, in 2016 Wolcott completed an attractive trailhead facility in the vicinity of the Town Offices. It includes amenities such as: parking for 10 vehicles including 2 with long trailers and 2 ADA, rain garden and landscaping,

community informational resources, modest lighting, access to potable water and restrooms during town office hours, bicycle racks, and a covered pavilion with picnic tables and benches. There could be a future sidewalk connection between the LVRT and the Town's school and library. Wolcott could also consider creating a WiFi servicing the school street area and areas of Wolcott Village within walking distance of the Rail Trail. Wolcott could also consider the specific types of businesses to encourage that would benefit the Town and Rail Trail users. The railbanking of the Lamoille Valley Rail Corridor provided an opportunity for the development of a multiuse path the length and quality of which is unprecedented in Vermont. Acting as an off-highway link between many villages along the way, the trail is poised to become a destination facility for walkers, bicycle tourists, and other recreation purposes, but also presents a real transportation alternative to VT Route 15. The economic benefits of the trail are potentially very high as well, with much opportunity for service industry along the way including food, lodging, and technical support for the various users of the trail. It should be noted, however, that even after the Rail Trail is built, cyclists will continue to use VT Route 15. Therefore, Wolcott should continue to consider non-motorized uses in future road improvement projects.

Rail Service

The closest Amtrak passenger rail service for Wolcott residents is stops located in Waterbury and Montpelier. Both of these depots serve Amtrak's "Vermont" line with a daily run between St. Albans, VT and Washington, DC.

Air

Wolcott residents have access to air transportation service through the Morrisville-Stowe State Airport on VT 100 in Morrystown, and through the Burlington International Airport in South Burlington.

Transit Services

Buses

Wolcott currently has no traditional fixed-route passenger-transit services.

Taxi

Local taxi service is provided by numerous taxi services that operate out of Hyde Park, Morrisville, and Stowe.

Carpooling

Wolcott encourages carpooling and may consider developing Park and Ride facilities where feasible. There are several informal and unadvertised locations on private and public lands which people use for park and ride purposes. Carpooling, ridesharing, and other tools to reduce vehicle miles travelled in Wolcott currently rely on grass roots initiatives and arrangements between individuals.

Human Services Transportation

Rural Community Transportation (RCT) is a public transportation provider for the Lamoille County region. RCT provides demand-response transportation for many of the human service agencies throughout Lamoille County, primarily utilizing vans and volunteer drivers. RCT receives grant funding through the state Agency of Transportation Elderly and Disabled Persons Program and Medicaid transportation funding to provide these services. Participating

human service agencies include Central Vermont Council on Aging, Out & About Adult Day Center, Lamoille County Mental Health, Vocational Rehabilitation, and Central Vermont Community Action Council. These transportation services are often medical trips including dialysis and cancer treatment patients traveling to treatment centers. RCT supplies Wolcott specific ridership and usage data in advance of each annual Town Meeting Day along with a request for financial support from the municipality.

Transportation Advisory Committee (TAC)

TAC is a regional transportation committee of the Lamoille County Planning Commission. The purpose of the TAC is to provide recommendations regarding regional transportation needs and concerns to the Lamoille County Planning Commission Board of Directors and the Vermont Agency of Transportation. Wolcott regularly participates in TAC meetings and discussions, and in recent years is one of the most consistent and reliable municipal members of the group.

SECTION 7.

PUBLIC SERVICES & COMMUNITY FACILITIES

Goals, Policies, & Recommendations of this Section

GOALS

Overall

- To ensure adequate public facilities and services are available to protect and enhance the lives of the residents and visitors of Wolcott.

Education

- Provide educational services and facilities to meet the needs of Wolcott's children.

Public Buildings

- For public buildings and facilities to provide adequate space, function, and location for the needs of public safety and municipal service provision.

Public Safety

- For Wolcott to have well-trained and funded fire, police and rescue services to provide a safe environment in which to work, live, and play.

Septic, Sewage and Solid Waste

- For Wolcott to have the septic/sewer capacity necessary for desired community and economic development.
- For Wolcott to comply with State solid waste disposal regulations, in particular Act 148 as it is implemented over the next several years.

Recreation facilities

- To maintain and enhance recreational facilities and opportunities.

POLICIES

Education

- Future residential development in town should be balanced with the capacity of the school district to provide educational services.
- The Town and School District of Wolcott should oppose all local, state and federal education policy mandates that are issued without supporting funding.

Public safety

- Take measures to improve Wolcott's flood resilience.
- Developments in rural areas, with multiple structures and limited access (e.g. slope and length of drives), should install dry hydrant service or another water source.
- Driveways and private roads should not have excessive slope so as to accommodate fire and rescue vehicles.

Septic, Sewage, Solid Waste

- All projects must provide for adequate removal of solid waste.
- Wolcott shall create a system for its transfer station, municipal and educational facilities and its residents to comply with Act 148, which mandates recycling and composting to be phased in over the next several years.

Recreation Facilities

- Developers of large residential projects should include adequate open space for recreation by the future residents of the project.

Public Lands

- Before any purchase of land to be held by the public, the entity must report the anticipated loss of value from the Grand List.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Education

- Continue to monitor enrollment levels at the school to ensure development does not place an undue burden on educational services.

Public Safety and Flood Resilience Actions

- Long Term: Relocate Town Garage and Fire Station out of 500-year floodplain.
- Short term: Use Lamoille River model to identify cost effective ways to prevent garage from becoming isolated during smaller storms.
- Explore further law enforcement coverage options and funding schemes.

Septic, Sewage, and Solid Waste

- Improve wastewater treatment capabilities in Wolcott Village and North Wolcott per recommendations of 2004 sewer feasibility study.

Libraries

- Continue to support the Town Library when budgets are drafted and approved at Town Meeting

Public Buildings

Highway / Fire Department Building

The Wolcott Fire and Highway Departments are housed in adjoining structures on School Street. Here is some information on their current condition. The School Street is within the 100-year floodplain, and can become inundated with floodwaters during larger flood events such as Tropical Storm Irene. This can impede emergency response efforts.

Table 7-1. Wolcott Fire / Highway Building Specifications

	Fire Section	Highway Section
Year Built	1975	1987
Square Footage	3,360 total	
Primary uses	Storage: 4 trucks and gear Meetings and training	Storage: 3 dump trucks Repair and maintenance

Source: 2006. *Town of Wolcott Municipal Facilities Assessment* performed by Stephen Bousquet Real Estate, Morrisville, VT.

Wolcott Town Office

The Wolcott Town Office has many uses, housing the Town Clerk, Selectboard, Listers, Zoning Administrator and Health Officer and also providing records storage and retrieval.

Educational Facilities

The Town of Wolcott belongs to the Orleans South Supervisory Union District (OSSU), a regional cooperative serving the towns of Craftsbury, Greensboro, Hardwick, Stannard, Wolcott, and Woodbury. Students within each town attend one of six local elementary schools, prior to advancing to Lamoille Union Middle and High School, within the Lamoille North Supervisory Union (LNSU) District.

Pre-school Education and Daycare

Data tells us that 72% of Vermont children under the age of six have all parents in the workforce.⁴ These parents rely on care outside of the home for their children for up to 40 hours a week. High quality early childhood experiences lay a foundation for children's success in school and in life. When we help our children grow to become productive adults, we also support our current workforce of parents, strengthen our community, and invest in prosperity now and in the future.

As of 2017, Wolcott has two licensed preschools in the Vermont Child Care Information Services database. Additional licensed preschools and registered home daycares are available in the surrounding towns of Hardwick, Craftsbury and Greensboro.

While Wolcott is fortunate to have pre-school available at the elementary school, this program does not provide full-week care and parents of children enrolled in the program often must make additional childcare accommodations for when their children cannot attend the program at the elementary school. This places an excessive burden on low to moderate income families that require childcare. There is a need to cover these costs to make it possible for children in low income families (who most need high quality early childhood programs) to participate in such programs.

The Lamoille Family Center (LFC) in Morrisville offers a range of early education services through a coordinated service network known as Children's Integrated Services (CIS). Programs offered through this network include Maternal Child Health, Early Childhood and Family Mental Health, And the Early Intervention Program for children with development delays.

Public Schools

Wolcott's kindergarten and elementary school students attend the **Wolcott Elementary School** on School Hill Drive. The Wolcott Elementary School operates within the jurisdiction of the Wolcott School District in the Orleans Southwest Supervisory District. Current enrollment at the Elementary School is 125 students.

Wolcott students in grades 7 – 12 are “tuitioned” out to regional schools of their choice. The high schools that Wolcott's older students typically choose to attend are:

- **Lamoille Union Middle School** (7-8) and **Lamoille Union High School** (9-12) in the town of Hyde Park and within the Lamoille North Supervisory Union;
- **Hazen Union High School** (7-12) in Hardwick or **Craftsbury Academy** (5-12) in Craftsbury Common, both within the Orleans Southwest Supervisory Union; or
- **People's Academy** (9-12) in Morrisville or **Stowe Middle and High School** (6-12) in Stowe, both within the Lamoille South Supervisory Union.

Vocational students attend classes at the **Green Mountain Technology & Career Center** located at the Lamoille Union High School in Hyde Park.

Current concerns about public education in Wolcott include the adequacy of the Elementary School facilities and the increasing cost to taxpayers of supporting the School District. Over the course of the decade, the number of students attending the elementary school has dropped

⁴ Census Bureau, American Community Survey 2008-2012, Percent of Children under 6 years old with all parents in the labor force.

from a high of 162 students in 1994-95 to 125 students enrolled for the 2017-2018 school year. When the school was built in 1988, the Vermont Dept. of Education determined it to have a capacity of 225 students. With the changing nature and needs of elementary education, the Department recently reassessed the capacity of the school to be 140. Wolcott will need to monitor enrollments to ensure the Elementary School continues to have sufficient space to accommodate growth.

Elementary School staff report that students are generally meeting or exceeding standards in literacy and math. Complete assessment results for all schools in the State are available on the Vermont Department of Education website. Wolcott Elementary has met AYP (adequate yearly progress) each year that the “No Child Left Behind” law has been in effect. The level of quality education provided at the Elementary School will have our children prepared for high school and beyond.

Paying for Public Schooling in Wolcott

Vermont’s statewide education property tax, which was instated in 1997 and has been periodically adjusted since then, has introduced a few different variables into how local tax rates are calculated. There are three basic pieces of information used to calculate a Wolcott property-owner’s education tax rate:

1. Whether the property being taxed is the owner’s primary residence (homestead) or not (non-residential),
2. How the proposed Wolcott school budget’s cost per *equalized* pupil compares to the a target threshold set by the State,
3. What Wolcott’s Common Level of Appraisal (CLA) ratio is (i.e. how the values of properties in Wolcott’s grand list compare to the entire state, and
4. How a property owner’s household income compares to statewide household income figures.

This plan will refrain from explaining the statewide property tax formula in detail. However, generally local per-equalized-pupil spending that is higher than the State’s base amount and/or a CLA well below 1.0000 will increase Wolcott’s education tax rates, regardless of how large the proposed school budget is and how it compares to previous years. This can make it difficult to compare school tax rates to school needs and performance solely in their own light.

Conversely, if a property owner’s household income is lower than certain state thresholds, the homestead tax rate may be reduced through an income sensitivity feature. The income sensitivity provisions included in the statewide education tax rules have likely benefited many local residents, as Wolcott’s median income is below that of the county and state.

Table 7-2 below depicts Wolcott’s education tax rates increase since the adoption of the last town plan. The rising school budget, in Table 7-3, contributes to Wolcott’s rising tax rates.

Table 7-2. Education Tax Rates (per \$100) in Wolcott, FY2013 and FY2018

	FY13	FY2018
Homestead	1.18	1.54
Non-Residential	1.28	1.50

Source: Wolcott Town Clerk’s Office

Table 7-3. Education budget in Wolcott, FY2013 – FY2018

	FY2013	FY2018
School Budget	\$4,352,595	\$4,611,950

Source: Annual Report of the Town of Wolcott, Vermont

Private School Options

The only private school in Wolcott is the **Mennonite School**, located in the basement of the Wolcott Mennonite Church on Route 15, providing education to members of their community in town. **The Center for Northern Studies** operated as a private nonprofit educational center providing undergraduate and graduate multi-disciplinary education in arctic and sub-arctic regions of the world. Nearby Sterling College bought the Center in 2003 and then decided to close it in 2011. Outside of Wolcott, residents may elect to send their children to one of several area private schools—most notably the Bishop John A. Marshall School, a Catholic school in Morrisville offering pre-kindergarten through 8th grade.

Post-Secondary & Adult Education

Along with GMTCC, which offers multiple courses eligible for college credit, there are two other local institutions offering college-level instruction in Lamoille County. Johnson State College in neighboring Johnson offers a variety of graduate and undergraduate degree programs, as well as continuing education services. The Community College of Vermont (CCV) also operates a campus in Morrisville, offering Associate Degrees, certificate programs and online instruction in various pre-professional concentrations. Finally, additional educational opportunities are available at Central Vermont Adult Basic Education (CVBAE) in Morrisville, which offers free literacy programs to adults and out-of-school youth.

Public Safety

Police

There are three levels of police coverage in Wolcott: the Town's elected Constable, the Lamoille County Sheriff's Department and the Vermont State Police.

A trained and certified **constable** has the same authority as any police officer in the State of Vermont within the jurisdiction of Wolcott; however, constables do have the authority to pursue a violator into a neighboring community. It is unknown whether the current constable has these certifications.

The **Lamoille County Sheriff** is elected to his/her position by Lamoille County voters, and the Sheriff's Department provides enforcement of all applicable laws, emergency dispatching services and back-up in emergency situations as requested. A minimum level of "life-and-death situation" service is provided to all ten towns in Lamoille County.⁵ Additional road patrol service is provided to Wolcott on a contractual basis for twenty-four hour police protection, response to emergency, fire and rescue calls, and to serve in the legal process. Wolcott has been entering into such contracts as a joint agreement with the towns of Johnson and Hyde Park.

The **Vermont State Police** provide a third level of police protection & support for Wolcott residents. The State Police provide emergency and back-up coverage as requested by the Sheriff's Department, criminal laboratory services, and the services of officers who are trained in special areas (i.e. homicide, arson or drug enforcement).

⁵ Current Lamoille County Sheriff Roger Marcoux has stated that his department will assist any town in a life-and-death situation, regardless of any formal agreements – from "Wolcott Voters Approve All" by Amy Kolb Noyes, *News & Citizen*, 05/17/07.

Rescue Services

Rescue services in Wolcott are provided by **Hardwick Emergency Rescue Squad Inc.**, a non-profit volunteer ambulance service that provides response emergency transport and medical care en route to the hospital. Hardwick Rescue serves the following communities: Wolcott, Hardwick, Craftsbury, Greensboro, Stannard and Woodbury. They also cover portions of East Calais, Elmore, Walden and West Wheelock.

Fire

The **Wolcott Fire Department** is a volunteer private nonprofit corporation funded by town appropriations, donations and the Department's fundraising efforts. The fire station is located with the Town Garage on School Street, providing storage for fire equipment and vehicles, as well as offices and physical plant space. Fires in Wolcott are reported using the 911 system through the County Sheriff's Office.

The Fire Department provides fire and rescue coverage for Wolcott and Elmore through a special mutual coverage relationship with the Elmore Fire Department. This agreement has worked well in the past to provide an adequate number of volunteers to respond to calls in both communities - especially during the workday when there can be a shortage of available volunteers.

The Wolcott Fire Department also participates in two mutual aid associations - the Lamoille County Mutual Aid Association, Inc. and Capital Mutual Aid to the east of Wolcott.

According to the report in the 2011 Wolcott Town Report, the Fire Department responded to 37 calls that year. Thirteen of the calls were for vehicular accidents, twelve for smoke and CO alarms, and eleven for structure, chimney or brush fires. The 2011 appropriation request submitted to the Town of \$52,000 was the same amount appropriated in 2010. As the population of Wolcott continues to grow, the demand on Department services can be expected to grow as well.

Wolcott has received two grants from the Dry Hydrant Program, which is funded by the State of Vermont and U.S. Forest Service and administered by the Vermont Rural Fire Protection Task Force and the Northern Vermont and George D. Aiken Resource Conservation and Development Councils. Dry hydrants link to lakes and ponds and allow for fire-fighting water supplies in towns without municipal water systems.

One growing concern in the town is the adequacy of local roads and private driveways for emergency services vehicles. The popularity of building homes on deep lots with narrow winding driveways can create a safety hazard, especially if Department trucks are unable to reach residences and maneuver around each other to coordinate fire-fighting incidents.

Emergency Management and Planning

Wolcott's hazard mitigation plan was adopted in 2015. The hazard mitigation plan contains an inventory of natural and technological hazards and hazard mitigation strategies. Natural hazard with the greatest potential in Wolcott is flooding, primarily due to its positioning along the Lamoille River and its tributaries. Wolcott's hazard mitigation plan is incorporated to this plan by reference.

In 2017, Wolcott utilized a hydraulic model of the Lamoille River Main Stem developed by Lamoille County Planning Commission to develop alternatives to reduce flooding at two most

flood-prone locations; Elmore Pond Road, and within the triangle defined of Route 15, School Street and Flat Iron Road in Wolcott Village.

Emergency Operations Centers / Emergency Shelters

Wolcott's Emergency Operations Centers / Emergency Shelters assist disaster victims and emergency workers and helps those affected by disaster to access other available resources. Wolcott currently has three designated EOCs/Shelters: Wolcott Town Office, Wolcott Elementary School and the Mennonite School. Of these, the Elementary School has a generator and the Town Office has wiring in place for a backup generator. All three shelters are Red Cross certified.

The Town should work with the American Red Cross to expand emergency services, such as providing food, clothing and health services; handling inquiries from concerned family members outside the disaster area; and during non-disaster times, support the Town by conducting emergency preparedness training and public education.

The Town should enhance the capacity of its Emergency Operations Center / Shelter with generators and other equipment, and coordinate with the Red Cross in order to enhance its effectiveness and insurance coverage. Furthermore, the Town should participate in NFIP, NIMS, and Red Cross Trainings.

Library Facilities

The **Glee Merritt Kelley Community Library** is designed to serve both the Town and the school. The library is supported by Town appropriations, facilities and monetary support through the school district, grants and other fundraising. A librarian runs the library under the direction of an eight member elected Board of Trustees.

Solid Waste Facilities

Wolcott is a member of the **Lamoille Regional Solid Waste Management District (LRSWMD)**, a municipal district formed to serve the towns of Lamoille County as well as Craftsbury and Worcester. Three quarters of the LRSWMD revenue is generated through operation of drop-off stations. The balance is generated through a surcharge on all waste collected and transported to a waste disposal site from the LRSWMD.

