VERMONT
LAND USE REVIEW BOARD
Application #:
RPC05-0001
Exhibit #: 004
Date Received: 1/15/26

2023 – 2031 LAMOILLE COUNTY REGIONAL PLAN

A Policy and Reference Guide

Adopted: October 24, 2023

Effective: November 28, 2023

Amended: X, X, 2026

Table of Contents

Section 1: Introduction

Executive Summary	1
LCPC: The Organization, the Vision, and the Mission Statement	6
Our Planning Process	10
Implementation Plan	19
Compatibility Statement	32
Economic Development: Strategy	35
Section 2: Getting to Know Lamoille County	**45**
History	46
Demographics	51
Section 3: Where We Live	**70**
Housing: Strategy	71
Housing: Background and Inventory	77
Transportation: Strategy	116
Transportation: Background and Inventory	124
Energy: Strategy	155
Energy: Background and Inventory	173
Telecommunications: Strategy	216
Telecommunications: Background and Inventory	221
Land Use: Strategy	231
Land Use: Background and Inventory	250
Future Land Use Map and Planning Areas	283
Section 4: Our Sense of Place	**287**
Recreation: Strategy	288
Recreation: Background and Inventory	295
Working Lands: Strategy	312
Working Lands: Background and Inventory	317
Water Resources: Strategy	347
Water Resources: Background and Inventory	353
Flood Resilience: Strategy	374
Flood Resilience: Background and Inventory	382
Section 5: Our Culture and Community	**410**
Public Safety: Strategy	411
Public Safety: Background and Inventory	416
Culture and Community: Strategy	432
Culture and Community: Background and Inventory	436
Public Facilities and Services: Strategy	452
Public Facilities and Services: Background and Inventory	455

Table of Maps

Transportation Maps **pages 148-154**
2022 Average Annual Daily
Traffic Points of Congestion
Federal Aid Highways
Highway Functional
Class
Regional Trails
Road Class
Transportation
Resources
Energy Maps **pages 210-215**
Electric Facilities
Potential for Wood Biomass Production and Existing Biomass
Facilities Regional Considerations
Potential for Wind Power and Existing Wind
Sites Solar Potential and Existing Solar Sites
Existing and Potential Hydroelectric Sites
Broadband Coverage Maps **pages 228-230**
Future Land Use Map **page 283**
Village Centers and Village Areas Map **page 284**
Agricultural Soils Map **page 285**
Conserved Lands Map **page 286**
Recreation Facilities **page 311**
Wildlife Resources Maps **pages 342-346**
Priority Forest
Blocks Habitat
Blocks
Natural
Communities
Wildlife
Collisions
Wildlife
Resources
Water Resources Maps **pages 353, 356, 367**
Watershed
Water
Resources
River Corridor Planning
Flood Resilience Maps **pages 393-395**
Special Flood Hazard Areas and River
Corridors Transportation Infrastructure

Vulnerable to Flooding Structures
Vulnerable to Flooding
Public Safety Maps **pages 429-431**
EMS and Rescue
Services Fire
Protection services
Law Enforcement
Facilities
Public Facilities and Services Maps **pages 471-472**
Community Resources
Municipal Water & Wastewater
Appendix A: Act 181 Checklist
Appendix B: 2025 Regional Plan
Survey Summary of Results
Appendix C: Renewable Energy
Generation and Land Area
Conversion Table

Executive Summary

The Lamoille County Regional Plan (the Plan) is a policy and reference document developed by and for the Lamoille County Planning Commission (LCPC) to address issues of common concern among the municipalities of the region. Under Vermont State Statutes, a regional plan guides and coordinates efficient and economic development of the region (see 24 VSA §4302) to promote health and safety of the residents and guides how land is used. As one of the fastest growing counties in Vermont, this Plan serves as a source of information and resources available to municipalities and other partners. It offers a forum for further discussion while providing LCPC with policies and action steps towards achieving regional and municipal goals and objectives that allow the region to grow demographically and economically, while maintaining the recreational, scenic, and resource base critical to our area.

This plan is used to:

- Reflect overall growth trends within the region and address issues of concern at the local and regional level
- Support the goals and issues of the region's communities as expressed in their municipal plans
- Serve as a guiding document for the Lamoille County Planning Commission Board of Directors to direct ongoing activities and develop new initiatives to serve the region and its communities
- Provide a basis to evaluate and review development projects proposed under 10 VSA Chapter 151: State Land Use and Development Plans (Act 250) and 30 VSA §248 (Public Service Board)
- Serve where needed to determine compatibility of state and federal agency plans affecting land use with regional and local planning and development priorities
- Provide information and regional concerns for municipal planning endeavors

The needs and priorities of the County will vary in different areas and change or evolve over the eight-year lifetime of this Plan. To meet the unique needs of Lamoille County's fifteen municipalities and the Region's diverse social, physical, and cultural landscapes, this Plan should be used as a "cookbook" rather than a single "recipe." For example, at a point in time one municipality may be focused on redeveloping its village center or downtown area. This municipality may find the chapters on Economic Development, Housing, and Land Use most relevant, while another municipality may be focused on conserving agricultural or forest land and may find "Section 3: Our Sense of Place" beneficial.

DRAFT

The Regional Plan is structured so that each chapter stands on its own, while also providing appropriate context to understand how it plays into a bigger, region-wide picture. Throughout the Plan development process, the Regional Plan Committee wove together relevant subjects, trends, and livability principles, such as health, wellness, and economic opportunity, into each chapter of the Plan.

The Plan is also cognizant of the fact that most municipalities in Lamoille County do not have local planning staff. Each chapter is divided into a brief Strategy section and a longer Background and Inventory section. By reviewing the Strategy section, a reader can get a quick snapshot of key objectives, policies, and action items. Readers wanting more information have the option to review the Background and Inventory section, which contains data, maps, and analysis that was used to inform the Strategies. In some cases, the Background and Inventory also provide an overview of relevant studies and projects that have been completed by LCPC, municipalities, other regional partners, or State agencies.

The Strategy section of each chapter outlines key objectives relevant to the topic area. These objectives are outlined in aggregate below. Readers are encouraged to review the discussion of each objective in the body of this Plan.

Economic Development

- *Adapt to changing demographics*
- *Invest in vital infrastructure*
- *Technological innovation*
- *Maintain a high quality of life to attract and keep residents and visitors*
- *Mobilize community resources to improve access to health care and coordination of services and to promote a culture of wellness*
- *Encourage and protect the working landscape*
- *Lamoille County is fortunate to have rich earth resources such as sand and gravel. Wise use of these resources enhances the regional economy.*
- *Work with the Northern Vermont Economic Development District to incorporate the Comprehensive Economic Development Strategy into all aspects of regional development.*

Housing

- *Provide for the full housing continuum*
- *Ensure a diverse and affordable housing stock*

DRAFT

- *Consider the costs of housing plus transportation*

Transportation

- *Address safety issues*
- *Maintain and manage existing infrastructure*
- *Enhance mobility by providing transportation alternatives*
- *Maintain the Lamoille County aesthetic, environment, and quality of life*
- *Integrate land use planning and transportation planning*
- *Support regional and local economic vitality*
- *Promote implementation of long-term telework policies that allow employees where/when possible to work remotely*

Energy

- *Reduce Lamoille County's dependence on non-renewable energy sources*
- *Energy generation, transportation, and consumption should be cost efficient and economically beneficial to residents*
- *Diversify the region's large- and small-scale energy production*
- *Encourage local energy production by utilizing existing assets*
- *Ensure Energy generation projects are sited in a way that minimizes impacts to natural resources and aesthetics while encouraging efficient land use design, as identified in the Lamoille County Regional Plan, and respecting goals and objectives of municipal plans*

Telecommunications

- *Adopt a 10-year plan for Lamoille County telecommunications towers and coverage*
- *Complete cellular and mobile phone coverage for all of Lamoille County*
- *Complete Wi-Fi or broadband coverage, or future compatible Internet technology including fiberoptics, for all of Lamoille County*

Land Use

- *Guide growth into Center and Enterprise Areas*
- *Encourage compact development and protect the working landscapes*
- *Protect the region's natural systems and valuable agricultural and silvicultural resources*

Recreation

- *Ensure Lamoille County integrates recreation into the daily functions of the built environment.*
- *Lamoille County's recreation network requires public landowners, private landowners, and user groups to thrive*
- *Respect Private Property - Private property owners are the primary stewards of the County's*

DRAFT

- *recreational opportunities*
- *Recreation is pivotal to Lamoille County's economy*
- *The working landscape provides diverse outdoor recreational opportunities*

Working Lands

- *Ensuring the viability of diverse agricultural and forest-based enterprises*
- *Private property owners are the primary stewards of the County's working landscape -- Private property must be respected*
- *Public Lands contribute to the County's working landscape*
- *Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat.*
- *The working landscape provides diverse outdoor recreational opportunities*

Water Resources

- *Lamoille County has abundant high quality water resources that support a variety of recreational, ecological, and economic uses*
- *Healthy riparian areas are restored and maintained*
- *Water resources that provide public recreational opportunities or are areas of significant historical, scenic, and recreational value are protected*
- *Wetlands and floodplains are restored and protected*
- *Lamoille County's groundwater and surface waters are uniformly of high-quality*

Flood Resilience

- *Communities are flood resilient when they can anticipate, prepare for, respond to, and recover from significant floods*
- *Development is concentrated in areas safe from flooding*
- *Development in flood prone areas is protected from flooding damages and does not cause an adverse impact to downstream areas.*
- *Floodplains and upland forested areas are protected.*
- *Ditches and water control structures for transportation infrastructure such as roads and trails are adequately designed, constructed, and maintained.*
- *Local communities are well-prepared for flooding emergencies*

Public Safety

- *Protect public safety in each of the four phases of emergency management – Preparedness, Response, Recovery, and Mitigation*

Human Services

DRAFT

- *All children deserve the opportunity to grow and develop in a safe, respected environment*
- *Ensure health and wellness needs, services, and facilities are available, affordable, and sufficient for Lamoille County residents and visitors*

Public Facilities and Services

- *Community investments such as educational, cultural, recreational, healthcare, and municipal services will aid in attracting economic development opportunities*

Note: This plan was developed by the LCPC Board of Directors, its staff, its member municipalities, and local/ regional/ state partners. It serves the needs of the Lamoille County region while containing 11 elements as identified in 24 VSA §4348(a) and shall be consistent with four broad planning goals and 14 specific goals under 24 VSA §4302. The following crosswalk is provided to assist the reader with ensuring consistency to statutory requirements.

DRAFT

2023 – 2031 LCPC Regional Plan Statutory Requirements

See Appendix A for the Act 181 checklist. This checklist also notes how the Lamoille County Regional Plan meets the required Plan elements and statewide planning goals.

LCPC: The Organization, the Vision, and the Mission Statement

Who We Are

The Lamoille County Planning Commission (LCPC) provides planning and technical assistance for member municipalities and the public, while remaining consistent with federal and state requirements. Our work results in the development and implementation of plans and projects that support sustainable development and improve the quality of life for Lamoille County residents and visitors.

The legal basis and powers for LCPC as a regional planning commission stem from Vermont laws as stipulated in 24 VSA §4301 et seq., as amended, 24 VSA §4345 et seq. The LCPC was chartered by the municipalities of Lamoille County on February 13, 1964 as the Lamoille County Development Council, with an amendment to the original charter dated February 9, 1988 to change the name to Lamoille County Planning Commission. LCPC is funded in part through the State of Vermont property transfer tax as outlined in 24 VSA §4306(a). The LCPC seeks additional state, federal, and private funding sources to enhance planning and project implementation services the LCPC provides to member municipalities.

Our Vision

Our vision is for Lamoille County to promote a healthy lifestyle, embodied by stewardship of the land, accessible recreation, public services, and local food options, nurturing the arts, historic preservation, and promoting a welcoming culture. The LCPC strives to encourage collaboration and support sustainable growth and the independence of Lamoille County's unique communities.

Our Mission

Lamoille County Planning Commission is political subdivision of the State dedicated to providing planning, information, and technical assistance to guide future growth and mutual understanding among municipalities and regional partners. In February of 2022 the LCPC Board of Directors adopted an Inclusivity Statement that can be viewed on LCPC's website at www.lcpcvt.org/about-us.

Our Goals

- Assist municipalities in the County in quality planning to guide future growth and mutual understanding among the region's municipalities and adjoining municipalities
- Ensure that planning decisions are educated decisions that

DRAFT

are made at the local level and promote meaningful public engagement
- Develop and provide information about Lamoille County and its communities to aid in a well-informed local decision-making process
- Facilitate information sharing of planning communications and resources between local, state, and federal governments
- Balance the region's economy with the natural environment and resource base and protect working lands
- Promote regional and local planning activities that support the well-being of Lamoille County communities, residents, and visitors
- Support and encourage other local/regional organizations working towards enhancing the quality of life for all Lamoille County residents and visitors

Plan Themes

Health Equity and Environmental Justice

Themes of health equity and environmental justice are incorporated throughout the Lamoille County Regional Plan in chapter policies and action items. The Lamoille County Planning Commission, regional partners, municipalities, and residents can play an important role in promoting the health and well-being of Lamoille County communities. Wellness, in its broadest sense, includes not only physical health but also mental, emotional, social, and environmental well-being. All these aspects of wellness contribute to a vibrant, thriving community. By addressing various aspects of health, municipalities can create an environment where individuals are aware of the resources and opportunities needed to live healthier, more fulfilling lives. For a one-stop-shop site to find resources like food, housing, financial assistance, health care, and more visit https://www.findhelp.org/. As defined by the Centers for Disease Control and Prevention, health equity is "the state in which everyone has a fair and just opportunity to attain their highest level of health". Achieving this requires ongoing efforts to overcome economic, social, and other obstacles to health to reduce health disparities. Health equity in community planning links traditional concepts of planning (land use, transportation, facilities, parks and open space, adequate/safe housing) with health themes such as physical activity, public safety, healthy food access, mental health, air and water quality, and social well-being. For more information on health equity planning visit the Health Equity Planning Toolkit at https://www.lcpcvt.org/healthequitytoolkit.

In accordance with Vermont Act 154 and Act 181, environmental justice is incorporated throughout

the Regional Plan and considered in the policies and actions of this plan. Similar to health equity, Vermont's first Environmental Justice law (Act 154) seeks to address environmental health disparities and improve the health and well-being of all Vermont residents. According to the Vermont Agency of Natural Resources, "the purpose of the Environmental Justice Law is to ensure all Vermonters regardless of race, cultural background, or income have equitable access to environmental benefits such as clean air and water, healthy food, and public transportation. The Environmental Justice Law also protects communities from disproportionate environmental burdens such as polluted air and water, climate change impacts, and limited access to green spaces." In line with the Vermont Environmental Justice Law and Act 181, the LCPC promotes meaningful engagement in regional and local decision-making processes. During the 2023 update and the 2026 Amendment of the Lamoille County Regional Plan, the LCPC conducted meaningful public engagement highlighted in the "Public Engagement" section below. To fulfill the Lamoille County Planning Commission's vision and mission, this plan was developed under the following primary objectives.

Equity Analysis

The devastating flooding that occurs on a regular basis in Lamoille County hits marginalized and low-income households the hardest. This occurrence highlights how environmental burdens related to flooding and natural hazards are impacting low income and marginalized communities the most in Lamoille County. Since the July 2023 flood, the LCPC has worked closely with LeARN (Lamoille Area Recovery Network) to conduct direct outreach to flood victims who were displaced during recent flooding events. This collaboration with LeARN involves outreach regarding individual assistance, navigating buyout programs and funding sources, and planning for future flood mitigation projects in flood impacted areas such as Cambridge Village, Jeffersonville, Johnson Village, Wolcott Village, and along the Wild Branch in Wolcott.

These rural communities residing along the Main Stem of the Lamoille River experienced substantial damages because of the federally declared disaster DR-4720 (the "July 2023 floods"). The July 2023 flood imposed significant damage on Wolcott's designated Village Center, including inundating the fire department, town garage, and individual septic systems and leach fields. Transportation infrastructure was also heavily impacted, including damage to a critical town culvert under School Street, the primary road into the Village core. Flat Iron Road (the only other route out of the Village when School Street is inundated), was completely eroded down to bedrock and needed to be rebuilt and riprapped. As a result of DR-4720, the Town of Wolcott approved eight (8) residential property buyouts. The loss of this revenue on the Grand List is amplified with additional debt taken on to respond to and recover from flood damages – the Town took on a $1,000,000 loan to repair damaged local infrastructure. Like Wolcott, Johnson Village homes,

businesses, and critical infrastructure were severely impacted in the DR-4720 flood event. The event resulted in $3,738,093 to date in public assistance for the community. This figure is a low estimate that does not include losses and damage to the wastewater treatment facility, which was under several feet of water and remains in a vulnerable condition. In July 2023, the village cores of Cambridge Village and Jeffersonville Village were fully inundated. During this event, forty-six (46) private structures including senior housing, residences, businesses, and religious institutions sustained significant flood damage with many requiring evacuations. Eight (8) residential structures totaling fourteen (14) dwelling units in the Village of Cambridge are in the buyout process.

Other substantial impacts were also experienced in subsequent disasters: DR-4744 (August 2023 floods), DR-4762 (December 2023 floods), and DR-4810 (July 2024 floods). Some of the hardest hit communities and businesses were in the central stretch of the Lamoille River in Lamoille County including Wolcott, Johnson, Jeffersonville, and Cambridge Village. The table below captures the correlation between the communities along the Main Stem of the Lamoille River impacted the most during the July 2023 flood and median Household Income by Census Designated Place.

Census Designated Place (CDP)	Median Household Income (MHI)°	% Low-to-Moderate Income (LMI)**	# LMI Persons**
Wolcott	$39,904	75%	135
Johnson Village	$48,355	70%	835
Jeffersonville	$57,083	52%	665
Cambridge Village	$50,595	44%	240

Census Designated Places correspond closely with the geography of flood impacts experienced in the hardest hit communities along the Lamoille River in Lamoille County.

***Source: Low-to-Moderate Income Data, Map Application, based on the 2016-2020 American Community Survey*

°Source: U.S. Census

Primary Regional Plan Objectives:

1. To guide growth into and near compact settlements outside the floodplain, whether historic or new, for efficient land use and development.
2. To protect the region's natural and working landscapes by promoting thriving, compact village centers and new growth centers near existing infrastructure, services, and compact housing development, while preserving the scenic character of the surrounding rural countryside.

3. To encourage affordable housing options and a diversity of housing options in Lamoille County including "missing middle" housing development to support Lamoille County's growing and aging population and to support first-time homebuyers.
4. To guide growth that promotes sustainability of the region's natural systems, valuable agricultural and forestry resources including working lands, support access to local food options, and enhance recreational amenities.
5. To promote healthy, thriving communities where residents and visitors feel welcomed.
6. To promote an efficient transportation system that serves the needs of Lamoille County residents and visitors.
7. To promote a diverse and thriving local economy that does not degrade the scenic and rural character of Lamoille County's working lands and historic settlement patterns.
8. To support investment in public infrastructure to support a thriving economy in Lamoille County and new local businesses and housing development.
9. To collaborate with local utilities, municipalities, and state agencies to promote energy efficiency and conservation in the thermal, transportation, and electrical sectors.
10. To consider environmental benefits and burdens on underserved communities in Lamoille County in regional and local planning efforts.

Our Planning Process

Public Engagement

No planning process is complete without including the constituents – the people who will be most impacted by the plan. Throughout the two years it took to develop the *Lamoille County Regional Plan*, the following stakeholders and parties were involved:

• Members of the **Lamoille County Planning Commission Board of Directors** participated at different levels of the Regional Plan update. The **Regional Plan Committee** met monthly to review draft chapters, discuss strategies and policies, gather background information, and engage with interested parties. At Board meetings, representatives had in-depth discussions, focusing on topics in the Plan. Other LCPC Committees, such as the **Transportation Advisory Committee**, **Regional Emergency Management Committee**, **Clean Water Advisory Committee, and Belonging and Inclusion Committee** had targeted dialogue that added to the Plan for relevant chapters.

• **Member municipalities' municipal plans** provided a foundation for this plan. Some municipalities were in the process of updating their plans and others had recently completed a plan amendment. This information was collated into the Regional Plan. A theme of this Plan is respect for the local planning process; thus, this Plan is based on the goals, objectives, and visions of our 15 municipalities.

DRAFT

- **Municipal officials and volunteer board members** provided invaluable feedback and insight into the Plan's development. Members of Selectboards, Boards of Trustees, Planning Commissions, Conservation Commissions, Clerks, Road Foremen, Managers of municipal utilities, and Emergency Management Directors contributed to the plan's text, policies, and goals. Three Information Sessions were held during LCPC Board of Directors' meetings to review and discuss the sections of the 2023-2031 Regional Plan. Invitations were extended to all municipalities and comments were received via email and in person.
- **State agency representatives** were provided an opportunity to review draft chapters and provide feedback that enriched the Plan. A copy of the plan was provided to representatives at the Vermont Agencies of Agriculture, Food and Markets, Transportation, Natural Resources, Commerce and Community Development, Emergency Management, and Health Department. The Vermont Public Service Department and Vermont Department of Health provided feedback on the draft Regional Plan during the drafting stage of the Regional Plan update.
- Prior to and during chapter draft development, **regional organizations, including partners, business representatives, non-profit agencies, service providers,** and **workforce development groups**, were included. In some cases, LCPC staff met with various groups and agencies and in other instances, presenters discussed topics with the Board of Directors.
- **Adjacent Regional Planning Commissions** from Central Vermont Regional Planning Commission, Chittenden Country Regional Planning Commission, Northeastern Vermont Development Association, and Northwest Regional Planning Commission were provided an opportunity to review the draft Lamoille County Regional Plan and provide feedback. No adjacent Regional Planning Commissions provided comments on the draft plan include.
- **Meaningful Engagement with the Public:** Members of the public were invited to engage with LCPC through a Regional Plan Survey. This was accomplished by tabling events across the County on Town Meeting Day, distributing flyers at public and commercial facilities across the County, Notices on Facebook, Front Porch Forum, newspaper notices and press releases, public meetings, information sessions/trainings, and word-of-mouth.

- As part of the 2023 Regional Plan update and development of the Health Equity Planning Toolkit, the LCPC conducted outreach to priority populations. This included direct outreach to the Lamoille Area Racial Equity Alliance, and prevention planning health partners such as Healthy Lamoille Valley, Morrisville Health District, and VT Department of Health.

DRAFT

2026 Regional Plan Amendment and Meaningful Public Engagement

In accordance with Act 181, in early March 2025 the Lamoille County Planning Commission began public outreach for the 2026 Amendment of the Lamoille County Regional Plan to comply with Act 181 and Act 47 statutory requirements. In addition to the stakeholder outreach noted above, in 2025 the Lamoille County Planning Commission conducted meaningful public engagement to inform the 2026 Regional Plan Amendment and the vision for Lamoille County as follows:

- Conducted a Regional Plan Survey receiving 278 responses representing all 10 towns across the County
- Posted flyers about the survey and value of the Regional Plan as a visioning tool at Town Clerks Offices around the County
- Distributed hard copies of the Regional Plan Survey to local Clerk's Offices in all 10 Towns
- Posted Regional Plan flyers at local grocery stores, hardware stores, and other local businesses
- Distributed the Regional Plan Survey on online forums (Front Porch Forum, via email, LCPC's website, Facebook page)
- Tabled in 3 communities across the County (Cambridge, Stowe, Wolcott) at 2025 Town Meeting Day and distributed flyers for Town Meeting Day in other Lamoille County communities.
- Distributed flyers about the Regional Plan and Survey at local Planning Commission, Selectboard, and Village Trustee meetings.
- Conducted municipal trainings and informational sessions on Act 181 and Act 47 hosted at LCPC Board of Directors meetings open to the public
- Met with local Planning Commissions, Selectboards, Village Trustees, municipal planning staff to outreach about Act 181, Act 47, the Lamoille County Housing targets, and the proposed changes to the Regional Plan Future Land Use map and how it informs statewide designation programs
- Hosted check-ins with the Lamoille County Board of Directors throughout the Regional Plan Amendment process. The LCPC's Board of Directors represents the 15 municipalities (towns/ villages) in Lamoille County.
- Hosted Regional public forums on Lamoille River and tributary hydraulic modeling and flood mitigation projects
- Conducted targeted outreach for visioning of sites pursuing property buyouts as a result of the 2023 and 2024 floods
- Coordinated Regional Plan outreach and strategies with the development of the Regional Flood Recovery and Resiliency Plan, Municipal Plan updates, and other Local Hazard Mitigation Plan updates
- Hosted public hearings in accordance with statute

DRAFT

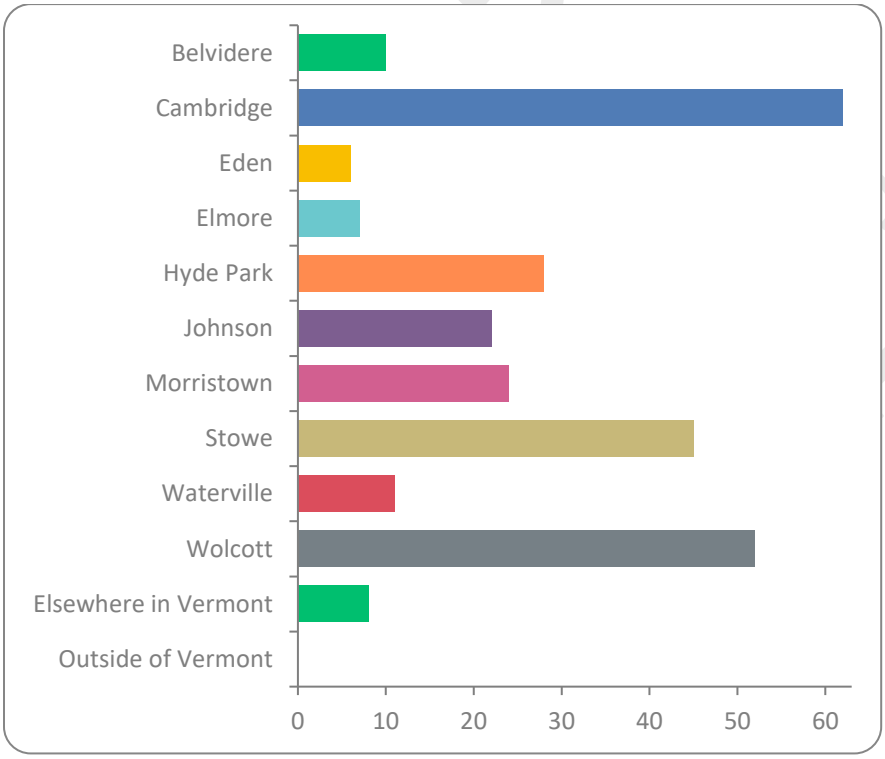
2025 Regional Plan Survey Results

The 2025 Regional Plan Survey yielded 278 responses representing participants from all 10 towns in Lamoille County. The purpose of this survey was to address the following objectives:

- To promote meaningful public engagement
- To inform the Regional Plan goals, policies, and vision statement
- To inform how we think about future development and the vision for Lamoille County

This next section highlights a summary of the 2025 Regional Plan Survey results. For the full survey results see Appendix B. Out of the 278 survey respondents, communities in Lamoille County with higher response rates included Cambridge (23% of responses), Wolcott (19% responses), and Stowe (16% of responses). See figure below for a breakdown of survey respondents by towns in Lamoille County. The average age of survey respondents is 54, meanwhile the medium age in Lamoille County is 41 years old, according to the 2023 American Community Survey.

2025 Regional Plan Survey: Respondents by Town



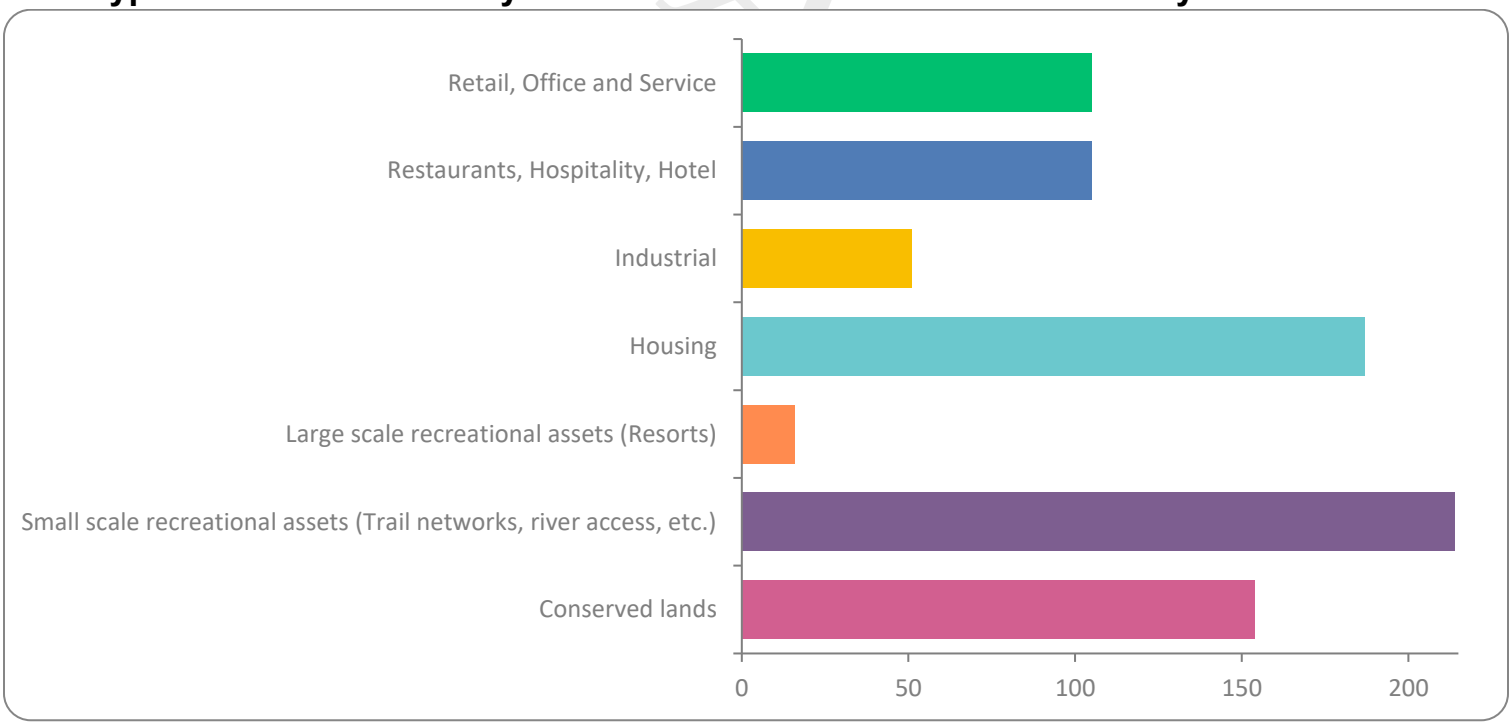
When respondents were asked what Lamoille County's greatest strengths are, the top four themes were 1) quality of life, 2) Scenic beauty, 3) recreational assets, and 4) sense of community.

When asked what the greatest challenges and needs in Lamoille County are, the top five response categories were:

- Housing shortage
- Flooding and natural disasters
- Livable wages
- Affordability
- Food access

When asked later in the survey about the greatest affordability challenges in Lamoille County, housing and taxes rose to the top. Respondents were also asked how they would like to see Lamoille County grow. Responses that rose to the top included an increase in small businesses and investment in public infrastructure. However, when asked what type of land use participants would like to see more of in Lamoille County, housing, small recreational assets like trails and river access, and conserved lands were the top common themes. See figure below for a breakdown of responses to this land use question.

What types of land use would you like to see more of in Lamoille County's future?

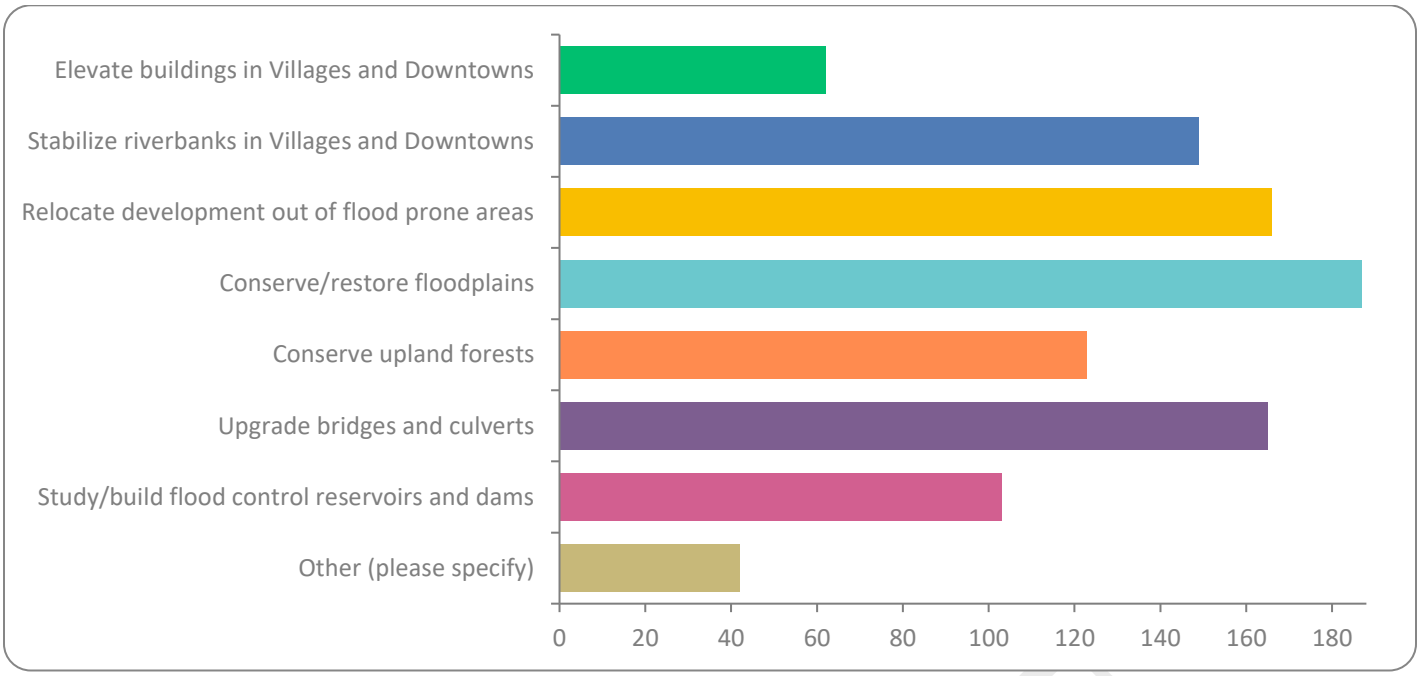


Survey respondents were asked what type of housing they would like to see built in Lamoille County. The top four included 1) Single Family, 2) Multi-family housing, 3) workforce housing,

and 4) apartments. When asked where people would like to see new housing built, the majority responded near village centers/ downtown or in a downtown/ village center.

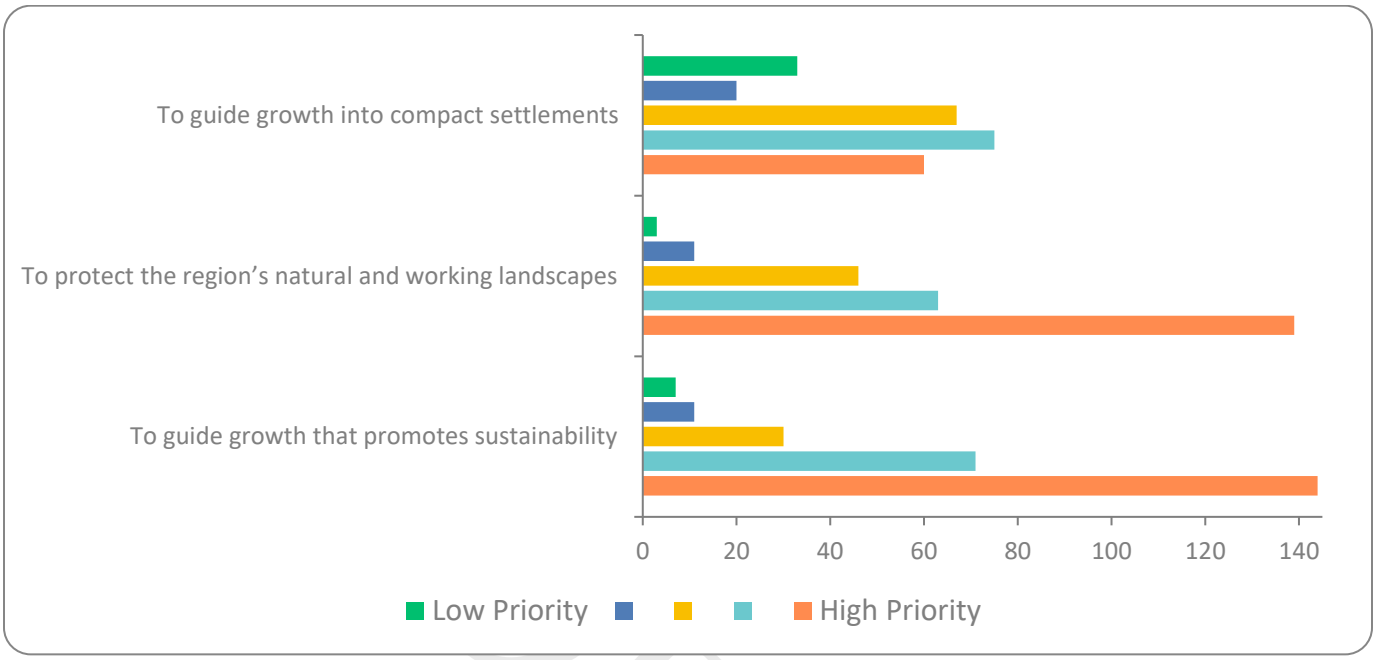
Survey respondents were also asked how Lamoille County should respond to the changing climate and increased flooding. The top response categories were relocating development out of the floodplain, conserving/restoring floodplains, upgrading bridges and culverts, and stabilizing riverbanks in villages and downtowns. See figure below for this response breakdown.

How should Lamoille County respond to a changing climate and recent increase in flooding events?



When asked how respondents feel about the current regional plan themes, protecting natural and working landscapes and guiding growth that promotes sustainability were the top priorities. See figure below for survey responses by priority of Regional Plan themes. This emphasis on protecting working landscapes and promoting sustainability continues to be reflected in the Regional Plan's overarching goals and objectives. Survey responses were used to update the goals, primary objectives, and policies found in the Regional Plan to reflect current priorities in Lamoille County such as housing shortage, affordability, protecting working lands, access to healthy foods, investing in public infrastructure, investing in recreational assets, and guiding new growth out of the floodplain in response to the changing climate and increased magnitude of recent flooding events.