As required by state law, the LRSWMD has devised a plan for the management and disposal of all types of solid waste generated in its member communities. Solid waste from Wolcott is currently brought to the town Transfer Station on Gulf Road. From there, waste is hauled to the Northeast Waste Systems landfill in Coventry. Recyclables, tires and scrap metal are also collected at the Wolcott Transfer Station and transported to the Chittenden Solid Waste District Material Recovery Facility, where they are processed for sale.

In addition to waste management, LRSWMD strives to educate the public about waste-related issues, including recycling, hazardous waste, computer disposal, and illegal disposal methods. With education, outreach, planning and public participation, LRSWMD is addressing goals in 3 primary areas:

1. waste reduction,
2. reuse of goods, and
3. increasing the recycling rate for all materials

In 2012, the Vermont Legislature passed Act 148 (H.485). This law institutes phased-in bans on recyclable and compostable materials, and requires parallel collection (collection of these materials in the same locations where trash is collected). By 2020, all food residuals, including that from households, must be diverted with no provision for distance. Wolcott needs to create a system for its transfer station, municipal and educational facilities, and its residents to comply with this mandate. Education and training should be made available to ensure the transition is as smooth as possible.

Sewage and Septic Systems

There is no central public sewage treatment system or facility in Wolcott. All sewage is treated in individual, on-site septic systems. Since July 1, 2007 the Vermont Agency of Natural Resources (ANR) has permitting authority over all local wastewater treatment and potable water supply systems. Any complaint or discovery of a failing septic system may be referred to the ANR by the local Health Officer. Owners of failed systems will be instructed by ANR on how to bring their systems back to operating condition.

The Wolcott Village area is believed to have some properties with failed or insufficient septic systems. The Selectboard has expressed an interest in finding an affordable means of providing municipal sewage treatment in this area.

In 2004 a sewer feasibility study was performed for both Wolcott Village and North Wolcott.⁶ The study considered the 109 properties in both areas in order to address multiple objectives, including:

- determining whether each parcel can support an onsite wastewater system,
- exploring possibilities for the construction of new onsite or offsite systems,
- identifying potential cluster system sites, and
- analyzing alternative systems.

The results of the study indicated that 23 of the 57 North Wolcott properties would benefit from an offsite wastewater treatment solution and recommended 19 properties for onsite systems. The call for an offsite system was even higher in Wolcott Village, applying to 30 of the 52 properties there. Onsite solutions were suggested for 13 properties. Properties without recommendations in either area seemed to be exempt from their consideration due to their vacant status. It may be prudent to consider the development potential of these properties and also include them in any wastewater system planning. The feasibility study also made the point that new onsite solutions have been allowed by the State of Vermont over the decade, and that the approval of new alternatives is always a possibility, given time.

Water Systems

The Town of Wolcott owns two small water supply systems; one supplying 6 residences on School Street and the other supplying the Town hall, the former Town office, a private residence, and the U.S. Post Office on Route 15. For the vast majority of Wolcott, water is supplied by private wells and springs. Beginning on July 1, 2007 the Vermont Agency of Natural Resources (ANR) assumed permitting authority over all local wastewater treatment and potable water supply systems.

There is a one-quarter to one-half acre public watershed on Wolcott's border with Elmore owned and managed by the Elmore Water Cooperative as a public water supply for their customers.

⁶ 2004 *Sewer Feasibility Study for the Villages of Wolcott & North Wolcott* performed by Stone Environmental, Inc., Montpelier, VT and Forcier, Aldrich & Associates, Essex Jct, VT.

Public Lands

The table below describes the various lands within the Town of Wolcott which are owned by the State of Vermont. Wolcott also owns approximately 81.7 acres of land including old landfills, purchased flood properties, recreational fields, cemeteries, and the town hall, town clerks office, town garage / fire station, and old railroad station.

Table 7-4. State owned land in Wolcott

Department or office	Location	Acreage	Use
Dept of Fish & Wildlife	South of Rte 15, adjacent to Fisher Bridge	~1.2 acres	Roadside park w/ picnic tables & lavatory
Dept of Fish & Wildlife	Miller Open Land, Rte 15	~4.9 acres	
Dept of Fish & Wildlife	Wolcott Pond Fishing Access	~24.1 acres	Fishing access
Dept of Fish & Wildlife	Elmore Rd & Lamoille River	~24.4 acres	Streambank conserve/ fishing access
Dept of Fish & Wildlife	Harris Parcel	~22 acres	
Dept of Fish & Wildlife	E. Hill Wildlife Mgt Area	~233 acres	Wildlife management
Dept of Water Res.	Wolcott Pond Access Site	~17 acres	Recreation
Dept of Water Res.	Wolcott Pond	~179 acres	Rec. & wildlife habitat
University of Vermont	Wolcott Research Forest – off of East Hill Road	~130 acres	Tree species research

SECTION 8.

ENERGY AND UTILITIES

Goals, Policies, & Recommendations of this Section

Improving energy efficiency and conservation is critical to the continued prosperity of the economy and local environment. Across Vermont, electricity is primarily generated through renewable sources, such as nuclear and hydro-electric. On the other hand, the energy that supplies local heating and transportation needs is overwhelmingly derived from non-renewable sources. While residents may not control the price and availability of energy resources, there are an abundance of money-saving efficiency and conservation measures that can be implemented to lower household energy costs. For its part, the Town should work with the appropriate State, regional, and non-profit agencies to promote rebates, incentives, and weatherization workshops that may be helpful to residents. The Town of Wolcott should also act as a model for the economical use of energy by incorporating the strategies of this Plan into municipal buildings and infrastructure.

The Town of Wolcott seeks to expand upon past energy planning efforts to emphasize the relationship between energy, land development patterns, transportation decisions, and overall quality of life. This Energy & Utilities chapter will inventory current energy consumption, outline opportunities for greater efficiency and conservation, and lay out strategies to align the Town's long-term energy profile with the statewide energy goal to reduce energy consumption by one-third by 2050 and to meet 90% of Vermont's energy demand by renewable sources by 2050.

GOALS

Energy

- To increase energy efficiency, availability, and affordability across heating, transportation and electricity sectors through conservation, cost effective investment, and sustainable management of locally available renewable resources.
- To reduce energy costs, the community's reliance on fossil fuels and foreign oil supplies, and greenhouse gas emissions that contribute to climate change.
- To promote energy efficiency and conservation in the design, construction, and maintenance of all municipal, residential, commercial, and industrial buildings.
- To identify and limit the adverse impacts of energy development and use on public health, safety and welfare, the town's historic and planned pattern of development, environmentally sensitive areas, and our most highly valued natural, cultural and scenic resources, consistent with related development, resource protection and land conservation policies included elsewhere in this plan.
- To increase renewable energy generation.

POLICIES

Energy

- The Town will include energy efficiency and conservation as a factor in municipal construction, purchases and use.
- The Town should promote the use of energy efficient appliances and materials in municipal buildings.
- The Town should install outdoor lighting cutoff fixtures on municipal buildings to reduce light pollution and allow for the installation of lower wattage bulbs.

- Wolcott supports the development of renewable energy generation facilities. Specifically, Wolcott supports rooftop and ground-mounted solar generation, on-site residential and on-site commercial wind generation serving Wolcott homes and businesses, biomass co-generation and hydroelectric generation. Larger than on-site commercial wind generation as well as utility-scale wind generation are not supported. In the Village and Village Core land use districts, energy projects shall comply with streetscape and screening standards specified in Wolcott's zoning bylaw. In all land use districts, energy generation projects shall comply with fencing standards of the zoning bylaw.
- The Town of Wolcott should use its party status in permitting processes to promote and facilitate the development of renewable energy sources in town when in balance with the other considerations in this plan concerning natural resources, aesthetic character and municipal services.
- Commercial and utility-scale energy generating facilities will be scrutinized carefully and in accordance with the "Siting of Renewable Energy Facilities" section of the energy plan.
- Wolcott supports efforts to build a wood burning or co-generation power facility in Lamoille County.
- All planning for electric transmission and distribution lines should be strongly weighed in favor of underground placement to preserve the Town's scenic landscape.
- Participate in long-range utility planning and development, in cooperation with the Hardwick Electric Department, Morrisville Water and Light Department, Lamoille County Planning Commission and neighboring communities, to ensure that local energy, resource conservation and development objectives are identified and considered in future utility development.

Telecommunications

- The Town must support and maintain initiatives to bring the availability of high-speed broadband Internet access to town.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Energy Actions:

- Provide energy code and energy efficiency information when an application is submitted for a zoning permit for the construction of, or alterations to a building.
- Pursue opportunities to conduct energy audits for all municipal buildings – step one: Invite Efficiency Vermont for a free of charge walk through of all municipal buildings.
- Include energy efficiency in municipal decisions regarding capital expenditures and municipal property renovations. Give full consideration to energy efficiency when purchasing new vehicles and heavy equipment, and explore alternative fuel technologies as they become available.
- Appoint an Energy Coordinator [or Committee] to more specifically quantify and track municipal energy consumption, and recommend actions that the town and community should take to conserve energy, increase energy efficiency, promote local energy production from renewable resources, and to reduce energy costs and greenhouse gas emissions.
- Host workshops to promote educational opportunities that further residents' energy awareness in electricity, transportation and heating sectors as well as financial incentives available to implement energy actions. Specific opportunities include promotion of available weatherization services, utilization of heat pumps for space heating, utilization of clean-burning modern wood heating systems and utilization of energy efficient appliances.
- Implement the ground-mounted solar installation at the former landfill and actively pursue opportunities for more renewable generation project on town owned lands and properties.
- Research grant funding sources to install an electric vehicle charging station in the Village.

- Perform actions to ensure energy availability during an emergency. Actions could include a purchase of a back-up generator or, preferably, boosting resilience by installing renewable distributed generation with storage and micro-grid capabilities at Wolcott’s emergency shelter.
- Inquire with the Hardwick Electric Department about a possibility to conduct an assessment of the Pottersville Dam to generate more energy.

Telecommunications

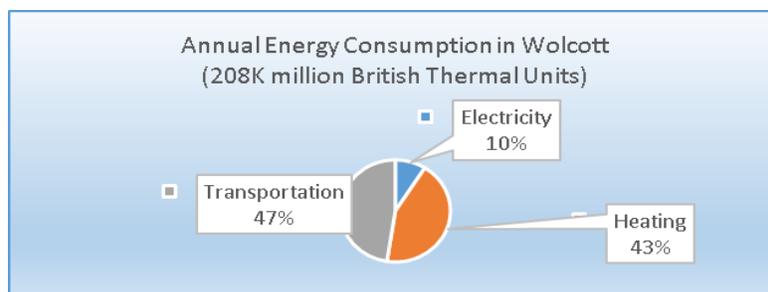
- Pursue grant funding and organizational partnerships toward initiatives to plan for and implement the availability of high-speed broadband Internet access in town.

1. Current Energy Consumption

Energy used in Wolcott is obtained from a variety of sources and is used to provide electricity, heat and cool buildings, and transport people and products. There are various ways to measure energy use. Electricity use can be measured in kilowatt hours, transportation fuel use can be expressed in gallons of gas, and heating fuel use can be tracked be tons of wood pellets, gallons of propane; depending on what kind of fuel is measured. A common measure of usage that can be calculated for any type of energy fuel is a British Thermal Unit (BTU) *7. While British Thermal Units (BTUs) may be harder to conceptualize in terms of the volume of energy fuel used, they allow for usage comparisons across all energy sectors; i.e. electricity, transportation and heating.

Estimates of current energy usage provided below were computed by the Lamoille County Planning Commission from data sources that included the American Community Survey, the Vermont Agency of Transportation, Efficiency Vermont and the Vermont Department of Public Service. Where applicable, Lamoille County Planning Commission converted these estimates to British Thermal Units. The figure below shows energy consumption estimates in BTUs. Further below is a more detailed discussion of consumption for each energy sector - electricity, transportation and space heating - that shows consumption in kilowatt hours of electricity, gallons of gasoline as well consumption of various space heating fuels.

Of all energy used in Wolcott, which is about 208,000 million British Thermal Units annually, electricity accounts for approximately 10% (21,000 million BTUs) of the total consumption, transportation for 47% (98,000 million BTUs) and space heating for 43% (89,000 million BTUs) of total consumption.



Source: Lamoille County Planning Commission

*7 The British thermal unit (Btu or BTU) is a traditional unit of heat; it is defined as the amount of heat required to raise the temperature of one *pound* of water by one degree Fahrenheit. It is part of the British *Imperial* system of units.

Today, energy sources used by Wolcott residents and businesses to meet their demand for electrical, heating and transportation energy are about 21% renewable (such as wood, sun or wind), and 79% of non-renewable (predominantly petroleum based products such as gasoline or heating oil). *8.

To demonstrate the impact of energy consumption on Wolcott household budgets, the Lamoille County Planning Commission calculated annual household energy expenditures which include expenditures on electricity, heating and transportation. In 2016, when prices of home heating and transportation fuels were the lowest since 2004, the annual average spending per household was \$6,165. *9. Over time the prices fluctuated significantly. For example, as compared to 2012, when residential fuel oil cost was \$4.00 per gallon and propane cost \$3.6 per gallon, the 2016 prices were \$1.85 and \$3.2 respectively. Gasoline cost \$3.62 per gallon in 2012 and \$2.17 in 2016. When the prices of crude oil products rise again, people and businesses in Wolcott will once again pay significantly more money to obtain the energy they need to meet their demand.

Current Energy Consumption by Sector: Electricity

Historically, electricity used by Vermont residents and businesses has been produced by large generators, predominantly located beyond Vermont borders. Hydro Quebec and the Seabrook nuclear facility in New Hampshire are a couple of examples. Electricity produced by these plants was then transmitted to Vermont customers via a robust network of transmission lines, distribution lines and transformers. In recent years, Vermont has seen a rise of in-state energy generation and the state's vision is for this trend to continue. Reliance on out-of-state energy generation will remain essential for meeting Vermont's electrical demand but the vision is that the out-of-state generation will be increasingly matched by Vermont-based generation plants utilizing renewable sources.

Efficiency Vermont reports that in 2015, Wolcott's residents and businesses used over six million kilowatt hours (KWh) of electricity. Wolcott's households utilized about 80% of this amount and the remainder was used by Wolcott's businesses. Throughout the year, residents and businesses took steps to conserve energy and implement energy efficiency measures. Efficiency Vermont reports that in 2015, electric and thermal efficiency measures installed by Efficiency Vermont in Wolcott resulted in annual energy cost savings of about \$12,000 to homes and \$6,000 to businesses. During 2015, Efficiency Vermont worked on 64 residential projects and 29 business projects. (Note: Efficiency Vermont defines a "project" as a collection of one or more energy efficient measures that have been implemented at a customer's physical location.) For businesses customers, energy efficiency measures almost exclusively focused on the installation of efficient lighting hardware fixtures and purchases of efficient light bulbs/lamps. For residential customers, improvements included installations of efficient lighting systems efficiencies, and purchases of more efficient electronic equipment, cooking ranges, refrigerators, washers and driers. A few residences implemented thermal shell weatherization improvements and motor control measures to improve efficiency of existing motors, pumps and fans.

*8 Community Energy Dashboard; <http://www.vtenergydashboard.org>

*9 Prices used to calculate energy expenditures are based on 2016 US Energy Information Administration data.

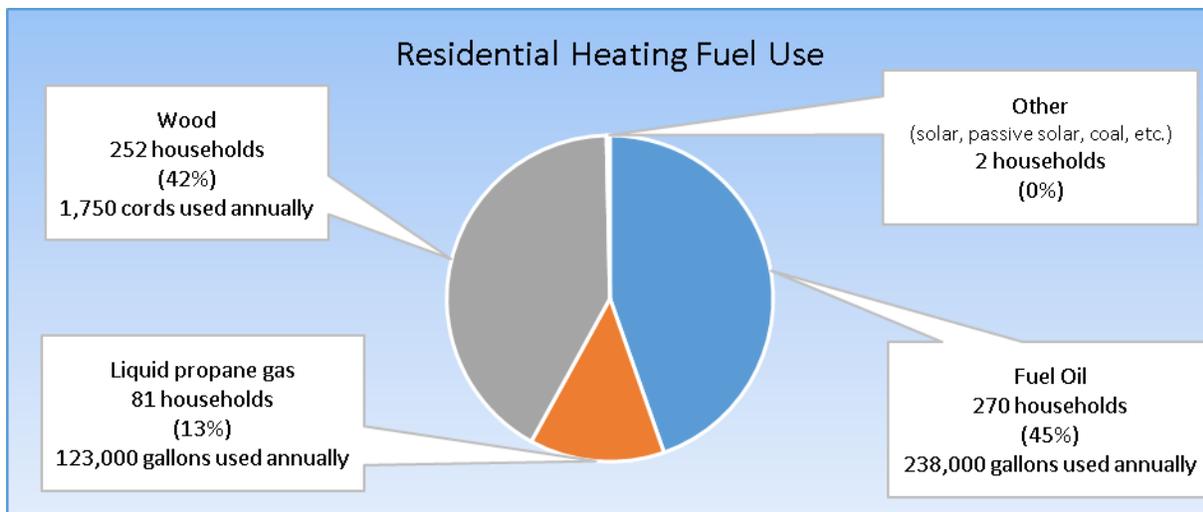
Electric Utilities Serving Wolcott

There are two utilities which provide electric utility services in the Town of Wolcott. The Hardwick Electric Department provides electric utility service to most of the Town. Morrisville Water and Light Department provides electric utility services to residents on the west side of Wolcott. They currently own approximately 164 acres of land, popularly known as “Zack Woods,” off of West Hill Road as part of their Green River Reservoir Watershed.

Current Energy Consumption by Sector: Space Heating

Residential Heating

Across Vermont, a vast majority of homes are heated with fuel oil, otherwise known as #2 home heating oil. On a dollar-per-MMBtu basis, fuel oil is among the least efficient heating sources available. Since it is delivered by truck, it also burdens local transportation infrastructure and increases carbon emissions. Wolcott households heat their homes primarily with fuel oil and propane (57% of households). Firewood and, to a lesser extent, wood pellets are used in 41% of homes. A more detailed profile of heating fuels used in Wolcott is shown in a figure below. With the recent volatility of petroleum prices and the adverse environmental impacts associated with burning fossil fuels, this profile is unsustainable. These statistics support the continued need for good local forest management and public education of energy conservation methods.