How do you feel about the current regional plan themes?



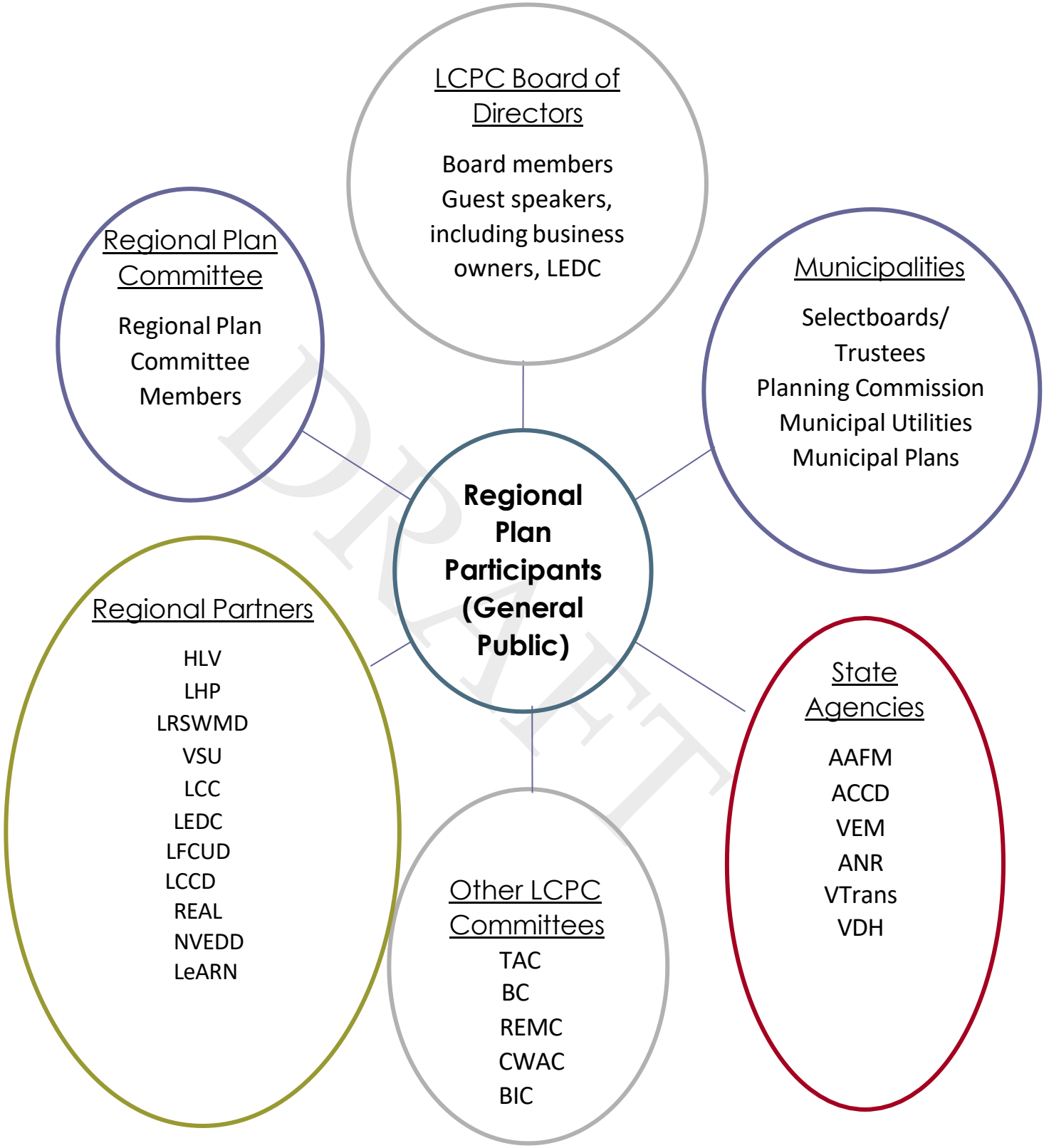
LCPC Standing Committees and Regional/State Partners

The following diagram captures the Lamoille County Planning Commission's standing committees that act as Advisory Committees to the LCPC Board of Directors. Also noted are state, regional, and municipal partners the LCPC collaborates with to carry out its mission and gather input for Regional Plan updates. Please see below for a list of acronyms for LCPC committees and partner organizations.

Acronym	Organization Name
LCPC Standing Committees	
BIC	Belonging and Inclusion Committee
BC	Brownfields Committee
CWAC	Clean Water Advisory Committee
REMC	Regional Emergency Management Committee
TAC	Transportation Advisory Committee
Regional Partners	
HLV	Healthy Lamoille Valley
LCC	Lamoille Chamber of Commerce
LEDC	Lamoille Economic Development Corporation
LeARN	Lamoille Area Recovery Network
LHP	Lamoille Housing Partnership
LCCD	Lamoille County Conservation District
LFCUD	Lamoille FiberNet Communications Union District

LRSWMD	Lamoille Regional Solid Waste Management District
NVEDD	Northern Vermont Economic Development District
REAL	Racial Equity Alliance of Lamoille
State Partners	
ACCD	Vermont Agency of Commerce and Community Development
AAFM	Vermont Agency of Agriculture and Food Markets
ANR	Vermont Agency of Natural Resources
VEM	Vermont Emergency Management
VDH	Vermont Department of Health
VTrans	Vermont Agency of Transportation

DRAFT


Regional Plan Participants (General Public)
LCPC Board of Directors
Board members
Guest speakers, including business owners, LEDC
Regional Plan Committee
Regional Plan Committee Members
Municipalities
Selectboards/ Trustees
Planning Commission
Municipal Utilities
Municipal Plans
Regional Partners
HLV
LHP
LRSWMD
VSU
LCC
LEDC
LFCUD
LCCD
REAL
NVEDD
LeARN
State Agencies
AAFM
ACCD
VEM
ANR
VTrans
VDH
Other LCPC Committees
TAC
BC
REMC
CWAC
BIC

DRAFT

Implementation Plan

The following table presents a summary of action items that will be implemented throughout the upcoming planning cycle and beyond. Certain items have a lifespan beyond this plan's eight years. This is done to recognize that planning is a long-term process and it can take many years to achieve the vision. Additional action items are found throughout each section of the plan and will be implemented as resources allow. Funding for implementing this plan will occur through annual workplans and contracts with the Agencies of Commerce and Community Development, Transportation and the Department of Public Safety, with additional funding from grants, municipal appropriations, and contracts with partner organizations. The Plan will also be implemented through regulatory proceedings described below.

Action Item (This table has been updated with a summary of the action items from the 2023 Draft Regional Plan)	**Timeframe to Complete Action/Status**
Economic Development	
Continue to provide municipal assistance for bylaw updates, municipal planning, grant assistance, and other tasks. LCPC will provide municipal assistance to achieve compatibility with the policies in this regional plan as well as with applicable state statutes.	Ongoing
Update the Substantial Regional Impact criteria as necessary to meet the purpose of VT State statute, municipalities, and regional interests.	2 years
Assist communities with appropriate state village center/downtown designation and work with municipal or regional entities to obtain funding to install or improve municipal services.	Ongoing
Work closely with municipalities and business owners to diversify recreational opportunities through emerging trends and new investments or re- investments in existing recreational infrastructure.	Ongoing

Collaborate with Lamoille Economic Development Corporation (LEDC) and/or local community economic councils to advance economic development strategies. Host meetings, at least annually, between local and regional economic development partners to coordinate strategies for workforce development, marketing, planning, and infrastructure needs, or other topics as necessary to facilitate a coordinated, collaborative economic growth strategy for Lamoille County. Coordinate with regional partners through the Northern Vermont Economic Development District and apply the Comprehensive Economic Development Strategy in regional planning work.	Ongoing
Housing	
As needed, update the county-wide housing study and needs assessment. This study addresses the full "housing continuum" and will include an analysis of housing availability and affordability, including "specialized housing". The study recommends strategies for increasing availability and/or affordability where they are lacking within housing types on the continuum.	2 years
Work with municipalities to designate Growth Centers and Neighborhood Planning Areas.	Ongoing
Upon request, assist municipalities with non-regulatory language or ordinances that provide creative ways of addressing housing needs. Housing options that could be explored include: community loan funds, cooperative housing, co-housing, reverse mortgages, HomeShare Now, and other techniques aimed at increasing housing opportunities and affordability.	Ongoing

Upon request, assist municipalities with individualized housing plans that accommodate the diverse and changing housing needs of each municipality through non-regulatory mechanisms, zoning and subdivision regulations, and other mechanisms. Assistance will include further education and outreach to the public about housing responsibilities, statutes, and needs for sheltering.	Ongoing

DRAFT

Conduct trainings throughout the region on land use tools and creative solutions to address housing needs, including, but not limited to, form based codes, PUDs, density bonuses, alternatives to large lot zoning, voluntary and compulsory inclusionary zoning and types of subdivisions, and other creative solutions to address housing needs. Trainings will be tailored for Planning Commissions, Development Review Boards, and other municipal decision-makers.	Ongoing
Transportation	
Continue to work with the Green Mountain Byway Steering Committee and the Smugglers' Notch Partnership to implement recommended projects and update management plans. Work with interested communities to extend the Green Mountain Byway north.	Ongoing
Utilize data such as traffic volumes, highway sufficiency, bridge inspections, and high crash location data to assist in the regional project prioritization process.	Ongoing
Encourage and assist in the implementation of low-cost safety improvements such as signs, pavement markings, and educational campaigns as short-term or interim solutions to identified highway safety issues.	Ongoing
Assist regional transit providers in identifying areas where services should be expanded.	Ongoing
Assist municipalities with developing transportation infrastructure inventories and capital budgets in an effort to effectively manage municipal highway infrastructure and prioritize improvement projects.	Ongoing
Assist municipalities in identifying needed Park and Ride improvements, including accommodations for public transit and bicycles.	3-5 years
Energy	
Work with planning commissions to incorporate energy efficiency and conservation measures into municipal plans and zoning bylaws.	2-4 years

DRAFT

Coordinate with local utilities to assist with outreach on current energy incentives and programs to promote electric options for heating/cooling, transportation, and renewable energy generation.	Ongoing
Coordinate with local utilities to host bi-annual or quarterly meetings of utilities serving the County to foster collaboration and unified messaging to Lamoille County residents and businesses.	1-3 years
Share and post on LCPC's website, funding opportunities to address hazard trees and utility safety concerns regarding Emerald Ash Borer.	1 year
Collaborate with utilities to host regional meetings to foster collaboration and information sharing of funding opportunities.	Ongoing
Land Use	
Explore and develop alternatives to wastewater infrastructure, such as innovative wastewater treatment options and development of decentralized wastewater systems. Work with municipalities to develop community wastewater management districts serving Center Areas and/or to develop low-interest loan programs for septic repair and upgrades. Provide language to the State Environmental Protection Rules to encourage greater use of "Innovative/Alternative Systems and Products" and waterless waste treatment options.	Beyond 8- years
Identify existing vacant or underutilized structures, industrial sites, and brownfield sites that could be redeveloped and/or reused. Assist with redeveloping these sites.	Beyond 8-years
As new developments are proposed, work with developers and municipalities to ensure future developments must not place an undue burden on the ability to provide public and community services, such as schools, roads, water, sewer, emergency access, etc. Where such services are impacted, including services that are provided by entities other than the host municipality, LCPC will recommend the municipalities pursue off site mitigations or financial mitigation such as impact fees.	Ongoing

DRAFT

Identify infrastructure limitations to support industrial development in Enterprise Areas and Center Areas. Assist municipalities in pursuing funding and financing to address these limitations, provided such investments support the three primary land use objectives described in this plan.	Beyond 8- years
Telecommunications	
Assist municipalities with the creation of new or expanding existing Wi-Fi hotspots for residents and visitors.	Beyond 8 years

Support the Communications Union District's efforts to increase infrastructure that can include broadband coverage in Lamoille County through the build-out of fiberoptic networks.	Ongoing
Broadcast government hearings, public meetings, and other important public gatherings online.	Ongoing
Implement tools and provide resources for public high speed internet access in villages and downtowns. Such tools include, but are not limited to, development of public access Wi-Fi zones, establishment of tele-centers, or development of publicly accessible "internet cafes."	Beyond 8 years
Support the use of social media and online networking tools to increase community connections among residents, visitors, and local businesses.	Ongoing
Recreation	
Work with municipalities, developers, and state and regional partners to incorporate outdoor recreation facilities and amenities into future plans, including sidewalks and connections to existing recreation facilities or trails; work to ensure continued public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails; and identify, provide, and protect recreation opportunities wherever appropriate.	Ongoing
Support recreational infrastructure projects that are designed for multiple types of users.	Ongoing

DRAFT

Continue to support efforts that will lead to regional year-round, multi-use trails that link municipalities within Lamoille County and to neighboring municipalities, such as the Lamoille Valley Rail Trail and Stowe-Morristown Path.	Beyond 8 years
Support local efforts to expand recreational opportunities through new and improved facilities or amenities such as playgrounds, municipal parks, athletic fields, trailheads, kiosks, and signage.	Beyond 8 years
Working Lands	
Work with municipalities, LEDC, and other economic development agencies to identify viable uses for the County's lower quality timber.	Beyond 8-years
Work with communities to ensure that regulations in the Rural and Working Lands Areas allow for diverse farm and forest operations, including onsite value-added production, and expanded definitions for State Accepted Agricultural Practices. Modernize regulations to reflect growth of non- traditional activities (such as agritourism, back-yard sawmills, on-farm cafes, etc.).	Ongoing
Support local efforts to create and manage town forests.	Ongoing
To prevent undue fragmentation of farm and forestland, work with communities to investigate innovative tools for maintaining the working landscape. Tools include alternatives to traditional "large lot zoning" such as density averaging and Planned Unit Developments, density transfers/transfer of development rights, and overlay districts.	Ongoing
Work with forestry and conservation partners to explore funding opportunities to protect priority forest blocks and wildlife habitat connectors. This may include funding to purchase, conserve, or maintain priority forest blocks for critical wildlife habitat, wildlife migration, and recreation.	Ongoing
Water Quality and Flood Resiliency	

DRAFT

Mitigate floodplain encroachments wherever and whenever possible. Mitigation may include flood proofing, property acquisitions, "compensatory storage," floodplain reconnection/re-vegetation, and/or implementation of projects identified in a river corridor plan or local hazard mitigation plan. Support planning for, funding of, and Implementation of mitigation projects to reduce damage in flood hazard areas.	Beyond 8- years
Work with State partners, communities, and community partners to accurately map and reflect river corridors and erosion areas. Assist municipalities in implementing wetland, fluvial erosion, river corridor, and riparian buffer protections to preserve these resources.	Ongoing
Encourage and work with communities to adopt NFIP and river corridor bylaws and standards. Encourage municipalities to adopt flood hazard regulations that strengthen protections in the flood hazard and river corridor areas.	5 - 6 years
Support local efforts to acquire and/or improve river access points.	Ongoing
Work with municipalities to develop and implement long-term groundwater protection measures.	Ongoing
Support municipalities acquiring title or easements to wellhead protection areas and recharge areas serving municipal and community water supplies	Ongoing
LCPC will work with ANR and municipalities to implement actions required under the new Water Quality rules. Work with municipalities to conduct periodic wastewater facilities analysis to determine the remaining capacity of systems based on projected growth and to determine if any system weaknesses exist.	Ongoing
Public Safety	
Proper training and equipment are essential to emergency response. LCPC staff will continue proper training to respond to anticipated disasters and assist emergency responders and municipal officials with access to proper training and equipment.	Ongoing
LCPC will continue to map critical facilities and vulnerable populations for use in local and regional emergency planning.	

DRAFT

	Ongoing

Assist municipalities in adopting and updating all-hazard mitigation plans, emergency operations plans, flood hazard regulations, and other planning documents to strengthen emergency preparedness and community resiliency.	Ongoing
Work cooperatively with Emergency Management Directors and the Local Emergency Planning Committee to improve emergency planning.	Ongoing
LCPC staff are an integral part of the Incident Command Team at the State Emergency Operations Center. To this end, LCPC supports continuing efforts for staff to provide regional and statewide response capability.	Ongoing
Upon request, assist municipalities in revising bylaws to require a dry hydrant or fire pond at any new development more than one mile from nearest rural water source.	Ongoing
Support the implementation of local and regional mitigation activities, projects and programs that reduce the impact on life and property.	Ongoing
Human Services	
Work with communities to utilize healthy community design principles, such as walkable and bikeable communities, access to healthy food, access to parks and recreation, and mixed-use development.	Ongoing
Support services, facilities, and opportunities for the aging population to remain active members of the community.	Ongoing
Evaluate the need for enhancing childcare facilities and services in the county. This includes conducting a needs assessment and evaluation of availability of public space to be used as childcare facilities; working with municipalities to address identified needs for childcare facilities or services including infrastructure needs (water/sewer) to support the operation of childcare facilities ; assisting employers and child care facility operators with access to financing for child care facilities, and supporting initiatives to develop childcare facilities where a need is proven.	Beyond 8- years

DRAFT

Public Facilities	
Collaborate with regional and local partners to improve and identify new parks, recreation, and green spaces as well as strategies to build vibrancy throughout the region.	Ongoing
Upon request, assist municipalities with amendments to ordinances and zoning that promote crime prevention and reduce substance misuse in licensed establishments, retail outlets, and public spaces.	Ongoing
Assist municipalities with identifying non-regulatory tools to strengthen healthy communities.	Ongoing
Collaborate with regional and local partners to improve and identify new parks, recreation, and green spaces as well as strategies to build vibrancy throughout the region.	Ongoing

Support projects that reinforce the value of youth in the community.	Ongoing
Prioritize infrastructure investments that promote environmentally safe and healthy lifestyles.	Ongoing
Work with schools, municipalities, parents, and other organizations to find creative ways to improve safe walking routes to school and reduce student time on busses.	Ongoing
Infrastructure is encouraged to support implementation of Vermont's Universal Recycling law, including increased accessibility to composting sites for organics diversion.	Ongoing

DRAFT

Public Service Board (Section 248 Hearings)

The Vermont Public Service Board is a quasi-judicial body empowered to review and issue a Certificate of Public Good for all new electrical, gas transmission, generation, and telecommunications facilities (30 VSA 248). Under the requirements of this statute, the Board is required to find that a proposed project:

- Will not interfere with the orderly development of the region;
- Is needed to meet present and future demand; and

- Will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment, and the public health and safety.

30 V.S.A. 248(b)(1) stipulates that Vermont's Public Service Board (PSB) may not issue a certificate of public good for a proposed utility facility unless the PSB finds that the facility "will not unduly interfere with the orderly development of the region with ***due consideration having been given to the recommendations of the municipal and regional planning commissions.***" LCPC participates in PSB proceedings and determines conformance with the Regional Plan is in accordance with the "Lamoille County Planning Commission's Role in Act 250 and State Permitting" Policy, as most recently amended by the Board of Directors.

Vermont's Land Use and Development Law, Act 250

Vermont's Land Use and Development Law (VSA Title 10, Chapter 151), commonly known as Act 250, was established in 1970 as part of a statewide planning and development control effort in response to rapid growth across the state. Act 250 reviews and issues permits to applicable residential, commercial, industrial developments, and public facilities. Permit decisions are based on the applicant's demonstration that the proposed project meets 10 specific criteria outlined in Statute. Under Criteria 10, Before the Act 250 District Commission may grant an Act 250 permit for a proposed development, the District Commission must find that the development is ***"in conformance with any duly adopted local or regional plan or capital program."*** [10 VSA 6086(a)(10) – "Criteria 10"]

Under state law, Regional Planning Commissions are a statutory party to review projects within the region, and in some cases outside the region. LCPC participates in Act 250 proceedings and determines that conformance with the Regional Plan is in accordance with the "Lamoille County Planning Commission's Role in Act 250 and State Permitting" Policy, as most recently amended by the Board of Directors.

What is Substantial Regional Impact

Substantial Regional Impact (SRI) relates primarily to Act 250 and Section 248 Public Service Board proceedings. In both Act 250 and Section 248, all applications must conform (Act 250) or give due consideration to (Section 248) ***both the local and regional plan.*** In these proceedings, State Statute [24 VSA 4348 (h)] requires that "the provisions of the regional plan shall be given effect to the extent that they are not in conflict with the provisions of a duly adopted municipal plan…. to the extent that such a conflict exists, the regional plan shall be given effect if it is demonstrated that the project under consideration in the proceedings

would have ***a substantial regional impact.***"

There are several key points to remember regarding substantial regional impact:

- There is ***no statewide definition for Substantial Regional Impact***. Rather, Statute [24 VSA 4345a (17)] requires each regional planning commission to define "substantial regional impact" in its regional plan.
- The Regional Plan's definition of Substantial Regional Impact is NOT used to determine whether a proposed development is or is not in conformance with the Regional Plan. ***A substantial regional impact can be positive or negative.*** As such, the definition below does not identify development projects that are "non-conforming" or should be opposed, but characterizes those projects that may influence more than one community and/or the Region as a whole.
- Substantial Regional Impact is NOT a threshold for the Regional Planning Commission (RPC) providing comments related to an Act 250 or Section 248 application. In fact, ***Statute requires the RPC to appear before the Act250 District Commission and the Public Service Board*** to aid them in making determinations regarding conformance with the Regional Plan regardless of whether there is a Substantial Regional Impact [24 VSA 4345a (13) & (14)].

Lamoille County Substantial Regional Impact Definition and Thresholds

For the purposes of this plan and for all purposes defined by Statute, Lamoille County Planning Commission establishes the following thresholds as the definition of substantial regional impact in Lamoille County. To the degree possible, these thresholds are organized to corresponded to the chapter headings in the Regional Plan

Economic Development

- Location of a new employer or expansion and/or relocation of an existing employer which is estimated to create the following number of new jobs within five years of any and all final permit approvals:
  - 50 jobs in a Town with a population of 2,500 or more (inclusive of Villages).
  - 30 jobs in a Town with a population less than 2,500 (inclusive of Villages).

(Note, for purposes of this criteria, the number of new jobs shall be measured based on total number of individuals employed, not full-time-equivalents)

Housing

- Removal or demolition of 10 or more units of housing that is affordable to a household earning up to 120% of the host community's median household income.

Transportation

1. A development that would substantially affect capacity or safety of the

transportation network, as measured by one or more of the following: Results in (a) 75 or more new daily trips, or (b) total new daily trips equal to or greater than 5% of the Average Annual Daily Traffic of the roads immediately servicing the project, whichever is less (*Note: number of trips will be based on a traffic study, and/or the most recent ITE Trip Generation Manual if no such traffic study is available)*

2. Contributes to a reduction in the peak hour Level of Service (LOS) below LOS D, unless a municipal plan approved in accordance with 24 VSA 4350(b) indicates that LOS F and/or E is acceptable to maintain desired development patterns and/or bike/pedestrian access. *(Note: LOS will be based on a traffic study, or available VTrans data if no such traffic study is available).*
3. Creates or exacerbates documented safety issues, including but not limited to high crash locations and corridors, and corridors or segments scheduled for systemic local road safety program improvements. *(Note: Related documentation and reports are available through Vtrans and/or the Lamoille County Planning Commission)*
4. Has the potential to adversely impact local roads in another town. Potential adverse impacts include, but are not limited to heavy vehicles, temporary construction traffic, noise, air quality, roadway conditions, and/or bicycle and pedestrian safety.
5. Has the potential to exacerbate a transportation related concern raised by the legislative body of another municipality or identified in the Plan of another municipality in accordance with 24 VSA 4382(8).

Energy/Telecommunications

- A development that would necessitate a capacity upgrade on sub-transmission networks (34.5kV or greater) or the bulk transmission system (115kV or greater), or any other substantive capital improvement.

Land Use

- Residential Development that creates:
  - 50 or more housing units in a Center or Enterprise Area, or
  - 20 or more housing units in the Rural/Working Lands, Working Lands/Forest, or Working lands/Floodplain area(s).
- Commercial, Industrial, or other Non-Residential Development that creates:
  - 50,000 square feet gross floor area or more in a Center or Enterprise Area, or
  - 20,000 square feet gross floor area or more in the Rural/Working Lands, Working Lands/Forest, or Working lands/Floodplain Area(s)
- Expansion/creation of a public water supply or public sewer/wastewater system outside of a Center or Enterprise Area.
- A development located in a part of the region (other than a Center or Enterprise Area) which does not presently contain development of similar type and scale and has the potential to have impacts beyond the Town in which it is located.

DRAFT

- A development lying within two or more municipalities

Water Resources, Flood Resiliency, and Working Lands

- A development that has the potential to adversely impact the following wildlife travel corridors identified in the Regional Plan, or other wildlife travel corridors identified in a municipal plan or by the Vermont Department of Fish and Wildlife:
    - Willow Crossing Area on Route 15 near the Cambridge/Johnson Town Line
    - Route 118 in Eden and Belvidere
    - Route 12 in Elmore
    - Area of Route 100 north of North Hyde Park Village at the Eden Town Line
    - Shutesville Hill area on Route 100 near the Stowe/Waterbury Town Line.
- A development that has the potential to adversely impact the following ridgelines (ridgelines will be further discussed in Energy chapter) identified in the Regional Plan, or other ridgelines identified in a municipal plan:
    - Mount Elmore
    - The Worcester Range
    - Mount Mansfield
    - The Sterling Range
    - the Woodbury Range
    - Butternut Mountain
    - Belvidere Mountain
- A development in which off-site mitigation associated with the project, such as the acquisition of development rights or similar vehicles, may directly result in the reduction of the value of property(ies) on the grand list of a municipality other than the host municipality.
- Any development within a 100-year floodplain or river corridor, based on the most recent FEMA FIRM maps, VTANR River Corridor Maps, or site-specific study.

Public Safety, Education, Culture and Community, and other Public Facilities and Services

- A development that has the potential to significantly impact the community services of a neighboring municipality.
- A development generating demands that has the potential to significantly affect public safety services (police, fire, EMS, etc) provided by two or more municipalities, including the host municipality, and/or which may require those entities to make major investments in personnel, equipment, vehicles, dispatch/communications, or other capital infrastructure.
- A development generating student numbers that may significantly affect school capacities in one or more neighboring communities and/or union schools.

DRAFT

Compatibility Statement

The *2023-2031 Lamoille County Regional Plan* (the Plan) was developed in consultation with representatives of and input from our 15 member municipalities. The Plan focuses on development in areas best able to accommodate growth. Member municipalities exhibit Vermont's historic settlement pattern of development, with the majority of growth directed towards compact areas surrounded by the rural countryside. This Plan and municipal plans seek greater affordability in the cost of living. Agriculture, forestry, and other resource-based uses are encouraged throughout municipal plans and this Plan, as well as commercial and industrial uses in areas best able to accommodate that type of development. The LCPC reviewed the goals and policies contained in municipal plans, as well as other plans in the region, to ensure compatibility between the goals and policies in this Regional Plan and other plans. If compatibility problems arise, LCPC will work with municipalities to resolve this issue.

Compatibility with Adjacent Regions

Cooperation among and between neighboring regions is integral to ensuring growth and development occur at rates that ensure Lamoille County's municipalities can continue to provide services and resources. As Chittenden County continues to urbanize and its housing costs increase, the western part of Lamoille County feels greater pressures on its roads and housing needs. Future public transportation services in Lamoille County will expand travel accessibility to residents, students, visitors, and job seekers in Lamoille County and neighboring regions. To the northeast, significant development proposals, should they reach their full and desired potential, may impact Lamoille County residents, environment, and infrastructure. Vermont's "Agricultural Renaissance", driven in part by Hardwick's agriculture and food economy, may impact eastern Lamoille County's Agri-entrepreneurial opportunities. As recreation evolves into more year-round use, activities like the Lamoille Valley Rail Trail will continue to expand recreation and economic opportunities and require inter-regional coordination.

Communities recognize the need to work collaboratively to achieve their own goals. For example, Conservation Commissions are strengthening relationships between residents of municipalities in and out of Lamoille County. Critical wildlife corridors or invasive species do not adhere to municipal boundaries and building partnerships between Lamoille County organizations and their counterparts in other regions allows concerned parties to address issues before they become problems. An example of local Conservation Commissions working collaboratively includes volunteer conducted Ash Tree Inventories in the public right-of-way in Lamoille County Towns. This effort was led by the Lamoille County Regional

Invasive Insect Preparedness Team, to prepare for hazards and financial impacts related to infestations of the Emerald Ash Borer.

Further, what is happening outside of Lamoille County's borders can influence residents' quality of life and services offered within its borders. Lamoille County takes pride in offering a high quality of life to its residents. The Plan seeks to find a balance between maintaining existing services and developing at a pace which accommodates changes to year-round and seasonal housing stock, schools, roads, workforce, natural resources, health, and culture.

While Lamoille County is impacted by its neighbors, it is important to consider how changes in Lamoille County can impact our neighbors. It has been stated throughout this plan that Lamoille County is one of the fastest growing counties in Vermont. The costs of land and housing have already been demonstrated to be more affordable in Lamoille County than in adjacent regions. Lamoille County's openness to business expansion, land values, municipal incentives, proximity to major transportation networks, and available technical assistance, combined with a high quality of life, make it an attractive place for commercial, industrial, and residential growth or relocation. The Regional Plans of Lamoille County's neighbors do not present any conflicts but leave open many opportunities to collaborate:

Central Vermont Regional Planning Commission (CVRPC) *(adjacent municipalities: Calais, Waterbury, Woodbury, Worcester):* Through the *Central Vermont Regional Plan*, Washington County recognizes a need to preserve and promote a viable agricultural economy, culture, and land base. Adjacent municipalities share similar characteristics to their Lamoille County counterparts. Many Lamoille County residents work in Washington County. The Montpelier/ Barre area provides significant civic resources for Lamoille County residents. In the future, residential and commercial development pressures in Montpelier/ Barre may creep towards Lamoille County. Upcoming capital transportation projects may increase and facilitate smoother traffic flows. LCPC works closely with CVRPC in many project areas, particularly transportation planning and initiatives.

Chittenden County Regional Planning Commission (CCRPC) *(adjacent municipalities: Bolton, Underhill, Westford*): Adjacent municipalities in Chittenden County are designated as "Rural Planning Areas with village centers". Growth is not planned for or encouraged in these areas according to CCRPC's *ECOS Plan* (2018). Rural Planning Areas are characterized by low-density development and a working landscape with sensitive and protected areas. Chittenden County is frequented by Lamoille County residents for work, entertainment, and other services. Chittenden County's labor force draws from Cambridge and other parts of

Lamoille County, where housing is often more affordable. Both Cambridge and Stowe fall within a 45-minute commute zone to Chittenden County communities.

Northeastern Vermont Development Association (NVDA) *(adjacent municipalities: Albany, Craftsbury, Greensboro, Hardwick, Lowell):* Areas of Caledonia and Orleans County are primarily forested with towns identified as village centers providing services for residents. *NVDA's Regional Plan for the Northeast Kingdom* (2015) identifies a need to protect recreation lands, prevent loss of wetlands, maintain historic development patterns, enhance the movement of goods while reducing commercial traffic, and better integrating land use and planning. The Plan recognizes that Morristown-Waterbury is a Labor Market Area potentially impacting Craftsbury, Greensboro, and Hardwick. New developments in Newport, Burke, and Jay are expected to draw workers from adjacent communities, particularly those from Lamoille County; proposed job growth may also spur new housing and/or commercial development in Lamoille County. The Plan also recognizes that the "success of value-added agricultural enterprises in Hardwick over recent years has had some effect on developments in Wolcott". Future development projects may reverberate throughout Lamoille County in ways large and small, including housing needs, schools, transportation, and workforce development. Full impacts are still unknown. Cooperation and collaboration between NVDA and LCPC is strongly encouraged to facilitate reasonable growth and development for Lamoille County's municipalities. Future transportation improvements should seek to foster smooth, efficient, multi-modal transportation through the regions. Strengthening the connection between Wolcott and Hardwick's agricultural enterprises could benefit both municipalities and both regions.

Northwest Regional Planning Commission (NRPC) *(adjacent municipalities: Bakersfield, Fairfax, Fletcher, Montgomery):* Franklin County has generally maintained a traditional pattern of densely settled villages surrounded by farm and forest land, although recent high growth rates have led to scattered residential development. Adjacent municipalities' land use areas are similar to Cambridge, Waterville, and Belvidere ("Conservation & Forest Resource Planning Area" and "Agricultural Resource Planning Area"). No major development projects are discussed in the *Plan for the Northwest Region* (2015) or made known through other means. Shared impact areas with Lamoille County include water quality, transportation increases, and wildlife habitat management. Franklin County and western Lamoille County share many public safety resources and a Vermont Agency of Transportation district.

DRAFT

Economic Development: Strategy

Economic development is an integral part of the planning process. Through an understanding of where our economic strengths and weaknesses lie, and our long-term needs and goals, we can plan for growth of our communities at a pace which local and regional infrastructure can sustain. The regional economic development planning effort must incorporate the challenges, needs, and successes of its communities to set the long-term vision for the region while meeting the goals of individual communities.

A diversified and dynamic economic development plan illustrates the interdependence between high quality of life, a clean environment, high-paying jobs, regional income, public revenue, and greater opportunities for individuals.

This Plan takes a new approach to economic development. The Strategy provides an overview of the economic structure and vision for Lamoille County. Throughout the Plan, economic development opportunities, challenges, policies, and programs are discussed in individual chapters. It is LCPC's vision to integrate economic development priorities into a holistic planning approach. For our regional economy to grow and thrive, we need stable infrastructure that includes high speed internet access, transportation, parking, and water/wastewater; an educated, healthy, and skilled workforce; natural resources; sound land use policies, and a vision for future development; a diversity of energy sources; affordable housing; access to affordable food, recreation, and cultural activities; and the amenities that make Lamoille County a desirable place to live. Economic development is achieved through investment in all aspects of planning.

A healthy, vital, and sustainable economy is required to balance human, natural, and capital resources to provide the public with a strong social safety net, environmental protection, high-quality public services, quality roads, and good schools. The Regional Plan's economic development objectives are:

> ***Adapt to changing demographics:*** Lamoille County's working age population is higher than state average. While the County's population of retirees continues to grow, this population can provide experience, knowledge, and resources to younger groups. Finding appropriate and affordable housing for a variety of residents on the housing continuum is vital to the workforce. More demographic data can be found in the Demographics chapter of this Plan.
> ***Invest in vital infrastructure*****:** Today, infrastructure is more than water, wastewater, and electricity. It requires phone, data, and internet accessibility, parking, road network

infrastructure (bridges and culverts), renewable energy, innovative wastewater treatment, universal recycling, and stormwater management. New developments planned around existing infrastructure can lower costs while re-thinking site design can lower new development costs. Infrastructure is framed in the Transportation, Land Use, and Energy chapters.

Technological innovation: To remain competitive in a changing economic environment, LCPC recognizes the value of technological advancement through mobile communication, high speed internet, and fast paced expansion of new technological trends. Technology is changing rapidly. Municipalities can support these changes by encouraging responsible telecommunications towers, home-based businesses that rely on highspeed internet (and its future equivalent) and adapting regulatory and non-regulatory practices to meet the demands of new and small businesses. Existing businesses must recognize the need to collaborate, coordinate, and experiment with new business models. Read more in the Telecommunications and Broadband chapter.

Maintain a high quality of life to attract and keep residents and visitors: As the recreational heart of Vermont, Lamoille County is fortunate to offer abundant recreation activities year-round. Mobile and aging "Baby Boomers", families, and the professional workforce settle in Lamoille County for its recreation, culture, scenic beauty, safe neighborhoods, and access to transportation. Excellence in academics, affordability, a burgeoning arts and food scene, and community cohesiveness are supported here. More information is found in the Public Facilities and Recreation chapters.

Tourism is an economic engine for Lamoille County. Recreation, agriculture, arts and culture, historic resources, scenic landscapes, and food and beverages are vital components to attract visitors to Lamoille County from throughout Vermont, the northeast, the United States, and even across international borders. This Plan recognizes the importance of sustainable growth and development of the tourism industry to the region's economy. More information can be found in the Recreation and Working Lands chapters.

Mobilize community resources to improve access to health care and coordination of services and promote a culture of wellness: Social and environmental factors contribute to our overall health and well-being. Community design, our transportation systems, access to goods, services and recreational opportunities, safe and affordable housing, and safe working conditions, are all examples of environmental conditions that have significant impacts on health. Find out more in the Housing, Transportation, and Human Services chapters.

Encourage and protect the working landscape: Renowned for its beauty, 80% of Lamoille County is covered in forests. The agricultural renaissance flourishing in Vermont is alive in Lamoille County. Read more in the Working Landscapes and Water Resources chapters.

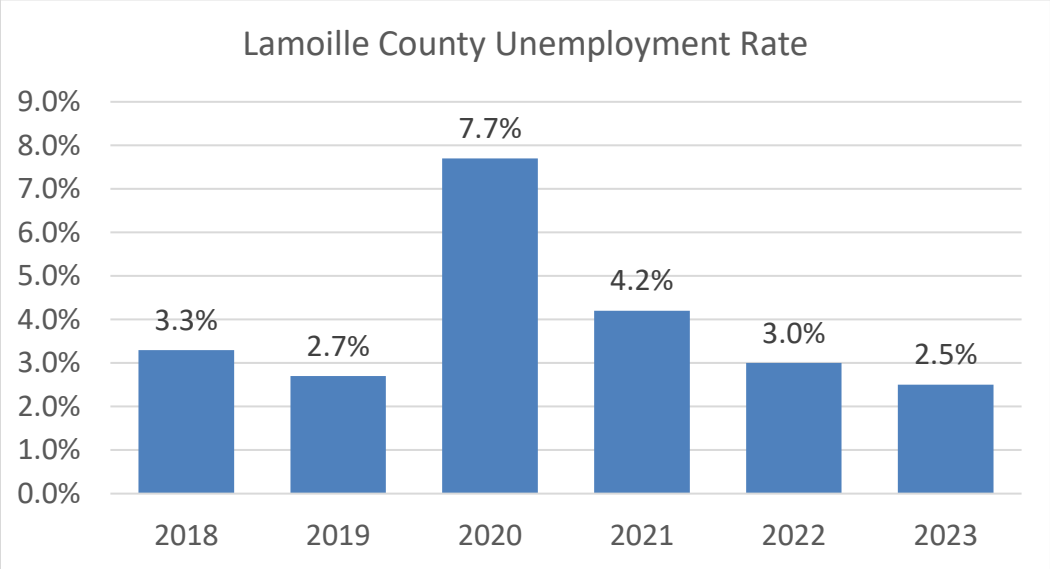
Lamoille County is fortunate to have rich earth resources such as sand and gravel. Wise utilization of these resources enhances the regional economy and provides a local source

of materials critical to regional infrastructure. Reuse of exhausted mines and gravel pits may also create opportunities to address other important regional needs.