Source: American Community Survey: 2011-2015

Commercial Heating

There are fourteen commercial and institutional establishments in Wolcott and together, these establishments consume about eleven percent of space heating energy used in the town. Similar to residences, these establishments heat spaces primarily with oil and propane, and to a lesser degree, wood.

Current Energy Consumption by Sector: Transportation

Due to the rural nature of Lamoille County, transportation in Wolcott is highly dependent on the personal automobile. According to the 2011-2015 American Community Survey, more than 80-percent of Wolcott residents commuted to work alone, with 30% of workers commuting at least 25 minutes each direction. Ultimately, the use of an automobile is a near necessity for households in rural Vermont. However, similar to petroleum-based heating sources, gasoline

is subject to major supply shocks and is highly polluting. At the local level, the Town seeks to enable residents make the most economical transportation decisions that fit their respective lifestyles. In relation to transportation and energy, this means expanding opportunities for residents to utilize alternative modes of transit and to carpool, when feasible.

Light Duty Vehicle Energy Usage in Wolcott

Number of Vehicles	1,185
Average Miles per Vehicle	15,000
Total Miles Traveled	17.7 million
Gallons of Gasoline Used	810,540

Source: American Community Survey 2011-2015, VTrans

The use of electricity as a transportation fuel is increasing in Vermont, however, the hybrid and electric vehicle market in Lamoille County is still nascent at best. As of April 2017, according to www.driveelectricvt.com, an estimated 5-19 electric vehicles and plug-in hybrids registered in Wolcott and its neighboring town of Elmore.

2. Future Energy Use

Vermont has a bold goal to meet 90% of its energy needs through increased efficiency and renewable sources by 2050. To model pathways towards the goal, the State, in partnership with Vermont Energy Investment Corporation (VEIC), utilized the Long-Range Energy Alternatives Planning model (LEAP) to projects future energy demand in the state and its regions. Among the most notable trends projected by LEAP are;

- Despite a growing population and economy, by 2050, energy use will decline by nearly 35 percent because of increased efficiency and conservation.
- Electricity use will increase with the intensified use of heat pumps as primary heating sources and the use of electric vehicles. Because those choices are powered by electricity, and electricity is three to four times more efficient compared to fossil fuels, overall energy use will decrease.
- Overtime, the model projects a near complete elimination of our two principal transportation fuels, gasoline and diesel, as well as oil, currently the major fuel used for space heating in many parts of the state.
- The use of wood as a fuel is expected to increase due to its expanded use for space heating as wood pellets displace oil, propane and natural gas in small residential buildings and as efficient biomass district heating systems become more widespread.

Energy Projections for Wolcott

To demonstrate the magnitude of changes that would need to take place to align Wolcott’s energy profile with the state energy goals, LEAP offers very specific targets to serve as a guidepost for Wolcott’s transitions in energy use and energy generation. The targets, listed below, project one way Wolcott can achieve its 2050 energy goals. It is possible that a different modeling scenario, with different targets, could be developed. However, because the energy goals are very ambitious, projected changes will always be need to be very significant, no matter what set of targets is developed.

There are many strategies that will help Wolcott attain the state energy goals but these strategies cannot be achieved by Wolcott alone and require the action of the state agencies,

regional organizations, public utilities and private individuals. That said, there are measures that Wolcott can take to conserve energy and switch from using fossil fuels to renewables. These measures are described in the Policies & Recommendations section of the plan.

Target: Households heated with wood

Households/Year	2015	2025	2035	2050
Number of households	251	297	314	483
Percentage of households	41%	41%	47%	66%

Target: Businesses/Institutions heated with wood

Households/Year	2015	2025	2035	2050
Percentage of establishments	9%	12%	17%	25%

Target: Households heated with electric heat pumps

Households/Year	2015	2025	2035	2050
Number of households	3	20	48	104
Percentage of all households	0%	3%	7%	14%

Target: Households weatherized

Households/Year	2015	2025	2035	2050
Number of households	31	134	324	727
Percentage of all households	5%	21%	49%	100%

Target: Businesses/Institutions weatherized

Establishments/Year	2015	2025	2035	2050
Percentage	7%	16%	31%	61%

Target: Households equipped with upgraded (more efficient) electrical equipment

Residencies/Year	2015	2025	2035	2050
# of res. with electrical upgrades	49	236	410	676
% of res. with electrical upgrades	8%	37%	62%	93%

Target: Passenger electric vehicle use

Vehicles/Year	2015	2025	2035	2050
Number of electric vehicles	3	136	499	1,250
Percentage of all vehicles	0%	11%	39%	89%

Target: Passenger biodiesel vehicle use

Vehicles/Year	2015	2025	2035	2050
Number of biodiesel vehicles	3	19	37	71
Percentage of all vehicles	0%	1.5%	2.9%	5%

Target: Renewable electrical generation from facilities located in Wolcott

Year	2016	2050
Total Electrical Output (megawatt)	3,610	11,895

Target: Use of renewables by sector

Energy Sector/Year	2015	2025	2035	2050
Electricity	29%	55%	74%	94%
Heating	29%	36%	47%	73%
Transportation	9%	21%	38%	86%

(Note: The targets shown below project an annual population growth of 0.4%).

3. Efficiency and Conservation

In addition to expanding its portfolio of renewables, Wolcott can reduce its overall energy footprint by placing a greater emphasis on efficiency and conservation.

Municipal Consumption

Wolcott's major municipal buildings, including Wolcott Elementary School, the Glee Merritt Kelley Community Library, the Town Offices, the Town Garage and the Wolcott Fire Station each rely on fuel oil as a primary heating source. The Town Highway and the Fire Departments own trucks and heavy equipment that utilize large amounts of transportation fuel. In 2016, the prices of heating and transportation fuels were relatively low. The prices, however, will rise again so it makes sense to begin to explore alternative fuel technologies. Whenever a vehicle or piece of equipment is replaced, a building renovated or a significant purchase made, the Town will give careful consideration to fuel economy and energy efficiency. The energy-saving measures incorporated into the renovations of the Town Offices in 2007 are an example of this strategy at work. By investing in energy efficient building supplies and design, the Town will achieve long-term cost savings. Other small-scale measures, such as the replacement of incandescent light bulbs with compact fluorescents and the utilization of advanced power strips in municipal buildings can result in additional savings to taxpayers.

Existing Residences & Businesses

The Planning Commission does not have direct influence on household energy decisions. However, Wolcott does seek to assist residents and businesses in obtaining the information they need to make sound, economical choices. Efficiency Vermont, the nation's first ratepayer-funded energy efficiency utility, is a public resource that provides valuable information on efficiency, conservation, rebates, and incentives.

To promote energy efficiency and conservation strategies among residents, and to advise the Town on municipal energy decisions, the Wolcott Planning Commission supports the appointment of an Energy Coordinator and, if sufficient interest exists, an Energy Committee. According to 24 VSA § 1131, the duties of a Municipal Energy Coordinator include:

- Coordinating existing energy resources in Town and cooperating with the Planning Commission and with those Federal, State and regional agencies of government which are responsible for energy matters; and
- Studying and evaluating alternate sources of energy with a view toward the more efficient and economical utilization of existing and potential energy resources.

The Planning Commission believes consolidating each of the above-mentioned duties under an Energy Coordinator could help encourage a more forward-thinking approach to local energy decisions. In this capacity, the Energy Coordinator could also serve as a resource to the Town and provide future input in the update and implementation of this Plan and other local bylaws.

Land Development & Municipal Bylaws

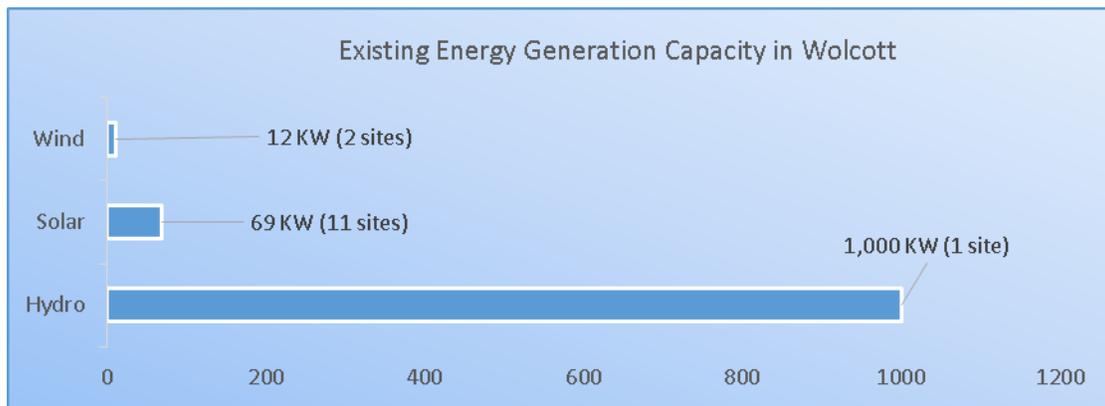
In addition to the energy choices made by current residents, future development trends will have a significant impact on the long-term energy profile of Wolcott. In general, dispersed settlement patterns demand more transportation infrastructure and make the delivery of essential services, including electricity and heating fuels, more expensive. The Planning Commission supports the permitting of Planned Unit Developments (PUDs) and other land use approaches that facilitate a more efficient provision of utilities. In 2015, Wolcott amended its zoning bylaw to create a “density bonus” option for PUDs. The bonus enables up to 25% more dwelling units than could have been developed under the base density if each of the additional units will be built to Vermont’s Energy Star Home or High Performance Home energy standards. The development review process can also be adapted to encourage energy efficient site designs, including south-facing building orientation and the use of trees for shade and wind buffering.

4. Renewable Energy Generation

Existing Energy Generation in Wolcott

Today, electricity generated in Wolcott comes predominantly from the Pottersville hydroelectric plant on the Lamoille River, just upstream from Wolcott Village. The plant is owned by Hardwick Electric Department and has a generation capacity of 1,000 kilowatts (KW). Annually, the plant produces about 3.6 million kilowatt hours (KWh) of electricity, which equates to about 80% of Wolcott total energy demand of 4.6 million KWh. In addition to the electricity generated by the hydro dam, thirteen residences installed solar and wind power generators with total generation capacity of 81 KW. *10.

In 2017, the Town of Wolcott completed a feasibility study for a ground mounted photovoltaic solar array at the former landfill site. The study showed that the site can provide the area needed to locate a 640 KW solar array. The Town is hoping to implement the project in 2018.



Source: Community Energy Dashboard, January 2017

Future Energy Generation

Wolcott has opportunities to generate energy from various resources. At this writing, two resources that appear to have the potential to most substantially contribute to meeting the

*10 Existing generation data is based on information available via Community Energy Dashboard, www.vtenergydashboard.org. As new facilities are added, the Energy Dashboard gets periodically updated. This data is based on January 2017 information.

state energy goal for Vermont-based generation are the sun and the wind. Hydro, biomass and even geothermal sources may be feasible for a production of modest amounts of electricity but are likely insufficient to produce the output required to keep Wolcott, and Vermont, on track to meet the 2050 target for energy generation.

Energy Maps

This plan includes five energy maps. The **Solar and Wind Resource Maps** show areas with energy generation potential as based on presence of the resource (sun or wind) and environmental attributes of the resource areas. “Prime” lands shown on these maps are lands with sufficient resource (sun or wind) and no environmental constraints. Secondary lands are lands with sufficient resource and potential environmental constraints that may limit the possibility of development. The **Hydroelectric Map** shows potential for hydroelectric generation. The **Woody Biomass Map** shows areas with potential for biomass harvesting and locations of potential combined heat and power facilities. The **Municipal Considerations Map** shows sites preferred for generation and areas unsuitable for certain types of energy generation.

The maps can be used for conceptual planning or initial site identification by those interested in developing renewable energy infrastructure. They should not, however, take the place of site-specific investigation for a proposed facility, and should therefore not be thought of as “siting maps.”

Solar Generation Potential

The initial mapping analysis identified that there are 7,692 acres of land in Wolcott that are potentially suitable for solar power generation. Of this number, 707 acres (about 9%) are lands with prime solar potential and 6,985 acres (about 91%) are lands with secondary solar potential. *11.

The suitability potential was determined on the basis of two factors: presence of sufficient sunlight and environmental characteristics of the land. As a result, the Solar Resource Map, shows “prime” solar areas defined as lands with sufficient sunlight and no environmental constraints, and “secondary” solar areas, defined as areas with sufficient sunlight and certain environmental characteristics that may pose an obstacle to the development of renewable energy facilities. Areas with insufficient solar radiation or environmental constraints that will make these areas likely unsuitable for renewable energy generation are not shown on the map. (Note: Environmental constraint categories associated with “secondary” and “likely unsuitable” lands are listed in Section 5 of the energy plan under headings *Areas Potentially Suitable for Renewable Energy Development* and *Areas Likely Unsuitable for Renewable Energy Development*).

Wolcott supports the development of renewable energy generation facilities and envisions to meet its 90x50 energy generation target primarily by deployment of solar ground-mounted facilities. This target, based on data from the Vermont Department of Public Service and Lamoille County Planning Commission (LCPC), is to develop new facilities with energy generation potential of 6,400 kilowatts (KW). Based on LCPC’s calculations, it would take about 51 acres of land to accommodate this level of solar generation. (Note: Using today’s solar panel installation technology, the LCPC estimated about 8 acres of land per 1,000 KW of solar

*11 Energy generation potential from lands potentially suitable for solar generation is 962 MW and 1,179,184. MWh. Source: 2018 Draft Regional Energy Plan.

installation.)

Wolcott supports the development of both land based and rooftop solar energy generation facilities. Larger, land based solar installations might be most appropriate along the Route 15 Corridor which is envisioned for further commercial and industrial growth, and has access to 3 phase power. Rooftop solar can supplement land based solar installations, however, rooftop solar cannot fully replace the land based installations and enable Wolcott meet the 2050 energy generation target. Wolcott estimates that if 25% of its households install rooftop solar facilities with an average capacity of 4 KW per household, the resulting generation capacity would be about 613 KW which is slightly less than 10% of the 90x50 energy generation target.

In a survey conducted by Wolcott Planning Commission in March 2017, 94% of respondents supported residential rooftop solar, 92% supported larger than residential rooftop solar, 83% supported residential ground mounted installations and 72% supported larger than residential ground mounted solar. Almost all respondents, (96%) were supportive of a ground-mounted solar project at the former landfill property owned by the Town of Wolcott.

Wind Generation Potential

The initial mapping analysis identified 257 acres of lands potentially suitable for wind energy generation. Of this number, about 1 acre are lands with prime wind potential. Lands with secondary wind potential total to about 255 acres. *12.

The suitability potential was determined on the basis of two factors: 1) presence of wind speeds high enough to allow for larger than residential wind generation facility - digitally modeled at 50 and 70 meter hub height - and 2) environmental characteristics of the land. As a result, the Wind Resource Map, shows “prime” wind areas defined as lands with sufficient wind speed and no environmental constraints, and “secondary” wind areas, defined as areas with sufficient wind speed and environmental characteristics that may pose an obstacle to the development of renewable energy facilities. Areas with insufficient wind speeds or environmental constraints that will make these areas likely unsuitable for renewable energy generation are not shown on the map. (Note: Environmental constraint categories associated with “secondary” and “likely unsuitable” lands are listed in Section 5 of the energy plan under headings *Areas Potentially Suitable for Renewable Energy Development* and *Areas Likely Unsuitable for Renewable Energy Development*).

The mapping analysis shows one area with potential to accommodate larger than residential wind generation facilities. This area is fully located within Wolcott’s highest priority interior forest block.

This plan states as its goal to protect and enhance Wolcott’s land resources in order to maintain an adequate land base to sustain farming and forestry operations. (p. 68). The plan also discusses the importance of maintaining and managing upland forests to attenuate floodwaters and avoiding further fragmentation of productive agricultural and forestland (p. 69), and states that deer wintering areas should be protected from development and other uses that threaten the ability of the habitat to support the species (p.70). Additionally, the area identified as having potential for wind generation is located in the Rural Areas land use district. Here, growth is focused on low to medium residential development, small and home businesses

*12 Energy generation potential from lands potentially suitable for wind generation is 64 MW and 196,991 MWh. Source: 2018 Draft Regional Energy Plan.

and industries, farming and forestry and small scale hospitality establishments (p.93). Larger than on-site residential and on-site commercial wind generation is incompatible with the envisioned land uses.

In a survey conducted by Wolcott Planning Commission in March 2017, 90% of respondents supported residential scale wind installations, 64% of respondents supported commercial wind installations and 42% supported utility-scale wind facilities.

Due to present environmental constraints and land use provisions of this plan, and in support of citizen preferences for wind generation facilities, Wolcott supports residential as well as on-site commercial wind generation that provides energy needs for Wolcott's residences and businesses. Larger than on-site commercial wind generation facilities as well as utility-scale wind facilities are not supported.

Woody and Non-Woody Biomass Generation Potential

Electricity can also be generated from other renewable resources, including organic waste (such as manure, brewery waste or food scrubs) or woody biomass.

Organic waste is processed in bio-digesters. The digesters produce methane gas that fuels an engine to produce electricity. Currently, there are no bio-digester facilities in Wolcott or Lamoille County. The LCPC is interested to study the potential for methane production, including the possibility of utilizing waste from several operations, (farm and non-farm) at one bio-digester.

The burning of woody biomass also possesses energy-generating potential, especially at combined heat and power (CHP) facilities. CHP facilities burn wood to generate electricity— a process which in and of itself is highly inefficient. However, when coupled with a mechanism to capture the excess heat associated with producing electricity, such facilities represent a local, renewable source of heat and power. In order to be cost-effective, CHP facilities typically require a large consumer of heat. Within Town, Smugglers Notch Resort represents one location with the combination of heat and electric demand to benefit from biomass co-generation. This plan supports electric generation that utilizes both woody and non-woody biomass resources. The woody biomass map shows areas with potential for wood harvesting for energy use.

Hydro Generation Potential

The Hydroelectric Resources map shows hydroelectric potential based on a 2007 study conducted by Community Hydro. The map shows two potential sites in Wolcott with very small hydroelectric capacity (1KW each). Additionally, there is one currently inactive privately owned hydroelectric dam powered by waters diverted from Baldwin Brook just above the falls with generation capacity of 15-30 KW. This plan supports hydroelectric generation.

5. Siting of Renewable Energy Facilities

Wolcott supports the development of renewable energy generation facilities and envisions to meet its 90x50 electric generation target primarily by deployment of solar ground-mounted facilities. This target, based on data from the VT Department of Public Service and Lamoille County Planning Commission (LCPC), is to develop new facilities with energy generation potential of 6,400 (KW). Based on LCPC's calculations, it would take about 51 acres of land to accommodate this level of solar generation. (Note: Using today's solar panel installation technology, the LCPC estimated about 8 acres of land per 1,000 KW of solar installation.)

In order to protect our natural, scenic and historic resources while encouraging renewable energy development, Wolcott developed an inventory of areas that are suitable or undesirable for renewable energy generation. These areas are described below.

Areas Preferred for Renewable Energy Development

Types of areas preferred for renewable energy development are the areas identified as preferred by the State of Vermont in Act 174. These areas include parking lots, brownfield sites, landfills, rooftop installations and gravel pits. Specific preferred areas for renewable generation are shown on the Municipal Considerations Map and include:

- Former landfill (for ground mounted solar)
- Fisher Bridge Industrial Park (for combined heat and power generation facility)
- Wolcott Elementary school and Town Offices (for rooftop solar)

Areas Unsuitable for Renewable Energy Development

Certain types and sizes of renewable energy generation facilities shall not be supported. Areas where certain generation facilities are not supported are shown on the Municipal Considerations Map and include:

- Wolcott Village District (larger than small scale, on-site energy systems serving residences and businesses in the district are not supported.)
- 100-year floodplain (larger than residential solar arrays are not supported)
- Shoreland Land Use District lands up to 150 feet from shore (all types and sizes of energy generation facilities are not supported);
- Zone 1 public water drinking source protection areas; i.e. 200 foot radius around the water supply well (all types and sizes of energy generation facilities are not supported)
- Rural Areas Land Use District (larger than small scale, on-site systems wind generation facilities serving residences and businesses in the district are not supported).

Areas Potentially Suitable for Renewable Energy Development

The Solar and Wind Resource Maps show areas with energy generation potential as based on presence of the resource (sun or wind) and environmental attributes of the resource areas. “Secondary” areas have possible environmental constraints that may pose a barrier to the development of renewable energy facilities, based on statewide regulations. In some cases, these constraints may prohibit the development and in others the development may be suitable. “Prime” areas are lands no environmental constraints.

The secondary areas shown on the Solar and Wind Resource Maps include the following environmental constraints:

- Federal Emergency Management Agency Special Flood Hazard Areas
- Prime Agricultural Soils
- Act 250 Agricultural Soil Mitigation areas
- Protected Lands (State Fee Lands and Private Conservation Lands)
- Deer Wintering
- Hydric Soils
- Conservation Design Highest Priority Forest Blocks

Locally designated secondary areas with potential environmental constraints, shown on the Municipal Constraints Map, include:

- Zone 2 and 3 public water drinking sources Source Protection Areas. Zone 2 consists of areas subject to monitoring by Vermont’s water supply rules. Zone 3 are remaining recharge area(s) or area of contribution to the source not delineated as Zone 2.

Areas Likely Unsuitable for Renewable Energy Development

Areas likely unsuitable for renewable energy development include areas with insufficient resource potential (sun or wind) and areas with environmental constraints that signal likely, though not absolute unsuitability for development based on statewide or local regulations or

designated critical resource. The solar and wind resource maps, name these areas as “solar likely unsuitable” or “wind likely unsuitable”. The environmental constraints include:

- Federal Emergency Management Agency identified floodways
- River Corridor Areas as identified by the Vermont Department of Environmental Conservation
- Class 1 and 2 Wetlands as noted in Vermont State Wetlands Inventory or advisory layers
- Vernal Pools (confirmed and unconfirmed)
- State-significant Natural Communities and Rare, Threatened, and Endangered Species
- Wilderness Areas, including National Wilderness Areas

Information Technology & Telecommunications

The Internet has become a crucial informational tool in both the private and work lives of Vermonters and Americans in general. Unfortunately Wolcott residents do not have available to them the modern speeds at which one may access the Internet today.

The availability of high-speed internet and mobile phone service is not only a quality of life amenity, but an essential public safety and economic development tool in the 21st century. Due to a variety of factors—including Vermont’s rural character, low population density and mountainous terrain—the state has yet to achieve full wireless telecommunications coverage.

Vermont law directs the Public Service Department to revise and update the minimum “acceptable level of service” objectives for high speed internet (i.e. broadband) access every three years. The current objective, as defined in the 2014 Telecommunications Plan, is 4 megabits per second (Mbps) download and 1 Mbps upload.

In January 2017, the Public Service Department released information about high-speed internet service availability at all E911 residential and commercial building locations in the state. In Wolcott, 830 buildings were assessed and the results show that 748 buildings (90%) are served by a broadband service of 4/1 Mbps or better and 82 buildings (10%) are underserved.

Currently, two initiatives are in the works to expand the 4/1 broadband service in Wolcott. Consolidated Communications (formerly Fairpoint Communications) and Vermont Telephone Company (VTel) accepted federal funding - and are therefore required to make a commitment - to provide wired and wireless 4/1 service, respectively, in designated areas in Wolcott. Once deployed, 4/1 broadband speed will be available to all buildings in town.

Telecommunications facilities

As a byproduct of the growing demand for telecommunications coverage, the state will need to construct an infrastructure of fiber optic lines and wireless towers to extend service to Vermont’s dispersed population of residents and businesses. Although the Town of Wolcott acknowledges that its residents demand world-class telecommunications, they accept the fact that infrastructure will need to be built in adherence to the policies listed below:

- In order to minimize tower proliferation, developers should co-locate antenna on existing towers, whenever possible.
- To minimize conflicts with scenic values, facility design and construction shall employ the following principles:
 - Where feasible, be sited in areas not highly visible to the traveling public, or

from residential areas, historic districts and public lands and outdoor recreation areas, including hiking trails and beaches;

- Be located in forested areas, or be sufficiently landscaped to screen the lower sections of towers and related ground fixtures from public vantage points, such as trails, roads or water bodies;
- Utilize materials, architectural styles, color schemes, lighting fixtures and other design elements to promote aesthetic compatibility with surrounding uses and to avoid adverse visual impacts;
- Where construction of access roads are involved, to minimize visibility, be situated to follow the contour of the land and to avoid open fields or meadows;
- To avoid peaks and ridges identified in the Historic, Scenic & Archaeological Resources chapter of this plan; and
- No external lights.

SECTION 9.

HEALTH & WELLNESS

Health and wellness, as a singular concept, is defined as the state of optimal well-being, not simply the absence of illness, but improved quality of life resulting from enhanced physical, mental, and spiritual health.

The purpose of this section is to lay out a vision and mission for the health and wellness of the residents of Wolcott. It incorporates objectives and targets while outlining strategies to achieve a healthy community. It also identifies potential partners who will be key to achieving our vision and goals.

Understanding that the root of health and wellness is self-responsibility on the part of Wolcott's residents, this Town Plan can only serve as a guide to local initiatives and land use decisions to facilitate a continuing journey of wellness. The information and goals in this section are intended to help the Town achieve a healthier environment and community for its residents.

As previously discussed in the Population & Growth section of this plan, Wolcott's population continues to grow, and with that comes factors that affect the quality of life residents have come to expect. As the town grows, it is important for its residents to be able to access livable wage jobs and educational and recreational resources as a means to increase wellness.

Identifying information on the health and wellness of the residents of town is problematic as the State and other agencies collect information on a county as a whole. However this information can be used to get a snap shot of the general health of the residents of town. Unfortunately there is a dearth of town level data to be able to track many relevant issues at a local level. This need must be addressed.

Goals, Policies, and Recommendations of this Section

GOALS

Overall

- To provide ample opportunities for the health and wellness of Wolcott residents.
- To have the local data necessary to provide a baseline for measuring health and wellness in Wolcott.

Recreation facilities

- To maintain and enhance recreational facilities and opportunities.

Land Use

- To encourage more physical activity through public land use plans and policies

Food systems

- To provide access to healthy, locally grown food
- To provide access to land for community gardens

POLICIES

Recreation Facilities

- Take active part in making the Lamoille Valley Rail Trail a rural trail facility that will provide opportunities for all users to enjoy nature and the scenic Vermont landscape to its fullest.

Land Use Review

- Developers of large residential projects should include adequate open space and pedestrian amenities for recreation by the future residents of the project.

Nutrition

- Support increased availability and affordability of locally grown foods to lower income residents.
- Plan for future community gardens.

Transportation

- All public roads in Wolcott should provide for safe walking and biking.

Natural Areas & Resources

- Protect natural, scenic and recreational areas so that they may be maintained as destinations for hiking, biking and other physical activities.
- Ensure public access to hunting and fishing and other outdoor recreation activities.

Education

- Provide to Wolcott's school children ample nutrition and information pertinent to healthy living.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Overall

- Develop a health and wellness/recreation committee of local residents that reports to the Planning Commission.
- Wolcott should work in partnership with other agencies to begin measuring more local health and wellness indicators.

Recreation Facilities

- Develop a comprehensive plan for amenities, facilities and aesthetics for the Lamoille Valley Rail Trail in town.
- Address various recreation issues in town, assist the development of recreational facilities, and support and coordinate the efforts of groups like the Wolcott Athletic Association
- Pursue grant funding for the development of the North Wolcott Recreation Park.

Education

- Promote the district wide school wellness policy for students and teachers developed by the Orleans South West Supervisory Union.
- Provide health and wellness education to townspeople as a chapter in the annual Town Report.

Housing

- Pursue partnerships with other organizations to ensure the provision of affordable housing for all residents, especially children, the elderly and those possessing disabilities.

Food Systems

- Pursue the development of community gardens in town; a first step would be the identification of potential sites.
- Investigate the feasibility of a Wolcott farmer's market.

Health & Wellness Issues

Health and wellness is defined as the state of optimal well-being, not simply the absence of illness, but improved quality of life resulting from enhanced physical, mental and spiritual health. If the health and wellness of individuals and families were to be imagined as a puzzle, then several essential pieces can be identified:

- ✓ Secure shelter;
- ✓ Access to safe and nutritious foods;
- ✓ Opportunities for mental and physical activity;
- ✓ Financial security;
- ✓ Proper care, supervision and stimulation for children, the elderly and similarly "dependent" groups;

- ✓ Adequate education for adults and children alike; and
- ✓ Minimization of unhealthy personal activities.

During the development of the previous 2013 Town Plan, Wolcott defined several ways, the Town could track improvements in the area of health and wellness. These included:

- Miles of road in Wolcott with shoulders adequate for biking and walking;
- Number of Wolcott residents who bike or walk to work, compared to vehicular commuting;
- Miles of sidewalk in Wolcott;
- Number of local connections and accesses to the developing Lamoille Valley Rail Trail and use by local residents;
- Use of local recreational facilities by child and adult residents;
- Number of health workshops and screenings held in town; and
- Types of food offered at Wolcott Elementary School.

Regional Health and Wellness Organizations are available in Lamoille County and can be used as a resource to healthy community planning. The Office of Local Health can provide updated regional community health data as well as best and promising practices related to Healthy Community Design. The Lamoille Valley Fit and Healthy Council is a local organization working to increase local infrastructure and access to healthy foods and physical activity opportunities in Lamoille County. They are available to conduct community assessments that focus on Healthy Community Design such as walkability/bikeability studies, food audits and recreational/environmental improvement surveys to identify where improvement opportunities exist. The town should work to develop regular channels of communication and collaboration between local health officials/organizations and planners through a means of ongoing feedback and input.

Health & Wellness Infrastructure and Services

Recreation Infrastructure

Wolcott is home to a growing number of recreational activities for its residents.

The **Wolcott Athletic Field** (also referred to as Town Park) is on School Street across from the Town Garage and Fire Station. The field is between 8 and 10 acres in size, and has two baseball/softball diamonds and a soccer field. The field is managed and maintained by the Wolcott Athletic Association, a private nonprofit group that sponsors baseball and softball programs for Wolcott. Field maintenance requires the help of volunteers, along with the availability of Town equipment. The Association is funded by a town appropriation, dues, fundraisers, concessions and other donations. The **North Wolcott Recreation Park** consists of land on North Wolcott Road that was purchased by the Town with FEMA funds after severe flooding damaged the private homes there. Wolcott Recreation Park Committee was formed and charged with developing the park. The park currently contains a baseball field, and future plans include a walking path, soccer field, and picnic areas. Wolcott Recreation Committee secured a Recreation Grant to develop a walking path around the Wolcott Recreation Park. Design plans for the walking path have been developed; however, the committee charged with the development of the park is currently inactive. The Wolcott Recreation Park has suffered damage from flooding and the Selectboard is currently overseeing its maintenance. Picnic tables are being installed at the park.

The **Wolcott Elementary School field** has both a baseball/softball diamond and a soccer field. These fields were once available for public use outside school hours, but their status is questionable at this point, due to issues with neighboring land-owners.

The Lamoille Valley Rail Trail (LVRT) is a year-round multi-use recreation path/trail slowly developing along the right-of-way of the original St. Johnsbury and Lake Champlain Rail Road Company established June 30, 1916 and most recently managed as the Lamoille Valley Rail Road Company (LVRR). The trail will be 93 miles in length and traverses an east-west route from St. Johnsbury to Swanton.

Health Facilities

The primary health care facility serving Wolcott and Lamoille County is **Copley Hospital** in Morristown. Copley operates as the emergency care center for local emergency services, and provides in-patient, outpatient, long-term care, and birthing center services. Copley functions as part of the larger Vermont health care system, with the Medical Center Hospital of Vermont (MCHV) in Burlington acting as the major tertiary referral hospital.

The **Hardwick Area Health Center** is a regional medical center which serves the communities of Walden, Woodbury, Wolcott, Craftsbury, Greensboro, Hardwick, and Stannard. Staff at the Center include family practitioners, internists, and nurse practitioners. The Center provides a wide array of medical services, with the exception of obstetrics. The Center is a component of the non-profit Northern Counties Health Care organization, and provides its services on a sliding scale based on need and ability to pay.

Wolcott residents must all travel outside of the community for medical services due to lack of doctors or dentists practicing in town.

Child Care Facilities

The availability of quality child care has become an increasing issue across Vermont. As of 2017, Wolcott has two licensed preschools in the Vermont Child Care Information Services database. The surrounding towns of Hardwick, Craftsbury and Greensboro provide additional facilities. The Planning Commission believes that there is a need for more child care services and encourages residents interested in opening a child care to contact the state Child Care Division for information.

Community Partners

Health and Wellness services, information and assistance in Wolcott are provided by a number of different agencies. Some are private commercial enterprises, a few are private not-for-profit organizations and others are governmental agencies.

Likely partners for health and wellness initiatives in Wolcott include:

- 4-H Program
- Building Bright Futures
- Community, Recreation, Exercise and Wellness (CREW)
- Copley Hospital
- Food Shelf
- Hardwick Area Community Collation
- Johnson State College
- Lamoille Area Cancer Network
- Lamoille Area Recreation Center (LARC)
- Lamoille Home Health and Hospices
- Healthy Lamoille Valley
- People in Partnership

- RSVP Bone Builders
- Salvation Farms
- Vermont Department of Health Morrisville District Office

Furthering Health & Wellness in Wolcott

While land use planning and regulation and other local initiatives normally cannot force the accomplishment of many community goals, much can be done to remove barriers and increase opportunities for desired behaviors. Such is the case with health and wellness in Wolcott. Identified below are several suggestions, plans, and recommendations conducive to the health and wellness to Wolcott residents.

The Lamoille Valley Rail Trail

The Town of Wolcott sees the LVRT for the unprecedented recreational resource that it could be. The trail will also facilitate various economic development and transportation benefits, embodied in increased tourism, local consumer activity, job creation, and new and healthier commuting avenues to Morristown, Hardwick and the towns beyond.

The Town of Wolcott should plan to do its part locally to provide a rural trail facility that will provide an environment so all users can enjoy nature and the scenic Vermont landscape to its fullest. The development of local trail amenities may be necessary. There are also at least three bridges on the trail in Wolcott that would need to be replaced or converted. Thus this Town Plan makes the following recommendations:

- By focusing the Town's facilities along school street along with zoning regulating geared to the development of a village center. The town hopes this will become a catalyst for future growth and highlight the LVRT crossing.
- The School Street Center should be developed as the Town's primary trailhead parking and picnic area. It should include facilities comprised of composting toilets, informational resources, appropriate lighting, access to potable water, playground equipment and more. There should be a sidewalk connection between the LVRT and the Town's school and library.
- Development of the Fisher Bridge parking and picnic area should be kept to a minimum so as to not undermine the aesthetic and historical significance of the area. It is recommended that development be limited to a parking area with a composting toilet, informational resources and appropriate lighting.
- Park benches, and provisions for wheelchair/stroller accessibility should be made at the two parking areas identified above as well as any other pertinent area along the LVRT in Wolcott.
- Bicycling connections should be made between the LVRT and other popular biking routes in Town.
- Wolcott should collaborate with the Lamoille Valley Rail Trail Committee, VAST and others in securing the funds and resources necessary to accomplish the necessary bridge work along the trail.

School Activities

Much should be done to maintain and enhance the education and nutritional programs at Wolcott Elementary School that encourage health and wellness among children:

- Ample recreation and physical activity opportunities,
- Education in healthy habits, and
- Access to healthy, locally produced food.

In June of 2012, a health fair was held at the Wolcott Elementary School. The school does not currently have a garden, but they do include local produce as much as possible and are working to increase this. The school's current lunch menu includes a fresh green salad and fruit and vegetable platter. Fat free milk is also included with breakfast and lunch.

The Role of Businesses

Businesses in Wolcott should do their part to provide healthy worksites, which could include the following:

- Drafting a wellness plan for the business and its employees,
- Providing health and wellness informational resources,
- Holding health workshops and screenings,
- Providing healthy snacks, and
- Rewarding walking or biking to work.

Land Use Decisions

There is much potential for land use planning and regulation to increase opportunities for health and wellness in Wolcott. Recommendations include:

- The protection of natural, scenic and recreational areas, so that they may be maintained as destinations for hiking, biking and other physical activities;
- Providing public access to hunting and fishing and other outdoor recreation activities;
- Ensuring that roads have adequate shoulders for recreational biking and walking; and
- Encouraging sidewalks and other pedestrian amenities in new developments.

These points are more fully developed in the Land Use section of the Town Plan.

SECTION 10.

NATURAL RESOURCES

Goals, Policies, & Recommendations of this Section

GOALS

Land Resources

- To protect and enhance Wolcott's land resources, including productive farm and forestland and available earth resources, in order to maintain an adequate land base to sustain farming and forestry operations and to secure needed supplies of sand and gravel for the benefit of existing and future generations.
- To use Wolcott's mineral and earth resources conservatively for the benefit of existing and future generations.
- To conserve and enhance the soils in Wolcott, especially prime and state significant soils, for present and future use.