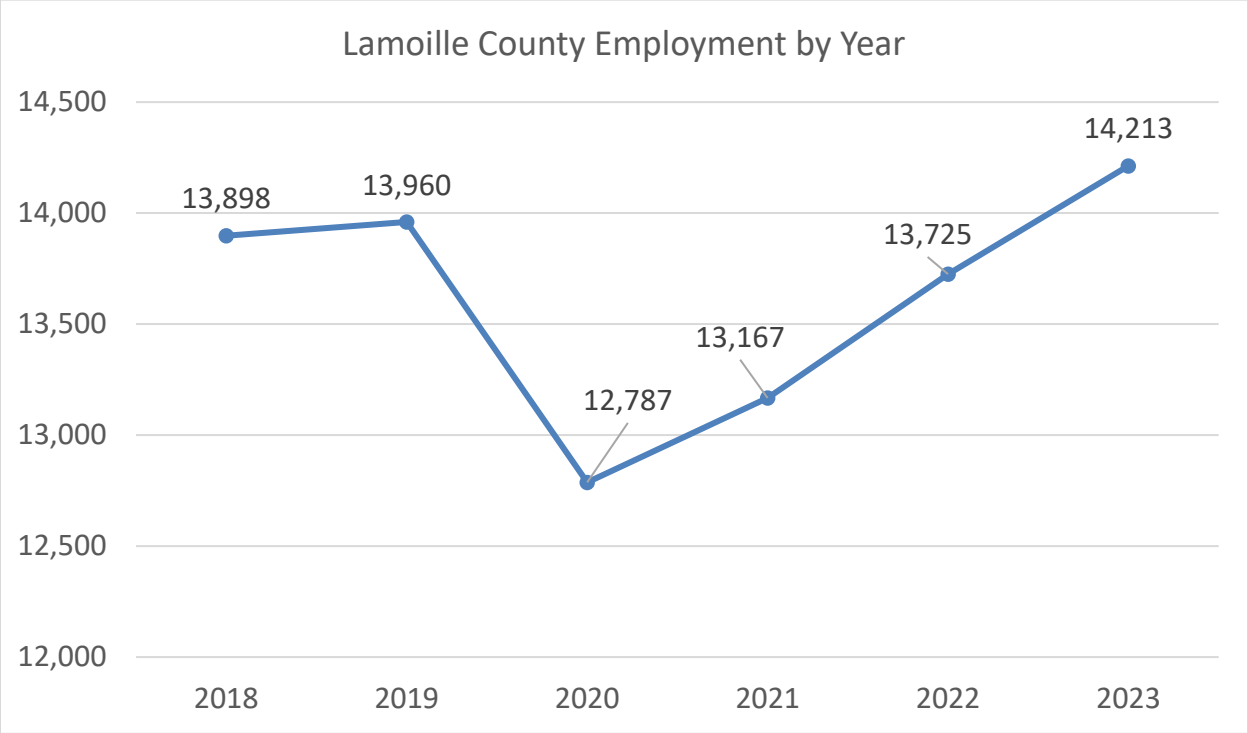
Economic Impact of the COVID-19 Pandemic

According to data from the Vermont Department of Labor, the graphs below show total employment and unemployment rates prior, during and after the Covid-19 Pandemic. In 2018 the county had an unemployment rate of 3.3% and a total employment of 13,960 people. Lamoille County felt the impact of the pandemic most in 2020, with a sharp decrease in employment and an unemployment rate of 7.7%. Since then, total employment has steadily increased, and the unemployment rate has dropped. The State saw similar impacts, starting with a total of 346,553 people employed and a 2.5% unemployment rate in 2018. Vermont had a sharp decrease in the total number of people employed in 2020, leveling out at 320,708 people employed, and the unemployment rate rose to 5.6%.

Despite the struggles experienced by Lamoille County workers during the global pandemic, the county had more total workers and a lower unemployment rate in years following the outbreak. As of December 2024, Vermont's total employment count was 343,840, which is just below the pre pandemic value of 346,553. As of December 2024, Vermont's unemployment rate of 2% is comparable to the pre-pandemic values.



Source: Vermont Department of Labor



Source: Vermont Department of Labor

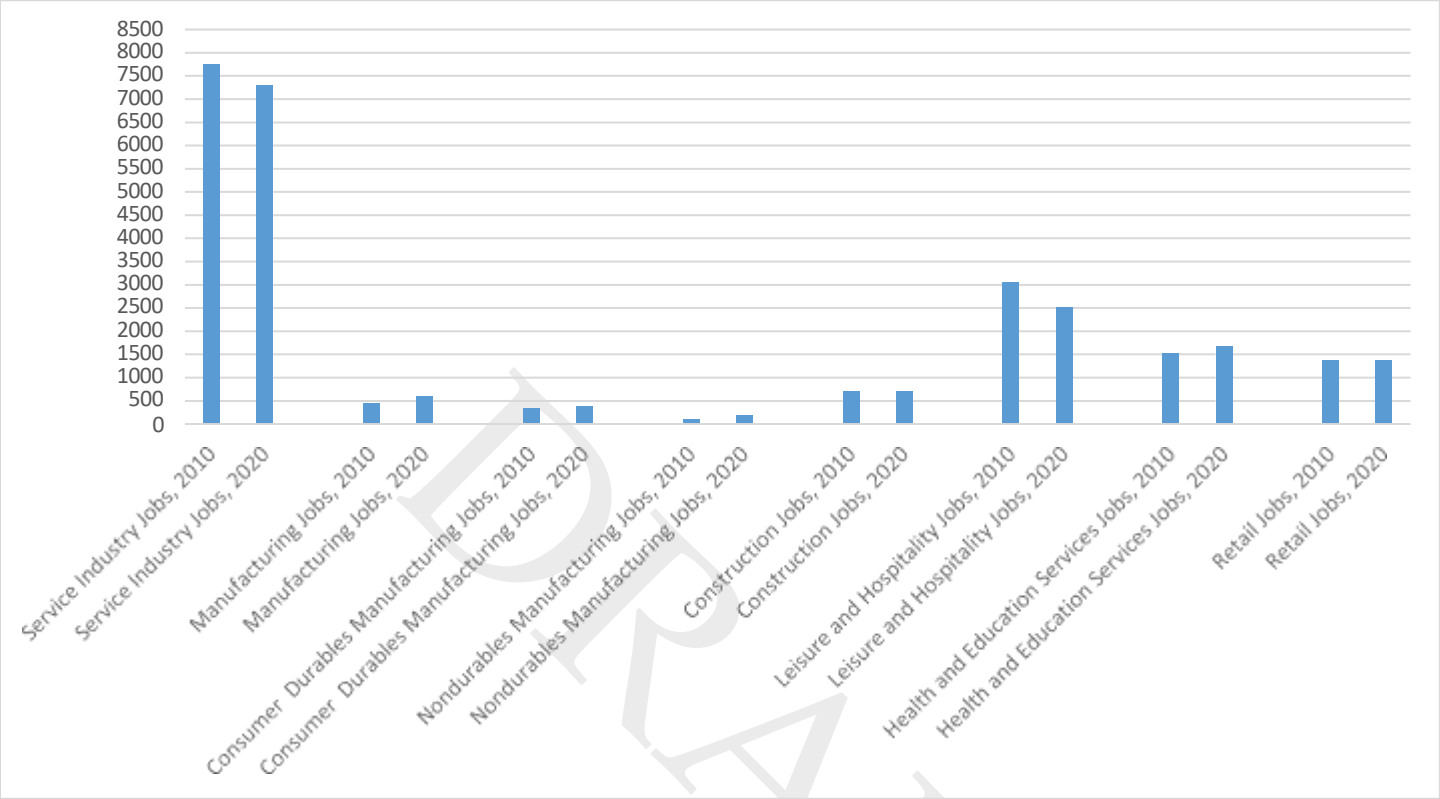
Trends in Jobs and Wages

The composition of the Lamoille County economy today is a reflection of the changes that have occurred in the region's economic base in past business cycles:

- The Services industries account for 6,555 jobs, or 63% of all Lamoille County jobs. The number of service establishments increased 12.9% from 2010 to 2020 while the number of employees decreased by 2.7%.
- As the number of manufacturing jobs increased by 32.5% from 2010 to 2020, wages increased 46.6%.
- In 2020, Consumer Durables Manufacturing (products sold directly to consumers or consumer dealers – "heavy" goods) included eight sectors, 19 establishments, and 390 jobs.
- The same pattern can be seen in the Nondurables Manufacturing sector. Now, non-durables manufacturing includes six sectors and 25 establishments for 197 jobs.
- The Construction sector has seen change in employment since 2010. The number of establishments increased by 2.3% from 2010 to 2020.
- Leisure and Hospitality is still the largest industry within the Services sector with over 2,505 jobs in 2020, the majority of these jobs in hotels. This sector contains the ski area employment.
- The Health Services industry has historically played a significant role in the region. In 2020, the Education and Health Services sector included 1,672 jobs, a slight increase from 2010.

- Retail accounts for almost 13% of all jobs in the County.

Trends in Jobs 2010-2020



DRAFT

Earth Resources

Although not as prominent as in other regions of the state, Lamoille County has a mining and quarrying tradition that continues today. Talc, soapstone, and asbestos were primary earth resources in the past.

Today, gravel is the primary earth resource being extracted in the region. Lamoille County is one of the most gravel rich counties in the state. The Lamoille River basin drainage area provides sand and gravel deposits. These resources have played an important role in the development that has occurred in the region over the past decade. They serve the economy by providing fill, building foundations, road material, septic systems, jobs, and tax revenue.

Gravel resources also play an important economic role for the towns and individuals that own and operate them. Municipally owned gravel pits lower the cost of purchasing and transporting gravel. Privately owned pits provide income, tax revenue, and jobs. However, development and growth that fuels the demand for the region's sand and gravel also impacts their availability. Those lands that are most likely to contain sand and gravel deposits are also

in high demand for development. Once development has occurred, the sand and gravel resources beneath them are no longer available. Many of the impacts relating to gravel extraction are site specific (i.e., noise, air quality, aesthetics) and are typically addressed at the local level or through the Act 250 process.

To control runoff and limit the aesthetic impacts of abandoned pits, Act 250 generally requires that sand and gravel pits be restored or re-vegetated once they are no longer in operation. In some cases, exhausted pits can be restored and used for other purposes, such as providing leveled land for housing or other development. Given the need for land for both housing and industrial use, LCPC should consider partnering with owners of existing pits and regional economic development entities to determine potential long term uses for pits once commercial grade gravel or sand has been extracted. A viable redevelopment plan can provide for needed regional development needs while offsetting the owners' costs for restoration.

DRAFT

POLICIES AND ACTION ITEMS

1. ***Policy:*** *LCPC strives to create an environment that encourages business expansion, creation, and relocation, employing Lamoille County residents in jobs that pay livable wages and benefits.*

Action Items:

- Conduct a needs assessment with strategic partners to identify and pursue specific industries and businesses for Lamoille County's municipalities and the Region.
- Assist communities with appropriate state village center/downtown designation and work with municipal or regional entities to obtain funding to install or improve municipal services.
- Consider a study where shared resources may increase partnership with other organizations supporting economic development in Lamoille County.

2. ***Policy:*** *LCPC encourages economic development which prioritizes diversification of the Region's economic base through the expansion of existing companies and/or the addition of new companies, including value-added industries.*

Action Item:

- Encourage development in Center Areas as identified on the Future Land Use Map

by working with local and regional entities to identify vacant and underutilized lands and buildings for commercial and/or industrial development.

- Encourage State offices to locate in Lamoille County Center Areas.
- Work closely with municipalities and business owners to diversify recreational opportunities through emerging trends and new investments or re-investments in existing recreation infrastructure.

3. **Policy:** *The economy of Lamoille County should continue to encourage and enhance recreation and related recreational activities, organizations, and industries to ensure the vitality of the Region's tourism industry and quality of life.*

Action Items:

- Ensure regional growth does not diminish the value and availability of outdoor recreational activities.
- Use recreation as a tool to preserve land and promote land stewardship while encouraging economic development opportunities that consider impacts to natural resources.
- Encourage new businesses and entrepreneurial activity in recreation sectors.
- Outdoor activities, such as mountain biking, that diversify the region's year-round tourism economy, are encouraged.
- Working with strategic public and private partners, assist in developing a regional marketing plan that unifies the Region's diverse recreation offerings.
- Encourage the publication of local and regional recreation guides to highlight the Region's recreational offerings and provide funding opportunities to user groups to create guides or maps.
- Encourage a coordinated trail system and network that connects similar uses to one another throughout the County, building on the strengths that each facility provides.
- Foster communication and cooperation between schools, municipalities, and sporting organizations to build a coalition of recreation enthusiasts in small communities.

4. **Policy**: *The LCPC supports implementation of the Comprehensive Economic Development Strategy adopted by the Northern Vermont Economic Development District of which LCPC is a member. The CEDS is a roadmap toward achieving economic prosperity and resiliency in Northern Vermont and includes the following:*

Action Items

- Goal 1: Build Economic Resilience in the Northern Vermont region

DRAFT

- Goal 2: Cultivate Business Growth
- Goal 3: Improve and Expand Infrastructure
- Goal 4: Develop the Workforce
- Goal 5: Promote Quality of Life in Communities
- Goal 6: Disaster Recovery.

Having an affordable and sufficient housing stock for the workforce is a critical component to achieving these economic development goals.

5. **Policy**: *The LCPC supports regional planning efforts to increase workforce housing development in Lamoille County.*

Action Items (Cross referenced from Housing chapter):

- Assist every municipality in planning for the full spectrum of the "Housing Continuum" to meet present and future population needs, including, but not limited to, entry level housing, manufactured housing parks, transitional housing, accessory apartments, senior housing and assisted living facilities, multi-family housing, single-family housing, and duplexes
- Support housing that allows elderly residents to age in their communities, including but not limited to accessory units and senior housing.
- Work closely with existing housing organizations on the planning, financing, development, and management of affordable housing projects in Lamoille County to ensure all residents have affordable shelter options year-round.
- Advocate for state policies and funding for initiatives that increase housing opportunities and affordability.
- Upon request, assist municipalities with non-regulatory language or ordinances that provide creative ways of addressing housing needs. Housing options that could be explored include: community loan funds, co- operative housing, co-housing, reverse mortgages, HomeShare Now, and other techniques aimed at increasing housing opportunities and affordability.
- Action Item: Coordinate with regional partners through the Northern Vermont Economic Development District and apply the Comprehensive Economic Development Strategy in regional planning work.

6. **Policy:** *LCPC Supports the manufacturing and marketing of value-added agriculture and forest products and new opportunities that allow working lands enterprises to remain viable.*

Action Items:

- Work with developers and municipal boards to include the "Right-to-Farm" concept in

DRAFT

municipal planning and planned residential developments / planned unit developments.

7. ***Policy:*** *To ensure a predictable and streamlined permitting process, LCPC will work with municipalities to provide clear standards to assess applications for commercial, industrial, and agricultural developments.*

Action Items:

- Upon request, LCPC will assist municipalities with zoning ordinance revisions to promote compatibility between land uses.
- Work with municipalities to develop planning documents that:
  - Support home-based businesses and remote work
  - Facilitate the housing development process by identifying appropriate lands for use
  - Encourage diverse and appropriate economic opportunities

8. **Policy:** *LCPC supports efforts to coordinate the development of business incubation in the region to support entrepreneurial activity and new business development, in cooperation with strategic partners.*

Action Items:

- Collaborate with Lamoille Economic Development Corporation (LEDC) and/or local community economic councils to advance economic development strategies.

9. **Policy:** *LCPC supports efforts that build regional capacity to access sufficient sources of capital to adequately fund the expansion and development of Lamoille County businesses.*

Action Items:

- Work with municipalities and regional partners to support the enhancement of the economic base of rural areas through local and regional planning that provide for a limited amount of suitable and compatible commercial and industrial activity.
- Work with municipalities and regional partners to encourage regional and multi-town economic development strategies.

10. **Policy:** *LCPC supports municipal efforts to purchase and operate gravel pits for use on local roads.*

DRAFT

Action Items:

- Provide technical and grant writing assistance to municipalities seeking to purchase sand/gravel pits for municipal use.
- Encourage State level regulations that do not unfairly burden municipal sand and gravel pits.

11. Policy: *This Plan recognizes the importance earth resource extraction plays in maintaining local infrastructure, providing local employment, and in supporting economic development.*

Action Items:

- Recognizing that earth resources are integral to supporting economic and efficient development, sand and gravel pits should be permitted, provided all State and local regulations are met.
- Operators of sand and gravel pits are encouraged to consider potential restoration and reuse of the site to further community and regional goals once the resource is exhausted.

DRAFT

Section 2: Getting to Know Lamoille County

History

Lamoille is the youngest county in Vermont. It was chartered by the state in 1835. Before that, the area that now contains the 10 towns of Lamoille County was distributed, at various times, among Chittenden, Franklin, Rutland, Washington, and Orleans Counties. At the time of its incorporation, the county contained 12 towns. The towns of Mansfield and Sterling, both located in the most mountainous part of the county adjacent to Smugglers' Notch, were eventually disbanded and their acreage distributed to other towns. The county attained its current boundaries by 1855. It is not definitively known where the name Lamoille originated. The most commonly accepted explanation is that it is a corruption of the French for Seagull – La Mouette.

Many of the towns were chartered in 1781, although settlement did not commence until later. The first European settlers harnessed the power of the rivers in the county by building grist mills and sawmills along their course. Potash and whiskey were early exports. Most settlers practiced subsistence farming, raising sheep and pigs for meat and cows for dairy. Dairy farming soon became predominant, and butter and cheese were early exported out of the county. With the advent of the railroads and better methods of refrigeration, liquid milk became a staple crop.

Lamoille County is currently, and has historically been, a major producer of maple products – originally sugar and subsequently syrup. Many farmers today can remain viable because of their extensive sugar bushes.

Within the towns, denser settlements became villages, many of which are still in existence. Hyde Park, Johnson, and Morristown currently contain an incorporated village while Cambridge has two – Cambridge Village and Jeffersonville. These villages and others are the historic heart of the county.

Pre-Colonial Native American Occupation

Indigenous Americans (Ex: Abenaki Tribe) have lived in Vermont for at least 12,900 years. Lamoille County offered a pathway between the Green Mountains and Lake Champlain, and between the Winooski River to the south, and Lake Memphremagog in the north. Although no permanent settlements have been identified, the remains of stone tools and hearth sites attest to occupation as far back as the Early Woodland Period (c 1000 BCE). Native Americans in this period would have occupied seasonal camps, utilizing local resources such as fish, grains, and other food, and raw materials. Gold could be found in Stowe, copper

DRAFT

in Eden, and lead in Belvidere. Ochre and talc can also be found in the county such as in Johnson and were probably exploited as well, although no direct evidence of their exploitation has yet been found. These seasonal camps were probably occupied year after year.

Because these seasonal camps were so ephemeral, they left little in the way of material remains. A general survey of sites in the county was undertaken in 1985, using local informants and surface reconnaissance. This method found 14 prehistoric sites, 13 find spots (locations where evidence consisted of a few, or only one, item), and 1 historic site. As of 2014, 45 prehistoric sites had been recorded in Lamoille County, most along rivers or their tributaries. The location of known sites is not surprising, since most archaeology is done at the time of bridge replacement or renovation. The lack of evidence for sites in upland areas should not be taken as proof that no sites exist in those areas, only that no one has looked there. Absence of evidence is not evidence of absence.

Historic Occupation

As stated above, most of the towns in the county were chartered in 1781, but the first settlers did not arrive until 1783. Cambridge was the first town settled in Lamoille County. The rivers in the town, Lamoille, Seymour, and Brewster, offered perfect locations for mills, both grist mills and sawmills. These were the first commercial establishments in town. Remains of the mills can be seen along the Brewster River, if you know where to look, but no systematic survey of these sites has been undertaken. The same is true in the other towns in the county.

Villages quickly developed at strategic locations along the rivers, most of which still exist. Although the effects of time, weather, and especially fire, have taken a toll on historic structures in the county, most villages contain structures dating from the early to mid-19th century. These villages are the core of the county.

Wooded areas in the county often hold remnants of earlier occupation in the form of cellar holes. This is especially true in the upland areas, where Sterling and Mansfield – the lost towns – were located, but cellar holes can be found throughout the county. The presence of lilac bushes in incongruous places is evidence of early occupation as well. Unfortunately, little exploration of these sites has been attempted. There is rich history locked in these sites.

Where Do We Go From Here?

Archaeologically, Lamoille County is almost a blank slate. Although Act 250 requires archaeological testing for all projects using state or federal funds, these

DRAFT

projects are almost exclusively related to transportation, skewing the little information we do have towards the river valleys. Flooding, which occurs regularly along all the water courses in the county, erases the remains of seasonal camps that may have existed in or near the floodplain.

To understand the long, rich history of the county it is important to begin to identify and record archaeological sites – both pre-contact and historic. There are many ways to begin the process without engaging a professional archaeologist. The process of excavation is destructive and should only be started after a clear set of questions, which the excavation will attempt to answer, has been formulated. Local historical societies, conservation commissions, schools, and interested citizens can begin the process by:

- Interviewing local farmers to identify and record find spots of prehistoric artifacts;
- Locating and cataloguing artifacts in private collections;
- Studying historic maps to determine where buildings once existed that are no longer standing;
- Interviewing descendants of the earliest settlers who may have memories or stories passed down through the generations.

Historic Structures

The village centers contain historic structures which need to be catalogued and preserved. Several Lamoille County towns have designated historic districts on the State and/or National Register of Historic Places. See Historic Districts and Structures map below at the end of the History section.

Other villages need to begin this process. Local historical societies could take the lead and bring schools in to learn not only history, but the research methods necessary to complete the inventory. Villages that are not yet designated village centers may seek this designation so that local businesses will have an incentive to participate in the cataloguing. As of the writing of this Plan, Lamoille County contains 16 Designated Village Centers. Approved boundary maps of Designated Village Centers/Downtowns in the county can be viewed on LCPC's website at: https://www.lcpcvt.org/villagecenters.

In addition to seeking Designated Village Center or Designated Downtown status, towns may consider the Certified Local Government (CLG) program. This program requires communities to develop and implement local legislation for the protection of historic properties, and makes towns and villages eligible to apply

DRAFT

for federal historic preservation grants open only to CLGs. Currently only Stowe, Waterville, and Cambridge Village in Lamoille County are CLGs.

This Plan, and the State of Vermont, has a stated policy of encouraging development in village centers. To make that happen, villages need to be inviting and interesting places for people to live. Preserving the historic character of the villages is important in creating that atmosphere. In addition, seeking and receiving Designated Village Center/Downtown and Certified Local Government status entices business development to the community which, in turn, makes the village a more inviting and interesting place to live.

From the past to the future

There is much that can and should be done to understand and preserve the rich history of Lamoille County, both above and below ground. What is needed is a catalyst to bring together members of the community having many different interests. Both historical societies and conservation commissions are interested in preserving the past, albeit in different ways. Planning commissions often steer development towards historic centers. Schools want to teach local history and research methods to their students. Educators could use catalysts such as:

Presenting programs on history co-sponsored by historical societies and conservation commissions to bring together diverse sections of the community and instill interest in pursuing further study;

Conducting outreach by planning commissions to explain the advantages of the historic center, designated village center, or designated downtown as appropriate, and of CLG programs to the community;

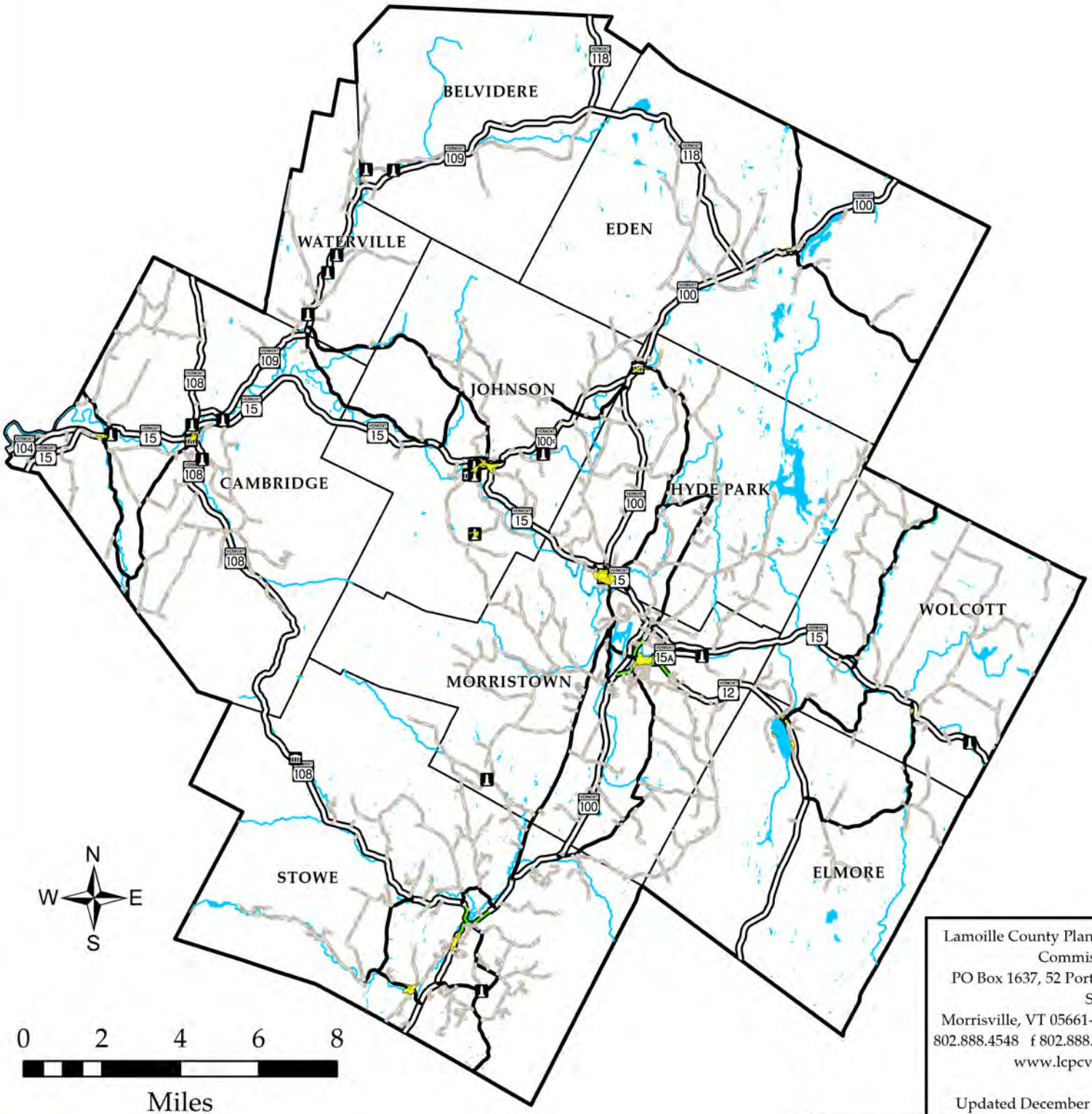
Developing or expanding historical curriculum in the schools to spark an interest in local history at the earliest age.

We need to begin to chart our history to be a vibrant county for the future.

Mansfield and Stowe were the first chartered communities in Lamoille County in June 1763. In 1848, Mansfield was annexed into the Town of Stowe.

DRAFT

Lamoille County, Vermont:
Historic and Cultural Resources



VT State Register Historic Districts

Historic/Cultural Structure

Historic/Cultural Building

Road Class

State Highway

Town Highway Class 1

Town Highway Class 2

Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

Updated December 2025

Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: Nation Hydrography Dataset, USGS, VCGI, 2022
HISTORIC DISTRICTS: VT State Register Historic Districts, VCGI, 2025
HISTORIC SITES: National Register of Historic Places, NPS, 2025

Demographics

Planning is based on people - how many there are, where we live, and the impacts we cause to one another and to the world around us. Planning connects the way we live to how we use our land and seek to prevent land use conflicts, protect natural resources, and manage future development while creating harmonious communities where people want to live, work, and visit. Understanding trends in the regional population will help manage future population and development trends.

Since 1960, Vermont experienced an unprecedented period of growth. Between 1960 and 1970, Vermont's population grew by 14.1% - faster than any period since the 1800s. Lamoille County now has 4 percent of the state's total population.

Throughout the 1990s, Lamoille County's total population rose faster than the state's average, a change of 17.7% as compared to 8.2% for the state. Lamoille County experienced higher percentage changes in all major age cohorts.

From 2010-2020, the county's population growth continued to outpace the State. The county population rose by 6%, compared to the State's 1.3% population growth. The population of 65+ has seen a noticeable increase, most notably in Stowe. As the elderly population continues to increase over time, assisted living homes may see an increase in demand. As for poverty in Lamoille County, the rate of people living in poverty is estimated at 12.4%, with the number of families living in poverty at 7.4%. These are groups with housing needs that are difficult to meet in today's competitive housing market. This demonstrates the continued need for more affordable housing in Lamoille County.

Median vs. Average

The median refers to the value in the middle. This is the point at which there are as many instances above as there are below. The average is the result of adding all numbers in a set then dividing by the total of the number.

DRAFT

The following charts will cover town population by age, change in the minority population and 65+ age group since 2010, and population percent change when compared to other counties. These charts will allow us to better understand the demographic makeup of Lamoille County residents.

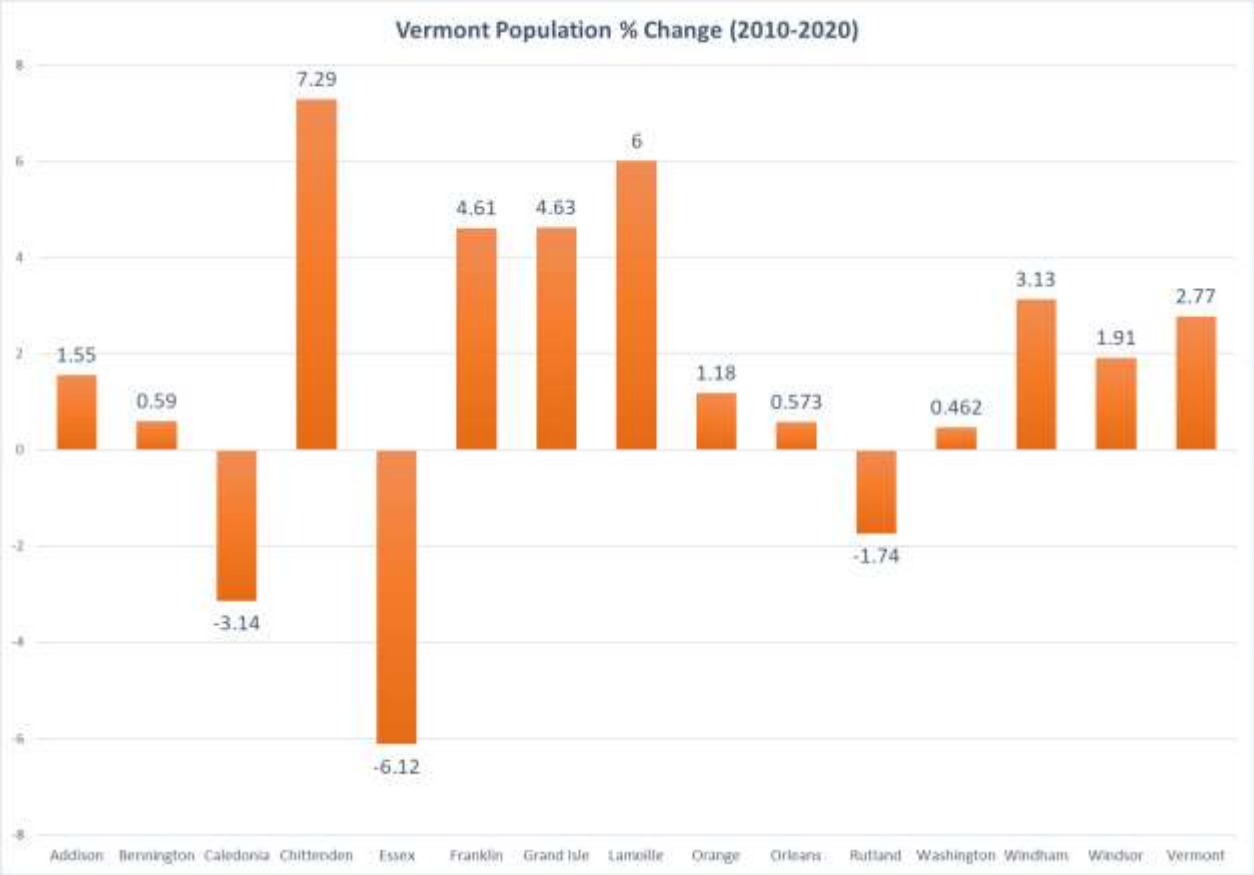


Figure 2-1 Vermont Population Percent Change

Source: 2010, 2020 Census

Vermont Counties Population Density

The square miles listed are updated from the 2020 Census which may cause the 2010 population density to appear incorrect. The 2010 column used 2010 Census data.

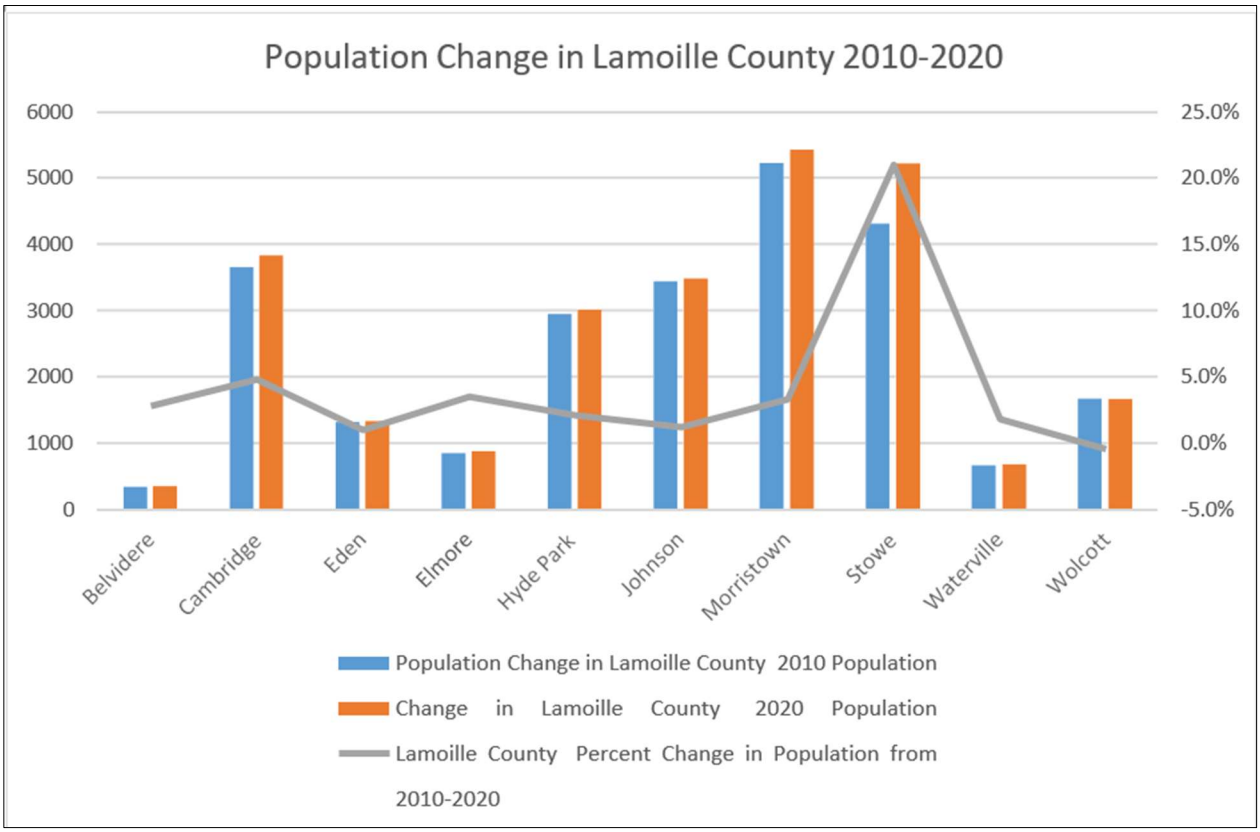
		2010	2020	% Change
Addison (766.1 Sq Miles)	Population	36,793	37,363	1.55
	Density	45	48	
Bennington (674.8 Sq Miles)	Population	37,125	37,347	.59
	Density	55	55	
Caledonia (648.8 Sq Miles)	Population	31,213	30,233	-3.14
	Density	48	46	
Chittenden (536.4 Sq Miles)	Population	156,056	168,323	7.29
	Density	254	305.97	
Essex (663.4 Sq Miles)	Population	6,306	5,920	-6.12
	Density	9	8.8	
Franklin (634 Sq Miles)	Population	47,746	49,946	4.61
	Density	69	72	
Grand Isle (81.8 Sq Miles)	Population	6,970	7,293	4.63
	Density	36	37	
Lamoille (458.7 Sq Miles)	Population	24,476	25,945	6.00
	Density	53	56	
Orange (686.8 Sq Miles)	Population	28,936	29,277	1.18
	Density	42	42	
Orleans (693.4 Sq Miles)	Population	27,238	27,393	.57
	Density	38	38	
Rutland (929.6 Sq Miles)	Population	61,645	60,572	-1.74
	Density	65	64	
Washington (686.9 Sq Miles)	Population	59,534	59,807	.46
	Density	85	86	
Windham (785.3 Sq Miles)	Population	44,513	45,905	3.13
	Density	56	56	
Windsor (969.3 Sq Miles)	Population	56,670	57,753	1.91
	Density	58	58	
State of Vermont (9,215.4 Sq Miles)	Population	625,741	643,077	2.77
	Density	65	65	

Source: 2010, 2020 Census

Population Change

As a whole, Lamoille County has grown by 6% when compared to 2010. The largest percentage growth has occurred in Stowe. This large percentage change could be due to the town being considered the premiere town in Lamoille County. The Town of Wolcott was the only municipality to show a decrease, losing 0.4% of its population compared to 2010.

Lamoille County continues to age. Stowe's 65+ age group increased by 211%. This large increase could be due to the increase in assisted living options in the town that have been built since 2010. Belvidere has seen the largest decrease in this age group with a 30.7% decrease. This could be due to various reasons the older demographic moving out of the town, younger people moving in, and/or some of the 65+ population passing away.