Water Resources

- To preserve, and where degraded, improve Wolcott's water resources – including its lakes, ponds, streams, rivers, wetlands, groundwater, and associated habitats – in order to ensure water quality for drinking, recreation and the environment.
- To ensure that Wolcott's rivers and streams contain clean water, a healthy riparian habitat and stable stream banks.
- To maintain the overall health of our lakes and ponds for recreation and environmental purposes.
- To preserve and protect wetlands from pollution, filling, and any other uses or activities that will result in their degradation or a reduction in its capacity to provide wildlife habitat, flood control and water storage.
- To protect the health, safety and welfare of the residents of Wolcott by limiting development in floodways to agriculture, recreation, and open space only.
- To maintain the quality and quantity of local groundwater supplies.
- To maintain and, where degraded, improve the water quality across the town.

Wildlife Resources

- To protect and maintain in healthy condition areas of significant habitat including wetlands, uplands, large habitat blocks and interconnecting links (e.g., wetland areas, riparian zones, and travel corridors).
- To maintain biological diversity of native plants and wildlife throughout Wolcott through the protection of significant habitats.

POLICIES

Land Resources

- Earth resources (primarily sand and gravel) should be identified and conserved until needed and reasonably developed in the public interest.
- Development that is proposed near or over important earth resources should mitigate the potential loss of that resource.
- Extraction and related processing operations will be permitted only when it has been demonstrated that there will be no undue adverse impacts on the town or its residents. Potential conflicts between current land use and proposed extraction operations must be minimized. Strict standards for the operation, maintenance, and restoration or extraction sites may be established as appropriate based on the unique conditions of the area affected. The full restoration of extraction sites will be ensured through the submission and

local approval of site restoration plans and the provision of adequate surety to guarantee the completion of the restoration plan at the operator's expense.

- All development within the town must be pursued with strict regard to the capability of the soils to support it.
- Development on slopes should ensure the protection of soils through measures equivalent to Accepted Agricultural Practices and Best Management Practices for agriculture and/or the Acceptable Management Practices for forestry. The USDA Natural Resources Conservation Service is also a source for recommended soil practices.
- Development within agricultural areas should be sited to avoid taking agricultural soils permanently out of production. Non-agricultural structures should not be placed in open fields and meadows; such structures and related infrastructure should be set back from field edges and follow tree lines where feasible to minimize disturbance and visual impacts, and to maximize open productive space.
- Avoid further fragmentation of productive agricultural and forestland;
- Ensure continued access to productive forest and farmland;

Water Resources

Rivers and Streams

- All rivers and streams must be identified on and integrated into site plans and subdivision plats. Development within or proximate to designated rivers and streams should take place in such a way as to avoid crossing the stream and to protect and maintain a natural vegetative buffer at least 50 feet wide.
- All bridges and culverts should be built to standards recommended by the VTrans Better Roads Program to ensure minimal impacts on rivers and streams and to prevent failure in the event of flooding.
- Development near Baldwin Brook Falls should not have a negative impact on the scenic and recreational qualities of this significant stream feature.

Lakes and Ponds

- Higher densities of residential development contribute to lake and pond pollution by way of septic and stormwater runoff. Controls on density are required in order to protect water quality.
- A 50-foot naturally vegetated buffer around the lakeshores would protect the water quality from contaminants as well as protecting the scenic values of the areas.
- A management plan for large lakes and ponds should be developed to determine boating, swimming, fishing and other recreational activities to ensure that ecological and recreational goals are met for the areas.

Wetlands

- Wetlands must be identified on and integrated into site plans and subdivision plats.
- All wetlands are required to have at least a 50-foot buffer. No filling or draining of wetlands is permitted.

Flood Resilience

- Maintain and manage upland forests to attenuate floodwaters.
- All rivers and streams must be identified on and integrated into site plans and subdivision plats. Development within or proximate to designated rivers and streams should take place in such a way as to avoid crossing the stream and to protect and maintain a natural vegetative buffer as least 50 feet wide.
- Agriculture, forestry, recreation fields, parks, and open space are all appropriate uses of flood or erosion hazard areas.

Groundwater

- Withdrawal of groundwater should not exceed the recharge rate over a reasonable period of time.
- No form of land waste disposal or storage of possible contaminants should be permitted in high water table and ground water recharge areas.

Water Quality

- All construction where soil is to be disturbed is required to provide adequate erosion

control so that no soil moves off site or into surface waters or wetlands.

- Agriculture and forestry must abide by Accepted Agricultural Practices and Acceptable Management Practices. Where an activity may have a negative impact on water quality, Best Management Practices are recommended.
- Total impervious surfaces on developed sites should be less than 10% of the site. If this is not possible, other stormwater management tools should be used to mitigate the impacts.
- Where appropriate, stormwater technologies and techniques should be used to prevent runoff from directly entering any surface waters.

Wildlife Resources

- Wolcott supports the acquisition of significant habitat by local or state conservation agencies whose goal is protection of the habitat.
- Significant habitat must be identified on and integrated into site plans and subdivision plats. Development within or proximate to designated significant habitat will take place in such a way as to preserve its value for education, science, research, aesthetics, and recreation.
- Deer wintering areas should be protected from development and other uses that threaten the ability of the habitat to support the species. Commercial, residential, and industrial development should not occur in these areas. Development should be permitted adjacent to deer wintering areas only if it is demonstrated, in consultation with the Department of Fish and Wildlife, that the integrity of the area for deer habitat will be preserved.
- Subdivisions and other development should avoid fragmenting habitat. Core habitat areas and interconnecting links (e.g. wetland areas, riparian zones, travel corridors) are to be preserved. Planned Unit Development provides this capability.
- Rare, threatened and endangered plants and animals and their habitats will be protected and preserved through appropriate conservation techniques. Where appropriate, a 500-foot buffer should be designed and maintained to ensure protection.

Methods of Natural Resource Protection

- Development should be clustered or otherwise situated in order to preserve contiguous tracts of undeveloped land.
- Encourage farm and forestland owners to participate in the “Current Use” program.
- Support the efforts of organizations in the purchase of development rights and other conservation methods provided the land protected meets the objectives of this plan. Where possible, the Planning Commission should review proposed purchases and comment based on the goals of this plan.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Land Resources

- Pursue the acquisition of land for a Town Forest.
- Ensure that the Town holds ownership of, or purchase rights to, sufficient gravel resources to provide for the town’s needs in the future.

Water Resources

Rivers and Streams

- Establish public accesses to rivers and streams for recreation.

Lakes and Ponds

- Consider an ordinance to require local approval of dams and other artificial water impoundments below 500,000 cubic feet.
- Place public education and signage at all boat accesses and public shoreland to notify the public of Eurasian Milfoil and how to protect the lake.

Wetlands

- Consider acquiring funds to have a wetland inventory of the town conducted.

Flood Resilience

- Develop a detailed plan for the flood hazard areas in town – especially along the Lamoille River. This plan should be informed by the findings of the Lamoille River Hydraulic Model. The purpose of the plan would be to generate public and private benefit from otherwise-

restricted areas and protect the public from loss of property and life. Additionally, this flood hazard area plan could address opportunities for recreation, buffers for the river and other water quality solutions (Action cross-referenced in Land Use Section).

- Identify opportunities to enhance wetlands and wildlife habitat on floodplain properties owned by the VT Department of Fish and Wildlife.

Groundwater

- Identify potential threats to groundwater supplies.
- Study whether there is a need to adopt additional Wellhead Protection Area zones into the zoning bylaws and restrict uses that present a risk of contamination to public groundwater sources.
- Improve wastewater treatment capabilities in Wolcott Village and North Wolcott per recommendations of 2004 sewer feasibility study.

Wildlife Resources

- Consider forming a conservation commission for the purposes of conducting a Natural Resources Inventory in Wolcott and contributing to natural resource protection through advocacy and consultation.
- Conduct a Natural Resources Inventory to determine how much of the significant habitats are protected and determine what gaps exist in the conservation effort.
- Consider pursuing funding and partnerships to protect the remaining parcels around Bear Swamp to ensure the long-term protection of this area.

Overview

Wolcott's natural resources, including productive soils and local sand and gravel deposits, represent truly unique, irreplaceable resources because of their physical properties, limited extent, and economic importance to the community. Productive agricultural and forestry lands also contribute significantly to the town's rural and scenic character, and traditional way of life, which still sustains the local economy.

The Town of Wolcott lies in east central Lamoille County. The town is comprised of 25,920 acres covering approximately 40.5 square miles. The Wolcott landscape is dominated by its rolling hills and flowing streams, with the Lamoille River crossing the southern portion of town. Elevations in Wolcott range from approximately 1,876 feet above sea level at the Ledges in the northwest corner of town, to a low of about 670 feet along the Lamoille River near the border with Morristown.

Climate

Climate represents the average weather conditions characteristic of a region over time. Vermont's northern climate is dominated in winter months by cold, dry Canadian air and in summer by warm moist air from the Gulf of Mexico. Weather patterns vary locally with topography and relief. Located to the east of the Green Mountains and the Worcester Range, Wolcott experiences slightly lower average winter temperatures and higher rates of precipitation than other parts of Vermont. The seasonal climate varies in Wolcott with daytime temperatures averaging 75 degrees Fahrenheit in the summer, and 28 degrees in the winter months. Wolcott receives an average of 2.72 inches of rainfall per month during winter months and 4.28 inches of rainfall per month in the summer months.

Weather patterns are an important planning and design consideration because of their effect on such things as flooding, storm water runoff, prolonged droughts, soil erosion, groundwater supplies, plant and crop growth, air quality, road and utility maintenance, energy demand for cooling and heating and the viability of weather-dependent industries such as skiing and

sugaring. In recent years Wolcott has seen more frequent and intense rain events, resulting in widespread flooding. Predicted future weather patterns include more heavy and intense rainfall and snowmelt in this region, which will further increase the frequency of flood events.

There is evidence of increasing frequency and severity of flooding. Whereas the 100-year flood, the standard basis for floodplain management, is by definition 1% likely to occur any given year, evidence suggests that actual flooding hazards are significantly underestimated. Consequentially, the 500-year flood (by definition 0.2% likely to occur any given year, but the chance of occurrence is actually much higher), is a more appropriate level for floodplain management. Furthermore, the greatest increases in severe floods are expected in the Northeast (and Pacific Northwest). The Town recognizes that the 100- and 500-year flood areas underestimate the true risk. For example, the 100-year event is now closer to a 20% likelihood in any year, and FEMA itself has estimated that the size of flood zones could increase by nearly 50% in the coming decades.

This will potentially lead to increased damage from flooding in homes and along roadways; and will also tax the capacity of our wastewater treatment systems, thus impacting our drinking water supply. More frequent and intense rainfall events can also cause direct flooding damage to above-ground utility facilities and buried infrastructure. This, of course, has a financial cost to our community. Wolcott should anticipate that a changing climate may bring dramatic social, economic, and environmental change to the area. Accordingly, Wolcott should plan for ways to adapt to the changing climate and prevent or minimize the resulting hardships.

Earth Resources

Bedrock geology and surface material

Wolcott's biological richness originates from the geophysical setting, the underlying soils and bedrock. With the exception of a very small portion of the south west corner of town, Wolcott's bedrock is classified as 'imbedded phyllites, schists, and quartzites.' This type of bedrock is calcium rich, which leads to the formation of nutrient rich soils, which in turn support diverse natural communities. The southwest corner lacks the quartz found in the rest of town and is classified as 'imbedded, gray to green, phyllites and schists.' At the border with Elmore, just north of Lake Elmore, is a small area of undifferentiated greenstones and amphibolites with local pillowed lavas or pillowed structures.

Contained within the bedrock materials can be found metallic minerals although not in high quantity or quality - the most common of these being copper. Highly variable concentrations of copper bearing ore (pyrrhotite and chalcopyrite) have been located in the rocks of the Stowe formation on Toothacher Hill. Wolcott does not appear to have the non-metallic minerals, such as asbestos and talc, which are found in Eden, Johnson, Hyde Park, Lowell and other towns to the west.

The surface materials are primarily glacial till with some 'sands and gravels' and 'stream alluvium' close to the Lamoille River and Wild Branch. Pockets of glacial kame terraces are also present beneath North Wolcott and north of Route 15 at the border with Hardwick and west of the village of Wolcott. Along Tamarack Brook is a large area of peat and muck, which is associated with swampy, poorly drained areas.

(Information from: Wright, Frank M. *Geology for Environmental Planning in the Johnson-Hardwick Region, Vermont*. 1974. Vermont Geological Survey. Water Resources Department. Montpelier, Vermont.)

Sand and Gravel

Lamoille County is one of the most gravel rich areas of the state. It is also one of the fastest growing. Gravel is a non-renewable resource and is therefore important to plan for its wise use. Areas which are likely to be gravel rich should be identified and noted so that the resource can be extracted as needed in the future. (Gravel Resources in Wolcott, pg. 59A). A study completed in 1989 by the Lamoille County Planning Commission identified Wolcott as a gravel rich area, capable of supplying mass quantities of high grade gravel for its own use and for surrounding communities. In 1989, Wolcott had 12% of the active gravel pits in Lamoille County. Wolcott is not in possession or control of its own gravel pit. However the Town has exclusive purchase rights to a gravel pit within the community as a condition of the pit's permit. There are a number of active and inactive pits in Wolcott which eventually will be reclaimed, including deposits in North Wolcott and East Hill Road.

Sand and gravel are important local resources and are needed for road repair and construction. Gravel deposits are also important areas for recharging groundwater supplies. Earth resource extraction and/or processing activities have a high potential for becoming a substantial nuisance in the area where such activities are located. There is a potential for problems in the any of the following areas:

- Noise, dust and air pollution or radiation;
- Surface and groundwater pollution, siltation or radiation;
- Storage and disposal of waste materials, both solid and liquid;
- Increased stormwater runoff, erosion and sedimentation;
- Spoiling of the landscape and limited utility for subsequent uses of the site;
- Decreased highway safety and increased municipal costs due to increased traffic and accelerated deterioration of highways and bridges attributed to the transportation activities generated by the earth resource operations; and
- Reduced property values because of primary or secondary impacts of the proposed earth resource operations. All these factors, single and together, may act to substantially depreciate land values in the immediate vicinity of such activities and the town in general.

The adverse impacts of sand and gravel operations can be addressed to a certain extent through local and state regulations, and good management practices. Regulations can ensure that extraction operations have minimal impact on the town and neighboring properties, and that sites are adequately restored to allow for subsequent use once extraction is completed.

While earth resource extraction comes with risks, many of these resources are needed by residents for roads and building material, or for sale as a marketable resource. Of concern is that each of these resources is finite and once depleted cannot be replaced. Additionally, development near or over the resource may, in effect, make extraction impossible in the future. Therefore any construction over an earth resource should account for the potential loss of that resource. The state has estimated that 31% of all sand and gravel deposits in Vermont are now inaccessible due to state regulations including water supply protection, critical wildlife habitat, conserved lands, and other factors. (Aggregate Resources of Vermont, VT Geological Survey 1993). Current developments over deposits have further limited the availability of the resource.

The town therefore has two responsibilities. First, Wolcott needs to be vigilant in its regulation of earth resource extraction operations to prevent the creation of a nuisance. And second, the town needs to protect the resource to ensure its availability for future residents. The locations of likely gravel deposits are shown on the Land Resources Map at the end of this Plan. The possibility of the Morrisville Alternate Truck Route and other regional transportation projects that could facilitate more truck traffic into Wolcott from nearby towns with land resource needs are good reasons for Wolcott to update the inventory of land resources in town and plan for

prudent development.

Soils

The soil structure attributes in Wolcott provide both opportunities and limitations to construction and agriculture. Depending on the physical and natural processes that formed the soils, they may have differing depth, composition, texture and layering. Soils also vary in how easily they absorb water and in their load-bearing capacity. Soils that pose limits to development are often characterized by excessive slope, shallow depth to bedrock, high seasonal water, instability or high erosion potential. Soils also have qualities that make them productive for timber and agricultural products. Prime agricultural and forestry soils as well as sand and gravel sites are shown on the **Land Resources Map**. These are the valuable and non-renewable soil resources that need to be protected for use in agriculture and forestry.

Agricultural Soils

Vermont soils are identified by the USDA Natural Resources Conservation Service (NRCS) in its publication *Farmland Classification Systems for Vermont Soils* (June 2006 edition). NRCS acknowledges those soils with agricultural values of 1 through 7 as demonstrating the characteristics needed for various agricultural uses. The Vermont Agency of Agriculture soil identification guidelines that were released on 04/30/07 advocates planning for the conservation of areas where there remain significant undeveloped primary agricultural soils (classes 1 through 7) and especially where there are minimally twenty contiguous acres of agricultural value classes 1, 2 or 3 soils.

The town's less productive upland soils went out of production during the last century with the abandonment of hill farms, but local farmers continue to rely on the best soils to remain economically viable. The location of active farmland in town strongly correlates with the location of primary agricultural soils. Because these soils are relatively well-drained and support on-site septic systems, they are also inexpensive to develop for a variety of other uses. Subdivision and associated development continue to threaten productive farm land, particularly outside of designated floodplain areas. Primary agricultural soils are a finite resource. Once converted to other uses, they are rarely returned to production. These soils sustain and enhance local capacity for food production, and support existing and future farming operations. For these reasons, the Town's best agricultural soils must be protected from other forms of development.

Accepted Agricultural Practices (AAPs) are designed to ensure soil conservation, and all farms are required to meet these standards. The Planning Commission would recommend that farmers use Best Management Practices (BMPs) where technically and economically feasible. BMPs are not required but offer better protection of the soil resource and will protect other resources as well including water. Information on AAPs and BMPs is readily available through the Vermont Agency of Agriculture.

Forestry Soils

NRCS also has identified the best soils to support commercial forestry, including many upland soils that are too shallow, rocky or steep to support other types of development. As a result, primary forestry soils are generally less threatened by development, but are more sensitive to site disturbance and erosion. To help prevent soil erosion, the state has adopted acceptable management practices (AMPs) to prevent soil erosion and maintain water quality on logging jobs. The Acceptable Management Practices (AMPs) for forestry in Vermont were first stipulated when the Vermont Dept. of Forests, Parks & Recreation developed the 1987 guide titled "Acceptable Management Practices for Maintaining Water Quality on Logging Operations in

Vermont.” Occasionally also referred to as “Best Management Practices,” the AMPs are intended to prevent mud, petroleum products, and woody debris from getting into streams, ponds, lakes, and rivers. AMPs also help maintain natural water temperatures by requiring that trees be left along streams and water bodies. They are scientifically proven methods for loggers and landowners to follow for maintaining water quality and minimizing erosion.¹³ While AMPs are voluntary, they have the force of law: a violation occurs when there is a discharge to state waters and the AMPs are not in place. Any foresters in Wolcott interested in obtaining more information or assistance on the AMPs at their sites should contact the Vermont Dept. of Forests, Parks & Recreation AMP Program.

Developmental Suitability

Development limitations are shown on the **Soil Limitations** map. This map highlights areas with steep slopes (over 30% slope), shallow depth to bedrock, high water tables, instability and high erosion potential. This map is not intended to infer that development is not possible on a site in these highlighted areas. It should be interpreted that development in these areas may need special construction, careful siting, or be of a limited extent or scale. Each property will be examined individually for limitations based on the characteristics above.

Water Resources

Water resources take on a variety of forms and functions. They provide rivers and lakes upon which to boat, fish and swim; groundwater to drink; and wetlands to store floodwaters and filter natural and man-made contaminants. Water resources provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic activities such as fishing and boating.

Water resources also unfortunately end up serving as repositories for pollutants from runoff and leaking storage tanks including pesticides, herbicides, sediments, landfills, septic systems and underground storage tanks. These contaminants kill fish and plants, destroy existing and potential drinking water supplies and preclude recreational activities.

Rivers and Streams

Wolcott is fortunate to have abundant riparian resources. Its numerous brooks, streams and rivers helped shape the local landscape and the historic mill economy on the Lamoille River.

The Lamoille River flows from southeast to northwest across the southern part of Wolcott for about 8 miles. The Lamoille originates at Horse Pond in Greensboro and flows into Lake Champlain at Milton. Along its route to Lake Champlain, the Lamoille assimilates water from a number of wastewater treatment plants while also providing numerous public recreation opportunities and scenic vistas.

Most of the rivers and streams in Wolcott contribute to the Lamoille Drainage Basin. The eight largest tributaries in Wolcott are the Green River, the Wild Branch, and Wolcott Pond Brook from the north; and the Elmore Pond Brook and Elmore Branch from the south. Smaller tributaries to the Lamoille include Jones Brook and Currier Brook from the north. Wolcott provides the headwaters for Millard, Keeler, and Tucker Brooks, all of which enter the Lamoille River in Hardwick.

¹³ VT Dept. of Forests, Parks & Recreation, AMP Program - <http://www.vtfpr.org/watershed/ampprog.cfm>, retrieved 05/22/07

The Wild Branch is fed by numerous smaller streams including Baldwin, Bruce, Clark and Tamarack Brooks. The northeast corner of Wolcott also provides the headwaters for Cass Brook, which is part of the Black River Drainage Basin to the north of Town.

Wolcott should establish public accesses to rivers and streams for recreation including swimming, fishing and boating.

Riparian Habitats

Plant life such as trees, shrubs, grasses and herbs along stream banks and river corridors serve to provide both food and shelter for a great many wildlife species. According to a 1986 study of Vermont's rivers, several of Vermont's wildlife groups are highly dependent on riparian areas for their habitat needs. The following Wolcott rivers and streams were noted as important habitat for water dependent species (information from *Vermont Rivers Study*, Vermont Agency of Natural Resources, 1986.):

<u>Waterway</u>	<u>Species</u>
• Lamoille River	Waterfowl & deer
• Green River	Moose and Deer
• Jones Brook	Deer
• Wild Branch	Deer

Significant River Feature: Baldwin Brook Falls

Baldwin Brook crosses the North Wolcott Road just south of North Wolcott. Baldwin Brook is a mountain stream, mostly four to eight feet wide, with very clean water. Its headwaters are two small ponds just below the Green River Reservoir. The falls are located below a 12-foot dam. Immediately below the dam there is a sheer falls of 50 feet. Below the falls is an abrupt gorge about 20 feet wide by 30 feet deep, below which can be found two lower falls of 10 to 15 feet each.

In statewide comparison, this waterfall and gorge site is the only one in Lamoille County considered to be above average in botanical content. Fifty foot sheer falls are very rare in Vermont, either in big or small streams, and consequently, these falls are considered to be of state significance. A 1991 report for the Lamoille County Planning Commission titled *Waterfalls, Cascades and Gorges of Lamoille County, Vermont* recommended that this site receive special mention in the Wolcott Municipal Plan as a special hydrological feature worthy of protection.

Lakes and Ponds

Wolcott is fortunate to have numerous lakes and ponds throughout the town that support both public and private recreation opportunities and important plant and animal habitats.

Wapanacki Lake, located near the Hardwick town line, has a surface area of about 21 acres, a maximum depth of 23 feet, and a drainage basin area of approximately 285 acres. Present uses of the lake include both warm and cold water fishing and swimming. Wapanacki is Wolcott's only artificial lake, and its entire shoreline is currently owned by the Girl Scouts of America.

Wolcott Pond, off of East Hill Road, is about 68 acres in size, has a maximum depth of 23 feet, and is supported by a 920 acre drainage area. A natural lake with artificial height control, Wolcott Pond is popular for warm water fishing and boating. A large part of Wolcott Pond's shoreline is protected by Vt. Fish and Wildlife Department ownership and management as a public access site. Wolcott Pond is also the home to a nesting pair of Common Loons and a number of endangered terrestrial and aquatic plant species.

Use of Wolcott pond is governed by the rules of the Vermont Water Resources Board, including a 5 mph speed limit on motor boats and a prohibition of personal watercraft. Enforcement of these rules is in the realm of the Vermont State Police and State Game Wardens. The Town of Wolcott urges all pond users to abide by the State's rules, in order to ensure a safe, pristine and relatively quiet pond area.

Local regulations have been implemented to help ensure that development along the shores of Wapanacki Lake and Wolcott Pond is in keeping with the quiet, scenic and pristine nature of these water bodies. This Shorelands zoning district allows development only through conditional use. Other measures could be considered as well, including purchase of development rights to ensure a vegetated buffer area on the shore.

Numerous other named and un-named ponds exist in town under private ownership. These ponds range in size for less than an acre to about 9 acres (Perch Pond). Currently state law requires water impoundments of 500,000 cubic feet or more to be approved by an engineer.¹⁴ In light of damage from storms, flooding and dam and culvert failure over the past decade, it may be prudent for Wolcott to pursue a local regulation that requires engineer review of even smaller impoundments. There are model ordinances and existing regulations in other towns that may be used as examples for Wolcott.

Wetlands

The term wetland is used to refer to areas that are inundated with water either seasonally or year-round. They are commonly referred to as swamps, marshes, bogs, fens or other such names. Wetlands share three basic characteristics:

1. The presence of water at or near the ground surface.
2. The presence of water dependent plants occurring on site; and
3. Common types of soil that have formed as a result of the presence of water.

Wetlands serve a number of important functions, including stormwater retention, erosion control, groundwater recharge and wildlife habitat. The largest wetland area in Wolcott is Bear Swamp on Tamarack Brook. This 200-acre area is currently owned by the Center for Northern Studies.

The U.S. Department of the Interior has mapped wetlands, and each town has a set of National Wetlands Inventory Maps. These maps were made using aerial photos. They are useful for assessing the general character of a particular area, but are not accurate enough to determine the nature of a particular property without a site visit.

Vermont's wetland regulations are based upon the National Wetlands Inventory. They designate all of the wetlands identified by the inventory in Wolcott as Class II, and require at least a 50-foot vegetated buffer between the wetland and any adjacent land development.

Vernal pools are small depressions in forests that fill with water in the spring and fall. They provide breeding habitat for many salamanders and frogs and have characteristic populations of fairy shrimp, fingernail clams, snails, water fleas, and copepods. These pools are often at peak level during the spring, when the ground is saturated with runoff from spring snow melt. The pools typically lack inlets and outlets, and thus are usually devoid of fish, allowing the safe development of natal amphibian and insect species. Typical Vermont species that rely on vernal pools for reproduction include the mole salamanders (Spotted salamander, Blue-spotted salamander, and Jefferson salamander), Eastern four-toed salamander, and wood frog. All of these species may breed in other wetlands, including artificial pools and ponds, but rely heavily

¹⁴ 10 V.S.A. § 1082

on vernal pools to maintain their populations.

Vernal pools and the organisms that depend on them are threatened by activities that alter pool hydrology and substrate, as well as by significant alteration of the surrounding forest. Construction of roads and other development in the upland forests around vernal pools can result in negatively affecting salamander migration and in mortality. Timber harvesting can have significant effects on vernal pools, including alteration of the vernal pool depression, changes in the amount of sunlight, leaf fall, and coarse woody debris in the pool, and disruption of amphibian migration routes by the creation of deep ruts.¹⁵

Floodplains

Floodplains are land areas adjacent to waterbodies, primarily rivers that are subject to seasonal or periodic flooding. These areas store runoff during heavy rains and spring thaws, thus slowing the velocity of water flowing downstream. Gradual releases of stormwater minimize erosion, streambank scouring and downstream flooding. Floodplains also provide important recreational, agricultural, aesthetic, drainage, and wildlife functions. The continuation of each of these functions requires consideration of the watercourses and their associated shorelines when designing for construction in their vicinity.

Floodplains are considered unsuitable for development for several reasons:

- ✓ potential danger to life and property,
- ✓ loss of flood water storage,
- ✓ effects on channel capacity and downstream communities, and
- ✓ improper functioning of subsurface sewage disposal systems when there are high water tables.

However, floodplain areas are usually prime agricultural land due to the highly productive nature of the soils, and can serve as recreation sites such as parks and ball fields.

Other flood hazards result from flashflood situations in particular along steeper stream sections. Clearing of vegetation cover and constructing impervious surfaces, like roofs and parking lots, increases storm runoff particularly in higher elevations. To prevent flash flood situations, developments cannot increase the volume or velocity of streams. Channeling and straightening streams increases stream velocity and increases the risk of flash floods. Many times roads and driveways up steep hills create perfect conditions for flash floods because they are designed to rapidly drain water from the surface and send it downhill in a straight steep ditch. The Better Backroads Program of the Vermont Agency of Natural Resources' *Ecosystem Restoration* initiative has road standards to avoid erosion and flashfloods resulting from road design and construction. Wolcott should continue to ensure that its own public road and private driveway standards are in line with the Better Backroads standards.

Flood hazard areas in Wolcott are associated with the entire length of the Lamoille River, Wild Branch, Green River, Elmore Branch, Bear Swamp, and Wolcott Pond, and portions of Baldwin Brook and Wolcott Pond Brook. The flood hazard areas are shown on the maps associated with this plan and are based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps which can be found in the Town Clerk's office. Wolcott has also adopted flood hazard area zoning which regulates the use and construction of structures in the flood hazard areas.

The Town of Wolcott should develop a detailed plan for the flood hazard areas in town – especially along the Lamoille River. Through this plan, Wolcott should determine appropriate

¹⁵ Vermont Department of Fish and Wildlife. "Vernal Pools." Website: http://www.vtfishandwildlife.com/cwp_elem_comm_vp.cfm

uses for the hazard areas including locations for recreational facilities, open space, and agriculture. The purpose of the plan would be to generate public and private benefit from otherwise-restricted areas and protect the public from loss of property and life. Additionally, this flood hazard area plan could address buffers for the river and other water quality solutions.

Fluvial Erosion Hazards

Recently, efforts have begun to study the erosion hazards, as well as the flooding hazards, that Wolcott's rivers and streams present. Fluvial erosion is a danger akin to flooding, as banks and soil can become undermined gradually or even quite quickly, and potentially damage life and property. Fluvial Erosion Hazard studies typically study the path and meander patterns of streams in order to designate areas that will be subject to erosion dangers over time. These erosion areas may or may not match the flood hazard areas that have been mapped for so long now. These erosion hazard areas should be protected from development in Wolcott.

Groundwater Resources

Groundwater is the source for over 90% of the drinking water for rural communities in Vermont. It is replenished through rain and surface waters which percolate through the soil. Any activity that introduces contaminants directly into the ground (such as underground storage tanks, septic disposal fields, and agricultural activities) can affect groundwater quality. Since surface waters may also travel underground, surface water quality may affect groundwater quality as well.

Since all water in Wolcott is provided through private wells, it is important to protect the quality of well water through appropriate separation between wellheads and septic disposal fields.

According to the Vermont Geological Survey, the lands adjacent to the Lamoille River, Baldwin Brook, the Wild Branch and the Elmore Branch have soil and geological characteristics that provide the best potential for groundwater.

Groundwater recharge areas are where soils and bedrock geology are such that surface water and ground water can easily percolate down to the natural water table. State land capability maps from 1972 indicate that areas of Wolcott with high groundwater potential may also be important groundwater recharge areas. Lands near The Ledges, Bear Swamp, Beaver Meadow and Jones Brook may also be important aquifer recharge areas.

Public groundwater sources in Vermont are assigned Wellhead Protection Areas (WHPAs) around them. WHPA's are defined as the surface and subsurface area surrounding a water-body or well field supplying water for a public water system. The state Agency of Natural Resources (ANR) is responsible for the Vermont Wellhead Protection Program. A public water supply is defined as one serving ten or more connections or 25 or more people. There is one WHPA in the south end of Wolcott on the Pond Road for the protection of the Elmore Water Coop well.

Without detailed information about the direction of groundwater flow in Wolcott and surrounding communities, it is vital that all groundwater recharge areas town-wide be protected from activities that could contaminate the drinking water supply of residences.

Water Quality

Vermont's waters are classified by the State's Department of Environmental Conservation

(DEC) according to a system which establishes whether or not their current state impairs their use for

1. aesthetics,
2. aquatic life support,
3. agricultural water supply
4. contact (swimming) or secondary contact (fishing, boating) recreation,
5. fish consumption, and
6. drinking water supply.

The VT DEC identifies surface waters with impaired uses, the source(s) of the impairment(s), and whether or not the water body is being managed for Total Maximum Daily Load (TDML) of certain pollutants.

In 2010, no waters in Wolcott were identified as impaired and in need of TDML. However the Wild Branch of the Lamoille River was identified as in need of further assessment¹⁶ with possible impaired uses:

- Possible pollutants: sediment.
- Possible uses impaired: boating/fishing, aquatic life support, aesthetics.
- Specific problems: loss of floodplain, bank erosion, etc.

The stretch of the Lamoille River from Lake Lamoille to Hardwick Lake was also cited in 2010 by VT DEC as water suffering from complications brought on by flow regulation¹⁷. Specifically attributed to Wolcott Dam were a poor and fluctuating water flow, erosion, and fish passage problems, which impacted aquatic life support, fishing and boating, and aesthetics.

Elmore Pond Brook is also cited for flow regulation problems stemming from the dam at Lake Elmore. This situation impacted ALL uses according to the VT DEC in 2010.

Stormwater and Agricultural Run-off

Two issues have been in the press over the past few years with regards to water quality – agricultural runoff and stormwater runoff from impervious surfaces such as roads, parking lots and roofs. Both of these sources of pollution impact our streams and rivers although agricultural runoff may be more important a factor in Wolcott.

The Department of Agriculture has produced ‘accepted’ and ‘best’ management practices for farms and silvicultural operations. Where farms are believed to be having an impact on water quality, BMPs and other measure can be used to help prevent the runoff from entering the streams. The Planning Commission will assist landowners who are looking to adopt management practices that prevent agricultural runoff. There are many organizations in Lamoille County willing to contribute supplies and expertise to resolve water quality issues if the interest exists.

Stormwater runoff is not as significant a problem in Wolcott as it is in some communities because we lack large commercial centers and the associated parking lots. New changes in state regulation are requiring tighter regulation of this issue. The Stormwater Section of Vermont’s Department of Environmental Conservation has a webpage on the Agency of Natural Resources site linking to multiple sources of information on stormwater regulation, treatment and management, including *The Vermont Stormwater Management Manual*.

¹⁶ Included in Part C of State of Vermont 2010 List of Priority Surface Waters Outside the Scope of Clean Water Act Section 303(d).

¹⁷ Included in Part F, *ibid*.

Some relatively minor additions to local zoning regulations can go a long way to keep Wolcott out of harm's way. For instance, requiring parking areas to be set back from streams and wetlands; keeping total impervious areas below 10% of the lot area or otherwise requiring provisions for onsite management of stormwater; and requiring landscaping to retain runoff on the grounds as opposed to channeling water into streams. Many developed properties do not meet these standards, but all new development should. Addressing the stormwater issue at the outset of development is far easier than trying to go back and retrofit old developments as is being proposed in other communities.

Forest Resources

Today, the dominant land cover in Lamoille County is the forest. Forests provide habitats for numerous game and non-game woodland animals, forest products from lumber to maple syrup, jobs both in the woods and the mills, protection of our valuable water resources, and contrast upon the landscape.

Until the middle of the eighteenth century, nearly 95 percent of the state was forested. Following settlement of the area, beginning in the mid-1700s, clearing of forest lands began in earnest, and just 150 years ago, most of the valley lands and much of the mountainsides were devoid of trees. A slow, but steady, reforestation process began in the late 1800s and continues to this day, as previously open land is reclaimed through processes of natural ecological succession. Today, approximately 85 percent of Wolcott is forested – totaling nearly 22,000 acres.

Forest Management

The region's forest resources provide an important component to the region's economy. Without some economic benefit being derived from forestland, it is difficult to imagine landowners keeping their resource lands in production. Many would argue it is the working forest that provides the greatest diversity of benefits to the landowner and public alike. With few exceptions, a healthy working forest provides a greater diversity of habitats for woodland animals, trails for recreationalists, and a blanket of color on our mountains and ridgelines.

According to the U.S. Forest Service, 98% of Lamoille County's forest is categorized as timberland, or forest capable of producing crops of industrial wood. Other wood related products include maple products and Christmas trees. Vermont has long touted the superior quality of its many maple products, and currently produces more than any other state. From maple syrup to maple butter, the sap from the sugar maple has been utilized for generations and has become an integral part of the cultural integrity of Vermont.

In addition to economic benefits, the region's forests provide numerous other public benefits that we often take for granted such as providing a critical habitat for game and non-game wildlife as well as specialized plant communities that play an important function in the ecological integrity of the region. Deer, bear and moose need often-remote expanses of contiguous forest for both yearly and seasonal habitats. Numerous other non-game woodland animals utilize various areas within the forest as well. The diversity of tree species and ecosystems within the forests is as important as its geographic extent. It is important that forest management maintain both the diversity of forest type and quality to support wildlife.