Population Change In Lamoille County			
Town	2010 Population	2020 Population	Percent Change
Belvidere	348	358	2.9%
Cambridge	3659	3839	4.9%
Eden	1323	1338	1.1%
Elmore	855	886	3.6%
Hyde Park	2954	3020	2.2%
Johnson	3446	3491	1.3%
Morristown	5227	5434	3.4%
Stowe	4314	5223	21.1%
Waterville	673	686	1.9%
Wolcott	1676	1670	-0.4%

Figure 2-2
Source: 2020 DEC Redistricting Data

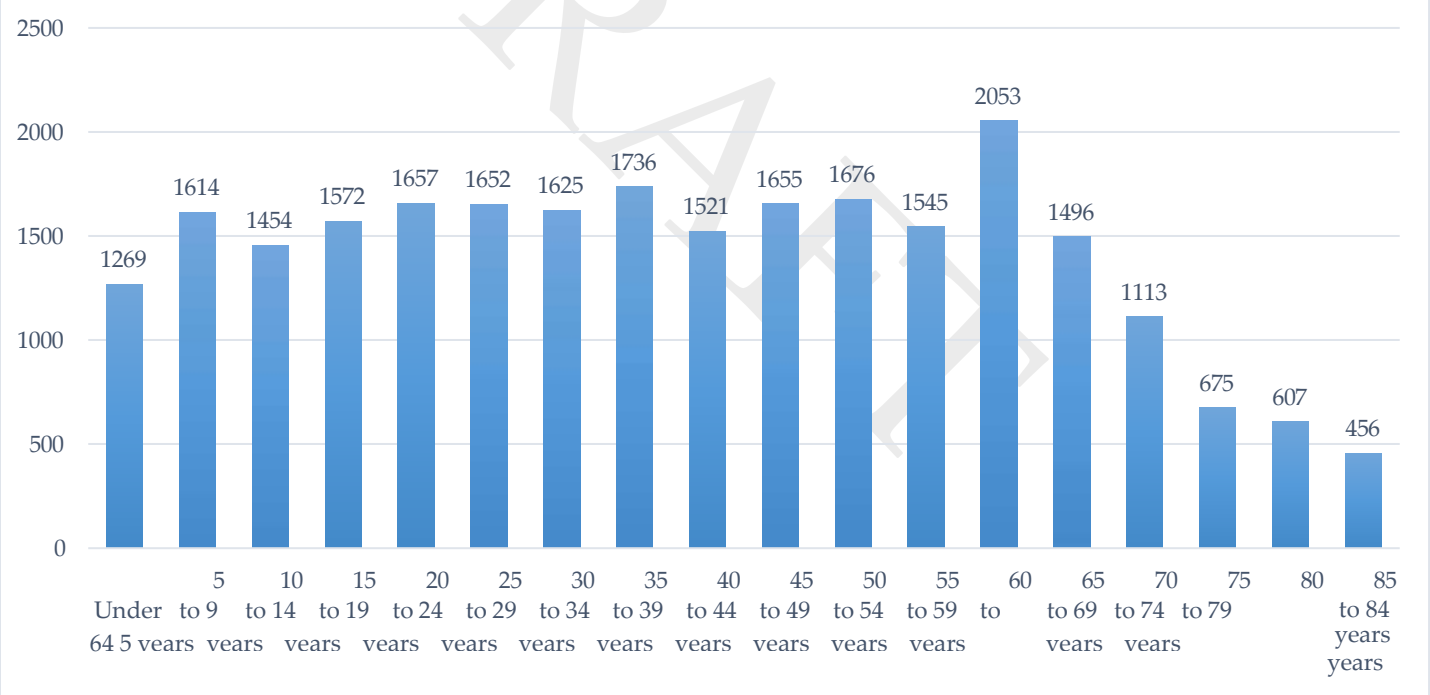
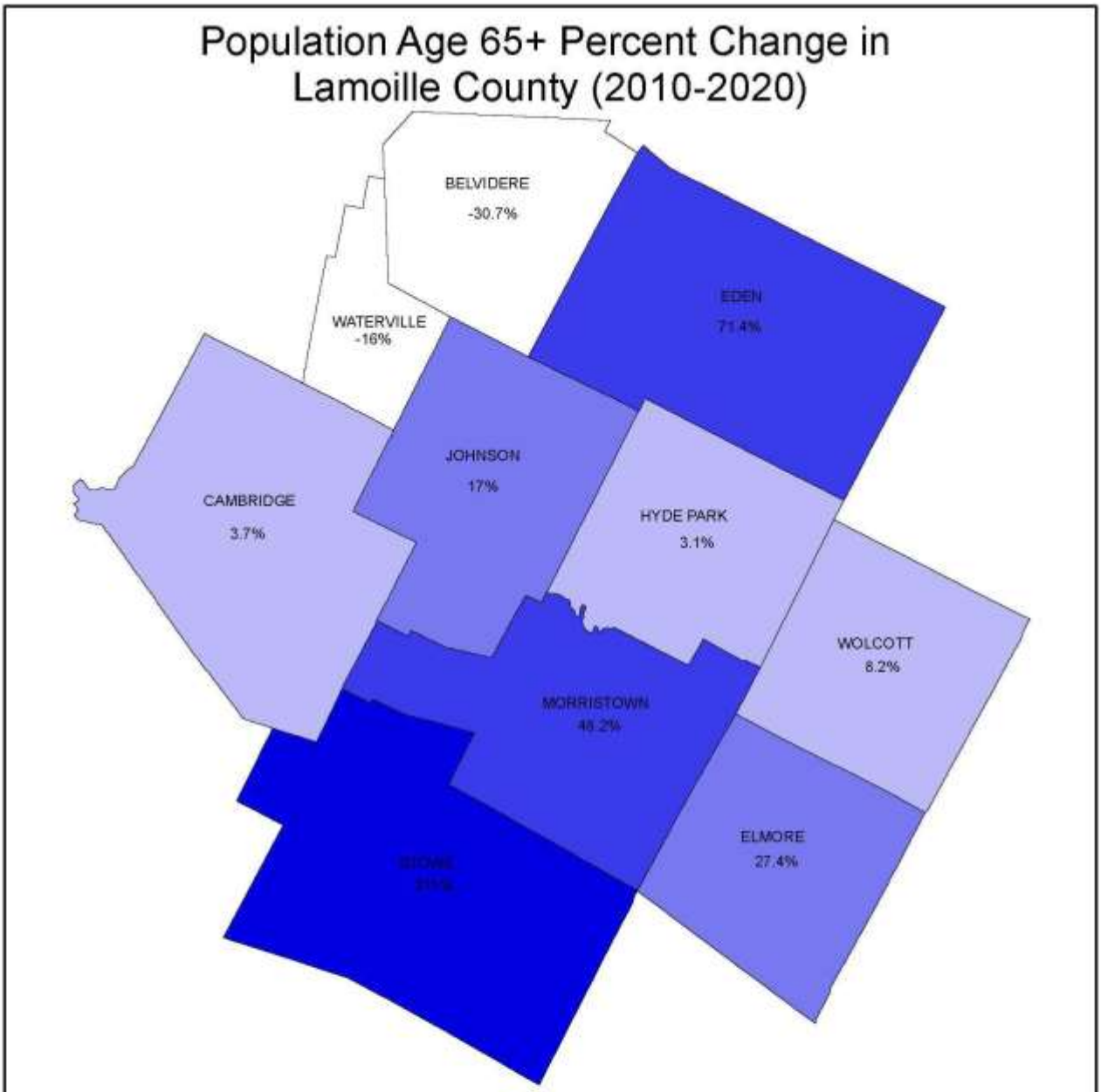


Figure 2-3 Lamoille County Population by Age (age increases by 5 year increments)
Source: 2020: ACS 5 year Estimates

DRAFT



Population Change In Lamoille County (age 65+)			
Town	2010 Population	2020 Population	Percent Change
Belvidere	52	36	-30.7%
Cambridge	349	362	3.7%
Eden	105	180	71.4%
Elmore	113	144	27.4%
Hyde Park	450	464	3.1%
Johnson	300	351	17.0%
Morristown	749	1110	48.2%
Stowe	447	1442	211.0%
Waterville	106	89	-16.0%
Wolcott	184	169	8.2%

Ethnic Population

Ethnic groups have continued to grow in Lamoille County. The overall ethnic population has grown to 985 when compared to the 2010 Census which reported a total ethnic population of 676, this is a 45.7% increase.

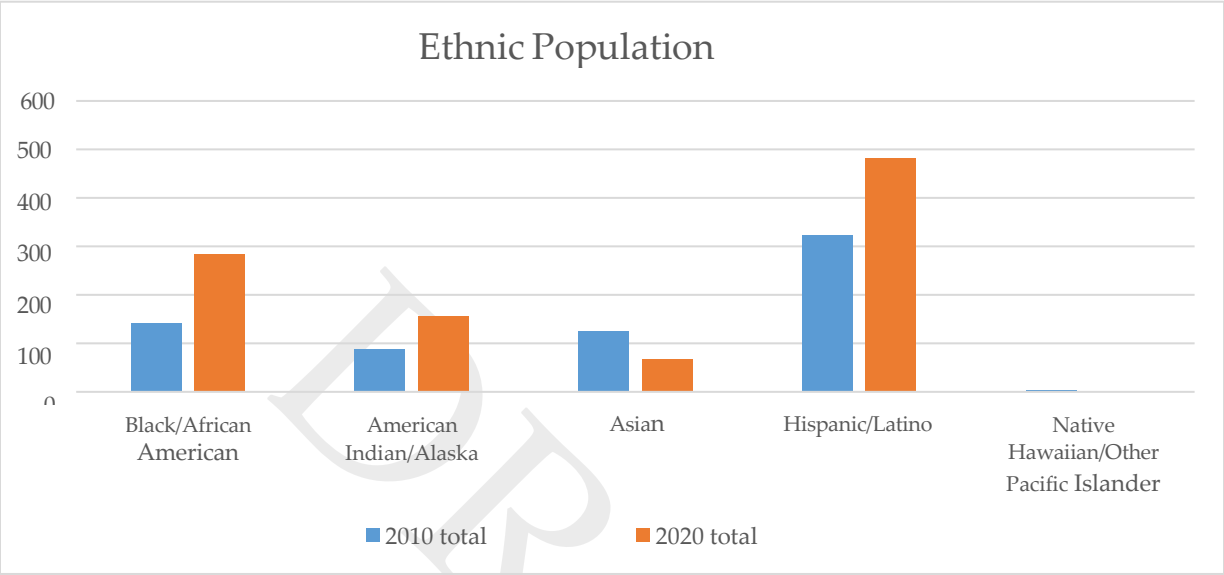


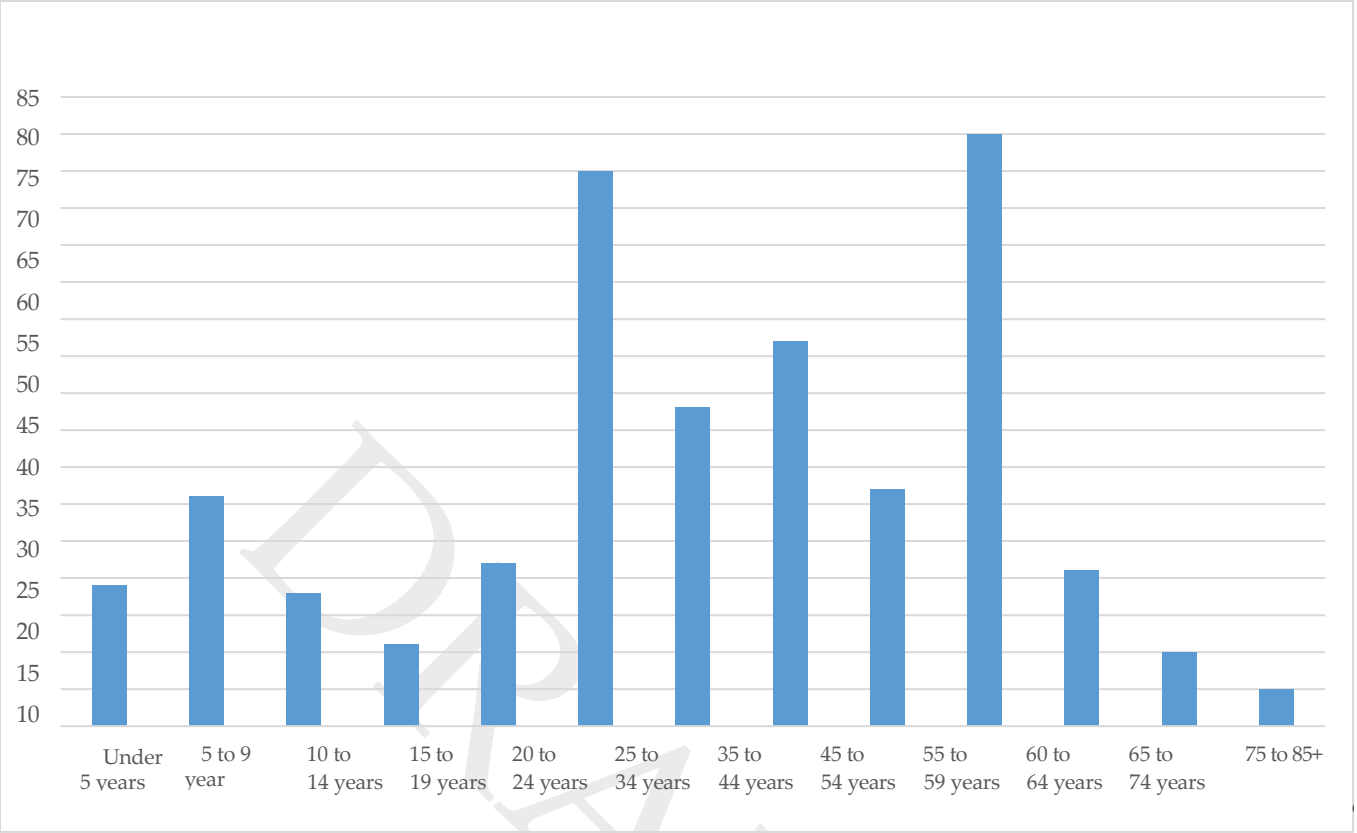
Figure 2-4 Ethnic Population

Source: 2020: ACS 5-year Estimates

Town Population by Age

The following charts depict the current age demographic per town in the county. The purpose of this information is to allow municipalities to utilize this data to inform municipal plans and community needs regarding growth in certain age groups. Stowe currently is home to the largest senior citizen group. Over the past decade, senior living homes have increased and long time residents who once were raising families in our towns are now falling into older age brackets. The Town of Johnson has the largest 20-24 year old demographic in the county, which could be assumed to be due to the presence of the University. The county population data represents full-time residents claiming a primary residence in Lamoille County. Part time residents (second home owners) are not recorded in the county population data.

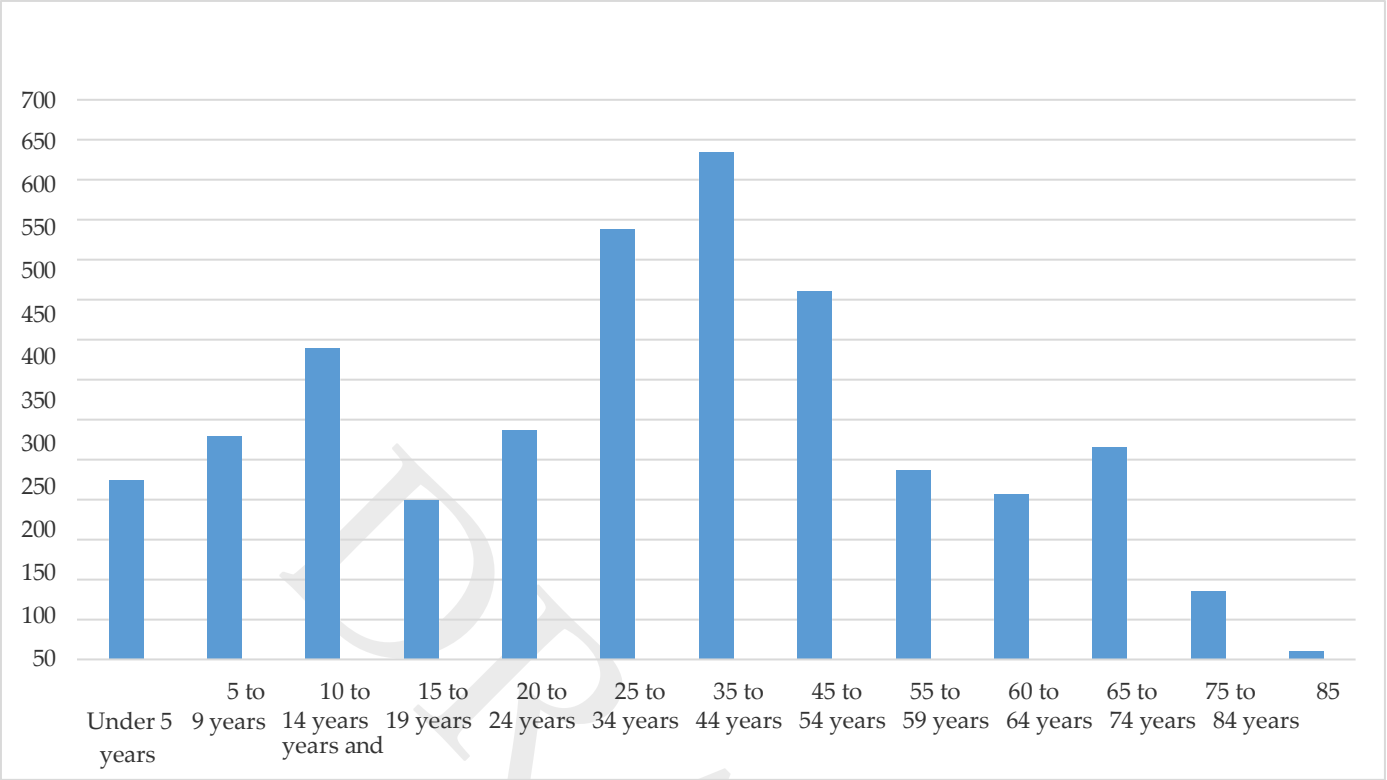
DRAFT



Belvidere Figure 2-5 Total population: 419

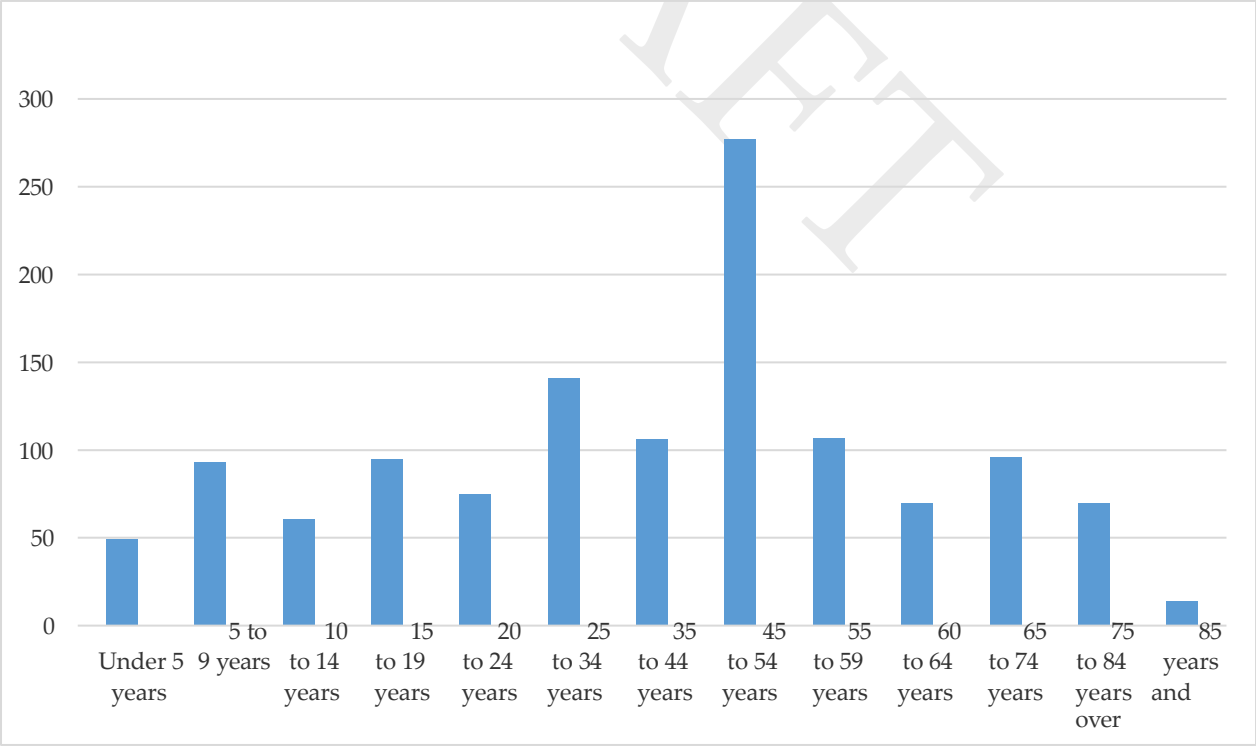
Source: 2020: ACS 5-year Estimates

DRAFT



Cambridge Figure 2-6 Total population: 3,819

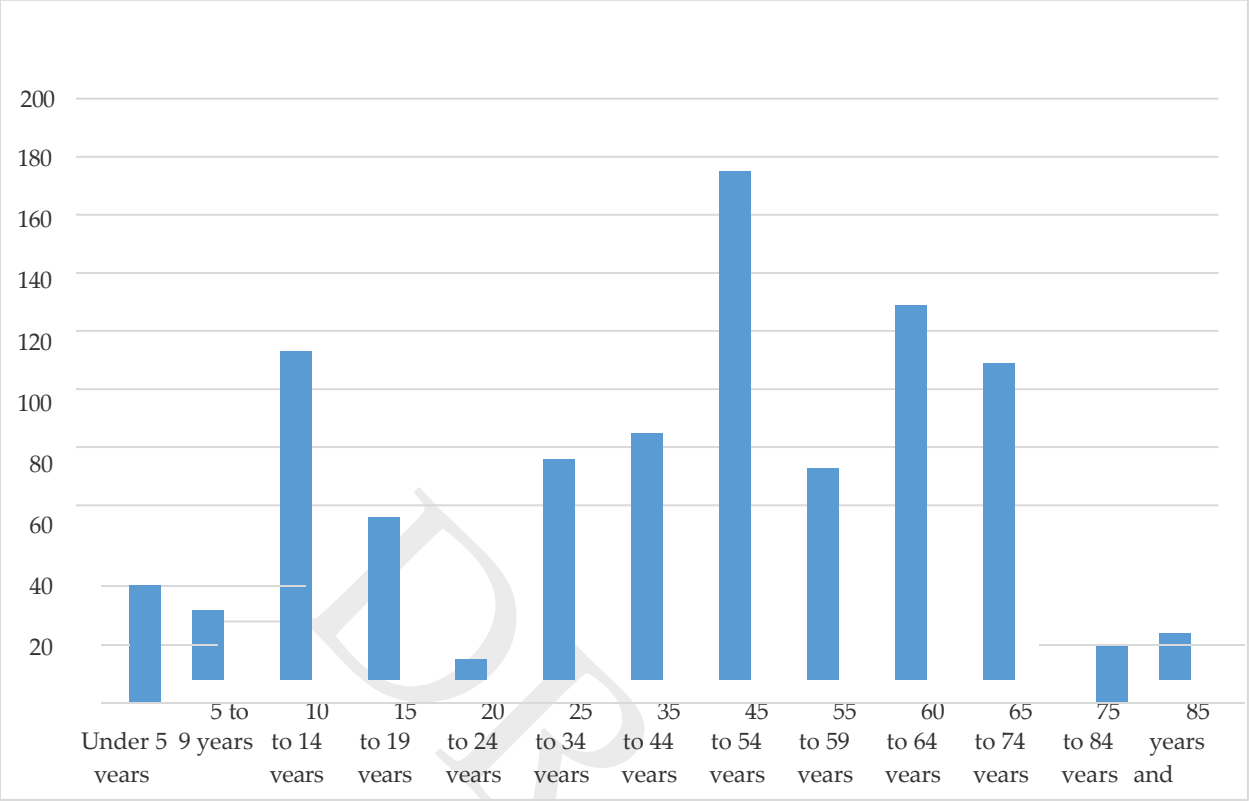
Source: 2020: ACS 5 year Estimate



Eden Figure 2 Total population: 1,254

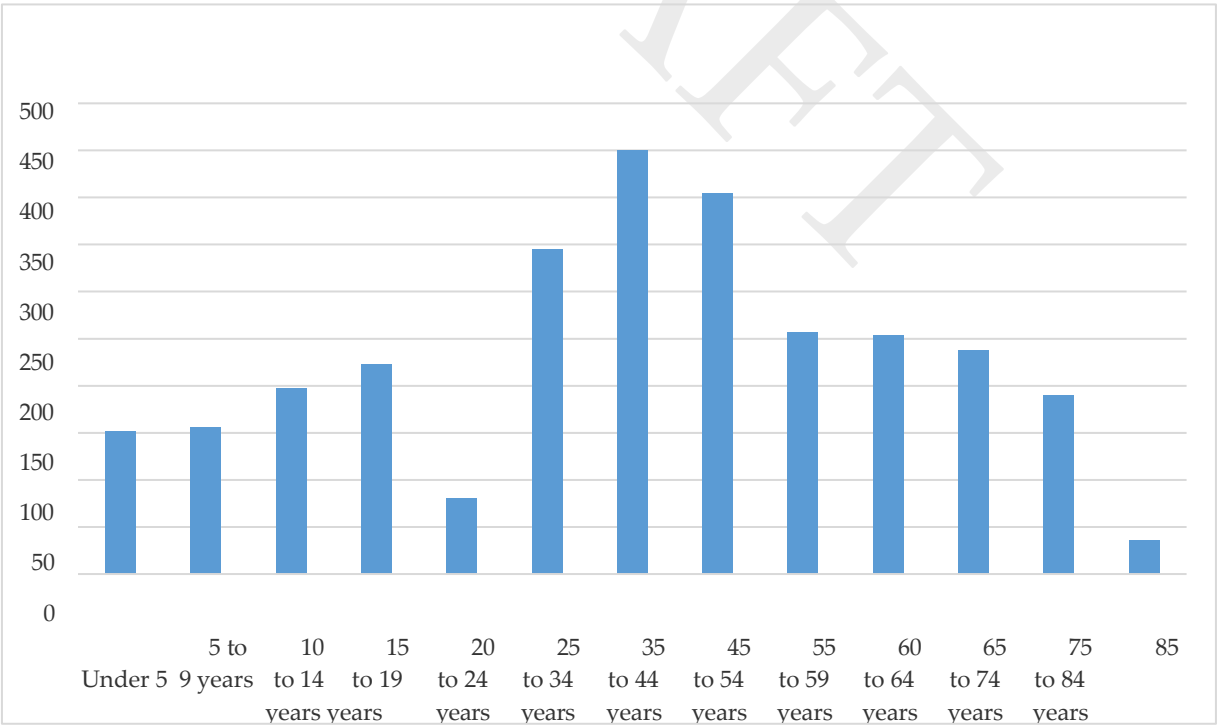
Source: 2020: ACS 5-year Estimates

DRAFT



Elmore Figure 2-8 Total population: 923

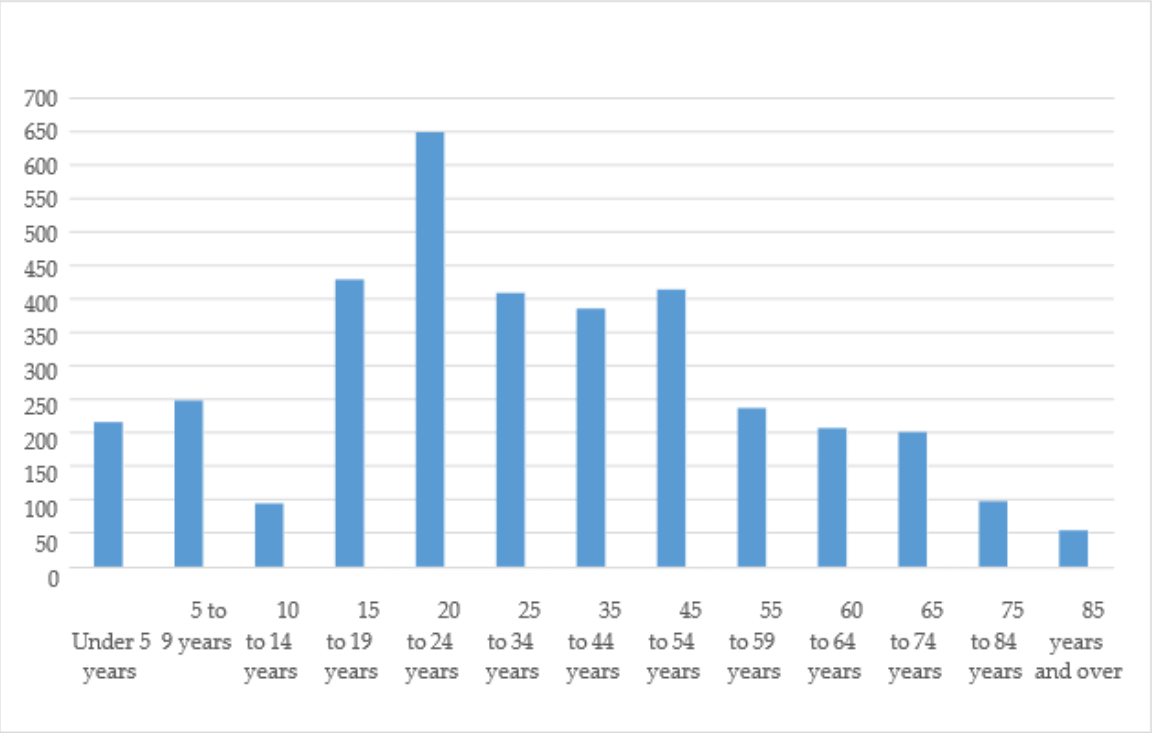
Source: 2020: ACS 5-year Estimates



Hyde Park Figure 2-9 Total population: 2,981

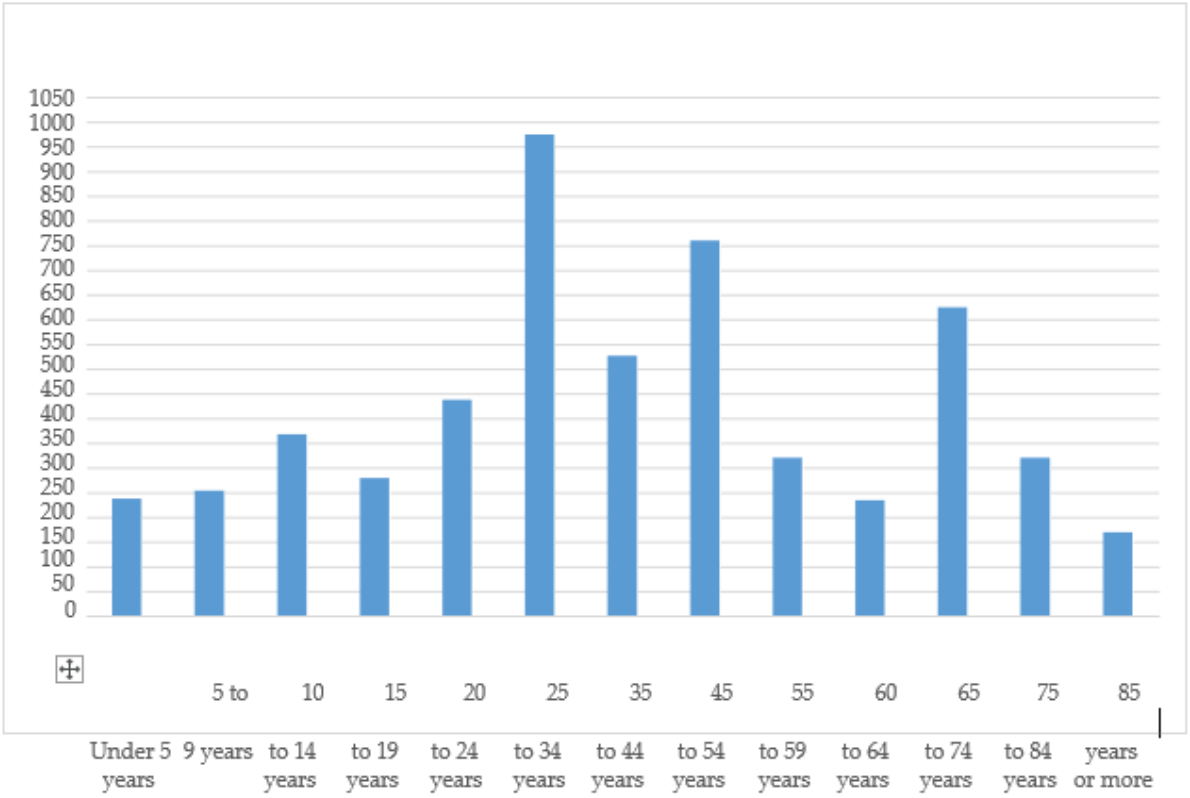
Source: 2020: ACS 5 year Estimates

DRAFT



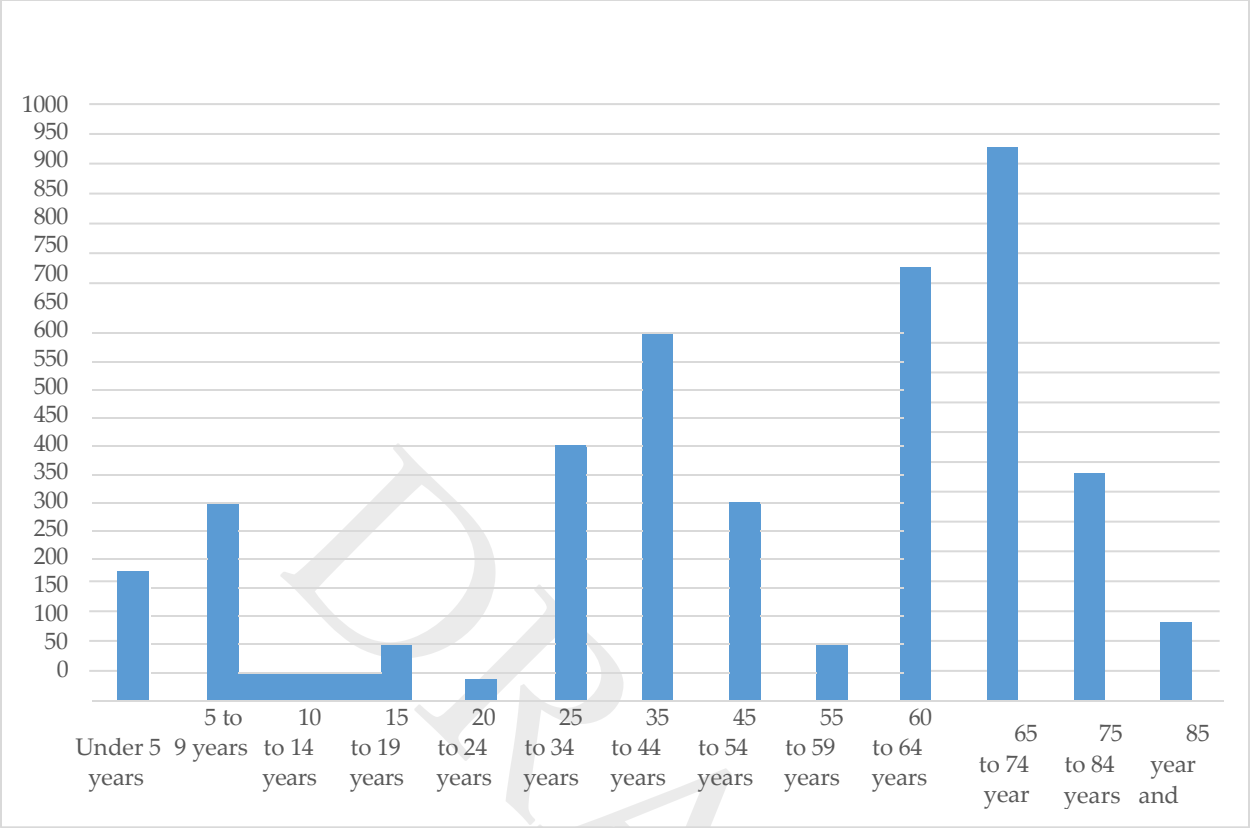
Johnson Figure 2-10 Total population: 3,625

Source: 2020: ACS 5-year Estimates



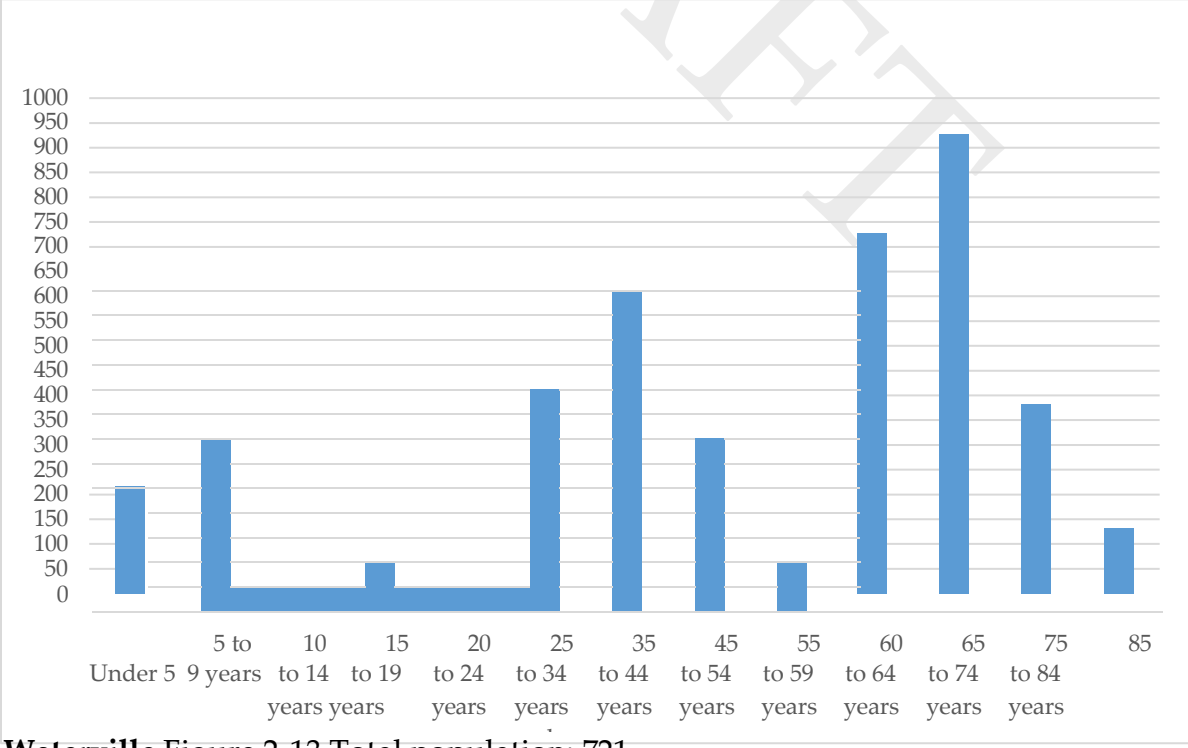
Morristown Figure 2-11 Total population: 5,485

Source: 2020: ACS 5-year Estimates



Stowe Figure 2-12 Total population: 4,447

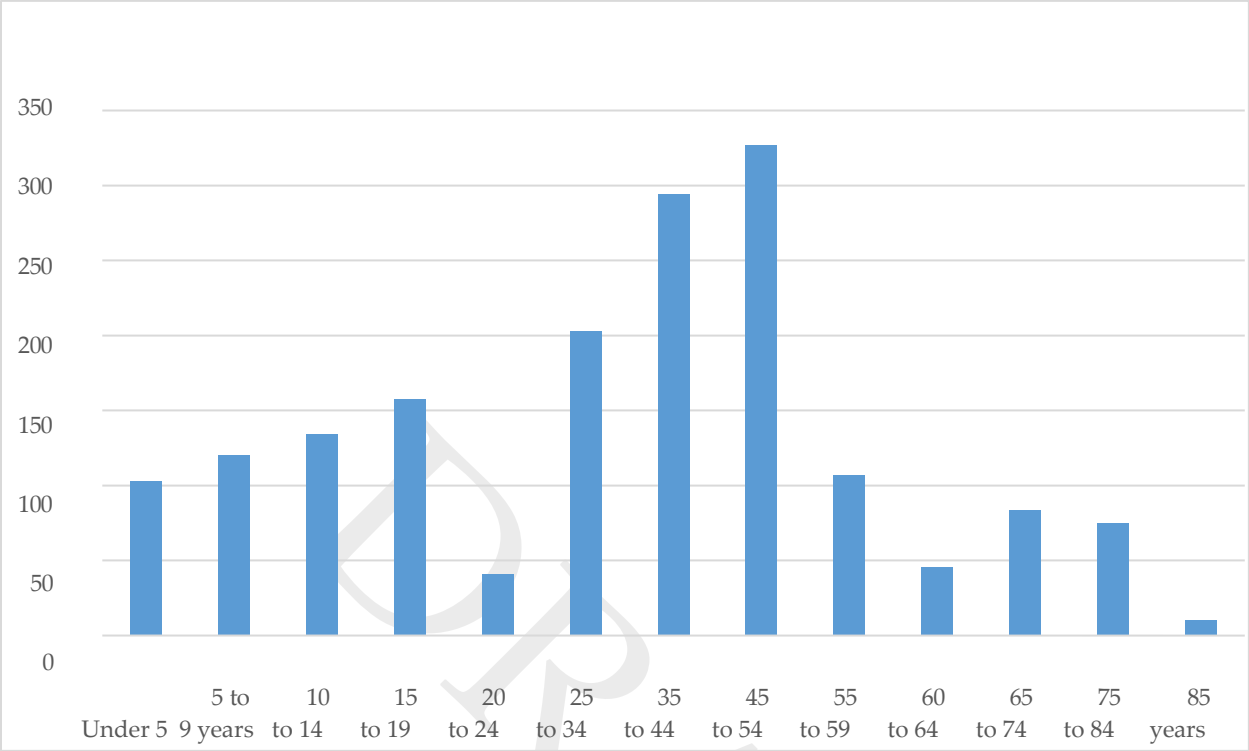
Source: 2020: ACS 5-year Estimates



Waterville Figure 2-13 Total population: 721

Source: 2020: ACS 5-year Estimate

DRAFT



Wolcott Figure 2-14 Total population: 1,702

Source: 2020: ACS 5-year Estimates

DRAFT

Education

The 18-24 age group having some college or higher has dropped from 50%, down to 45.3%. When focusing on the 18-24 age group, the drop could be casued by young adults moving out of Vermont, not pursuing higher education, or choosing to begin/re-enter college at an older age. Overall The total number of 25+ year olds with a bacehlor's degree living in Lamoille County has incrased from 34.6% to 41%. This is outpacing the State of Vermont by 1.3%. Overall, Lamoille County continues to attract a college educated demographic. This could lead to an increase in economic activity, especially for towns with lively Village Centers. According to the Brookings research group, College graduates spend over $278,000 more over their lifetime compared to the average wage earner. Also, over a college graduates lifetime, they will contribute $44,000 more in State and local taxes.

Household Trends

Before 2010, the number of homes in Vermont increased at an average annual pace of 1%. By 2025, that pace is expected to slow to less than 0.2% – a virtual stagnation in the number of year-round Vermont homes. Although less severe in the northwest part of the state, this slowdown is occurring in every Vermont county. Vermont's role as a vacation destination affects how its housing stock is used. The number of seasonal homes here continues to grow, comprising 17%

of the state's housing stock as of 2017. According to the 2020 American Community Survey, Stowe has seen the largest increase in seasonal homes in the county. Lamoille County is anticipated to grow by 164 primary residents

According to the 2020-2025 Vermont Housing Needs Assessment, a primary resident household is defined as a person/family living in a house, either by renting or owning at least 6 months out of the year. Neighboring counties of Chittenden and Franklin have the highest projected household growth. Lamoille County households have been increasing at an annual rate of less than one percent (0.77%) and it is projected that through 2020-2025, the county will only increase its households by 0.3% per year.

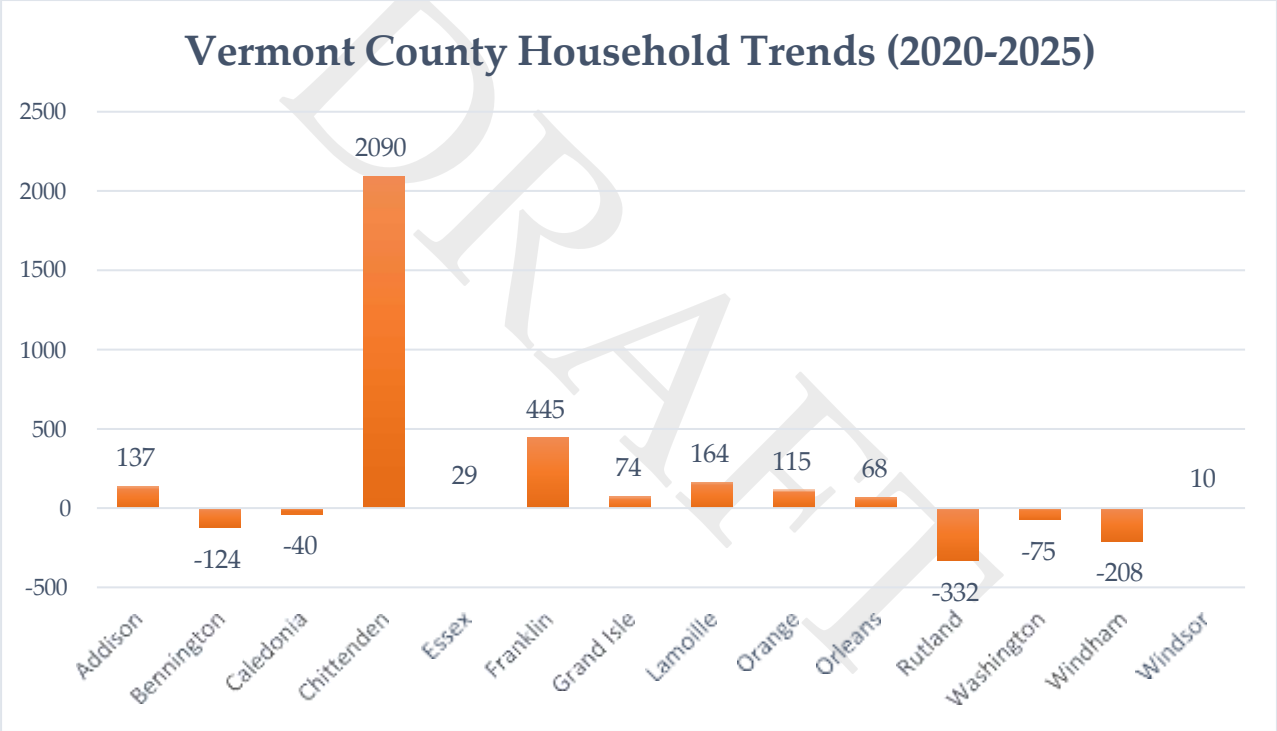


Figure 2-15

Source: 2020 Vermont Housing Needs Assessment

Seasonal Home Inventory

Vermont has always prided itself on being a vacation destination due to its unique year-round weather. The seasons range from full of sunshine during the spring and summer, with cool fall nights that lead into a snowy winter. Due to this, seasonal homes have been and will continue to be the norm for the State. This has led to increasing economic activity, but it has also led to a housing crisis for local year-round residents due to a lack of inventory. This second home culture is growing throughout the State. When focusing on Lamoille County the Town of Stowe has been the most consistent in increasing its secondary housing market. It should be noted

that Covid-19 may have aided in accelerating seasonal home purchases. The chart below depicts the increase from 2010 to 2020 in the seasonal home inventory for the county and Town of Stowe.

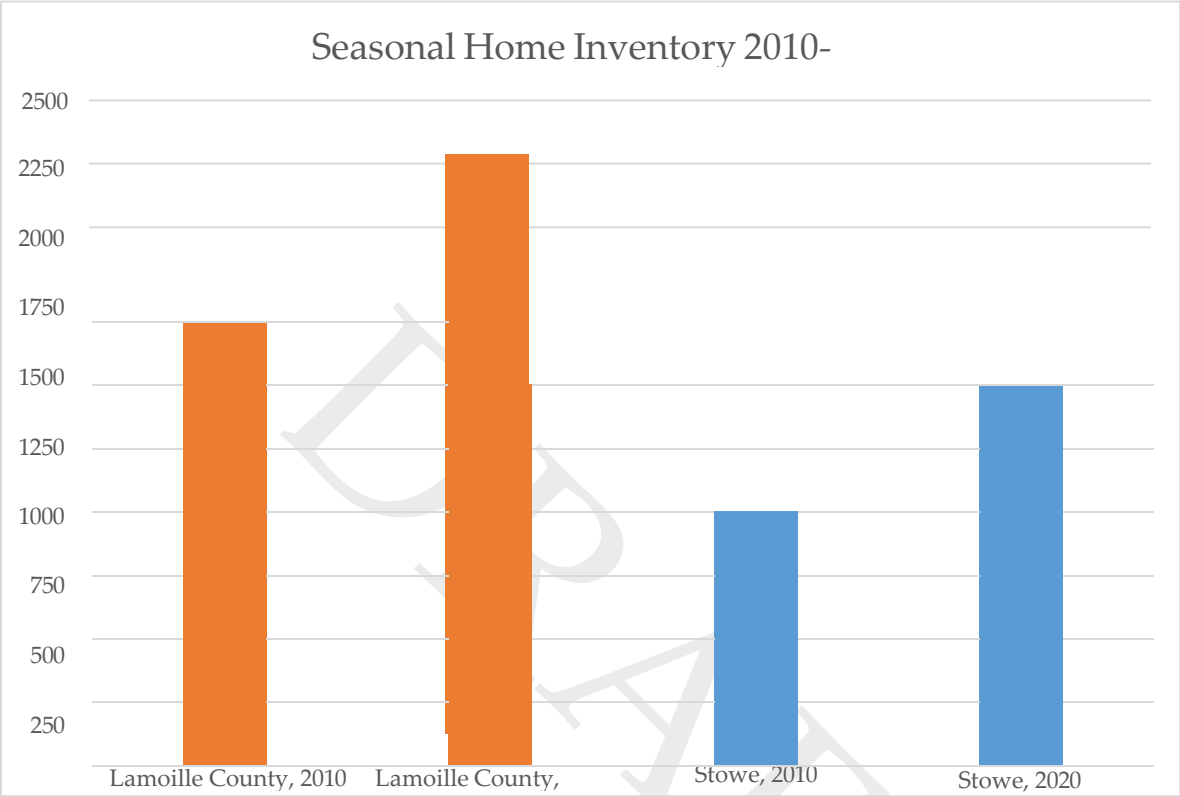


Figure 2-16
Source: 2020: ACS 5-year Estimates

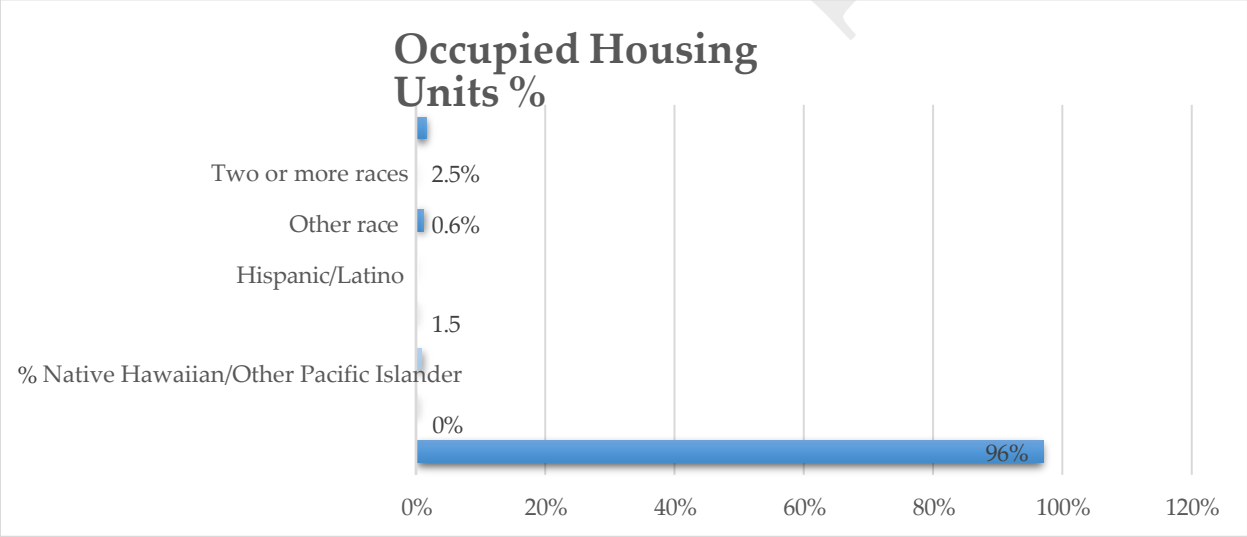


Figure 2-17
Source: 2020: ACS 5-year Estimates

DRAFT

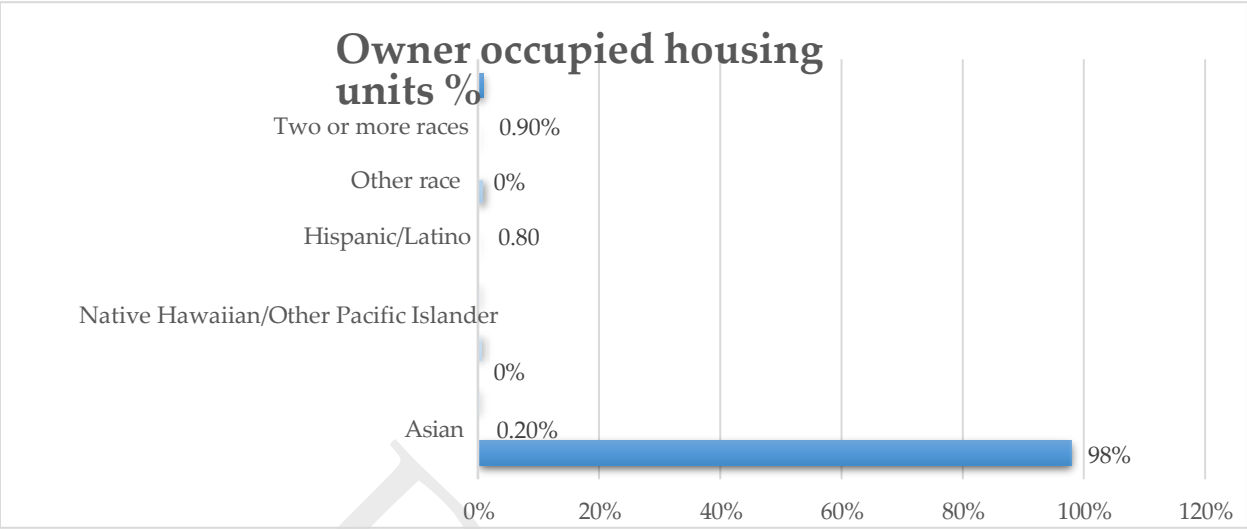


Figure 2-18

Source: 2020: ACS 5-year Estimates

Income and Poverty

Over the past decade Lamoille County household median income has increased by 22.9%, going from $52,232 to $64,179. This median household income increase has outpaced the State's median income which is $63,477. The data collected will display the median household income by town in the county, industry average wage, and employment and wages in each town. The employment and wages chart should be read with the understanding that the numbers are based on businesses located outside of each town. The household median income chart represents a typical median household income regardless of whether they work within Lamoille County or not.

Poverty within Lamoille County is 12.4% according to the 2020 ACS 5-year estimates. This is 1.6% higher than the Statewide poverty number which is 10.8%. 7.4% of families are considered in poverty. The 18 to 34 age group has the highest percentage of individuals considered in poverty at 20%.

DRAFT

This chart depicts household income by town. The households do not necessarily work within Lamoille County, they live within the county boundary.

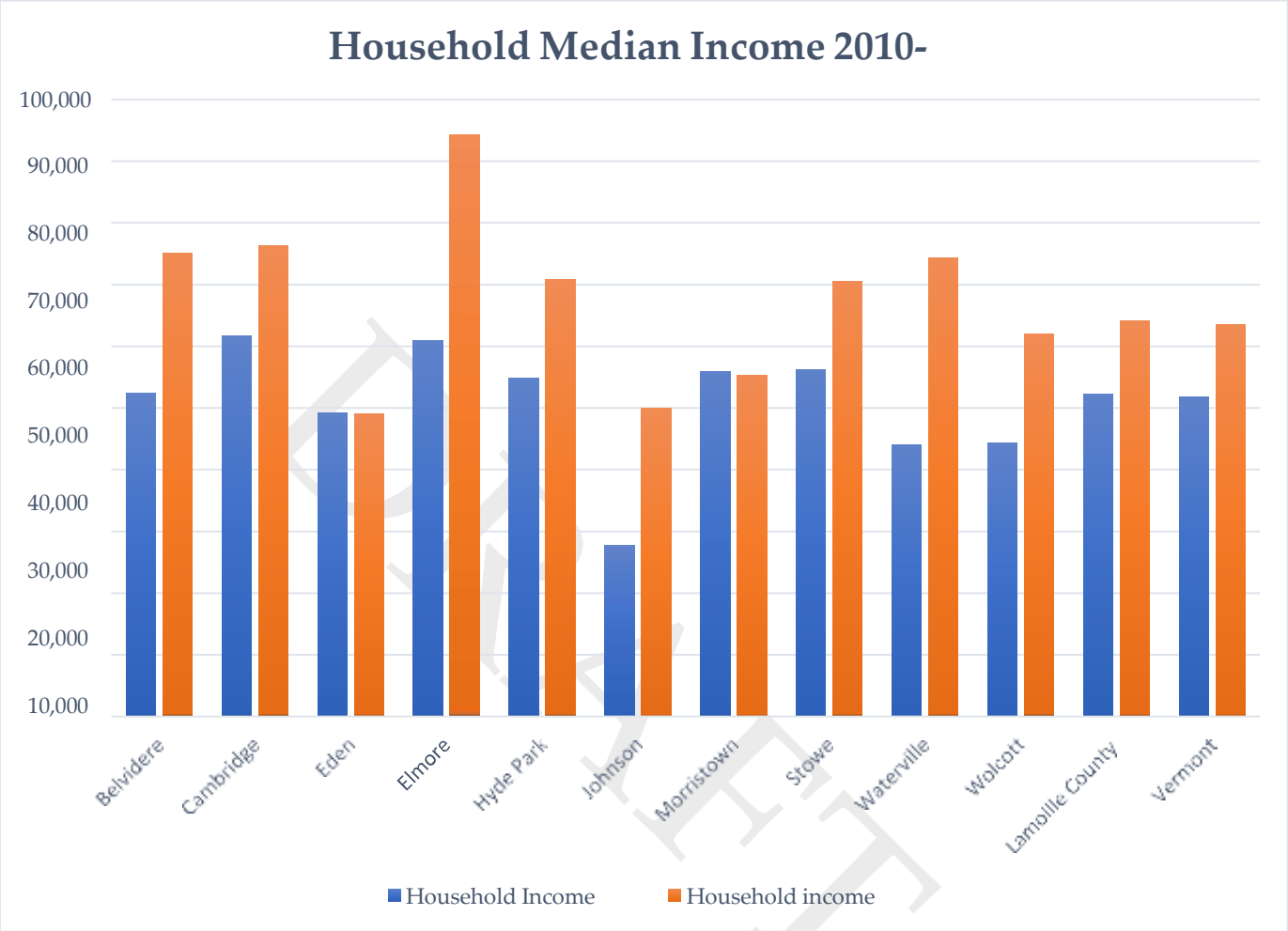


Figure 2-19
Source: 2020: ACS 5-year Estimates

Lamoille County Annual Wages by Industry, 2020

The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. This data does not take into account the agricultural industry.

North American Industrial Classification System Industry	Average Wage ($)	Employment
Total Covered Jobs*	46,474	10,379
Private ownership	45,887	8,826
Goods Producing	52,831	1,534
Natural Resources and Mining	45,103	236
Construction	52,143	711
Manufacturing	56,769	587
Durable Goods	67,884	390
Non-Durable Goods	34,793	197
Service Providing	44,427	7,292
Trade, Transportation, and Utilities	41,204	1,643
Retail trade	34,183	1,378
Information	61,035	128
Financial Activities	67,520	381
Professional and Business Services	65,794	681
Education and Health Services	51,708	1,672
Health care and social assistance	52,701	1,525
Leisure and Hospitality	32,648	2,505
Other services, except public admin	34,418	283
Government (total)	49,810	1,553
Federal Government	49,536	68
State government	49,421	359
Local government	49,951	1,126

Figure 2-20

Source: Vermont Dept. of Labor

DRAFT

Employment within Lamoille County Towns

This chart focuses on how many people are employed by businesses within each Lamoille County town. The second column states the annual average wage per employee working within the town. The last column shows the percentage of individuals living below the poverty line within each town.

	Annual Average Employment	Annual Average Wage per employee	2010-2010 Income Percent Change	Percent of People Living Below Poverty Line**
Belvidere*	N/A	N/A	N/A	11.2
Cambridge	1,206	$38,155	44.7	3.7
Eden	52	$37,553	55.2	6.9
Elmore	34	$42,767	127.2	9
Hyde Park	760	$46,920	37.2	5.2
Johnson	837	$44,347	25.3	30.4
Morristown	3,905	$50,504	46.1	13.6
Stowe	3,378	$45,741	49.2	20.9
Waterville	32	$45,902	56.5	5.4
Wolcott	165	$37,865	31.7	8.8
Lamoille County	10,379	$46,474	45	13.6
Vermont	283,562	$54,075	37.2	10.2

Figure 2-21

Source: Vermont Dept. of Labor

*Data cannot be released, does not meet confidentiality standards.

**2020 ACS-5-year Estimates

Effective Homestead Education Tax Rate

Belvidere	Cambridge	Eden	Elmore	Hyde Park	Johnson	Morristown	Stowe	Waterville	Wolcott	Lamoille County	Vermont
$1.66	$1.59	$1.63	$1.51	$1.64	$1.53	$1.59	$1.71	$1.65	$1.67	N/A	N/A

Source: Vermont Dept. of Taxes

DRAFT

Section 3: Where We Live

Housing, Transportation, Energy, Telecommunications and Broadband, and Land Use

Housing: Strategy

According to the 2023 American Community Survey (ACS), Vermont saw 4.2% of residents moving from other states to Vermont. Lamoille County's population continues to grow, with 3.9% of the county population having moved from a different state to Vermont in 2023. In 2023 the ACS reported an average household size in Lamoille County of 2.33 people. This is a slight decrease since 2020 when the average household size was 2.37. Housing costs and home prices continue to rise at a rate unequal to income growth. This means that more housing units will be necessary to house the same number of people and the ability of people to spend money outside of their basic needs may be restricted. The expectation, therefore, is an overwhelming need for additional and affordable housing as the County continues to grow. To meet this need, the Regional Plan offers the following Housing objectives:

Provide for the full housing continuum: There is more to the County's housing picture than simple supply. The housing needs of various segments of the population vary greatly. Affordability for young families, renters, and first-time homebuyers is a major workforce housing concern. There is a growing need for "missing middle" options for homeownership throughout the Region. At the same time, an aging population creates future needs for more housing options for senior and disabled residents.

Ensure a diverse and affordable housing stock*:* With the diversity of communities in Lamoille County, from rural communities without traditional village centers or commercial cores to towns that are the workforce center of the region, to communities with heavy seasonal housing stock, the housing needs of each community vary. Further, each community has different water and wastewater availability, development pressures, and priority needs that must be addressed. A diversity of housing options should be encouraged to meet the County's housing needs, including development of additional multi-family, Accessory Dwelling Units, single-family, and senior housing units. The 2025 Regional Plan Survey demonstrated support for renovating vacant and underused housing units to assist in providing additional housing stock in the County.

Consider the costs of housing plus transportation**:** As the cost of transportation rises, the costs of housing plus transportation may begin to factor into where housing is built or re-developed. Encouraging growth in and near Village and Downtown Centers by locating centers of employment, services, and housing more compactly, helps alleviate additional transportation costs. The 2025 Regional Plan Survey demonstrated that rising housing

DRAFT

costs continues to be the greatest challenge for Lamoille County residents in terms of affordability.

Expand housing options in "safer areas" outside the floodplain within and near village centers and downtown centers: Many of Lamoille County's traditional village centers and downtowns are located close to rivers and other waterbodies. As a result, significant portions of the Region's most "naturally affordable" housing stock are located in flood prone areas. Recent flood events have had devastating impacts on these neighborhoods and highlighted the vulnerability of these centers. New housing outside of the floodplain is a critical element of local and regional flood recovery.

Promote Safe and Adequate Housing Options ("Healthy Homes"): Several health and environmental factors play a role in ensuring housing options are safe and adequate for Lamoille County residents. Locating more affordable housing options outside flood prone areas promotes housing stock in safer locations less susceptible to future flooding events. Housing stock and neighborhoods that support health and well-being are predictors of overall wellness. The Lamoille County Planning Commission recognizes that everyone deserves to live in a healthy, safe home. Health and wellness should be considered when locating new housing development and services in Lamoille County. Wellness can take many forms including promoting walkable safe environments, enhancing access to green space and parks, ensuring access to healthy foods, health services, and alternative modes of transportation as well as providing opportunities for social engagement. Ensuring prospective and existing homeowners are aware of other health factors and potential hazards such as high radon levels, contaminants in drinking water, and the presence of lead paint also plays a role in providing healthy homes.

This chapter was based on available U.S. Census and American Community Survey data, municipal plans, the regional plans of other Regional Planning Commissions, the report *Fair Housing and Land Use Regulation in Lamoille County, Vermont* (2007), the *2024 Lamoille County Housing Study and Needs Assessment, and* the *2025 Vermont Housing Needs Assessment (This includes a specific Lamoille County Housing Needs Assessment Report).* While this section aims to be comprehensive in addressing the needs of Lamoille County's population and its communities, it is nearly impossible to capture every housing need or scenario. The section aims to address trends found throughout the region and provides suggestions, policies, and recommended actions to guide LCPC's work in ensuring all residents have safe, quality housing they can afford over the next eight years. In June of 2023 the Vermont Home Act (Act 47) was passed to reform Vermont housing statue to address the current

DRAFT

housing crisis regarding limited housing availability and affordability. The Act amends the Planning and Development statute, Act 250, and other laws to enable new opportunities for housing development within state, regional, and local planning and development regulations.

POLICIES & ACTION ITEMS

Policy: *Affordable housing is a regional challenge. When applicable, regional solutions should be promoted to further increase housing stock.*

Action Items:

- Assist every municipality in planning for the full spectrum of the "Housing Continuum" to meet present and future population needs, including, but not limited to, entry level housing, manufactured housing parks, transitional housing, accessory apartments, senior housing and assisted living facilities, multi-family housing, single-family housing, and duplexes. Work with municipalities to identify and overcome barriers to meeting the housing targets identified in the State Housing Needs Assessment.
- Along with its member municipalities, regularly update the county-wide housing study and needs assessment. The LCPC is committed to gathering data to help inform the local decision making process.
- Support housing that allows elderly residents to age in their communities, including but not limited to accessory dwelling units and senior housing.
- Evaluate and support opportunities to expand "missing middle" homeownership options throughout the Region.
- Identify appropriate locations for specialized housing options. "Specialized housing options" are identified in the Housing Section. Locations are discussed in the Land Use section.
- Maintain historic housing data for comparison to current trends to help project future housing needs.
- Work closely with existing housing organizations on the planning, financing, development, and management of affordable housing projects in Lamoille County to ensure all residents have affordable shelter options year-round.
- Advocate for state policies, regulatory reforms, and funding for initiatives that increase housing opportunities and affordability.
- Upon request, assist municipalities with non-regulatory language or ordinances that

DRAFT

provide creative ways of addressing housing needs. Housing options that could be explored include: community loan funds, co- operative housing, co-housing, reverse mortgages, HomeShare Now, and other techniques aimed at increasing housing opportunities and affordability.

Policy: *LCPC, along with municipalities and regional housing organizations, should promote and support efforts that allow and encourage clustering for the purpose of providing affordable housing, building multi- family units, providing lots for single family homes, and mixed-use development projects.*

Action Items:

- Upon request, assist municipalities with individualized housing plans that accommodate the diverse and changing housing needs of each municipality through non-regulatory mechanisms, fee structures, zoning and subdivision regulations, and other mechanisms. Assistance will include further education and outreach to the public about housing responsibilities, statutes, and needs for sheltering.
- Encourage affordable housing by offering potential incentives to meet a municipality's stated affordable housing goals, such as reducing permit or hookup fees or allowing single meters to serve multi- unit structures for municipal sewer, water, or electrical services.

Policy: *LCPC encourages municipal efforts to maintain adequate sewer, water, and other facilities and services that accommodate residential growth in Center Areas.*

Action Items:

- LCPC supports efforts to upgrade sewer, water, and other infrastructure to accommodate residential growth in and near Village and Downtown Centers.
- In order to accommodate the need for housing outside of flood prone village centers and downtown centers, LCPC supports efforts to expand sewer, water, and other infrastructure into Transition Infill Areas, Village Areas, and Planned Growth Areas identified on the Future Land Use Map and other "safer areas" identified in regionally approved municipal plans. The LCPC will work cooperatively with municipalities to develop land use tools and sewer/water ordinances to ensure that these expansions support growth of needed housing while minimizing strip development.

DRAFT

- LCPC works with municipalities to improve the quality of the existing housing stock. Efforts may include: providing technical assistance in applications for grants, loans, and tax credits for code improvement; assisting with the adoption and enforcement of health and building codes; assisting with lead and asbestos assessment and abatement; and brownfield assessment, remediation, and reuse.

Policy: *LCPC shall assist municipalities in preparing capital programs and capital budgets to fund improvements to community infrastructure and services needed to support housing development, particularly within Village/Downtown Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas.*

Action Items:

- Work with municipalities to obtain the greater "step" benefits available to Village Centers and Downtowns and adopt the local pre-requisites for Tier 1b status.
- LCPC should assist municipalities in pursuing State and Federal funding to assist in the installation and/or upgrade of improved infrastructure and municipal services to service housing developments, particularly within Village /Downtown Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas.
- The existing housing stock should be preserved and renovated. Renovation of underutilized buildings, and adaptive re-use of older and historic buildings is encouraged, especially in Village/Downtown Centers.

Policy: *LCPC supports residential development that is compatible with objective standards defined in municipal plans and bylaws. An increase in the total number of dwelling units and/or housing density in comparison to neighboring properties shall not be considered detrimental to the character of the neighborhood. The need to shift development patterns away from flood prone areas may result in an increase in housing density in some currently lower-density areas of the Region.*

Policy: *Development standards should permit a wide variety of housing (including single-family, multi-family, accessory, and mobile homes). Municipalities should use alternatives to minimum lot size to regulate use and intensity of development, especially in Village/Downtown Centers.*

Action Items:

- Encourage policies, regulations, and projects that support policies outlined in this Land Use Plan, aimed to support housing in and adjacent to Village/Downtown Centers,

DRAFT

cluster housing, preserve open space and working landscapes, and involve a variety of regulatory and non- regulatory tools to achieve desired densities and settlement patterns.

- LCPC encourages innovative planning, design, and construction of primary housing that minimizes cost, energy consumption, and environmental impacts of housing.
- To support clustering of housing, developers shall consider use of community water/wastewater systems, wastewater pretreatment, and innovative wastewater treatment.
- To ensure a predictable permitting process, municipalities are encouraged to provide clear standards to assess applications for new housing and subdivisions.
- Conduct trainings throughout the region on land use tools and creative solutions to address housing needs, including, but not limited to, form based codes, PUDs (Planned Unit Development), density bonuses, alternatives to large lot zoning, voluntary and compulsory inclusionary zoning and types of subdivisions, and other creative solutions to address housing needs. Trainings will be tailored for Planning Commissions, Development Review Boards, and other municipal decision-makers.

Policy: *LCPC supports promoting "Healthy Homes" and safe and adequate housing options in Lamoille County.*

Actions Items:

- Consider health impacts and consult community health assessments when reviewing proposed development and Act 250 applications with the LCPC Plan and Project Review Committee.
- Work with municipal, regional, and state health partners to share information regarding existing state testing programs designed to promote home safety, such as lead paint, radon, and water testing, and ensure these resources are accessible to the community through a variety of communication methods.
- Assist Lamoille County municipalities in planning for future growth outside flood prone areas near existing Village/ Downtown Centers. This may take the form of Municipal Plan updates, zoning bylaw updates, and assisting communities in securing grant funding for priority community projects that promote flood resiliency.

DRAFT

Housing: Background and Inventory

As this chapter is very data heavy, LCPC felt it was appropriate to break down the commonly used sources. Census data is frequently used and is an all-encompassing survey done every ten years. The Census Bureau also conducts the American Community Survey (ACS), which is done every year and creates a representative sample of the study location.

Furthermore, LCPC used data and analysis from the 2024 Lamoille County/Hardwick Regional Housing Assessment as well as the Vermont Housing Needs Assessment: 2025-2029. These two reports also frequently use the Census and ACS data, but also incorporated other sources depending on the analysis. Each report has been hyperlinked to ensure that readers can view these housing assessment reports as desired.. Furthermore, the Town of Stowe has produced its own local 2025 Housing Needs Assessment Report which looks specifically at the existing housing stock in Stowe.

Municipalities may find unique approaches to addressing housing needs applicable to the community but ultimately, a regional entity may be able to facilitate work between municipalities, service providers, non-profit agencies, and residents of varying needs to address housing needs.

Housing is affected by transportation, location, workforce development, and land use trends. Regional organizations that do not work directly with those seeking housing, such as LCPC, can be liaisons between regional groups, agencies, entities, and organizations that do create housing and housing policy. Housing struggles are not limited to any one community in the county. Policies and programs implemented in one community may have consequences in the next. LCPC can facilitate county-wide dialogues to help finance and locate housing.

To address housing needs and trends, it is useful to collect and analyze data on demographic changes or to undertake housing needs assessments. A Lamoille County regional housing needs assessment was last conducted in 2024. Since the beginning of the Covid-19 Pandemic in 2020, trends are different given changes in regional, state, and national economies.

DRAFT

Lamoille County's demographic trends show a substantial increase in housing units, likely due to the County's increasing population. It should be noted that 2nd homes and commercial housing is counted in total housing units available. Housing challenges include affordability, adequate stock of housing for diverse populations, quality of housing, transportation costs, land constraints, and availability of employment opportunities. Everyone needs shelter and a regional approach to addressing housing makes everyone responsible for ensuring all people are adequately and appropriately sheltered. The increase in short-term rental housing limits available housing stock for year-round residents. Trends in seasonal/short-term housing are described below in the Housing Stock Characteristics section of this chapter. Challenges regarding limiting year-round housing stock and affordability exacerbate regional and statewide issues concerning staffing shortages across all economic sectors.

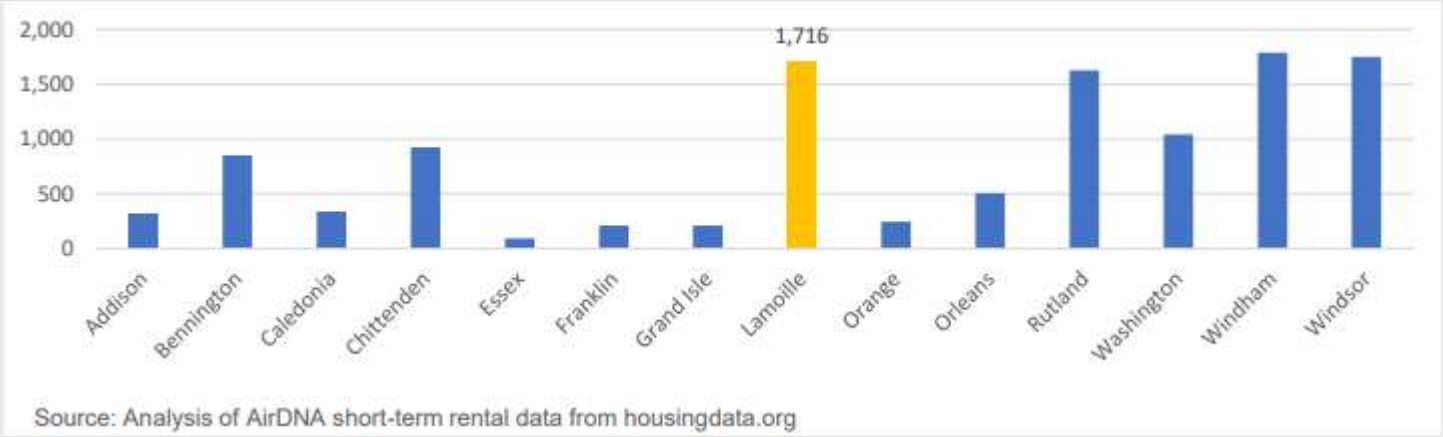


Figure 3-1 short-term Rental Data

The State's housing report shows that Lamoille County has the second highest number of short term rentals (STR) in the State. Stowe has the greatest portion of their housing stock dedicated to Short-term Rentals/seasonal homes. The 2025 Stowe Housing Needs Assessment reported that only 33% of residential properties were year-round residences. Meaning roughly 67% of residential properties in Stowe are second homes. Stowe contains more than half of the short-term rentals in the county. Cambridge, the town nearest Smugglers' Notch, had the second highest share of STRs in the county.