Forest cover also plays an important, although less visible role within our communities. The forest provides shade, which improves energy efficiency, soil stability, water retention, wildlife habitat and aesthetic value within a predominantly human landscape. Forests also play a

valuable role of carbon sequestration, helping to moderate the impact of greenhouse gasses on climate change. The implementation of forest management strategies that increase carbon sequestration and storage from forests with low carbon can significantly contribute to greenhouse gas reduction throughout the state. Private landowners have the opportunity to significantly contribute to carbon sequestration through sustainable forestry practices. Pressures from forest conversions, harvesting wood for energy, and infestations of non-native destructive pests or changes in private or public land management can alter the extent of forest mitigation of GHG (Vermont Forest Resource Plan, 2010).

The general public needs to better understand the importance of forest resources in our everyday lives. The interconnection between the many benefits the public realizes from the forest and the economics to the landowner of preserving the traditional and historic uses of the land cannot be understated. Future policy and planning for our forests must include this relationship between the private and public benefits received from the resource. Forests are living systems which, when properly managed, can provide economic and social benefits for generations.

Private Forest Lands

The majority of forested land in Wolcott is privately owned. 110 parcels or 11,000 acres of private land in Wolcott are currently enrolled in the state current use program, and are therefore managed in accordance with a forest management plan approved by the county forester. A regional Forest Stewardship Plan recently completed by the Lamoille County Planning Commission identified priority forest lands in the region as those lands with high potential to benefit from the USDA Forest Stewardship Program. The identification of priority areas, which excluded conserved lands, was based on a visual analysis of mapped resources; including ecological, recreational, scenic, and economic values, as well as potential threats from environmental factors such as invasive pests and acid rain, and human factors such as landscape degradation/fragmentation from parcelization. Priority landscapes identified in Wolcott included the lands just south of Route 15, the lands between the Wild Branch, Tamarack Stream and Wolcott Pond Brook, as well as lands north of East Hill Wildlife Management Area.

University of Vermont Wolcott Research Forest

The University of Vermont owns 130 acres of forest accessible from the northernmost bend of East Hill Road. This forest was used for research on Christmas trees from 1965 to 1976. Since then, the focus of research has been shifted to various other forms of research on the tree species within the forest. Approximately 35 acres of the property, once open meadows, now exhibit small plantations of Christmas tree species and a few hardwoods. The old pasture, about eight acres, has been left to regenerate naturally with balsam fir, white spruce, and other woody species. The remaining 90 acres is cut-over balsam fir and white spruce stands with some low-value hardwoods.

Municipal Forest

Vermont has a long-standing tradition of towns owning and managing forests for public benefit. Communities across Vermont are purchasing new town forests, which will meet community needs for forestland that is open to all, and help maintain the forest values that Vermonters hold most dear.¹⁸ Wolcott does not currently have a town forest but should consider future acquisition and management of a town forest, which could provide recreation,

¹⁸ Northern Forest Alliance. *The Vermont Town Forest Stewardship Guide: A Community User's Manual for Town Forests*.

wildlife, scenic and timber management benefits to the Town. Opportunities to acquire a municipal forest through the purchase or gift of land may exist. Any acquisition of forestland by the Town should be based on a comprehensive management plan for the municipal forest, and should result in the acquisition of those lands which will enhance the Town's ability to manage the forest for a range of management objectives. The Vermont Town Forest Project (VTFP) assists communities across Vermont in the creation of new town forests by providing staff time, financial resources, and technical expertise. Additionally, there is a strong network of community forests across Vermont that can provide models for a future Wolcott town forest.

Environmentally Sensitive Areas and Wildlife Resources

Wolcott's environmentally sensitive areas and wildlife resources are designated by this plan for conservation. Protection of these resources provides opportunities for hunting and fishing as well as educational and recreational activities. The same implementation opportunities are available for these areas as for the land resources areas determined in Section 9. For the most critical and sensitive habitats, purchase of the properties would be the most equitable. For other areas, land use regulations to cluster development away from significant habitats would be sufficient.

Environmentally Sensitive Areas

In 1976, the State of Vermont created an inventory of "significant natural areas" throughout the state. While "natural area" designation did not provide a site with any additional protection from development, it did act as a tool for increasing local knowledge of Vermont's important natural heritage. Many of the sites nominated to this list were included in the State Fragile Areas Registry. Unfortunately a call to the Vermont Department of Forests, Parks and Recreation confirmed that the Registry is no longer actively maintained. The following sites were included in the former Natural Areas Inventory.

Wolcott Pond

Approximately 68 acres in size, the pond and its watershed are almost entirely undeveloped. Conditions around the pond have remained unchanged for years, aside from the development of a state access area at the western end. A number of rare or unusual species of plants have been found in and around the pond, including *Rhododendron prinophyllum* "Roseshell Azaleas," which are very rare this far north. The pond has also been frequented by common loons. Increasing recreational use of Wolcott Pond, especially by motorized boats, may threaten this important loon habitat.

Bear Swamp

Bear Swamp, 300 acres and almost two miles long, contains large stands of typical boreal forest, balsam fir, black and red spruce, and northern larch. The under story of the swamp contains northern flora such as Labrador tea, blueberry, bunchberry and over 50 species of ferns and fern allies. Bear Swamp provides important habitat for a wide variety of breeding birds. Snowshoe hares, fisher, and otter are also found in the swamp. The swamp has been undisturbed for a long time and currently supports near-climax vegetation. Much of the area is presently owned by the Center for Northern Studies at Sterling College, and appears to be safe from development pressures indefinitely. Some portions of the swamp remain in private ownership and should be protected to ensure the entire natural area remains safe from development or mismanagement.

North Wolcott Bog

The North Wolcott Bog is a 2-acre sphagnum quaking bog with unique plant communities considered to be of statewide significance. The bog is under private ownership, and could be

threatened in the future by development pressure on adjacent uplands.

Wolcott Copper Mine

This abandoned mining site near Jones Brook was identified as a significant natural area because of the manmade rock outcrops on site, which are of statewide geologic significance. The site is currently under private ownership, with no protection provided. Recently a road or driveway has been constructed on the property in close proximity to the mine, and may pose a future threat to its value as a local historic and geological resource.

Significant Wildlife Habitat in Wolcott

The VT Non-game and Natural Heritage Program, in the Department of Fisheries and Wildlife, has an ongoing program of identifying and mapping special natural features of significance in each town. These maps show the approximate boundaries of known deer wintering areas and known locations of rare plants, animals, significant wildlife communities or state environmentally sensitive areas.

The **Significant Habitat Map** for Wolcott identifies 6 known significant habitat areas in town, as well as winter deer range boundaries which encompass about 1/3 of the town. It is important to note that, although recently updated, the deer range boundaries are approximate only and subject to future changes. The location of critical habitats is shown in an intentionally inexact fashion for the protection of those habitats.

Deer Wintering Areas

Vermont's deer require specific winter habitat to survive the seasonally severe weather and heavy snowfall. Winter deeryards provide shelter that is important to whitetail deer survival. Statewide, between 6% and 8% of Vermont's forestland is suitable for winter deer range under average winter conditions. Wintering areas do not change significantly between years and can be used by generations of deer over several decades if appropriate habitat conditions are maintained. Not only are these areas critical to deer, but nearly half of Vermont's vertebrate wildlife species rely on coniferous forests for at least part of their life needs. Deer wintering areas are prevalent throughout Wolcott, especially north of Route 15 along the Wild Branch and Wolcott Pond Brook.

Bear Habitat

Bears require large areas of uninterrupted forestland for breeding. They also require travel corridors to move from one part of their habitat to another, especially as forested areas may be subdivided and developed. The Vermont Department of Fish and Wildlife prepared a map of large habitat blocks critically important for bear and other large wide-ranging mammals like moose, fisher and bobcat. Large habitat blocks are prevalent along Wolcott's northern border. However, Wolcott's bear habitat may be marginal at best due to the lack of high quality beech stands. If there is enough interest among forestry parcel owners in the north part of town, beech stands could be managed and improved to increase the quality of black bear habitat in town.

Rare & Endangered Species Habitat

Rare plants and animals are important for a variety of reasons. Some are indicators of unusual habitats or of colder (or warmer) climates in Vermont's distant past. Some serve as indicators of environmental quality. Some species may provide compounds for medicines or agricultural or industrial products. Finally, some are attractive and add beauty to the natural landscape. Many uncommon species will disappear if not recognized and given some form of local protection.

Fisheries

According to the 1986 Vermont Rivers Study, brown, brook and rainbow trout are all present in Wolcott in the Lamoille River, Green River, Elmore Branch and Elmore Pond Brook. State water quality records show that Wolcott Pond and Wapanacki Lake support both cold and warm water fishing.

East Hill Wildlife Management Area

The East Hill Wildlife Management Area (WMA) is located adjacent to Wolcott Pond. The WMA is approximately 962 acres in size, however only 452 of those acres are owned by the State of Vermont in fee simple (total ownership). The State of Vermont owns hunting rights only for the remaining 706 acres. The Vermont Fish & Wildlife Department manages 256 acres to the southeast of Wolcott Pond and the Vermont Department of Environmental Conservation manages approximately 196 acres south and east of Wolcott Pond. The Wolcott Pond Access Area, managed by the Vermont Fish & Wildlife Department, is associated with the WMA and provides access to Wolcott Pond for fishing opportunities. Access to the WMA is from Route 15 and East Hill Road east of the Village of Wolcott. Developed parking lots exist on (Oral) Marsh Road before the intersection of Simmons Road, as well as at the Wolcott Pond boating access area.

Wildlife Habitat Connectivity

Connecting habitat is land that links large patches of habitat within a landscape, allowing the movement, migration, and dispersal of animals and plants. Riparian habitat along streams and rivers, strips of forest cover between developed areas, and even hedgerows and fencerows, all represent potential connecting habitat. Often these areas are called “corridors”, even though they are not always linear, as the term implies. Corridors act as lifelines for isolated populations as they:

- allow wildlife to move freely across their range
- allow wildlife to colonize new habitat as climate change, succession, or other ecological processes force them to migrate
- reduce the risk of population isolation
- ensure the exchange of genetic information among populations
- allow wildlife access to foraging and breeding grounds
- facilitate seasonal movements (migrations) to essential range or habitat
- allow the dispersal of young adult animals from natal range
- allow adult animals to interact with potential mates, thus improving reproductive success and genetic fitness

Corridors between large patches of habitat help ensure the ultimate viability of local wildlife populations. Wildlife travel corridors create a network of habitat connectivity, linking together both large and small patches of land, in both highly fragmented and highly connected landscapes (Critical Paths 2009).

Recent changes in development patterns have increased development pressure on forests. A shift in the last several decades away from clustered village centers to lower density exurban development patterns and sprawling suburban development has significantly increased forest fragmentation. Exurban development, the unorganized scattering of homes on large parcels of 10 to 40 acres (Hilty et al. 2006), has become a common development pattern in rural Vermont, with seriously detrimental impacts to Vermont wildlife.

This type of development necessitates the construction of new roads, which increase habitat fragmentation as the roads dissect contiguous blocks of core habitat that are critical to the survival of a multitude of native species. Recognizing the serious pressures present on wildlife, it is vital that connectivity between existing large tracts of habitat is maintained.

The free movement between habitats will facilitate individual species ability to adapt to a changing climate. This is especially important along south to north corridors, where migration along a latitudinal gradient may be vital to species' range shift in response to climate change.

Reduced connectivity between habitats as a result of the fragmentation caused by roads has serious impacts on wildlife populations at a variety of spatial and temporal scales. In the short term, habitat fragmentation can restrict species access to critical seasonal habitat. For example, black bear require different seasonal habitats including mast stands during summer and fall months, and den areas in winter months. Roads can act as a barrier between necessary habitats, restricting access to essential habitat for survival. In a greater temporal scope, habitat fragmentation can restrict genetic flow between populations and limit migratory capabilities. Both of these can significantly influence the long term viability of localized populations.

One way to maintain connectivity involves conservation or protection of critical linkages through easements or outright purchases of land. However, this option poses challenges, as these critical linkages are generally lands adjacent to roadways, and as such, not considered in the public eye as prime habitat worthy of conservation. Other mitigation measures include retrofitting existing underpasses or culverts to allow wildlife passage, or simply installing wildlife crossing signs to alert motorists.

Methods of Natural Resource Protection

Natural resources need to be protected from two sources of loss: development on or near the resource and mismanagement of the resource. The best way to protect natural resources from incompatible development is to ensure the working landscape is economically feasible and provides the landowner with a stable income. There are three tools that help ensure the economic feasibility of agricultural and forestry use of the land: Current Use Assessment, Purchase of Development Rights, and land use regulations.

Vermont's Agricultural and Managed Forest Land Use Value Program AKA "Current Use" Program

One mechanism helping property owners maintain working lands is the state's Use Value Appraisal (UVA) program. The program recognizes the fact that tax pressures placed on farm and forestlands were contributing to their development and fragmentation throughout the state. The program allows farm and forestland to be taxed on resource production value, rather than the value of the parcel's development potential. As of 2017, there were 117 parcels in Wolcott enrolled in UVA, totaling more than 11,876 acres, or 48 percent of the town's land area. While the numbers are no longer broken down into forest and agriculture acres, it is expected that the majority of the land remains in forest management.

Purchase of Development Rights

The most well-known group involved in the purchase of development rights is the **Vermont Land Trust**. In a purchase of development rights, the right of the property owner to develop or subdivide a parcel is bought by another party. The amount paid depends on the value of the potential development. In this way the farmer or forester receives extra money they need while still retaining the farm or forest. In addition, the property now has a lower appraised value resulting in lower property taxes. The obvious problem with purchase of development rights is the cost. In order to protect a large amount of land, one needs a huge sum of money. Also, the landowner must want to sell the rights - all purchases are willing buyer/willing seller.

Wolcott may want to consider forming a **Conservation Commission** to help connect interested

landowners with Conservation Organizations or Land Trusts, or to purchase development rights on their own. In that way the town would own the development rights instead of a non-profit organization. Purchasing and maintaining conservation easements can be challenging for a small community, however. The money to purchase properties or development rights could be pursued through grants and funding institutions around the state.

In 2006 the **Northern Rivers Land Trust** (NRLT) was founded, which includes the towns of Wolcott, Craftsbury, Elmore, Greensboro, Hardwick and Woodbury. The NRLT intends to purchase conservation easements to protect land from development as well as to acquire land for the development of clustered, affordable housing.

Land Use Regulations

Zoning and subdivision regulations are effective in regulating development of important land resource parcels, while being far less expensive than the purchase of land for conservation. These types of regulations should guide development to ensure certain goals are accomplished. One valuable tool is Planned Unit Developments (PUDs) where developable lots are clustered to protect open space or other objectives. This type of flexible zoning tool allows the same number of developable lots as traditional subdivisions except that it also keeps the fields open and forests unfragmented.

SECTION 11.

LAND USE & DEVELOPMENT

This Town Plan has identified challenges and strengths of life in Wolcott. While the Plan itself has a limited role in actually addressing these issues, it can identify priorities and potential solutions. The Plan provides a frame work for future actions by the Town Of Wolcott, which can be divided into two categories:

1. Initiatives, projects, committees and partnerships, through which priorities can be addressed and solutions can be developed.
2. Specific ways of guiding the use of land in Wolcott, often through regulations, incentives and/or information.

This section deals with the latter category. This section contains an assessment of how land is being used in Wolcott, what may or may not be working, and what land-use changes could be made to *minimize barriers* and *create opportunities* to address particular priorities and allow for certain solutions and improvements. In the end, land-use guidance cannot actually create fair and affordable housing, economic development, healthier lifestyles, or any of the other initiatives posited by this plan, but it can be used to minimize barriers and create opportunities to addressing these challenges. The rest is up to the residents and property-owners of Wolcott.

Goals, Policies, and Recommendations of this Section

Local land use is perhaps the most basic, crucial and often the most controversial issue faced by local communities. The mandatory provisions of this Town Plan are intended to be legally enforceable standards as provided by Act 250 (10 V.S.A. § 6000, et. seq.) and Section 248 (30 V.S.A. § 248). The Primary Goal of this town plan addressed the need for providing guidelines for the development of Wolcott in the best interest of its residents while respecting private property rights. This has required the planning commission to walk a careful line to make the recommendations in this land use plan.

GOAL

- For development and growth in Wolcott to occur in a reasonable and sustainable manner so as to protect the natural resource base, use services efficiently, and to preserve Wolcott's rural character and historic settlement patterns.

The Town has developed the following policies in order to guide development in a manner consistent with the overall goals and objectives of this plan. The policies were drafted in the effort to preserve landowners' property rights as much as possible while guarding against unsafe, unhealthy, or costly forms of development.

POLICIES

- Encourage mixed-use developments to allow commercial, business, and residential uses to be located near each other, particularly in the Village Areas
- Respect traditional patterns of development, in which villages, hamlets, and farmsteads with clustered buildings were scattered through working countryside while protecting rural and scenic character; and maintaining contiguous tracts of resources and open land.
- Continue to make available Fisher Bridge Enterprise Area for light-industrial and storage type uses.
- The Flood Hazard Overlay is intended to protect life and property within federally designated 100-year floodplain. New incursions into the floodplain are not permitted and existing buildings should be relocated or flood proofed as prescribed in the zoning

- bylaws. Rebuilding in the floodplains and frequently flooded properties is discouraged.
- Encourage silvicultural, agricultural and recreational activities as acceptable uses within the floodplain.
 - Highly encourage shared driveway access outside of the Village on Route 15 in order to ensure safe and efficient flow of traffic.
 - Where possible, new development should maintain or install vegetative buffers along the Lamoille Valley Rail Trail. In particular, commercial and industrial development along the Route 15 Corridor should provide adequate screening to maintain the scenic nature of the Rail Trail.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

General Land Use Actions

- Improve wastewater treatment capabilities in Wolcott Village and North Wolcott per recommendations of 2004 sewer feasibility study. Without these services, the Town's ability to achieve the goals and objectives associated with these areas will be severely hampered. Periodically explore if new technologies and wastewater management techniques can create new opportunities for the Village.
- Monitor whether the recently created Fisher Bridge Enterprise District is adequately serving the need for light industrial development. If additional land is needed for these uses, investigate establishing additional "nodes" in proximity to Route 15. In order limit linear "sprawl" and prevent new development in the floodplain, such nodes should be near major intersections and naturally above the floodplain.
- Monitor whether the "conservation subdivision" tools and incentives incorporated into the Town's Zoning in 2016 are effectively enabling landowners to create small lots while maintain large blocks of working agricultural and/or forest land and protecting important natural resources. Annually, as part of the ZA and DRB's Town meeting reports evaluate; How many subdivisions have been approved as "conservation subdivisions" vs. conventional subdivisions; How many acres of land have been set aside as "conserved land and/or "open space" within conservation subdivisions; How many conservation subdivisions have been eligible for density bonuses, and the total number of bonus units granted.