Housing and Demographic Changes

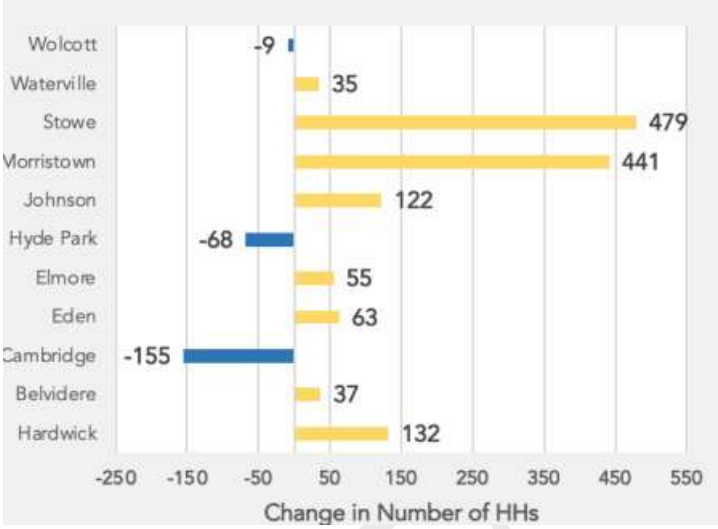


Figure 3-2 Change in Households in Lamoille County Between 2015-2022

Source: 2024 Lamoille County Housing Assessment Report

	Population Change - Recent, Current												
	Hardwick	Belvidere	Cambridge	Eden	Elmore	Hyde Park	Johnson	Morristown	Stowe	Waterville	Wolcott	Study Region	Vermont
2000	3,174	294	3,186	1,152	849	2,847	3,274	5,139	4,339	697	1,456	26,407	608,827
2010	3,010	348	3,659	1,323	855	2,954	3,446	5,227	4,314	673	1,676	27,485	625,741
2015	2,937	356	3,769	1,353	881	3,068	3,526	5,415	4,448	691	1,728	28,172	626,042
2020	2,906	353	3,807	1,334	876	3,001	3,540	5,435	5,218	689	1,661	28,820	642,495
2022	2,972	350	3,763	1,319	885	3,009	3,444	5,676	5,291	682	1,671	29,062	647,064
% Change													
2000-'22	(6%)	19%	18%	14%	4%	6%	5%	10%	22%	(2%)	15%	10%	6%
2010-'22	(1%)	1%	3%	(0%)	4%	2%	(0%)	9%	23%	1%	(0%)	6%	3%
2020-'22	2.3%	(0.8%)	(1.2%)	(1.1%)	1.0%	0.3%	(2.7%)	4.4%	1.4%	(1.0%)	0.6%	0.8%	0.7%

Figure 3-3 Population Change 2000-2022

Source: 2024 Lamoille County/Hardwick Regional Housing Assessment

Over the past three decades Lamoille County and Hardwick have consistently been outpacing the State in population growth. More recently, however, the region has dropped closer to the State's average growth levels.

The change in households between 2015 and 2022 shows a sharp increase in Stowe and Morristown, but noticeable decreases in Cambridge and Hyde Park.

Housing Needs and the Housing Continuum

People have different housing needs at different ages. When there is a burst of demand within a specific age group, it leads to inflation within their particular type of housing. Lamoille County must track population and age statistics to ensure each group has an adequate supply of housing to meet their needs. The chart below builds upon the previous definition from the State of Vermont Housing Needs Assessment.

Table 3-1 Housing Continuum by Age Group

Age Group	General Characteristics	Housing Demand
20s	-Lower incomes -Career Exploration/Training -High mobility -Small households (single-unmarried)	Apartments Student Housing House sharing (many households in one unit)
30s	-Growing households (marriage) -Beginning families -Small children -Growing income -Career growth -Higher Education	Apartments, Tiny Homes Larger rentals-single family homes, duplexes, etc. 1st Time Homebuyer Mobile homes Condos
40s	-Beginning families -Older children -Growing families -Growing income -May experience housing changes with family events (death, divorce, etc.)	1st Time Homebuyer Step up to larger house Additions, home improvements Accessory Dwelling Units (additional rental income or caring for loved ones)
50s	-Older children -Empty nest -May experience housing changes with family events (death, divorce, etc.) -Stable income -Consistent housing	Live in existing homes Renovate and improve housing May downsize or move for children/life events
60s	-Nearing retirement- May experience housing changes with family events (death, divorce, etc.)	Begin process of "downsizing" May move for resources or community

DRAFT

70s	-Retirement -Reduced income -Reduced physical mobility	Smaller homes Accessory dwelling units Accessible tiny homes Apartments May move to be close to children/grandchildren Condos Retirement developments
80s/90s	-Risk of frailty -Could utilize live in support -More single households than couples	Assisted living May move in with children May move to be closer to healthcare At risk of institutional care

Source: Vermont Department of Housing and Community Development, 2020 VT Housing Needs Assessment

Demographic trends (see Section 2) indicate that the proportion of the population who are retirement age and elderly will increase over the next decade. While the middle-aged tends to be the wealthiest sector of the population, many of those in the elderly age range may be single people with limited incomes and the need to locate near services. The increasing trend shifting towards older renters over younger will impact the housing demands. From a supply standpoint, older renters expect higher quality rental units than younger renters or may need to shift from a detached single-family home to a more modest living unit.

Household and Family Characteristics

The Census has defined the following:

A household includes all the people who occupy a housing unit (such as a house or apartment) as their usual place of residence.

A household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roommates, is also counted as a household. The count of households excludes group quarters. There are two major categories of households:

- *A family includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family.*
- *A nonfamily household consists of a householder living alone (a one-person household)*

or where the householder shares the home only with people to whom he/she is not related (e.g., a roommate).

Families are broken down into types:

Families may be a "Married Couple Family," "Female householder, no spouse present" or "Male householder, no spouse present."

The town with the highest percentage of householders living alone is Stowe (38%) followed by Hyde Park and Johnson (both 28%). The town with the lowest percentage of householders living alone is Cambridge at 17%.

Lamoille County, 2020:
63% of the 10,770 households were families,
48% of households were married families – often living in homeownership situations
8% of households were female householders with no spouse present,
27% of householders live alone

DRAFT

Many people may desire homeownership but a married couple has an easier time qualifying and securing financing for a home. This can be due to the overall cost, bank policies, credit, or other factors

The householder data also demonstrates some similarities of high rates of non-family households (A nonfamily household consists of a householder living alone (a one-person household) or where the householder shares the home exclusively with people to whom he/she is not related). The highest is Stowe (49%), followed by Johnson (42%), and Morristown (39%). Both Stowe and Johnson have high rates of households composed of non-family members. This could be housemates or people living alone. Stowe, Johnson, and Morristown have high rates of rental occupancy. However, for Johnson, this is likely due to the high population of students and for Stowe, it is the high population of seasonal residents, many of whom are retirees.

Table 3-2 depicts the trends in the average size of families and all households between 2000 and 2020 for the county and the entire state. The average family and household size

across Vermont has steadily decreased since 2000. There has been a slight increase in the household and family size for Lamoille County since 2010. The overall trend is still lower than in 2000. Families and households that are smaller may desire smaller dwellings. However, the numbers presented are averages and many households do experience overcrowding. Economic shifts from the Covid-19 pandemic may have exacerbated this trend due to reduced incomes, employment changes, or increased childcare disruptions impacting the ability to work. Similarly, taking in elderly or lower- income relatives may be unsuitable for smaller houses not equipped to handle more people.

Table 3-2. Average Size of Families, 2010-2020

Year	Lamoille County	Vermont
2010	2.74	2.85
2020	2.79	2.83

Sources: 2000 Census and 2010, 2020 ACS 5 Year Estimates

Table 3-3

	Households by Size - Owner & Renter (2022)												
	Hardwick	Belvidere	Cambridge	Eden	Elmore	Hyde Park	Johnson	Morristown	Stowe	Waterville	Wolcott	Study Region	Vermont
Total:	1,224	179	1,376	571	464	1,241	1,284	2,429	2,401	183	702	12,054	262,514
Owner occupied:	1,031	172	939	448	427	1,095	774	1,672	1,726	137	533	8,954	189,152
1-person household	243	41	113	115	118	317	222	252	637	37	96	2,191	47,090
2-person household	394	74	382	204	154	409	228	899	731	58	205	3,738	81,472
3-person household	191	36	184	63	60	126	153	216	96	24	130	1,279	27,431
4-person household	142	18	117	25	84	172	156	181	59	15	63	1,032	22,398
5-person household	58	2	94	41	2	11	15	96	57	3	21	400	7,254
6-person household	3	1	14	0	9	9	0	0	146	0	0	182	2,344
7+ person household	0	0	35	0	0	51	0	28	0	0	18	132	1,163
Renter occupied:	193	7	437	123	37	146	510	757	675	46	169	3,100	73,362
1-person household	83	0	115	23	23	45	162	373	337	4	79	1,244	33,421
2-person household	97	0	155	48	3	64	181	247	226	27	40	1,088	21,777
3-person household	13	7	86	15	2	29	40	81	17	15	13	318	9,452
4-person household	0	0	59	32	9	0	72	51	95	0	34	352	5,618
5-person household	0	0	0	5	0	8	55	5	0	0	0	73	2,113
6-person household	0	0	12	0	0	0	0	0	0	0	0	12	657
7+ person household	0	0	10	0	0	0	0	0	0	0	3	13	324

Source: 2024 Lamoille County/Hardwick Regional Housing Assessment

Table 3-3 above shows minimal change in the average family size for Lamoille County and the State respectively between 2010 and 2020. During this time there was a slight increase in the average family size in Lamoille County. Meanwhile, Vermont saw a slight decrease in the average family size.

According to the 2024 Lamoille County/Hardwick Regional Housing Assessment table 3-4 above shows household size split between renter occupied units and owner occupied units in the Lamoille Region. There are significantly more owner occupied units and they also tend to have larger families. The renter occupied units are primarily single individuals or are a two-person family, with very few renter occupied units having 5 or more family members.

Housing Stock Characteristics

According to the U.S. Census (2020), the majority (68%) of the housing units in Lamoille County are single-family homes. Structures with two or more units are 22% of the housing stock, and mobile homes make up the remaining 10%.

The housing stock in Lamoille County is primarily owner occupied. The County has stayed at 69–72% owner occupancy from 2000 to 2020 for all occupied properties. Johnson has the highest percentage of rental occupancy (68%) of all Lamoille County towns. Johnson was the only town in Lamoille County that saw an increase in rental housing in the past 20 years. Several towns saw a decrease in rental housing including Belvidere, Elmore, and Hyde Park. The remaining towns have similar, if not the same rates of rental occupancy in the past 20 years.

HOUSING UNITS (*1 house = 1,000 units)*

Almost half of the County's housing is in Morristown and Stowe

DRAFT

In the past 20 years from 2000-2020, Stowe had the highest rate of increase in housing units at 40% while Cambridge follows close behind at 36%. Waterville has had the slowest rate of housing unit growth throughout this same time period, increasing its housing stock by only 8%. Belvidere, Eden, Johnson, and Morristown have seen growth in the 20th percentile over the past 20 years.

Lamoille County depends on its seasonal population for much of its economic growth. However, a majority (84%) of the County's housing stock is year-round housing. Cambridge (7%), Hyde Park (7%), Morristown (6%), and Wolcott (8%), each have only a small portion of their housing stock as seasonal. On the other hand, Stowe, Elmore, and Eden each have significant seasonal populations, 39%, 27%, and 21% respectively. There have been significant changes to seasonal homes within the county over the past 20 years. The chart below demonstrates how each town changed since 2000. Some have doubled the seasonal housing, while others have significantly decreased. This could be from people changing seasonal homes to year-round occupancy during the pandemic.

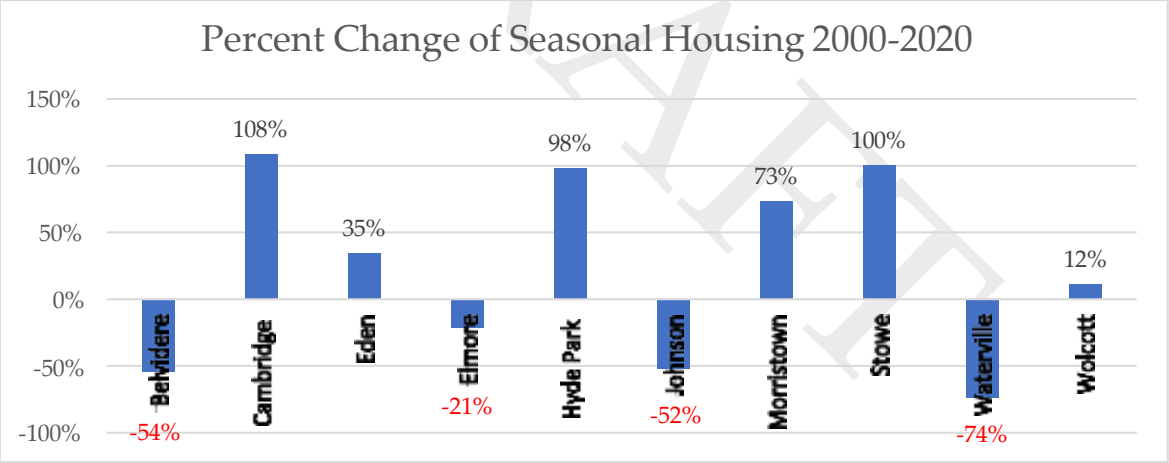


Figure 3-4 Percent Change in Seasonal Housing from 2000-2020
Source: Census 2000-2020

DRAFT

One way of measuring housing quality is by the age of housing stock. Much of Vermont's housing stock is older than the national average. This corresponds to housing quality issues and the potential need for housing rehabilitation as opposed to new housing, which can come with its own set of additional costs.

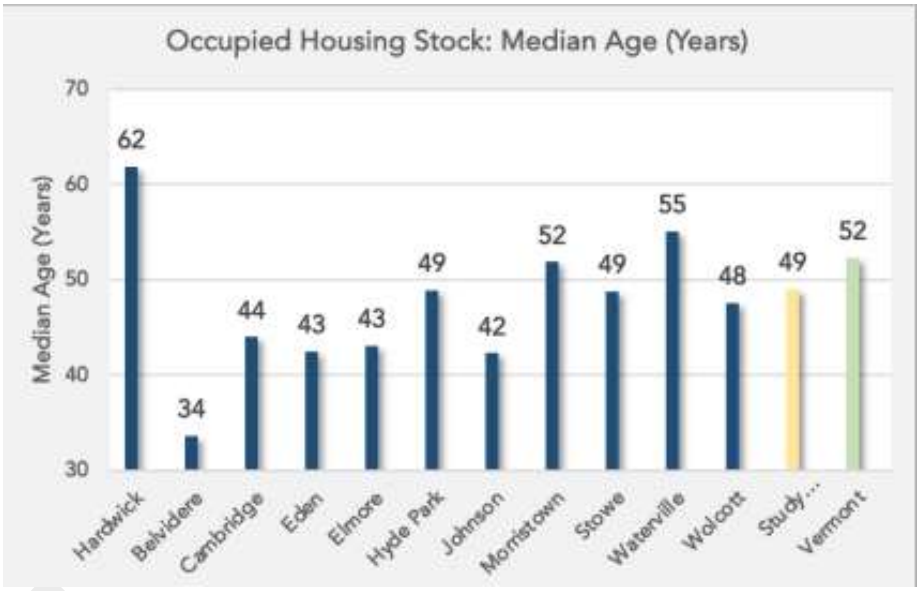


Figure 3-5 Occupied Housing Stock Median Age
Source: 2024 Lamoille County Housing Assessment Report

Examples of issues that can arise with an older housing stock include: prevalence of lead paint and asbestos, no fire code, and inefficient home heating and cooling. With that in mind it should be noted that Lamoille has a younger overall housing stock when compared to the state average.

Lamoille County is 5th in the state out of the fourteen counties for housing built before to 1939. Almost 18% of the housing stock was built since 2000, which is again in the top five relative to other counties and exemplifies the county's increasing growth rate. However 68% of the houses in Cambridge Village and 48% of the homes in Jeffersonville Village were built prior to 1939. Another area with a high percentage of homes built prior to 1939 is Waterville (40%). The 2024 Lamoille Housing Report showed that Waterville's median home age is 55, with Morristown and Hyde Park at 52 and 49 respectively. These clusters of old housing stock within Lamoille County can become problems for these communities and the owners if regular maintenance is not done. An example of a potential hazard that may show up in homes older than 1978 is Lead paint. It is possible that renters and homeowners have been exposed to lead in their house especially in towns with older housing stock. More specifically, around 46.1% of Lamoille County's housing stock was built before the 1978 ban of Lead paint

DRAFT

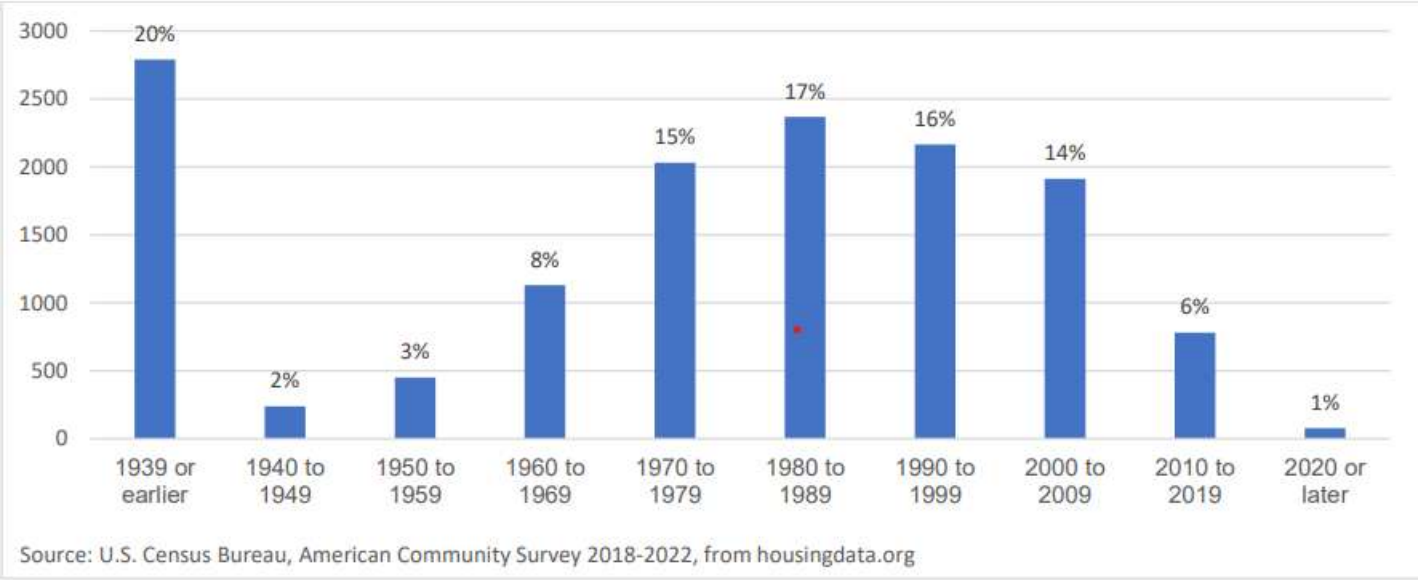


Figure 3-6 Lamoille County Housing Stock Year Built

All houses have their challenges but one of the challenges with older homes is their functionality. When houses were built in the 19th century, they were larger, to accommodate extended families and families that were much larger than they are today. The average size of a family in Lamoille County today is 2.79 people, which is down when compared to a typical household size in the year 2000. Also, when compared to the year 1800, the household size is down dramatically from 7.00 people. Large Victorian homes have proved useful for a number of adaptive re-uses. Beyond their intended use as a single-family home, these homes have found use as rental apartments for individuals and families, shared housing situations for elderly, assisted living facilities, commercial uses, museums, transitional housing, or mixed-use developments (commercial and residential uses). There are many opportunities to adapt and reuse these older homes in village centers. However, there needs to be infrastructure upgrades to the water and wastewater systems to accommodate these changes.

DRAFT

State Housing Targets

The Vermont Agency of Commerce and Community Development has created aspirational housing targets for each county in Vermont and tasked each RPC with creating town specific goals. These goals are seen as a response to the ongoing state wide housing crisis. A Dwelling Unit is a self-contained housing space where one or more people live. It can be a house, apartment, or even a single room, with its own entrance, kitchen, and bathroom. The State provided four different goals for each RPC. Importantly, these goals are not mandatory and were created to encourage statewide housing growth rather than enforce it. Furthermore, the state does not distiniguish between primary and secondary homes or types of housing units. The State provided LCPC with the following goals:

- 2030 Lower Goal: 1,387 additional dwelling units
- 2030 Higher Goal: 1,959 additional dwelling units
- 2050 Lower Goal: 3,359 additional dwelling units
- 2050 Higher Goal: 6,621 additional dwelling units

The table below shows the total number of dwelling units in Lamoille County from 2010 to 2022. This was calculated by using the ACS estimation of the occupied units in the county and adding the ACS estimate of vacant units in the county. (The State used this same processes in calculting the county's 2022 number of total units.) To create a historic trend line, the annual change in units was calculated and averaged. This found that the average number of new dwelling units in Lamoille County between 2010 and 2022 was 101.

Table 3-4 Total Number of Dwelling Units in Lamoille County 2010-2022

Year	Occupied Units	Vacant Units	Total Units	Change in Total Units
2022	11,176	2,770	**13,946**	156
2021	10,830	2,960	13,790	-27
2020	10,770	3,047	13,817	136
2019	10,546	3,135	13,681	128
2018	10,607	2,946	13,553	122
2017	10,401	3,030	13,431	196

DRAFT

2016	10,342	2,893	13,235	113
2015	10,176	2,946	13,122	28
2014	10,121	2,973	13,094	87
2013	10,046	2,961	13,007	57
2012	9,975	2,975	12,950	66
2011	10,097	2,787	12,884	156
2010	10,345	2,383	12,728	N/A

Source: ACS 5-year estimates

The Vermont Housing Needs Assessment used 2022 American Community Survey Data to serve as a starting point for each County's goal. The 2022 ACS cites 13,946 total dwelling units in the County. With this in mind, starting in 2022, Lamoille County would need to build an average of the following numbers of new dwelling units each year to hit each goal:

- 2030 Lower Goal: 197 additional dwelling units per year between 2022 and 2030
- 2030 Higher Goal: 269 additional dwelling units per year between 2022 and 2030
- 2050 Lower Goal: 127 additional dwelling units per year between 2022 and 2050
- 2050 Higher Goal: 243 additional dwelling units per year between 2022 and 2050

DRAFT

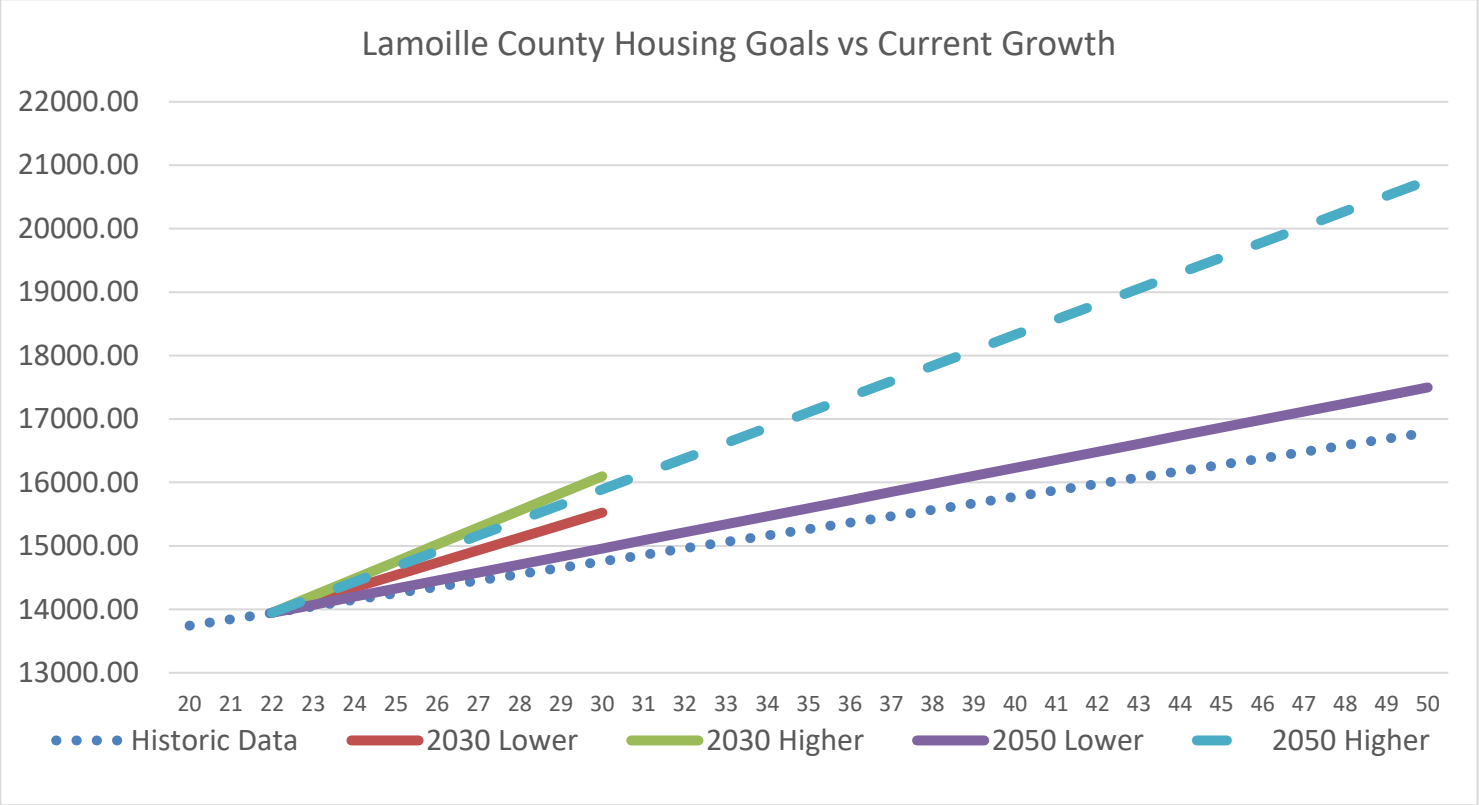


Figure 3-7 Lamoille County Housing Goals
Source: 2025 Vermont Housing Assessment Report

The graph above directly compares a projection that maintains the 101 new dwelling units per year that was seen between 2010 and 2022 to the number of new units needed per year to meet each of the State's goals. Notably, the 2030 goals not only have a closer timeline, but also require significantly more accerlation than the 2050 goals.

The town specific goals have been created by disaggregating the county goals above in poroportion to each town's portion of the county's total population. For example, Belvidere represents about 1.38% of the county's population. As such, they will represent 1.38% of the county's housing goals. The 2030 lower goal aims for 1,387 new units for the county at large. Therefore, Belvidere's goal is 19 new units, which is about 1.38% of 1,387 new units. The table below includes each town's goals.

The LCPC explored other options and formulas to create town level housing targets. Dividing the regional target based on current population distribution proved to be the most rational and equitable approach. The LCPC explored dividing the targets based on current housing unit distribution, but this produced skewed results due to the high volume of 2nd homes in Lamoille County – especially in Stowe. The LCPC also considered developing a formula-based infrastructure service area. The LCPC decided against that

method due to limitations of existing water and sewer infrastructure in the County.

Table 3-5

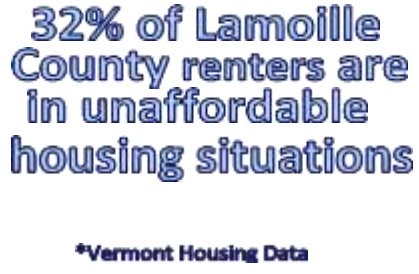
	2030 Lower # of Additional Units	2030 Higher # of Additional Units	2050 Lower # of Additional Units	2050 Higher # of Additional Units
Belvidere	19	27	46	91
Cambridge	205	290	497	980
Eden	72	101	173	341
Elmore	47	67	115	226
Hyde Park	161	228	391	771
Johnson	187	264	452	891
Morristown	290	410	704	1,387
Stowe	279	394	676	1,333
Waterville	37	52	89	175
Wolcott	89	126	216	426
Lamoille	1,387	1,959	3,359	6,621

Source: LCPC, 2025. Regional Housing Targets Goal broke down by percentage of population/town.

The Need for Fair and Affordable Housing

It would be ideal for all residents of Lamoille County 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 ethnicity, familial status, and more.

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.



In 2007, LCPC published a report entitled *Fair Housing and Land Use Planning & Regulation in Lamoille County, Vermont*. This report analyzed Lamoille County's municipal plans and zoning bylaws to assess the degree of compliance with the U.S. Fair Housing Act and propose steps to further the goal of fair housing. The report noted that all towns and villages with a plan have some language that may be impractical given the community's lack of regulatory authority and that many

communities do have some provisions to increase access to affordable housing.

Housing Affordability

Affordable housing is hard to find, and this is becoming a major crisis across Vermont. "The state would have to build a minimum of 5,800 homes and apartments by 2025, and more than triple that to address the broader affordability crisis."[2]

The Vermont Department of Housing and Community Development (DHCD) housing policy states that housing is considered affordable when the costs (such as rent and utilities, or mortgage and taxes) are no more than 30% of income for a household earning 80% of the county median. Generally, the lower the income, the smaller the chance that available housing will be affordable. Factors that affect the affordability of housing are briefly discussed below. (For more detailed analysis, see the Economic Development, Energy, Transportation, and Demographics sections). An affordable monthly housing payment for local families is approximately $1,334 per month, including taxes and utilities. Accounting for increases in heating fuel prices — which may exceed $200 per month during winter — there are a limited number of housing options in the region that are, by definition, affordable.

The median household income of a renter in Lamoille County is $40,453, compared to the median household income of a homeowner, $77,083. In Lamoille County, 39% of homeowners with a mortgage spend less than 20% of their income on housing costs, while 22% spend over 35% on housing costs. The remaining 58% of homeowners spend more than 20% but less than 35% on housing costs. Housing costs for renters are higher with 34% of renters spending more than 35% of their income and 33% of renters spending 20%-29% of their income on housing costs. This higher cost, combined with a lack of home equity and overall lower income, makes it harder to work towards home ownership.

2 https://vtdigger.org/2022/04/17/vermont-conversation-the-roots-and-way-out-of-vermonts-housing-crisis/ Windham and Windsor Housing Trust.

DRAFT

Table 3-6

Municipality	2020 Median Gross Mortgage	2020 Median Household Income	2020 Housing Costs as % of Household Income	2010 Housing Costs as % of Household Income
Belvidere	$ 1,314	$ 75,156	20.98%	25.80%
Cambridge	$ 1,808	$ 76,250	28.45%	22.30%
Cambridge Village	$ 1,528	$ 72,500	25.29%	28.10%
Jeffersonville	$ 1,625	$ 54,917	35.51%	31.40%
Eden	$ 1,211	$ 49,010	29.65%	21.70%
Elmore	$ 1,480	$ 94,286	18.84%	21.30%
Hyde Park	$ 1,511	$ 70,871	25.58%	21.80%
Hyde Park Village	$ 1,554	$ 72,880	25.59%	25.20%
Johnson	$ 1,392	$ 50,000	33.41%	26.80%
Johnson Village	$ 1,422	$ 40,907	41.71%	31.60%
Morristown	$ 1,645	$ 55,343	35.67%	23.10%
Morrisville	$ 1,526	$ 53,138	34.46%	23.00%
Stowe	$ 2,200	$ 70,577	37.41%	29.80%
Waterville	$ 1,447	$ 74,375	23.35%	24.60%
Wolcott	$ 1,188	$ 60,703	23.48%	26.60%
Lamoille County	**$ 1,594**	**$ 64,179**	**29.80%**	**23.70%**
State of Vermont	**$ 1,630**	**$ 63,477**	**30.81%**	**23.20%**

Source: American Community Survey 2020

Low and middle-income residents do not fare as well. Lower-income earners are likely to have a harder time keeping up with housing costs than higher wage earners. A combination of rising land and home prices, concentration of employment in the low-wage service sector, and increased pressure on the rental market could rapidly push some Lamoille County communities out of the affordable range for low and middle-income residents. While owning a home may be more affordable for some workers, the cost of maintaining that home over time will continue to increase as the cost of living increases faster than wages.

Figure 3-8 Residential State Sale Prices for Lamoille County

Source: Vermont Department of Taxes, 2010-2021

Cost of purchasing a home

Using the rough estimate that households can afford a house that is three times their yearly income, a family with an income of $64,179 (median income in 2020) could afford a home with a sale price of $192,537. Affordability is determined by sale prices, not by property values; there may be plenty of affordable housing but if none of it is for sale, it doesn't do a buyer any good. The median sale prices for Lamoille County are in the figure below. These prices were derived from property transfer tax information compiled by the State of Vermont. Countywide, the median household income increased 63% between the 2000 and 2020 Census counts. This is a slower increase than seen in the previous 20 years.

Table 3-7 attempts to determine whether local and regional income sources have been keeping up with increases in home sale prices. Home sale prices are a primary driver of housing costs and increases in average wages can affect all local households, regardless of how many earners may be present. However, this table does not consider mortgage rates, utility costs, tax rates, and other non-wage income sources, including public subsidies.

Home prices and wages in Lamoille County have not increased at the same rate over the past 11 years. The State Department of Taxes tracks housing sale prices annually,

categorized by parcel size. In 2021, median sale prices ranged from $201,250 for less than 6 acres to $247,375 greater than 6 acres. This is higher than the $192,537 calculated above that a median family income in 2020 could afford. The Vermont Housing and Finance Authority (VHFA) calculated that the overall home price for Lamoille County has grown 33% from 2019-2021.

Table 3-7. Increase in Median Home Prices Versus Annual Average Wages – Lamoille County

Time Period	Median Home Price Increase	Average Wage Increase
2010-2012	13%	19%
2013-2015	16%	20%
2016-2018	17%	19%
2019-2021	21%	12%

Sources: 2010-2021 Vermont Dept. of Taxes, Property Transfer Data, U.S. Census, Quarterly Covered Employment and Wages Report

DRAFT

Housing prices are beyond affordability for the average Lamoille County worker. Families who make the median income or less are unable to afford the median home price. The lack of affordable housing is a challenge for many, and any current renters will have a very hard time transitioning to purchasing a home based on the increase in home prices.

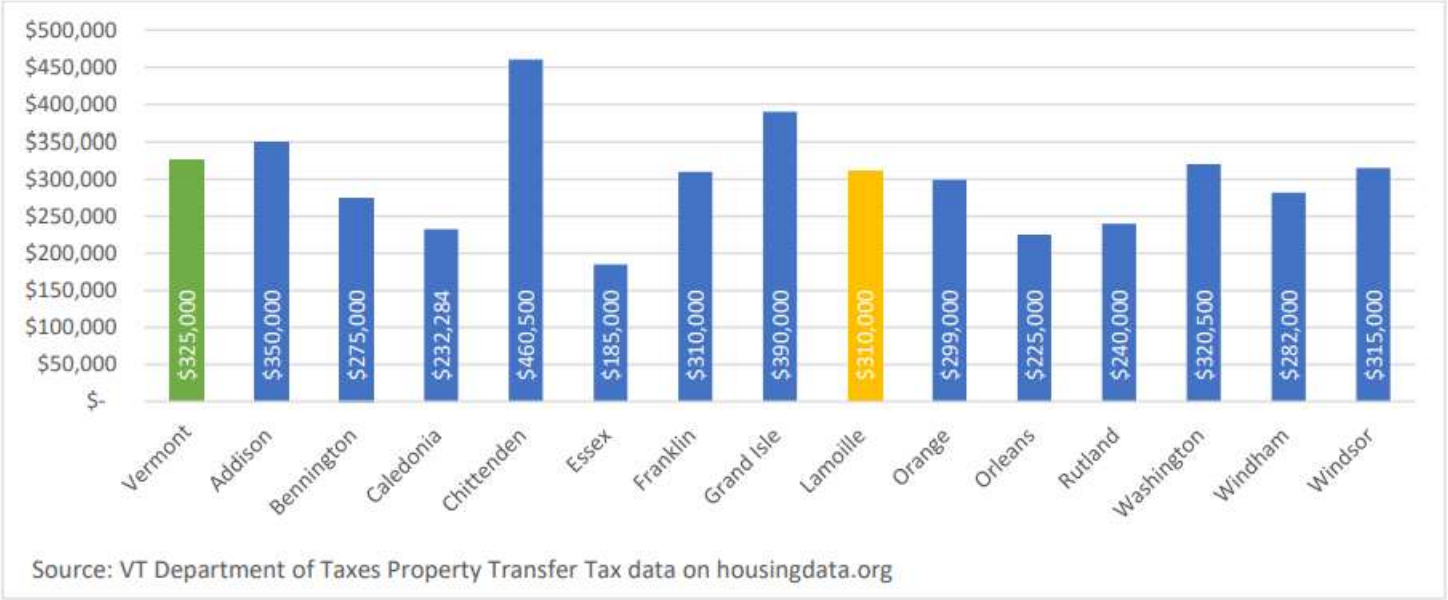


Figure 3-9 2023 Median Primary Home Sale Price by County

The figure above (figure 3-9) from the 2025 Vermont Housing Needs Assessment compares the median primary home sale price by county in 2023. Lamoille County's median price was $310,000 which is just $15,000 below the States median price. In looking at other counties, Chittenden and Grand Isle are the most expensive and Essex and Orleans are the least expensive. Lastly, it is important to note that industry data suggests that the average price of a home in Lamoille County may be significantly higher than reported in the American Community Survey and 2025 Vermont Housing Needs Assessment.

The 2025 Vermont Housing Needs Assessment also compared the ratio of median home sale price to county median household income in 2022. This graph reveals that while Lamoille County may be below average in median home price, when median income is taken into account the county is actually above average. Furthermore, the assessment also notes that households on average are paying more than 30% of their annual income towards housing costs and are thus considered cost burdened. An estimated 33% of owner-occupied households in Lamoille County are cost burdened. The graph below

(figure 3-10) demonstrates this cost burden by looking at this threshold of affordability and which Counties in Vermont are above the "affordability limit" including Lamoille County.

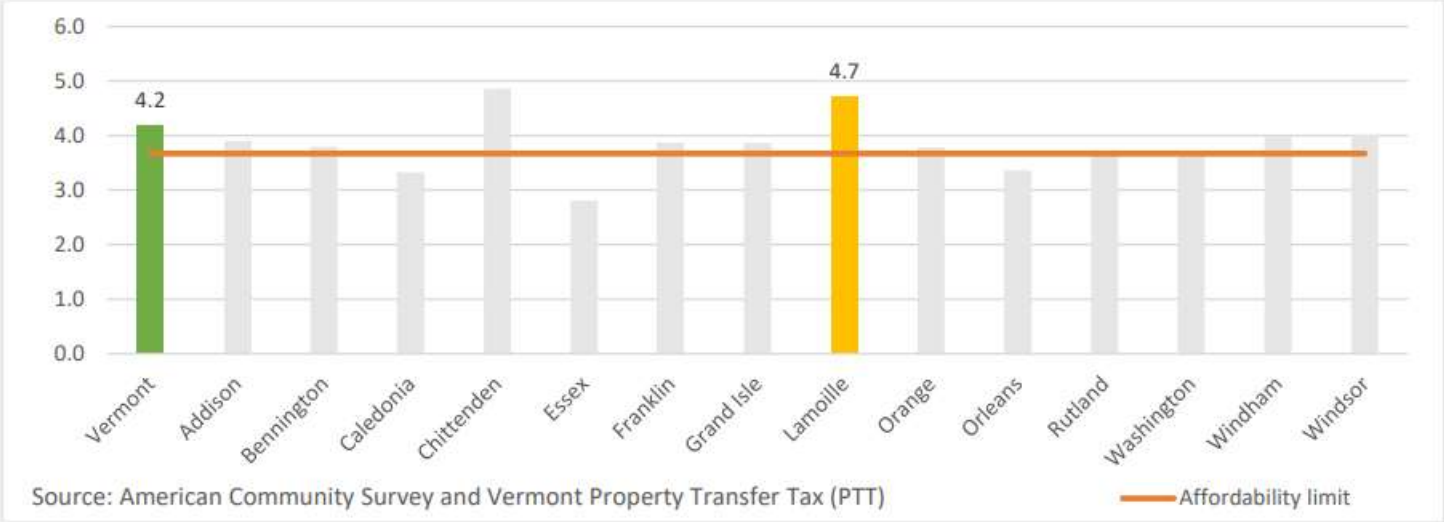


Figure 3-10 Cost Burden of Housing

Rental Housing Costs

Renters struggle to afford housing in Lamoille County. As demonstrated in Table 3-8, rental housing affordability has improved since 2010, although the renter-occupied median income is less than owner occupied housing, which means anyone below the median pays considerably more for their housing.

Table 3-8. Rental Housing Costs as Percent of Household Income

Municipality	2010 Median Gross Rent ($)	2010 % of Household Income	2020 Median Gross Rent ($)	2020 % of Household Income (Renters)
Belvidere	988	41.70%	1000	29.66%
Cambridge	888	24.90%	977	24.82%
Cambridge Village	782	35.70%	1016	20.61%
Jeffersonville	867	29.70%	1017	27.98%
Eden	1,305	37.50%	1,125	27.55%
Elmore	1,167	28.30%	696	29.48%
Hyde Park	790	32.50%	884	17.13%
Hyde Park Village	800	27.00%	1019	27.34%

DRAFT

Johnson	758	31.00%	891	34.44%
Johnson Village	719	40.30%	928	29.56%
Morristown	931	28.70%	928	30.36%
Morrisville	841	31.00%	945	27.17%
Stowe	1,318	34.00%	1,075	34.79%
Waterville	940	25.90%	850	24.24%
Wolcott	758	20.00%	817	24.09%
Lamoille County Average	**930**	**31.80%**	**941**	**27.91%**
Vermont Average	**843**	**30.90%**	**999**	**32.22%**

Source: U.S. Census 2010 and American Community Survey 2020

Housing Plus Transportation

The decision about where to live and where to work is based on several factors. Employment in Chittenden County may pay more, but it also costs more to buy a home there. Lamoille County's communities are within driving distance to Burlington, but housing costs have historically been much lower. The same can be said for living and working within Lamoille County. Housing values, as opposed to sale prices, vary throughout Lamoille County towns. Since the Covid-19 Pandemic, there has been an increase in people working from home and an increase in home prices and sales. As life shifts back to normal, there will be an increase in returning to the office, although many may continue to work remotely, at least part time.

72% of 2021 property transfers in Lamoille County were in Stowe, Morristown, and Cambridge. These three communities are also closest to employment centers. While housing is generally more affordable further from employment centers, longer commutes often result in increased transportation costs (including fuel costs, vehicle repairs, and other related expenses, Table 3-9).

Table 3-9 Costs of Commuting*

	40-mile round trip commute	**15-miles round trip commute**
Monthly Costs	$507	$190
Yearly Costs	$6084	$2282

*Assumes commute is 5 days per week x 2021 IRS rate ($.585 per mile)

DRAFT

The financial costs of commuting show that an average 40-mile round trip per workday will cost a worker about $507 a month, or $6,084 a year (using the Internal Revenue Service's 2021 standard mileage rate) while a worker who has a 15-mile round trip commute will spend significantly less, $190 a month or $2,282 annually. Commuting also impacts quality of life, traffic, air pollution, and time spent with families or in the community (for more information, see the Transportation Section). Development patterns that locate housing further from jobs and services, cost residents time and money and reduce the amount of disposable income that residents can spend at local businesses.

This combination of housing plus transportation costs is at the root of a new affordability index developed by the Center for Neighborhood Technology (CNT). CNT realized that there are more cost burdens associated with housing than just income, or income and commuting costs. Neighborhoods that are efficient also cost less. This means compact neighborhoods with mixed-uses, access to jobs, services, and transit are more efficient. After housing costs, transportation is the second greatest cost to a household. Combined, housing and transportation should be no more than 45% of a household's income.

The CNT website, https://cnt.org/ , discusses housing and transportation costs in greater detail and features an interactive platform that allows users to gauge their housing plus transportation affordability index. The index includes income, household size, and average number of commuters per household. An example from the site shows that Lamoille County residents spend about 33% of their income on housing costs. When combined with transportation, they spend over 61% of their income on those two costs. This has been deemed unaffordable by the CNT index.

Lamoille County's housing values are $228,200 and the household income is $64,179. The idea of housing plus transportation costs for Lamoille County Residents are shown in Table 3-10.

Table 3-10. Housing + Transportation Affordability in Lamoille County*

	Cost	% of income
Median Mortgage payments	$1,594/ month	30
Commuting costs	$14,506 (annually)	23
Total (annual)	$33,634	53

*Based on the median annual income for a household in the 2020 Census, Commuting costs were obtained through H+T Index.

DRAFT

Housing values for towns in adjacent regions provide varied options for potential Lamoille County residents. In the northeastern regions and towns, housing values are lower and more diverse than the western and southern towns which border Lamoille County. Owner-occupied housing values in Lowell and Hardwick are lower than Craftsbury, for example. The southern towns of Franklin County, all of Chittenden County's towns adjacent to Lamoille County, and most of Washington County's bordering towns have median housing values in the upper end of the spectrum.

Housing values in adjoining regions are an important consideration for communities bordering other counties. As housing costs in Chittenden County continue to increase, development pressure may be put on Cambridge and Jeffersonville. Waterville, Belvidere, and Eden are all currently relatively affordable communities within reasonable commuting distance to the Jay/Newport area. Major developments proposed in this area may have an impact on housing costs and/or increase development pressures on these Lamoille County communities. Monitoring workforce projects will be important for LCPC as these development proposals unfold to the north.

Specialized Housing Options

There are individuals or families with special housing needs within every community. The elderly, individuals, and families with children in poverty are examples of groups with special needs that are found in most communities. People with disabilities 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. If diverse housing options are not available, some residents may be forced to relocate outside of Lamoille County as they age and need additional levels of care.

High housing costs adversely affect young families and the elderly more than the general population. For the elderly who may be living on fixed incomes, the cost of utilities, health care, or other monthly costs can be difficult to maintain. For the elderly, who may live alone or with another person, their homes may be larger than what one or two people need or can maintain. This increases costs of heating and maintenance. The draw for elders to remain in their homes may be economic (an older person is more likely to own his or her home rather than pay a mortgage) or social (comfort of knowing the house, the neighborhood, and the community).

DRAFT

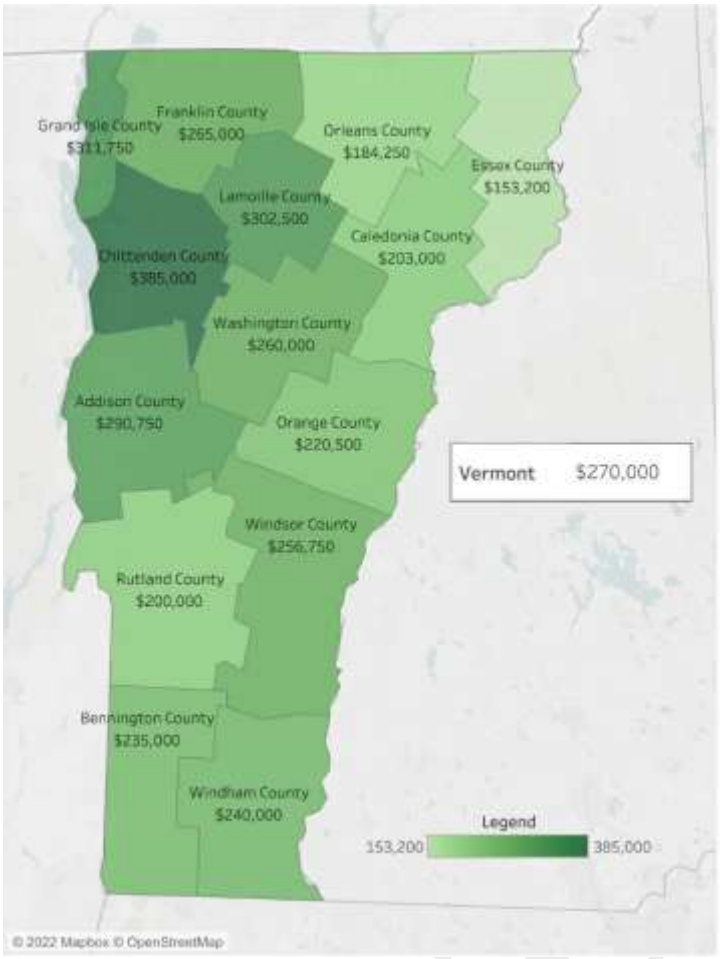


Figure 3-11 Median Value of Homes by County
Source: VT Housing Data

Young families may require more bedrooms. Ramifications of inadequate bedroom counts may impact, among other factors, wastewater treatment systems in communities without municipal sewer or cause overcrowding. The median sale price for a home in Lamoille County is currently $302,500, according to VT Dept. of Taxes. This means to comfortably afford a home in Lamoille County in the current housing market, a household should earn near six figures. This is well above the county median income.

Listed below are groups with specific needs which are found in Lamoille County and an evaluation of how well their needs are being met. Generalizations are made throughout this section based on characteristics and they are not intended to be derogatory in any manner. With each generation, individuals are staying healthier longer and can live independently much later in life. But, in general, taking care of oneself and one's home

gets significantly more difficult as one gets older, especially if someone loses a spouse.

For elderly assisted living facilities, there are four levels based on the amount of care and assistance necessary. The amount of special care required may be more or less depending on the situation. Some individuals need only special construction (such as handicapped accessibility) while others need assisted living arrangements (visiting nurses) while still others may require full institutional care.

The groups listed below would need Level IV care.

- Seniors 70-85: Most seniors between 70 and 85 continue to live independently, but many require some assistance especially as they get older. These may be situations where seniors have difficulty driving or require a visiting nurse periodically. This age group may require Level III care.
- Seniors 85 and over: Beyond age 85, seniors increasingly need more intensive care. In the most serious cases, full institutional care is required. There are relatively few individuals in this category, but this may be due to the fact that anyone who requires assisted living is forced to move to towns which have these facilities available. These individuals would require Level II or Level I housing. Level I nursing homes are generally located near hospitals where emergency services are available.
- Mobility and self-care limitations (people with disabilities). Individuals would require assistance with day-to-day functions such as eating, dressing, and bathing. Depending on the severity of the limitations presented by one's disability, human services, transportation services, or special construction (handicapped accessibility) may be required. Social services are available in Lamoille County although special living situations for those with serious conditions do not exist.
- Families, Children, and Seniors in Poverty: The average rate of poverty in Lamoille County, based on 2020 estimates, is 12.4%. Poverty affects individuals, families, and the elderly. It is a compound of income, cost of living, and the ability to provide basic needs to survive.
- Homelessness and Transitional Housing: Homelessness is when people, an individual, or a family, lack a fixed, regular, and adequate nighttime residence. Despite the resiliency of Vermonters, homelessness continues to afflict many in Lamoille County.
- Student housing: Contrary to State trends, Lamoille County's percentage of 20-24 year olds is increasing and is projected to continue growing. That age group has

DRAFT

decreased in enrolment in post- secondary education but undergraduate degrees for the 25+ population is increasing. However, housing a student population requires different expectations than housing for elderly or families. With Vermont State University in Johnson, and the Vermont Woodworking School student population housed in Jeffersonville, these two communities face especially different housing challenges related to housing affordability and availability than many other Lamoille County communities.

- Seasonal workers: As an economy which benefits heavily from tourism related industries, Lamoille County has a unique challenge in housing seasonal workers who may only spend 5-8 months in Lamoille County. There is no definitive characterization of the type of seasonal worker who may need housing in the region so housing should accommodate a variety of needs on the housing continuum.
- Veterans: Lamoille County has a population of veterans who live here year-round. The housing needs of veterans, individually or a family, are unique to this group. While military benefits are generally available, veterans often need a holistic approach to address their needs. The incidence of post-traumatic stress disorder, substance abuse, or mental health illness is high in this group, making stable, affordable, and safe housing an issue of concern for many.

Older and Disabled Residents

The proportion of Lamoille County households with household members over 62 years of age is growing at a faster rate than for all households (29% in 2020, compared to 20 percent in 2010). In 2020, more than 741 Lamoille County elderly residents (65+) had some type of mobility and/or self-care limitation. The problem was pronounced for elderly residents age 75+. However, non-elderly households experienced even higher levels (39% of owner and 20% of renter households). The total number of households with mobility and/or self-care limitations represents 13.5% of all Lamoille County residents.

Lamoille County does not have access to assisted living or some forms of unlicensed special needs housing. Elders report difficulty in locating the special needs housing they require, and some providers are exploring the feasibility of adding units to existing special needs housing projects.

According to the 2020 Census, there were 1,188 seniors (65+) living alone in Lamoille County. About 40% of the 65+ population lives alone. There should be great focus on this

DRAFT

age group because of the difficulties that are presented to them when living alone. In many cases, opportunities to rent apartments in senior housing are desired. The average monthly payment for Supplemental Security Income (SSI)[3] is $841. There are over 536 individuals in Lamoille County receiving these federal benefits. This monthly income is not sufficient to provide housing and food, at a minimum.

Homelessness and Transitional Housing

Homelessness is difficult to measure, particularly in a region like Lamoille County, with limited social services, a scattered population, and proximity to major social service centers like Burlington and Barre. While data is limited, based on the best available information, we know:

- There is 1 domestic violence shelter in Lamoille County
- According to 2021 Point In Time count (PIT) there were approximately 143 households staying in hotels/shelters in the County. A PIT count is meant to provide information about the unmet needs in our community and show trends over time.
- According to a 2021 PIT report at least 75 households utilized the Morrisville Emergency Shelter
- Out of the 112 people who were in the Morrisville Shelter, 26 of them were under the age of 18.
- People find places to live such as personal automobiles or tents.
- Seasonal work leads to homelessness in off seasons.
- Most people who are homeless are employed at some level.

There are several causes for homelessness. It is not often that there is only one factor that causes an individual or family to become homeless but rather it is a culmination. Some factors include:

- Domestic violence or threatening situation
- Lack of affordable housing
- Rental policies are difficult (requiring first/last and security deposit is unaffordable; lack of 2, 3, or 4 bedroom rental units; landlords uneasy to rent to families)
- Undiagnosed mental health issues
- Substance abuse
- Gap between income needed to purchase or rent a home is growing

3 Supplemental Security Income Supplemental Security Income (SSI) is a Federal income supplement program funded by general tax revenues (*not* Social Security taxes) that is designed to help aged, blind, and disabled people who have little to no income. It provides cash to meet basic needs for food, clothing, and shelter.

DRAFT

- Low or stagnant wages are not keeping up with rising costs of heating, housing, or transportation

Point in Time data collection counts the number of individuals and families receiving State assistance at any given point. For all counties there were 2591 people in Emergency Shelters or transitional housing for homelessness, or shelters not adequate for human habitation. This is an increase from 1481 the year before. A total of 2043 households were experiencing a form of homelessness which is up from 1222 the year prior. Statewide, Homelessness is a serious issue that continues to grow, even as the economy appears to improve. As of January 27, 2021, the number of individuals seeking assistance in Lamoille County was 112. Out of these 112 individuals, 53 people were experiencing first time homelessness and were seeking services. This means those seeking assistance are often seeking assistance on multiple occasions, highlighting a need for continued assistance. Chittenden County, with its high population, has the highest rates of services sought. Lamoille County, Caledonia County, and Franklin County all have similar numbers of individuals seeking shelter.

County	Total Persons	%	Chronic Homeless	Precariously Housed***	Motel Vouchers	VT Rental Subsidy
Caledonia	116	8%	3	N/A	93	2
Chittenden	700	48.6%	166	N/A	539	55
Franklin	146	10.3%	15	N/A	113	39
Lamoille	112	7.8%	13	N/A	102	12
Orleans	38	2.6%	6	N/A	16	6
Washington	327	23%	57	N/A	258	19

***Precariously housed column does not contain data because it did not take place in 2021 due to COVID-19.Statewide Unduplicated counts may not equal the sum of County or AHS District Totals. For example, if a person with the same unique identifier was counted by an agency in Addison County and by an agency in Chittenden County, statewide unduplicated counts will count this person as one, and breakdowns for Addison County and for Chittenden County will each count this person.

DRAFT

As of the writing of this Plan, there is one year-round, 24-hour homeless shelter available in the County, located at 213 Clark Rd in Hyde Park, Vermont (Lamoille Community House). On Mondays the United Community Church in Morrisville also provides a warming and cooling shelter. Mondays were chosen because the Library is not open at this time. There has been a continued effort to have a year-round, 24-hour shelter and due to the current federal grant opportunities through the American Rescue Plan Act, local partners are actively working towards this goal. In addition to emergency shelters, transitional housing plays a key role in moving a family or individual from a homeless condition to permanent housing. In addition to shelter, transitional housing offers accompanying services coordinated by support agencies to manage the housing, coordinate with partners, and expand beyond finding a housing unit and into life skills training. The goal of transitional housing is to help individuals or families become independent and successful in finding permanent housing. There is no definition of a transitional housing unit; it can be a motel, apartment, a unit in a multifamily structure, a room in a house, or a facility built specifically as transitional housing. Residency generally lasts between six months and two years. Because it is an amorphous issue, it can be difficult to quantify people served by transitional housing. Service providers (those working for non-profits or for State or Federally funded social service programs) have identified a need for more transitional housing spread out around Lamoille County rather than concentrated in one or two buildings in one or two towns.

The State, through the Reach Up program, offers motel vouchers for emergency situations to families. These vouchers are not handed out freely, but eligibility must be determined by income, resources, living expenses, and number of family members. If temporary assistance is sought, recipients must show they are likely to be self-sufficient in 4 months or less.

Other State assistance programs include the Vermont Rental Subsidy Program, similar in structure to the Federal Section 8 program. Applicants must be pre-screened by regional Housing Review Teams and meet eligibility requirements. Approved renters pay a portion of rent while the state pays the remaining portion. Apartments selected must be priced below fair market rent and pass an inspection. Federal programs provide housing assistance under the Section-8 Housing Choice Voucher. A family or individual can apply to the Vermont State Housing Authority for rental assistance (called a "voucher") that would

DRAFT

enable them to afford a privately-owned apartment of their choice within the Housing Authority's jurisdiction. Affordable housing developments such as Brewster River Housing (Jeffersonville) and Section 8 Housing Vouchers are, in many cases, the housing of last resort for some families before becoming homeless. These housing and support programs are necessary to help families keep a roof over their heads until a more permanent arrangement can be made.

Social service providers, through the Agency of Human Services, Department of Corrections, non-profit organizations, United Way, the Lamoille Family Center, clergy, and other programs, have identified barriers to finding housing for those in desperate need. Lamoille County's dependence on tourism has made it difficult for public places to be open to the public when the need is greatest. Shelters often have limited hours. The availability to find showers, maintain a mailing address or phone number, and to receive assistance during non-business hours are consistent barriers preventing individuals and families from taking steps to improve their situations. Landlord relationships with service providers and potential renters are strained. There is often a misunderstanding and miscommunication between the parties, buoyed by public misperceptions of those receiving State assistance. Further, as state and federal funding is often tenuous and unpredictable, service providers are stretched thin and working to triage clients' needs.

Student Housing

The population of 20–24-year-olds continues to increase in Lamoille County, a trend not seen in most other regions of Vermont. For people in this age group who are receiving post-secondary education, there are unique housing challenges. The housing continuum identifies this age group as having lower incomes and high mobility, likely living in apartments or rental housing.

Lamoille County is home to Vermont State University at Johnson. Enrollment has increased steadily since 1985, now educating about 1,925 individuals. VSU's Johnson campus includes on-campus dormitories with 550 beds and on-campus apartments for 50 people, including students with families. An increasing proportion of the college's student population is classified as "non-traditional college age." These older students are more likely to seek off campus housing, often in Johnson Village.

Johnson Village contains 545 housing units. Out of the 502 occupied units, 70% are renter

DRAFT

occupied. Out of those 545 housing units, 53% are in multi-unit structures. Large village homes have frequently been converted into apartments, which encourages a denser village center but also poses other challenges to public safety and neighboring property values. The high rate of housing conversions often results in absentee landlord situations. The median rent for households in Johnson is $928 a month, which is below the median county rent which is $941. Due to the lower cost of housing, the typical household will spend below 30% of their gross income on rent (27%).

Another educational institution providing student housing in Lamoille County is the Vermont Woodworking School, located in nearby Fairfax. The Woodworking School leases a building in Jeffersonville to provide housing for their students. There is a farmhouse and two renovated silos that contain 14 single occupancy rooms on the campus. Students who live off-site may also tend to seek housing in Jeffersonville given its high rate of rental units. With lower housing costs in Lamoille County than in neighboring regions such as Chittenden County, students who attend schools in Burlington or Montpelier may choose to either live at home with parents residing in Lamoille County or rent their own apartments and commute to school in other regions. Data has not been collected to verify whether this is occurring. Expanding the availability of accessory apartments is one way to accommodate a commuter/student population without overtaxing an already limited rental housing market.

Seasonal Worker Housing

The regional economy is dependent upon tourism, especially the winter ski industry. This economy can bring unique challenges to municipalities that host major ski resorts and related service-based businesses. Cambridge and Stowe must consider issues related to housing for seasonal workers. Stowe Mountain Resort, Smugglers' Notch Resort and other companies rely on seasonal employees. These workers generally need inexpensive housing with short-term or no leases. Providing affordable housing for seasonal workers is essential for the success of the tourism industry. The high demand for seasonal housing in Stowe and Jeffersonville has caused the price of rental units to be significantly higher than what can be afforded by those who are employed in these areas. The result is a spillover, which increases rents in neighboring communities as well.

Seasonal worker housing can be constructed and maintained in a manner that has a positive impact on the area's aesthetics and the towns. A trend in both Stowe and Cambridge suggests old motor lodges are being converted to seasonal worker housing.

DRAFT

Poorly kept facilities could degrade the character and health of host towns. These issues could be addressed through zoning regulations by requiring site plan and/or conditional use review for these types of units. Zoning regulations could further identify appropriate locations for such housing types (for example, along Route 108 in proximity to major resorts). By locating such housing in specific areas or along specific corridors, it becomes more feasible to provide transit and other services that benefit seasonal employees.

Municipalities and Housing

As residents age, many may wish to remain in their communities, but it will become more difficult to take care of large, rural properties. At the same time, housing costs may be prohibitively expensive for younger families and individuals seeking their first home. Some Lamoille County towns lack the infrastructure to support large senior housing or affordable housing developments while others must balance housing affordability and housing stock with other factors such as parking, infill development, and/or natural resources. There are several strategies a municipality may employ to address housing, some of which are presented below.

Planning

Through plans, municipalities have assessed their housing needs and goals. While each community has its own housing needs, challenges, and opportunities, the following common themes are found among plans:

- Safe, quality housing for all residents, including those with specialized housing needs
- A variety of housing needs should be available, including accessory apartments and manufactured housing
- New housing should be located near existing facilities, infrastructure, and utilities and should not place an undue burden on the capacity of the municipality to provide services
- New housing should be built in a way to lessen the impact on natural and fragile resources, including along elevations unsuitable for development and in flood hazard areas
- Housing should follow the land use policies identified in the municipal plan
- Identify appropriate locations for locating types of housing to accommodate the continuum of housing needs

DRAFT

- Identify needs and set goals for achieving housing affordability and needs
- Set policies to guide municipal housing planning
- Describe possible funding mechanisms to encourage new housing developments, improve safety conditions, or lower costs for residents
- Develop land use policies that may impact where and how housing can be placed in the community
- Set the agenda for municipal actions over the next five years
- Provide a statement on affordable/fair housing
- Outline incentives for developers to encourage fair housing

Education and Outreach

- Municipalities can educate property owners of their rights and responsibilities, renters of their rights and responsibilities, and the rights and responsibilities of landlords
- Municipalities can provide updated information on any changes to housing laws or discrimination practices
- Provide public spaces for homeless residents to bathe, rest, or stay warm in the winter

Regulation

- Revise limits on lot sizes/lot requirements
- Allow permitted uses to include multi-family, single-family, manufactured, co-operative, senior housing, and other housing types in all districts where residential housing is appropriate
- Allow accessory apartments at the State minimums or larger, which may affect square footage, number of occupants, bedrooms, etc.
- Allow a variety of building styles, such as encouraging clustering to save costs, burying utilities, sharing driveways, etc.
- Inclusionary zoning for affordable housing units
- Instate flexible regulations, including, where appropriate, zero lot-line development, small lots, and easing parking requirements
- Allow mechanisms in regulations to encourage transitional housing or homeless shelters

Funding

Few Lamoille County communities have large enough tax bases to provide local funding for new housing development. However, communities can assist in securing funds for housing that meets their local needs. For example, many senior and affordable housing

DRAFT

developments are funded through Community Development Block Grants, which require the municipality to serve as the applicant. In addition, tax credits provided through the Vermont Downtown and Village Center programs can be used to facilitate the adaptive reuse of historic buildings and offset the costs of making code and other improvements to the existing housing stock.

Specifically, for communities with land use regulations, state law requires that zoning bylaws cannot discriminate against certain types of housing, such as mobile homes. Well-planned mobile home parks can provide affordable, entry-level homeownership housing options. The Sterling View mobile home park in Hyde Park is an example of such a park. A developing trend in other regions of the Country are "cottage" neighborhoods, which consist of relatively small (sometimes less than 1,000 sf), owner-occupied dwellings located close together on small lots. These developments often include central buildings with common cooking and recreation facilities. Another area where zoning can help create affordable housing is through clustered housing. State statute allows clustered housing through a mechanism called a "Planned Unit Development." This provides communities with another means of regulating density in downtowns and village centers from the traditional use of minimum lot sizes. Clustered housing can decrease costs by minimizing infrastructure investment, such as shorter roads and fewer power lines. Density bonuses for affordable units have also been used in other towns and regions.

State Programs

The State program "Vermont Neighborhoods" is another option to increase the supply of affordable housing. The program offers relief from Act 250 and certain state taxes for projects that contain affordable housing and are located in proximity to state "designated Village Centers and Downtowns". It also provides a small amount of financial incentives for communities that host new affordable housing. Municipalities may wish to investigate if participation in this program would help to further their communities' goals.

Brownfields

Brownfields Programs assist property owners and investors in overcoming environmental challenges related to past use. Brownfields projects prioritize sites for assessment. Working with consultants, property owners, prospective developers, and state and federal agencies, projects move from assessment phases to redevelopment phases. The Arthur's Main Street Block in Morrisville is a brownfields redevelopment using historic buildings for housing and commercial use. The Johnson Village Housing on School Street in Johnson is another

DRAFT

example of a brownfields redevelopment project. In both cases, the Lamoille Housing Partnership was the key organization for moving the projects to redevelopment. Brownfields projects are excellent models of adaptive re-use of buildings and land.

Housing Resources

There are many resources available for renters, homeowners, potential homeowners, municipalities, and others interested in housing. The Lamoille Housing Partnership (LHP) is a regional, non-profit organization serving residents of Lamoille County in funding, managing, and developing attractive, affordable housing opportunities. LHP develops projects in Lamoille County communities that:

- Are financially feasible
- Meet perceived or real social needs
- Serve community interests

LHP has developed affordable housing projects in several communities (Jeffersonville, Morrisville, and Stowe) and is available to work with town government, businesses, and individuals to discuss developing other affordable housing opportunities. They have 300 units in their portfolio, with some projects focusing on Section 8 housing units, units for seniors, or units dedicated to eligible low-income individuals and families. LHP also supports a limited equity homeownership program, in which grants are offered to first time homebuyers meeting income eligibility guidelines. When the homeowner is ready to sell, LHP receives a portion of the appreciation of the home, while the remainder is passed on to the next homebuyer, allowing the home to remain "perpetually affordable."

The land use provisions of this plan can help create opportunities for housing developers and service providers to do their part to encourage fair and affordable housing. These provisions will be discussed in detail in the Land Use section of this plan.

Capstone Community Action helps people achieve economic sufficiency with dignity through individual and family development. Since 1965, Capstone has worked with low-income families, those who are impoverished, government agencies, and other non-profits to provide services and programs for low to moderate income Vermonters. Capstone provides outreach, and works to empower individuals to take control of their economic futures. Capstone also organizes to identify common problems, establish goals, and take action to address social and community issues.

DRAFT

In 2025, the Lamoille County Planning Commission developed a "Housing Resources Guide" for a one-stop-shop of resources, guides, and tools for individuals, homeowners, small builders, communities and municipalities to encourage the development of diverse housing options in Lamoille County. To view the Housing Resources Guide, the latest Housing Needs Assessment Report for the County, and other helpful housing data visit LCPC's Housing Resources webpage at https://www.lcpcvt.org/housing.

Additional Highlights and Data from the 2024 Lamoille County/Hardwick Regional Housing Assessment

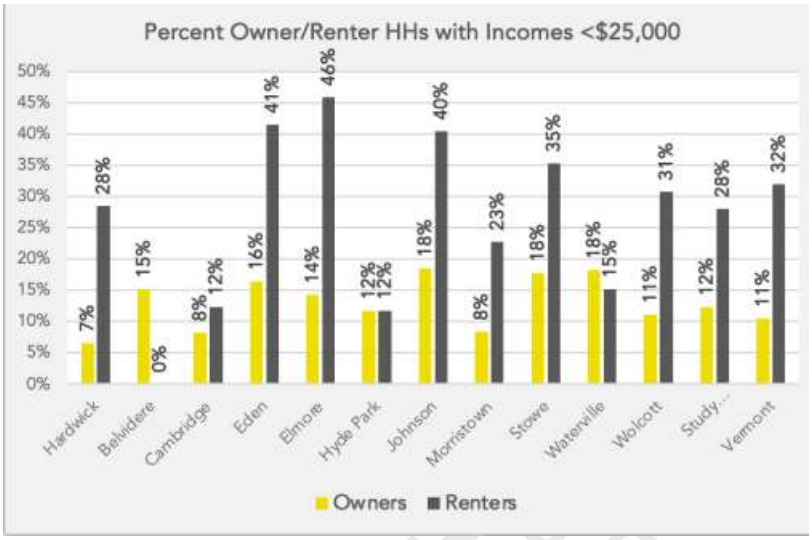


Figure 3-12 Percentage of Household Owners/Renters with Incomes <$25,000

The graph above (figure 3-12) shows the percentage of both homeowners and renters that have a household income less than $25,000 in each town. Eden, Elmore and Johson have more than 40% of their rental households making less than $25,000, and less than 20% of the homeowners making less than $25,000. The State as a whole has 32% of its rental households and 11% of homeowner households making less than $25,000.

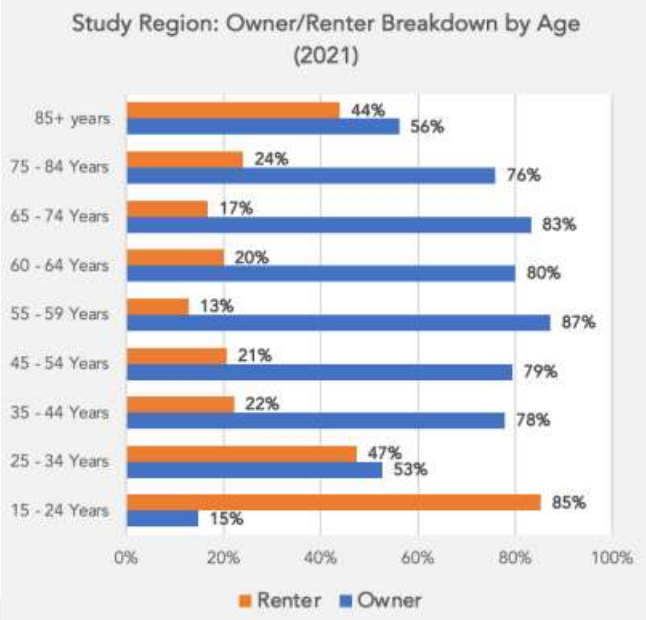


Figure 3-13 Owners/Renters by Age

The *2024 Lamoille County/Hardwick Regional Housing Assessment also provides the graph above and states that it is a "*breakdown between study region owners and renters by age bracket". This graph shows that the number of renters is not only higher in the younger age brackets but also rises to 44% in the 85+ age bracket. Home ownership is most common between the ages of 35 and 84.

Housing Related Findings from the 2025 Regional Plan Survey

Question 6 (see appendix B) of the 2025 Regional Plan Survey asked "What policies should Lamoille County pursue to meet its housing needs?" This allowed respondents to pick up to 5 options provided that they felt answered the question. The overwhelming majority (84%) of respondents selected "Renovate vacant and underused housing". This option garnered significantly more support than the second most selected option "invest in upgrades to public infrastructure" (52%). All other options saw around 45% of respondents voicing their support , accept for "reduce regulations on housing construction", which only gathered 32% of respondents. The results indicate that respondents feel strongly that the renovation of empty and underutilized dwelling units is an attractive solution to the county's housing needs. While all other options provided some support, it is clear that de-regulation dips in support below the other options, and significantly below housing renovation options.

Similarly, question 7 asks "What types of housing would you like to see built?" The most frequently selected response (62%) was single family units, which was closely followed by multifamily units (59%). 47% of respondents selected they would like to see apartments

DRAFT

and workforce housing built. 27% of respondents selected accessory dwelling units.

Question 9 looks at the location of new housing units in asking "Where would you like to see the majority of new homes built?" The most frequently selected option was "near downtown and village centers" with just under half (45%) of respondents picking that option. Support for new dwellings in village centers/downtowns was just under a third (29%) of respondents. 16% of respondents voiced their opinions for new dwellings in rural areas, and the remaining 10% selected the "other" option. The respondents that selected "other" had the opportunity to elaborate, with many of them commenting on the importance of building out of the floodplain and some advocating for a balance of locations.

Lastly, it is important to note that when asked "What do you see as the main affordability challenges for Lamoille County?" 77% of respondents selected "housing". This was the most frequently selected option, with "taxes" being the second most common answer having 71% of responses.

The survey in its entirety is located in appendix B, and touches on many issues relevant to housing that can expand one's understanding of Lamoille County's needs and support for a diversity of housing options.

DRAFT

Transportation: Strategy

An effective transportation network provides safe, efficient, accessible, and environmentally sound transportation options that connect residents and workers to their jobs, schools, recreation, shopping, and other community activities. The following strategies must be taken into consideration in order to achieve an efficient transportation system:

Address Safety Issues: Priority should be given to transportation projects or programs that address identified safety issues.

Maintain and Manage Existing Infrastructure: The existing transportation system is vital for moving people and goods within the region. Given the extreme cost of transportation investments, maintaining the existing infrastructure should be given priority.

Enhance Mobility by Providing Transportation Alternatives: In order to provide meaningful transportation choices to children, seniors, residents, visitors, and businesses, creative effort must be focused on alternatives to single occupancy vehicle travel whenever feasible. Such alternatives should incorporate healthy community design and be enhanced by a land use pattern where the everyday needs of residents can be satisfied within concentrated, mixed use developments served by a network of bicycle and pedestrian routes and connected by public transportation.

Maintain the Lamoille County Aesthetic, Environment, and Quality of Life: Transportation investments should be consistent with the overall character of the region. This should be reflected in all projects from bridge designs and highway facilities, to transit bus size, sidewalks, and bike-paths.

Integrate Land Use Planning and Transportation Planning: There is a direct relationship between land development and the transportation system. The existing transportation system is a major influence on land use decisions. In some instances, this has resulted in the fragmentation of the region's scenic, agricultural, natural, and social resources. For example, effective access management enables municipalities and the State to maximize the capacity of the existing transportation network. By considering the transportation aspect of land development, we are more likely to be successful in making the best use of our limited land resources and preserving regional character.

Support Regional and Local Economic Vitality: The transportation infrastructure

DRAFT

of Lamoille County is an integral component of the regional and local economy, therefore project prioritization and funding should consider economic effects.

Promote an energy efficient transportation network that reduces energy demand: In order to provide an energy efficient transportation network the LCPC and Lamoille County municipalities will continue to coordinate with local utility providers and regional partners to promote incentives for electric vehicle options. Working with municipalities to update zoning to allow charging stations can help with the transition away from gas powered vehicles. Promoting walkable transportation networks such as enhancing trail networks and improving bike/pedestrian infrastructure (sidewalks, bike lanes) helps reduce the energy demand throughout the county.