Land Use Actions to Enhance Flood Resiliency

- Develop a detailed plan for the flood hazard areas in town – especially along the Lamoille River. This plan should be informed by the findings of the Lamoille River Hydraulic Model. The purpose of the plan would be to generate public and private benefit from otherwise-restricted areas and protect the public from loss of property and life. Additionally, this flood hazard area plan could address opportunities for recreation, buffers for the river and other water quality solutions (Action cross-referenced in Natural Resources Section).

Zoning and Subdivision Bylaw Revisions Actions

- In order to better protect life and property, investigate adopting flood hazard regulations that exceed minimum FEMA standards Specifically, consider incorporating the following standard into the Flood Hazard Area Overlay: prohibit new structures in the 100-year flood hazard area; require substantial improvement or expansion of existing structures in the 100-year flood hazard area to be elevated two feet above the base flood elevation; require conditional use review for substantial improvement, elevation, relocation, or flood proofing of existing structures in the 100-year floodplain; require conditional use review for new structures in the 500-year floodplain; and require compensatory storage (no-net-fill) for any new fill in the floodplain.
- Consider making small scale hospitality enterprises such as bed and breakfasts, agri-tourism, and similar uses permitted rather than conditional uses in all districts.
- In the village districts, encourage mixed uses to enable efficient use of existing septic capacity, such as office and retail that require less septic capacity than residential uses. Encourage shared and offsite parking in order to maximize land available for on-site septic.
- Review site plan approval and subdivision guidelines in light of this town plan to ensure the

regulations adequately and fairly protect scenic resources.

- Explore whether to seek state delegation for shoreline protection. (Note: State of Vermont regulates shoreland development within 250 feet of a lakes' mean water level for all lakes greater than 10 acres in size. It is possible for State to delegate permit authority to towns as long as the town has adopted shoreland bylaw equivalent to state shoreland standards.)
- Adopt guidelines within the Wolcott Zoning Bylaws to address development within archeologically sensitive areas.
- Review and, if necessary, update the zoning provisions regulating earth extraction operations to ensure the bylaws achieve the goals of this section and provide the owner of the site with a clear set of guidelines to follow.
- Maintain existing the zoning standards for the siting construction of telecommunications towers to ensure local oversight in the event that the current State preemption is not extended.

Assessment of Existing Land Use

The current land use pattern can probably best be described as scattered development with clusters of development in areas such as the village areas of North Wolcott and Wolcott Village. Most industrial and commercial properties are appropriately located along Route 15 in order to take advantage of the access to this transportation corridor. The most intense such development is located within the Fisher Bridge Industrial Park.

Wolcott's official size is 25,920 acres. The steady increase in housing units demonstrates that Wolcott has become a popular place to build a home. The Town's open spaces, forests, and recreational opportunities contribute to the desirability of living in Wolcott. As home development continues, the natural aspects of Wolcott that have helped shape its popularity (scenic views, open fields, continuous forests, and recreational amenities) may be threatened. By properly managing and directing development, Wolcott can allow growth to continue while protecting these important resources.

Wolcott is still a rural community, but we are feeling the pressures of growth both within our borders and in surrounding communities. Economic development in communities such as Morristown, Stowe, Montpelier and Hardwick have helped make Wolcott a popular "bedroom community." With the increase in the number of residences over the years has come an increased demand on town services such as education and road maintenance.

Future Land Use

Land use refers to broad, general categories describing how land is used. Examples of classes of land uses include residential, commercial, industrial, institutional, agricultural/forestry, and recreation. Some of these classes can be further refined – for example, commercial uses may include retail stores, business and professional offices, and restaurants. This section of the plan will attempt to classify the town into various districts based upon existing use, capacities, concerns and pressures identified in earlier chapters.

Within each district different controls can be used to regulate how lots are created, what uses are allowed, and how development is sited and designed. These controls take the form of minimum lot sizes, road frontage requirements, setbacks, slope restrictions, soil management rules, and other standards. These controls form the basic components of zoning and subdivision regulations, which are discussed below.

Future Land Use Districts

Drawing from earlier goals and guiding principles in this plan, the Wolcott Planning Commission identified the general districts listed below. These districts also exist in the current zoning bylaws. (see the **Future Land Use Map**).

- **Village Areas** The Village Areas of Wolcott Village and North Wolcott have been the center of social, commercial, and governmental functions since the town's founding. This area is divided into distinct neighborhoods. Varying intensities of development are anticipated, depending on the neighborhood within the District.
 - The **Village Core** is the densest, most developed area and serves as the core of Wolcott Village. The purpose of this District is to provide for a mix of commercial, residential, institutional, and governmental uses in a traditional pedestrian friendly environment. Buildings are tightly spaced and located close to the roadway. Most buildings have one-and-a-half or two stories, though there are several larger buildings along Route 15. A mix of uses is anticipated in this area. Industrial and storage uses are also located in the Core Area. These uses should be allowed to continue to operate and evolve their operations as necessary, though landscaping may be required to buffer major neighboring uses if major expansions occur. Multi-level buildings of varying architectural styles with ground level commercial space accessible from the street are encouraged in this District. The upper stories of buildings may be occupied by both residential and non-residential uses. Business and property owners are encouraged to make efficient use of the District's limited wastewater capacity. In addition to being a State highway, Route 15 serves as the "Main Street" through Wolcott Village. As the area develops, it will be necessary to create pedestrian infrastructure and streetscape improvements to accommodate the needs of both through traffic and local residents and customers. Installation of such infrastructure or reservation of rights-of-way for these purposes should be a condition of approval for development in this area. Street trees, public art, and public and private seating areas are also encouraged. On-street parking and other traffic calming measures are encouraged to decrease vehicle speed and encourage pedestrian safety.
 - The **Gateway** -- areas of Wolcott Village along Route 15 east and west of the Core, -- is planned for a wide variety of higher density residential development, small businesses, commercial operations, and home industries. Larger scale industrial development may also occur, provided potential impacts on adjacent properties are addressed. Most buildings are one or two stories with façade elements such as porches or stoops. The area has shallow to medium front yards, often with fencing or landscaping providing a buffer from the street. "Softer" pedestrian infrastructure such as off-road paths and widened shoulders, may be appropriate in this area. Landscape elements such as street trees that provide a visual cue to motorists that they are entering a more densely developed area are encouraged.
 - **School Street** currently consists primarily of residential uses. A mix of residential uses, including both single and multi-family homes, is expected to occur in this area. Small service oriented commercial uses may be appropriate if they are compatible with the predominantly residential character of the District. Uses might include, but are not necessarily limited to, professional offices, childcare homes, bed and breakfasts, and small studios/galleries. Any non-residential use located on School Street should have a similar exterior design and scale as residential uses. Special care should be taken to ensure that non-residential uses do not create undue traffic burdens on neighborhood streets. Pedestrian connections between School Street, to the Village Core, and to community amenities such as Wolcott Elementary School, and the Lamoille

- Valley Rail Trail are of particular importance in this area.
- **North Wolcott** is a small hamlet along North Wolcott road. Most structures are small, two story. While the District is currently primarily residential, there are several small retail, commercial, and industrial enterprises. Additional commercial and non-residential uses are expected in this area. Non-residential uses should be examined to ensure they do not create undue traffic burdens on the area's rural roads.
- **Shorelands** - The Shorelands District consists of all lands within 500 feet of the normal mean watermark around all lakes, ponds or impoundments in Wolcott exceeding 20 acres. This includes Wolcott Pond, Wapanacki Lake, and Zack Woods Pond. The goal of delineating these areas is to protect the sensitive shorelines of the large lakes in Wolcott. As a result, future development in this area is be limited and subject to conditional use review to ensure environmental impacts and shoreline erosion are minimized.
- **Flood Hazard Areas** – This district shall consist of all lands in Wolcott identified as areas of special flood hazard on FEMA flood insurance maps and further delineated in the Flood Insurance Study covering the town. It is the purpose of this district to minimize and prevent loss of life and property, the disruption of commerce, the impairment of the tax base, and the extraordinary public expenditures and demands on public services that result from flooding. It is, furthermore, the purpose of this district to serve the public health, safety, convenience, and general welfare; to provide the economic and social advantages resulting from planned use of land resources; and to minimize the need for rescue and relief efforts associated with flooding.
- **Wellhead Protection Area** – This district includes those portions of the Town that are within the public water supply source protection areas serving the Elmore Water Cooperative. In order to protect the Elmore Water Cooperative's public water supply, this district will restrict land uses that might impact surface or ground water quality. Uses that involve use or storage of solid or hazardous wastes or store uses, distributes, or stores toxic chemicals, solvents, or fuels shall not be located in this district. In order to ensure adequate ground water recharge, total impervious surfaces for all uses shall be minimized.
- **Route 15 Corridor** – The Route 15 corridor is established to achieve two objectives: to maintain a safe, efficient travel corridor and to encourage commercial and industrial development in areas with the best highway access and exposure to travelers. As the only state route through town, the only sure source of 3-phase power and the likely corridor for advanced telecommunications infrastructure in town, Route 15 is seen as the area where commercial and industrial growth should be concentrated, as it has been in the past.

The linear nature of the corridor is conducive to sprawl and unmanageable access creation. Wolcott has taken several steps to minimize “sprawl” and strip development along Route 15. The Wolcott zoning regulations lengthen Route 15 road frontage requirements to 600 feet with a 100 foot frontage along secondary roads within the Route 15 corridor. The regulations also encourage, and in some cases require shared access points and/or internal circulation roads between commercially developed parcels along Route 15. Finally, the regulations contain development standards to ensure that larger commercial and multifamily development are compatible with the rural nature of the corridor.

The flood plains along the corridor are seen as a very limiting factor for overdevelopment in this district.

- **Fisher Bridge Enterprise** – This area includes all land in and near the Fisher Bridge Industrial Park and also extends northwards into the area permitted for gravel resource extraction. The primary objective of this district is to enable a node of development specifically tailored for industrial uses. This area was created in 2016 with the explicit purpose of dedicating an area for industrial development -- including development that relies on truck and other heavy vehicles. The district is adjacent to Route 15 and served by three-phase electricity. In order to avoid conflicts with through traffic on Route 15, most new development in this District will be accessed from internal circulation roads, rather than the State highway.
- **Rural** - This area includes the balance of the town. Growth is allowed to occur in this district in a similar manner to how it has been over the past 30 years, including low to medium density residential, small and home businesses and industries, farming and forestry, including value-added farm and forestry operations, and small scale hospitality establishments such as bed and breakfasts and agri-tourism.

Timing and Intensity of Growth

Future development in Wolcott should be timed so that the demands placed on community services are not overburdened. The Town has a responsibility to its taxpayers and residents to continue to provide the highest level of service while keeping costs under control. Future development - both residential and non-residential - should be encouraged in a manner that is sensitive to this responsibility.

Implementing the Land Use Plan

The two most common land use planning tools used in Vermont are zoning bylaws and subdivision regulations. Both of these are effective tools to implement the goals and objectives of the land use plan.

Zoning has four purposes as defined in State statutes:

1. to regulate the uses of land;
2. to regulate the dimensions, construction, repair, and removal of structures;
3. to establish dimensions of land, areas, yards and distances; and
4. to set densities of population and intensity of use.

Wolcott's current **Zoning** consists of 6 standard districts and 2 overlay districts (flood hazard and wellhead protection). These areas reflect current and planned land use patterns and other factors that affect development. **Subdivision** regulations apply to the creation of new lots. The size, shape, location, and density of building lots will determine the pattern of development. In short, zoning regulates what someone can build or how they can use their property, while subdivision regulations control the division of that property into two or more lots. In 2016, Wolcott combine its Zoning and Subdivision Regulations into a single "Unified Development Bylaw." This allows for better coordination of review, possibly reducing the number of hearings required for some applications, and allows for a single set of definitions. These Unified Bylaws also contained provisions for voluntary "conservation subdivisions" which enable property owners to cluster development on the most developable portions of their property while maintaining large blocks of farm and forest land and protecting other sensitive natural resources such as wetlands, floodplains, and wildlife habitat. In some circumstances, landowners who create "conservation subdivisions" are also eligible for a "density bonus," such as when they create affordable housing or provide public access.

SECTION 12.

IMPLEMENTING THIS PLAN

There are several ways that a town can implement a town plan. A few of these include:

- Zoning and subdivision regulations
- Impact fees
- A program to purchase of development rights
- Tax policies
- Individual projects and studies
- Education and outreach
- Action by citizen groups
- Capital budgeting
- Assorted other ordinances such as road policies.

Wolcott currently has zoning and subdivision regulations. This plan has called for exploration or potential changes to policies and rules in the regulations, but no broad-based revisions to the zoning or subdivision regulations are being suggested at this time.

Review of Town Roles

There are four local entities in the Town of Wolcott with primary roles in the regulation of land use and implementation of this plan overall: the Planning Commission, Selectboard, Development Review Board and Zoning Administrator. Each board or position has duties subscribed to it by State law in 24 V.S.A. Chapter 117. The statutory text may be revised from time to time, but the basic roles remain:

The **Planning Commission** is charged with drafting the Town Plan and land use rules, including zoning and subdivision regulations. This is considered a “quasi-legislative” role. Once the Planning Commission has approved of its work in drafting plans and regulations, they are submitted to the Selectboard for final adoption. The Planning Commission can also pursue its own non-regulatory initiatives and activities, such as applying for village center designation or planning grants or drafting a capital budget, with the blessings of the Selectboard.

The **Selectboard** executes the legislative functions of the Town of Wolcott, including final adoption of the Town Plan, capital budget or any regulations drafted by the Planning Commission. The Selectboard may also put these tools to a full town vote. The Selectboard also appoints the members of the Planning Commission and Development Review Board and hires the Zoning Administrator.

The **Zoning Administrator (ZA)** is the recipient for all applications for regulated land uses and development in Wolcott. The ZA directly reviews any applications for proposed uses that are permitted by Wolcott’s subdivision and zoning regulations, refers to the Development Review Board any applications that require their consideration (e.g. conditional use), and denies any proposed uses that are in outright violation of the regulations.

The **Development Review Board (DRB)** has the final say on regulated land use and development rulings in Wolcott. The DRB considers all applications for uses covered by conditional use rules, requiring site plan approval or consisting of PUDs. The DRB also hears appeals of Zoning Administrator decisions and makes final rulings.

In a “nutshell,” it can be said that the Planning Commission makes plans and land use and

development regulations, the Selectboard adopts them, and the Zoning Administrator and Development Review Board carry out the regulations. However there is more to it than that, and, given time and energy, each party can find many other ways to implement Wolcott's vision for the future. It is not necessary or feasible for this plan to elaborate on them all.

There are other players as well. Many groups can form to guide their own initiatives, like the Wolcott Historical Society, the Northern Rivers Land Trust, recreational groups and more. There is also the **Lamoille County Planning Commission**, which develops a Regional Plan for to advise the planning activities of all Lamoille County towns, provides other technical assistance when needed, and issues regional approval of Town Plans, making towns eligible for different grant funding sources and other possibilities.

Finally and most importantly, there are the **Residents, Voters and Property Owners of Wolcott**, themselves, who make the most crucial decisions of all: how to use and develop their land, whether to follow the Town's regulations, who to vote to the Selectboard, and where to invest their time, energy and resources to make their vision of Wolcott come alive. Without their actions and support, this Town Plan is nothing but ink on paper.

Recommended Actions for Implementation of the Town Plan

Each section of this Town Plan begins by listing various actions and recommendations pertinent to the subject material. These recommendations are reinforced by stated goals, policies and the background information presented in the sections. There are roles for the Wolcott Selectboard, Planning Commission and other groups to undertake, and all Town board and commission members are urged to read through them. The introductory section (page 6), however, lists top priorities to accomplish over the next eight years.

How the Plan Relates to the Regional Plan and Adjacent Municipalities

Elmore: Two main roads travel from Elmore to Wolcott. The areas along these roads are rural residential. Both towns have zoning and treat development in a similar manner: 2-acre rural residential zoning.

Morristown: Wolcott connects to Morristown via Route 15, the most important roadway in Wolcott. Traffic is a major concern and will have effects on both communities. Morristown has similar zoning with areas south of Route 15 zoned 2 acre Rural Residential and areas north of Route 15 as a Rural Residential with Agricultural Use and Special Industrial District (2-acre residential and 5- acre industrial).

Hyde Park: The border between Hyde Park and Wolcott is fairly remote and crossed by a road only a few times. Hyde Park has zoned this area Rural Residential 5 with 5-acre lot minimum. No conflict is anticipated with Wolcott's 2-acre minimum along this border.

Craftsbury: Many commuters from Craftsbury travel the North Wolcott Road to reach employment opportunities to the south. Wolcott will need to monitor trends in commuter traffic to determine if problems develop.

Greensboro: Wolcott shares a very small border with Greensboro and no roads connect the two towns.

Hardwick: Like Morristown, Hardwick is an important neighbor, joined to Wolcott by Route 15. Hardwick offers employment and retail opportunities although not at the scale of Morristown. Traffic along Route 15 will continue to be important to the two towns. Both have higher-density corridor-type zoning along Route 15. Hardwick's Rural Residential zoning district allows slightly lower densities than Wolcott's (3 acres vs. 2), but this is not seen as a major conflict.

Regional Plan: The Lamoille County Regional Plan is based on the principle of local control. Nothing in the 2018 Wolcott Town Plan is expected to be in direct conflict with the regional plan or will have a negative effect on any future implementation of the regional land use plan. The Wolcott Planning Commission is willing to work with Lamoille County Planning Commission to address any concerns they may have.

Planning Maps

The following maps, which proceed after this page in the order given below, are meant as tools to help visualize many aspects of this Town Plan. When viewing or downloading this Town Plan electronically, the maps might be included in a separate file.

Historic Resources Map

Transportation Map

Lamoille Valley Rail Trail Resources Map

Utilities & Facilities Map

Energy maps: Solar, Wind, Hydro and Biomass Resources and Municipal Considerations Map

Land Resources Map

Agricultural Value Map

Soil Limitations Map

Water Resources Map

Critical Habitat Map

Priority Forest Blocks and Habitat Connectivity Blocks

Future Land Use Map

Wolcott Village Center Designation Map