POLICIES & ACTION ITEMS

Policy: *Ensure the region's transportation infrastructure is resilient.*

Action Items:

- Engage Vermont Agency of Transportation (VTrans) early in the project development process to ensure that local concerns are addressed.
- Work with municipalities to identify vulnerable transportation infrastructure and facilities; identify recommendations to increase resiliency.
- Work with municipalities to identify "flood resiliency" improvements to the transportation network, especially as they relate to Village Centers, Downtown Centers, and Village Areas, such as but not limited to, constructing bridges and culverts to accommodate a 50-year flood event.
- Advocate for increased funding for maintenance of existing roads and bridges.
- Roads and bridges should be built to consider locally defined needs, such as flood resiliency, land use, and future infrastructure needs.

Policy: *Promote an energy efficient transportation network that reduces energy demand.* Additional related policies and action items are included the Lamoille County Enhanced Energy Plan.

Action Items:

DRAFT

- Coordinate with local utility providers and regional partners to promote incentives for electric vehicle options.
- Work with municipalities to update zoning to allow charging stations to help with the transition away from gas powered vehicles.
- Work with local transit service providers to promote expansion of public transit and Micro-transit service in Lamoille County.
- Work with municipalities and regional partners to enhance/extend local trail networks and bike/pedestrian infrastructure.

Policy: *Improve safety on Lamoille County roads.*

Action Items:

- Encourage municipalities to develop transportation infrastructure inventories and capital budgets to effectively manage municipal highway infrastructure and prioritize improvement projects.
- Utilize data such as traffic volumes, highway sufficiency, bridge inspections, and high crash location data to assist in the regional project prioritization process.
- Encourage and assist in the implementation of low-cost safety improvements such as signs, pavement markings, and educational campaigns as short-term or interim solutions to identified highway safety issues.
- Ensure the transportation network is designed to safely accommodate all users, including pedestrians and bicyclists, particularly in Center Areas.
- Encourage and assist in the implementation of traffic calming measures at appropriate locations throughout the region.
- Continue to support the implementation of projects that improve conditions for the truck freight industry.

Policy: *Foster efficient and convenient public transit service that addresses local and regional needs.*

Action Items:

- Continue to support and assist local transit providers in obtaining needed funding.
- Continue to actively represent Lamoille County on the GMT and RCT Boards of Directors.
- Assist regional transit providers in identifying areas where services should be

DRAFT

expanded.

- Advocate for increased overall public awareness and use of various human services transportation programs and the future needs of the programs.
- Conduct periodic needs assessments to determine whether the region's various public transit services are meeting the needs of Lamoille County in an equitable way.
- Investigate the feasibility of new services and actively seek funding for them.
- Continue to support public transit options to access jobs and work with partners to secure adequate parking facilities and multi-modal options for commuters.
- Continue to support existing public transit services between known origins and destinations such as Morristown and Stowe, and periodically evaluate needs and performance data.
- Work to establish public transit service options between origins and destinations not currently served such as Johnson, Cambridge, and Morristown, in consideration of needs and performance predictors.
- Work to extend the schedule of the existing Mountain Road Shuttle in Stowe to the summer and/or fall seasons.
- Work with regional partners to extend public transit service to the Johnson campus of Vermont State University.
- Coordinate with transit providers serving Lamoille County to maximize connectivity, mobility, and efficiency of existing routes and services, including origins and destinations within and outside Lamoille County.
- Work with transit providers to broaden and expand Micro-transit service in Lamoille County.

Policy: *Improve the connectivity of the bicycle and pedestrian network in Lamoille County to reduce energy demand and ensure regional bicycle and pedestrian needs are met.*

Action Items:

- Promote the removal of roadway hazards to bicycle travel during routine maintenance.
- Encourage the integration of bicycles with other transportation modes through techniques such as bicycle racks on transit vehicles, bike parking, improvement of shoulders, and construction of multi-use paths.
- When reviewing projects, recommend that shoulder widths follow the VT State Design Standards and Bicycle Facility Planning and Design Manual, or the most

recent State Standards.

- Work with municipalities, VTrans, and other stakeholders to develop a Bicycle and Pedestrian Master Plan for Lamoille County. As part of this process, consult the 2021 VTrans Bicycle and Pedestrian Strategic Plan and update the "Regional Bicycle Routes" map.
- Road shoulders are essential in rural communities for biking and walking; encourage appropriate shoulder widths in the design of paving projects.
- Upon request, work with municipalities and recreational stakeholders to identify areas where bicycle parking or storage facilities should be established. When feasible, coordinate the location of bicycle parking/storage with existing or planned public transit service.
- Identify roadways where bicycle improvements are needed in order to link employment and population centers.
- In conjunction with municipalities, support creation of bicycle lanes, especially in Downtown/Village Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas .
- Assist municipalities in planning for the improvement of existing and future sidewalk networks, as well as pedestrian accommodations including benches, lighting, and signs.
- Work with municipalities to design intersections and public walkways to meet ADA requirements for curb ramps, accessible traffic signals, and crosswalk enhancements.
- Assist towns and interested organizations in performing community walkability audits to identify pedestrian barriers and needs.
- Continue to work with municipalities to inventory sidewalks; identify missing connections between facilities.
- Coordinate with VTrans to ensure that pedestrian accommodations are included in intersection improvement, paving, and roundabout projects on state roads; pedestrian needs shall be considered in state highway projects, especially in Downtown/Village Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas .
- Advocate for continued and increased funding for programs providing resources for bicycle and pedestrian programs.
- Encourage municipalities to consider bicycle and pedestrian transportation in development plans through local ordinances.
- Encourage municipalities to apply Complete Street principles appropriate to

DRAFT

context and need, to enhance safe access and circulation for pedestrians, bicyclists, transit riders, and motorists.

- Encourage schools to promote educational programs that support walking and bicycling and its health benefits.
- Work with municipalities and schools upon request to map safe walking and bicycling routes.
- Continue to actively participate in monitoring the use of the Lamoille Valley Rail Trail (LVRT) and promote its economic benefits, including working with VTrans and other State Agencies to enhance the success and vitality of the State-owned asset.
- Assist with identifying and implementing municipal connections to the LVRT, as well as other direct pathway connections between municipalities.
- Support the planning, design, and implementation of the extension of the Stowe Recreation Path to Stowe Mountain Resort and other destinations upon request of the municipality.
- Continue to support community organizations and non-profits seeking to implement recreational trail connectivity, trail mapping, multi-use trails, bike racks, etc., by providing grant writing and technical assistance.
- Study and assess impacts of trails over time on transportation patterns, property values, crime, and other quality of life factors.
- Explore planning options for connecting elements of the existing multi use, bike-pedestrian path network. This could include revisiting the possibility of a Stowe to Morristown or Hyde Park recreation path or identifying other corridors that could connect existing bike-ped assets.

Policy: *Support regional efforts to make air travel a safe, attractive, efficient, and competitive mode of shipping and transportation.*

Action Items:

- Support improvements for capacity and user experience of the Morrisville-Stowe Airport and the implementation of the Morrisville-Stowe Airport Master Plan.
- Support efforts to overcome environmental and physical constraints to expanded hangar and tie down capacity.
- Support efforts to improve the viability of the Airport's cargo and freight transportation, including establishment of a Foreign Trade Zone in Lamoille

DRAFT

County.

- Support the development of appropriate cargo related uses and facilities at and in the vicinity of the Morrisville-Stowe Airport.
- Promote the various activities and services offered at the Morrisville-Stowe Airport.
- Enhance public awareness of the benefits of having a regional airport.
- Encourage the use of airport facilities to enhance economic development.

Policy: *Support statewide upgrades to existing rail infrastructure for freight and passenger service.*

Action Items:

- Support continued Amtrak services through Waterbury, Essex Junction, and St. Albans as a benefit to the Lamoille County region.
- Support re-establishment of passenger rail service to Montreal.
- Encourage efforts to upgrade existing rail infrastructure.
- Encourage continued efforts to maintain and improve a functional statewide freight and passenger rail system.

Policy: *Support regional multi-modal opportunities.*

Action Items:

- Assist municipalities in identifying needed Park and Ride improvements, including accommodations for public transit and bicycles.
- Educate local developers and businesses about Transportation Demand Management (TDM) strategies.
- Work cooperatively with VTrans and regional transit providers to make Park and Ride locations as multi-modal as possible.
- Encourage non-motorized travel, public transit including Micro-transit service, carpooling, telecommuting, and alternative fuel vehicles to lessen the demand on fossil fuels.
- Develop a comprehensive regional TDM plan and work with regional partners to implement the plan.
- Work to install electrical vehicle charging stations in each of the region's Designated Downtowns and Village Centers and at park and ride locations, and encourage or incentivize private businesses to host charging stations.
- Study successful TDM options and identify portions suited for Lamoille

DRAFT

County. Consider connectivity between existing and proposed developments such as cross-access between parking lots when studying TDM solutions.

- Work with regional partners to coordinate, promote, and implement rideshare and transit programs.
- Continue to participate in regional activities that promote alternative transportation.
- Participate in the design phase of State highway projects to address multi-modal connectivity with roundabouts and other traffic calming devices. Roundabouts shall be designed to improve pedestrian and bicycle mobility and safety.

Policy: *Minimize traffic and parking impacts generated by development projects.*

Action Items:

- In relation to policy "support regional multi-modal opportunities", encourage the implementation of Transportation Demand Management (TDM) strategies identified in the regional TDM plan as suitable and appropriate for Lamoille County.
- Encourage the implementation of access management strategies identified in the regional TDM plan as suitable and appropriate for Lamoille County to maximize safe and efficient roads.
- In conformance with Significant Regional Impact policies when appropriate, coordinate with regulatory agencies to obtain Traffic Impact Studies for proposed development projects.
- Encourage the implementation of on-site and off-site parking strategies identified in the regional TDM plan as suitable and appropriate for Lamoille County.
- Provide technical assistance to municipalities to develop "Transportation Improvement District" (TID) plans, and if desired by local leadership, implementation of those plans through the development review process.

Policy: *Ensure transportation projects are compatible with regional land use planning efforts.*

Action Items:

- Continue to coordinate with appropriate agencies and municipalities to ensure that land use and transportation decisions are linked so land use is supported by the appropriate types and timing of transportation improvements.
- Coordinate with municipalities on land use and transportation projects to

DRAFT

address local transportation needs, including access management issues.
- Assist municipalities in establishing land use patterns that encourage alternative modes of transportation and multi-modal connections.
- Continue to participate in regional and state transportation planning efforts to ensure Lamoille County's transportation needs are addressed in regional and state plans.

Policy: *Ensure roadway improvement projects enhance scenic and environmental resources while improving safety and mobility and that they fit the character of Lamoille County.*

Action Items:
- Evaluate regional transportation corridors and conduct corridor management planning as needed.
- Continue to work with VTrans and municipal road and highway departments, to design, construct, and maintain roadways in a manner which preserves the character of the region.
- Develop design guidelines to be utilized when planning road improvement projects on designated scenic highways and byways.
- Continue to work with the Green Mountain Byway Steering Committee and the Smugglers' Notch Partnership to implement recommended projects, including updating the management plans as needed.
- Preserve the region's character by encouraging the use of context sensitive design standards on state highway projects.

Transportation: Background and Inventory

Highway System

In Lamoille County, the highway system serves much of the region's transportation needs, by means of multiple modes of transportation sharing the common infrastructure. The region's highway system serves many purposes. It is the primary freight network for the county but also often serves as the village "Main Street". The combination of these uses can sometimes create safety issues and pedestrian − vehicular conflicts. These issues must be addressed to continue to provide a safe and functioning transportation network.

Table 3-11. Total Highway Mileage in Lamoille County, 2020

DRAFT

Highway Classification	Description	Miles
Class 1	The state occasionally implements paving projects on these roads, otherwise they are tow maintained. These are extensions of state highways and carry state highway route number	4.4
Class 2	Usually provide through connections between towns and typically have more traffic than Class 3 roads. These roads are generally of regional significance.	95.1
Class 3	All traveled town highways other than Class 1 or 2; must be passable under normal conditions all seasons of the year by a "typical" passenger car. Provide local access via connections with other local network roads.	381.6
Class 4	All other town highways not identified as Class 1-3; need not be kept open year-round by the town, but bridges and culverts are to be maintained.	89.4
Legal Trail	Public rights-of-way which are not highways are not a required responsibility of the town for any construction, maintenance, repair, or safety. Typically provide public access to recreational activities.	15.9
State Highway	Highways exclusively maintained by the state.	119.7
	Total Class 1-4 Highways	570.5
	All Highways	706.1

Source: Vermont Agency of Transportation, 2012 Highway Mileage Report, February 2012

Road Classification

Highway systems are characterized and classified by various means depending on the purpose. Most pertinent to local and regional planning are: at the local level by *Town Highway Classification* or by *Functional Classification* at the state and federal levels (see map at the end of this chapter).

Town Highway Classification

All town highways in Vermont are classified as Class 1, 2, 3, or 4. Table 3-11 shows the composition of all town and state highway mileage in Lamoille County. A majority of the highway network in Lamoille County is Class 3. Maintenance of existing highways is often the largest item in a municipal budget. For this reason, it is important for municipalities to plan for, monitor, and manage their highways as effectively as possible. Road surface management, bridge and culvert inventories, and capital budget planning are all tools to help municipalities manage their highway networks. The Agency of Transportation (VTrans) also offers a variety of road and bridge grant programs to assist in funding municipal highway projects. *The Handbook for Local Officials,* also known as

"the orange book", is an excellent resource on many topics and is available through the VTrans website.

Functional Classification

Functional classification is a federal process to identify the efficiency and channelization of traffic within a network. Examples of categories are: principle arterials, minor arterials, major and minor collectors, and local roads. All roads serve dual functions of providing mobility and access. Functional classifications are important when considering land access and development which can affect safety and congestion. Functional classification can also be used when deciding where investment priorities are to be made.

Both state and federal governments use the functional classification system. The map at the end of the chapter shows the functional classification of the regional highway network. For the purposes of this plan, the state highways and town-highway major-collectors are referred to as the "regional" highway system.

Lamoille County lacks an interstate or numbered Federal Routes. This fact elevates the importance of the State and local highway network in place.

Table 3-12. Functional classification of the regional highway system

Functional Classification	Purpose	Description
Arterial	Maximize speed and volume of vehicles, few access points	Roads designed primarily to carry through traffic or large volumes of traffic for long distances. Characterized by controlled access, channelized intersections, and restricted parking. These roads function to distribute traffic to and from collector streets serving all land uses.
Collector	Moderate speed and mobility	Intended to collect and channel traffic from lesser traveled roads into the arterial system and provide access to adjoining parcels. Major collectors generally serve traffic between towns and communities, and minor collectors generally operate within a town.
Local Road	Lower speeds and volume, many access points	Provide access to adjoining land and generally have little to no through traffic. These can be considered "neighborhood" type streets and have a higher number of access points or driveways.

DRAFT

Vehicle Miles Traveled
Lamoille County's highway network carries approximately 261 million vehicle miles traveled (VMT) annually. The annual average daily traffic volume or "AADT" is a statistical measure of the average vehicle traffic on a particular highway. This information is used for engineering projects and tracking growth pressures, travel patterns, and other trends over time related to regional development. The map at the end of this chapter provides an overview of the region's AADT.

Bridge Classification
Bridges are classified according to their length and whether they are owned and maintained by the state or a municipality. Bridges longer than 20' in length are classified as "long" structures, while those between 6'-20' in length are considered short. Structures shorter than six feet are classified as culverts. Lamoille County's highway system includes 122 bridges.

Bridge Sufficiency
VTrans inspects all state-highway bridges, and town highway bridges 20' or longer. VTrans calculates bridge sufficiency ratings based upon these inspections. These ratings are known as the Federal Sufficiency Rating (FSR).

The FSR provides a uniform means of comparing bridge conditions among multiple structures. It is important to note that a low FSR does not necessarily indicate that a bridge is in danger of physical failure. Bridges listed as structurally deficient and/or having restrictions should be considered first when prioritizing bridge projects. Prioritization should also consider the bridge's relevance to the overall regional highway system, economic vitality, and safety. The most current FSR for bridges in Lamoille County can be obtained from VTrans.

Movement of People
Lamoille County residents rely heavily upon the automobile as their primary means of transportation. Given the nature of development in the region, this reliance on the automobile has formed a trend toward the separation of employment areas, commercial services, and housing opportunities. This separation has resulted in greater auto-dependency.

Table 3-13. Travel Time to Work 2000-2020

	2000	2010	2020

DRAFT

Travel time to work	Number	Percent	Number	Percent	Number	Percent
Workers not working at home	11,306	100	11,693	100	12,727	93
Less than 5 minutes	807	7.1	752	6.4	X	X
5 to 9 minutes	1,539	13.6	1,765	15.1	X	X
Less than 10 Minutes*	N/A	(X)	N/A	(X)	2,201	17.3
10 to 14 minutes	1,584	14	1,470	12.6	2,099	16.5
15 to 19 minutes	1,569	13.9	1,546	13.2	1,336	10.5
20 to 29 minutes	1,579	14	1,829	15.6	2,138	16.8
30 to 44 minutes	1,940	17.2	1,998	17.1	2,341	18.4
45 or more minutes	2,288	20.2	2,333	20	2,621	20.6
Mean travel time (minutes)	25.7	(X)	24.4	(X)	25.9	(X)

Source: 2000,2010,2020 U.S. Census CTPP, 5 year-American Community Survey

*The 2020 Census does not show time intervals 5-9 minutes and Less than 5 minutes.

Access to Highway System

Although a majority of Lamoille County residents have access to one or more vehicles, there continues to be many auto-less households that rely on public transportation and/or ride sharing as the primary means of transportation. These residents must also be considered in the development of our future transportation system.

Commuting Travel

Based on 2020 census data, 76% of Lamoille County residents commute alone to work by automobile. The American Community Survey indicates that Lamoille County residents are also commuting a greater length of time to work. Although in more developed areas this is often attributed to congestion, in rural regions it is primarily the increasing distance between home and places of employment. Table 3-16 shows that from 2000 to 2020 the average travel-time-to-work in Lamoille County has increased from 25.7 minutes to 25.9 minutes. This information and Table 3-16 above do not represent the increase in telework in Lamoille County since the start of the 2020 Pandemic. Census and ACS data is not yet available to represent this recent trend.

Freight Transportation

The primary source of freight transportation in Lamoille County is the regional highway system. This means freight must be transported into and out of the region via the state highway network. Note an important form of "freight" is truck traffic to the landfill in Coventry. The Vermont Statewide Freight Plan (Revised December 2021) concluded that most freight in Vermont is transported by truck. This puts a tremendous strain on the highway network in terms of needed maintenance and adds

DRAFT

to perceived congestion. Truck traffic counts conducted by VTrans provide information regarding the region's highway network for moving freight. Truck traffic counts have identified VT Route 100 and VT Route 15 as the largest volumes of freight and truck routes in the region.

Local Transportation System Planning

The condition and safety of the highway network is a topic of interest to municipalities. To address any concerns, LCPC works closely with regional municipalities to provide resources which enable tracking of road maintenance, culvert and bridge conditions, and needed improvements. In an effort to maximize the safety and efficiency of the region's highway network, LCPC encourages towns to adopt minimum design standards for town highways. Adopting design standards can help prioritize maintenance investments, provide eligibility for some grant programs, and ensures equitable access from private roads and driveways into the municipal highway network. Standards typically address design concepts and goals such as ditching and culvert requirements, right-of-way, roadway crown, travel lane width, and so forth. Specifications typically address engineering and design detail requirements. A road policy typically outlines processes such as the acceptance of a private road into the town highway system, driveway and access objectives, and the procedure for laying out, reclassifying, or discontinuing a highway. Adopting design standards, specifications, or a road policy can help prolong the life of existing infrastructure, as well as save on future costs. Assistance with these planning activities is available through LCPC and the VTrans District Administrator's office.

Transportation Resources

Lamoille County continuously improves transportation resources available to the public. The Transportation Resources map at the end of this chapter depicts key facilities and resources that residents and visitors can utilize. Most notably are park and ride locations , multi-modal transportation options, and public EV charging stations. The resources map does not display available charging stations that are privately owned by businesses. Most chargers are currently located near/in Stowe, while over time an increasing number of installations are occurring around the County.

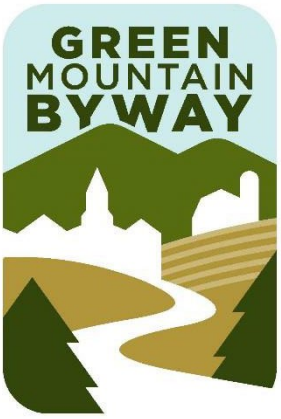
DRAFT

Vermont Byways Program

Lamoille County is home to the Green Mountain Byway, as well as the Smugglers' Notch Scenic Highway. Both are tailored to celebrate scenic road corridors and significant landscapes. According to the Vermont Scenery Preservation Council, a byway is defined as "a highway or other public road that may be associated with other transportation resources that have special scenic, historic, recreational, cultural, archaeological and/or natural qualities, and that has been formally designated by the Vermont Transportation Board."

Green Mountain Byway

The Green Mountain Byway includes the highway network in Stowe, Morristown, Hyde Park, Johnson, Cambridge, and Waterbury (which borders Lamoille County to the south). The Byway and plans associated with it are non-regulatory. This network of highways was first designated in 2009, and expanded in 2018, for its scenic, historic, cultural, and economic importance to the region. Intrinsic resources found all along the byway include historic structures and landmarks, scenic views, recreational facilities, local businesses and other popular tourism attractions. The Green Mountain Byway Corridor Management Plan (2018) identifies the importance of the highway network, as well as ideas for preserving its valuable assets for the enjoyment of future generations and all users.

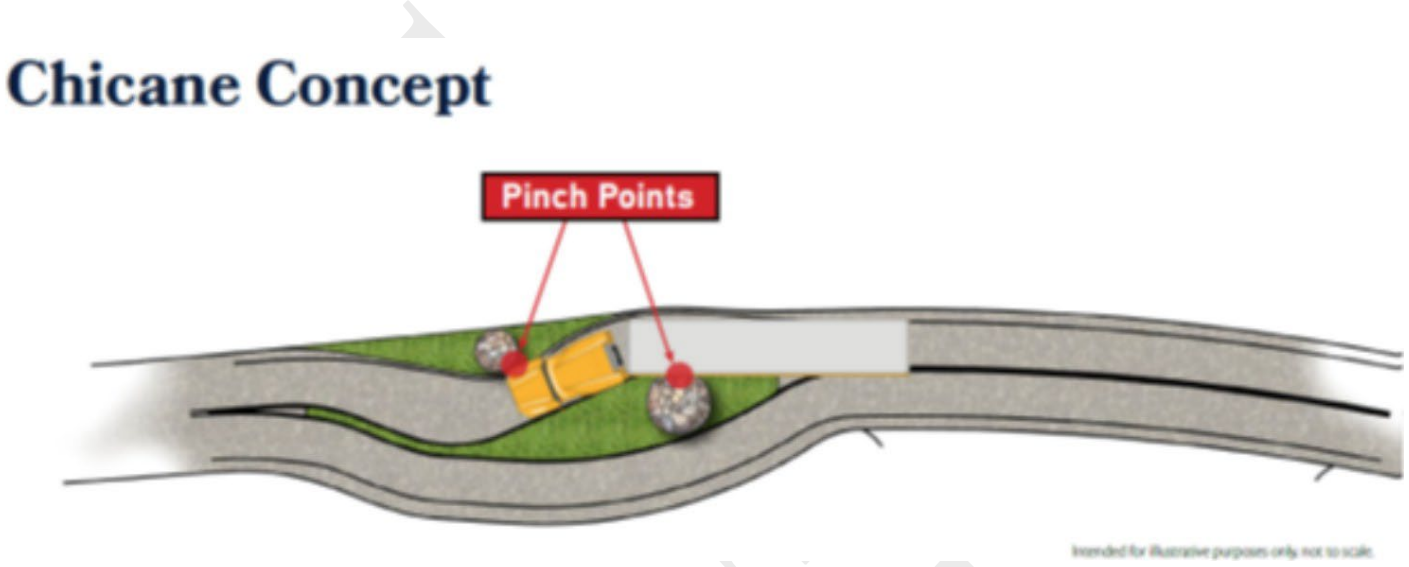


Smugglers' Notch Scenic Highway

The Smugglers' Notch Scenic Highway is a 3.7 mile portion of VT Route 108, beginning in Stowe and ending in Cambridge. Scenic highways are designated for their representation of valuable natural resources including ecologically sensitive habitats, recreation areas, and productive scenic working landscapes. The Smugglers' Notch Scenic Highway is best known for its intriguing cliff formations, scenic vistas, variety of hiking trails and narrow, winding roadway. Smugglers' Notch, listed on the Vermont Fragile Areas Registry, is home to a variety of rare species of flora and fauna. This scenic highway is managed in a manner that protects the ecological, geological, and recreational assets of the area. Proposed projects along the highway should conform to the *Smugglers' Notch Scenic Highway Corridor Management* Plan (1995). Efforts should be made periodically to update the plan and re- evaluate the project recommendations.

DRAFT

As this route through the Notch is a popular scenic detour during the non-winter seasons, it also has been a prime location for tractor trailers to get stuck in the Notch. In 2023, LCPC partnered with Vtrans to investigate potential ways to further discourage trucks from attempting to traverse the narrow roadway through Smugglers' Notch. Since 2020, Vtrans has increased signage along I-89, Route 15, and Route 100 to provide advance notification that the Notch is impassible to tractor trailer trucks. While the total number of trucks becoming stuck has decreased since these improved signs were installed, some drivers still attempt to pass through the Notch. Based on extensive feedback from public meetings and online surveys conducted in 2022 and 2023, Vtrans evaluated the effectiveness of "chicanes" before the gates at either end before Route 108 enters the Notch. Vtrans piloted a test of this concept in 2024 and 2025.



Based on the success of this pilot program in reducing the number of vehicles that get stuck in Notch, VTrans will consider the Chicane's approach as a permanent safety improvement to the Smugglers' Notch Scenic Highway.

Public Transportation

Throughout Lamoille County and Vermont, public transportation provides basic mobility service to all people. Vermont has made great strides in public transportation in recent years. Many regions are benefiting from fixed-route transit services. Demand-response transportation is successful in supplementing fixed-routes thanks to a large network of volunteer drivers and well-organized transit operators utilizing current best management and operational practices.

The current public transit system in Lamoille County consists of two providers: Green Mountain Transit (GMT) and Rural Community Transportation (RCT). The transit

system is comprised of both traditional "fixed route" and "demand response" services. For GMT public transit service routes visit https://ridegmt.com/. See below for more information RCT demand response service or visit https://www.riderct.org/.

GMT and RCT have implemented many of the recommendations from previous planning efforts which include service and operational recommendations. Though the region has seen many improvements in public transit, there are still many challenges. The relatively low-density population, topography, and seasonal impact on needs, pose challenges to the establishment, maintenance, and upkeep of viable transit operations. Current and historic ridership data for all public transit services is available through VTrans and/or the providers. Performance metrics are also tracked and monitored by VTrans and the providers. Efforts should be made to continuously evaluate and improve the efficiency and effectiveness of the many public transit programs and services available, including exploring viability of innovative operational service models and ideas. Lamoille County, as of 2022, accounted for 3% of overall ridership in Vermont. In addition to the traditional public transit services, RCT has now implemented their RCT Rides Micro-transit program.

Existing Transit Services

Traditional fixed route services operate on a set schedule, along a pre-determined route, and sometimes are required to deviate from the fixed routes to fulfill eligible requests in accordance with federal and state requirements.

Public Transportation also includes non-emergency medical transportation and other demand response services . These services are typically offered and managed in partnership with regional human services partners.

Several fixed route services are provided throughout Lamoille County; maps, schedules, and general information can be found through the providers' websites. Non-fixed route services, including but not limited to demand response, Elders and Persons with Disabilities program, non-emergency medical transportation, and various human services related transportation options, are all essential services in Lamoille County. These services, and the funding programs which sustain them, can sometimes vary over time; for information about current options in Lamoille County, contact the providers directly.

DRAFT

The RCT Rides Micro-transit program is available to anyone within the service area in Lamoille County. Currently the program is available to those traveling within Morrisville, Hyde Park Village, Johnson Village, and Elmore. This service provides on demand transit service to all users in the service area for a fare-free taxi-style experience. Users can expect the service to make multiple pick ups that are traveling in a similar direction. This service is not limited to medical appointments or restricted by Medicaid eligibility like other programs offered in Lamoille County. Due to the reduction in fixed route services in the county, Micro-transit provides a more targeted service in fuel efficient cars rather than buses. Through implementation of the RCT Transit Development Plan (2024) the service area of this micro-transit service area will first be expanded to include all of Cambridge, Johnson, and Morristown. The expansion would then look to cover Elmore, Wolcott, and extend into Caledonia County. Finally, the Towns of Hyde Park, Eden, Belvidere, and Waterville will be included in the service area. Once the full Transit development plan is implemented, all of Lamoille County will be served by RCT Micro-transit. This expansion process is anticipated to happen over a 10-year time frame. For more information on Micro-transit service in Lamoille County visit https://www.riderct.org/.

Transportation Demand Management and Multi-Modal Connectivity

Creating a connected transportation system that supports cars, bicycles, pedestrians, rail, aviation, and public transit is a primary strategy for developing a comprehensive and efficient transportation network. Transportation Demand Management, or TDM, is a term for strategies that increase transportation system efficiency by encouraging reduced auto trips, increasing travel options, providing incentives to modify travel behavior, or reducing the need to travel by promoting compact mixed-use developments and infrastructure which enables remote working. TDM strategies most often focus on identifying alternatives to single occupant vehicles during commuting hours.

Perhaps the most attractive characteristic of these strategies is that they are significantly less expensive and controversial than large highway construction projects. TDM provides an opportunity to address many of our highway management issues while continuing to improve facilities and services. To improve the efficiency of the region's overall transportation system, all future transportation projects and TDM strategies should consider three main factors: reliability, convenience, and connectivity to other transportation modes.

DRAFT

Traditional TDM strategies include carpooling, vanpooling, transit use, walking, and bicycling. More recent TDM measures that have been well received by the commuting public include flexible scheduling, compressed work week, and telecommuting. Advances in communications technology make these strategies possible; however, these strategies do rely on the flexibility of employers and the ability and willingness of employees to alter their typical daily schedules.

Currently, *Go Vermont* offers an online carpool matching service through their own website. The *Go Vermont* program offers many resources, including but not limited to, trip planning utilizing public transit, human services ride program information, EV charging information, co-op rideshare program, employer incentives and ideas to support employee needs, and guaranteed ride home program among others. Employers can offer a variety of opportunities to encourage ride sharing and alternative means of transportation. Examples include providing preferred parking spaces to carpoolers, installing bike racks or offering incentive programs. Promoting employer- based programs that encourage the use of alternative transportation modes can yield a variety of benefits relating to health, vehicle maintenance, and the reduction of single passenger vehicle miles traveled.

Creating more walkable and bikeable communities can help decrease transportation spending, energy burden, and emissions, and improve access to community assets. Improved walking and biking infrastructure can also facilitate safe movement for older adults and households without access to vehicles. Performing walking audits can help identify vulnerable transportation infrastructure and places that need to be improved for all pedestrians. Walkability in village centers also supports people's ability to age in place. Working in partnership with municipalities, regional partners, and underserved communities, the LCPC can help identify transportation infrastructure that can be improved or added and increase mobility and accessibility at the local and regional level.

Park and Rides

Park and Ride lots provide a facility for travelers and commuters to leave their vehicle and connect to public transit or carpool for the remainder of their trip. Lamoille County has multiple Park & Ride lots. These parking areas are operated and maintained by the State, a municipality, or a private business or landowner. Individuals sometimes improvise carpooling by leaving a car in a pull off on the side of the road. VTrans

DRAFT

works with municipalities and others to promote, plan, and build formal park & rides when appropriate. See Transportation Resources map at the end of this chapter for current locations of official park & rides.

Current Use of Bicycle & Pedestrian Network

In America's recent past, most transportation projects have been primarily aimed toward improving the mobility and safety of automobile travel. In many cases, this has been without consideration for pedestrians and bicyclists or connectivity between modes. More recently, the growing popularity of bicycling, running, walking, and general concern for health, has increased demand for appropriate bicycle and pedestrian facilities and access to multi-modal options.

Current Census data (2020) for Lamoille County indicates that 587 commuters, or approximately 4.3% of commuters, walk or bicycle to work. This figure has decreased from approximately 715 commuters in 2010. Most often bicycle or pedestrian trips are made in areas of compact development with adequate travel space for pedestrian and cyclists. VTrans and some municipalities have identified bicycle and pedestrian infrastructure of importance for prioritization of maintenance and improvement projects. The data which informs these priorities should periodically be reviewed, updated, and evaluated for accuracy.

Feasibility of Pedestrian and Bicycle Travel

Most bicycle travel in Lamoille County takes place on the region's highway network. A common concern is that road shoulders are often too narrow to safely accommodate shared use. The provision of adequate shoulders for bicycling along highways is an important step in encouraging bicycling as a viable form of transportation. Generally, bicycling is considered a feasible transportation option for trips of less than five miles. College towns, such as Johnson, often see a great deal of bicycle users, as there is a concentration of residents who do not own cars and must rely on other modes of transportation. Bicycle use is also common among school-age children, where bicycles provide important mobility to get to school, as well as social and recreational activities.

Bicycling in Lamoille County also has become a tourist attraction, both on the road network and on trails such as the Lamoille Valley Rail Trail. Safe, pleasant, and convenient facilities (bike lanes and extended trail) and amenities (bike racks and bike lockers) should be provided to support the needs of bicyclists.

The decision to walk rather than drive is highly dependent on distance, the condition of the pedestrian infrastructure, and weather. Studies have indicated that pedestrians in the United States have a general walking threshold of roughly a quarter-mile, or approximately 5 minutes for regular trips, and a 1-mile radius or approximately 20 minutes for a commute trip. The majority of regional pedestrian trips tend to be concentrated in developed areas where the distance between origin and destination is relatively short. Walking as the only mode of travel is mostly used for short trips, while it is part of all transportation trips as people need to walk to/from a parking lot or bus stop to their final destination. Many municipalities have made improvements to their pedestrian environment by planning and constructing sidewalk networks in developed areas. These expansions have allowed for greater connectivity and safe routes for pedestrian travel. In many small developed rural areas, widened road shoulders or a separated path may in some cases be the most appropriate pedestrian facility. The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* should be consulted when making decisions regarding designs for pedestrian facilities. Improvements to street and highway design in both developed areas and on rural roads will assist in increasing pedestrian safety and providing more comfortable walking environments. Vtrans may recognize shoulders three-feet wide or greater as "pedestrian facilities." However, this width is often insufficient for providing a comfortable walking environment.

Recreation and Transportation

The connection between recreation and transportation is often overlooked. The Stowe Recreation Path plays an important transportation role in Stowe providing an alternative, non-motorized transportation facility for much of the length of the Mountain Road (VT108), which serves local residents and tourists. Similarly, the Lamoille Valley Rail Trail (LVRT) is a regional transportation facility connecting many of the towns and villages throughout the region and beyond. All municipalities in Lamoille County have myriad off-road trails for walking, running, biking, skiing, snowshoeing, snowmobiling, paddling, and/or ATV use. These facilities, some of which are primarily recreational facilities, should also receive attention for their role

DRAFT

and importance as transportation corridors. For example, Towns not directly served by the LVRT will most likely wish to develop safe connections to the trail. Some will choose to gain access to the LVRT via highway connections, but others may wish to develop off- highway connections, contributing to a region-wide trail network.

A previous study explored the possibility of connecting the Stowe Recreation Path to the Lamoille Valley Rail Trail. Connecting the Stowe Recreation Path and the LVRT remains a goal of this plan as it would greatly improve the recreation network.

The federal process utilized in railbanking of the Lamoille Valley Rail Corridor provided an opportunity for the development of a multi-use path the length and quality of which is unprecedented in Vermont. Providing an off-highway link between many developed areas along the way, the LVRT is poised to become a destination facility for many recreational 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 industries along the way including food, lodging, and technical support for the various users of the trail.

Additionally, communities throughout the region recognize the importance of existing local trail connectors and their ability to provide a safe travel link to developed areas. Local connectors across the region serve in the form of extended sidewalks, local roadways, and recreational pathways. See the Regional Trails map at the end of this chapter for current locations and types of trails.

Planning for Facilities

VTrans developed and adopted the *Vermont Bicycle and Pedestrian Facility Planning and Design Manual* in 2002. This manual provides extensive background and guidance on the specifications of bicycle and pedestrian planning and facility design. This manual, in conjunction with the most recent Vermont guidelines, should be consulted whenever planning for, or designing, bicycle and pedestrian facilities in addition to the *Vermont State Design Standards*. In addition to these guidance and standards, the principle of incorporating all transportation users into the existing road network was backed by "Complete Streets" legislation. The Complete Streets Law (Act 34) which went into effect July 1, 2011, requires both the state and municipalities in Vermont to consider the needs of all users (e.g. bicyclists, pedestrians, transit users) in all transportation plans and projects.

DRAFT

The Lamoille County Planning Commission works with municipalities through the planning process and various types of bike and pedestrian facilities. This effort reenforces the importance of making smart connections in villages to community facilities, healthcare, and recreation options. This effort of providing walkable and bikeable communities can help reduce the demand on fossil fuel consumption and green house gas emissions in Lamoille County communities. The LCPC works closely with the State and municipalities to help secure funding for these projects and ensure compliance with state design standards.

Air Transportation

Aviation provides an important function in the region's transportation system. Convenient access to passenger and freight air service is vital to many businesses in Lamoille County and is important to the tourist economy and business sectors. A functional airport is a tremendous asset and an integral component of an intermodal transportation system.

Regional Airport Facilities and Services

The airspace that needs to be protected for safe take-offs and landings can extend beyond the municipality in which the airport is located. If people build near it, they need to check in with the FAA (Federal Aviation Administration). If they build into it without following the FAA requirements, they can be required to remove the building or structure. The FAA also created a web based tool to check if a proposed project needs to accommodate FAA restrictions. Contact LCPC or VTrans for assistance obtaining information about restricted air space as related to proposed projects.

Lamoille County is home to the Morrisville-Stowe State Airport, located in Morristown on VT100. Owned by the State of Vermont, VTrans manages the administration of the airport, and contracts with a private fixed-base operator that handles daily operations at the facility. The airport is currently classified as a Regional Service airport with a focus on connecting the local and regional economy to the state and national markets. This general aviation airport services charter and air taxi service for business class travelers and tourists, similar to many of the other small State-owned aviation airports scattered around Vermont. Situated between Morrisville and Stowe, the Morrisville-Stowe State Airport is a vital contributor to attracting visitors and increasing business revenue in the county.

DRAFT

Morrisville-Stowe Airport Master Plan

VTrans completed the most recent Master Plan update for Morrisville- Stowe Airport in August 2018. While formerly privately owned, Morrisville-Stowe Airport is now owned and operated by the State of Vermont. Many of the improvements are oriented toward meeting FAA safety requirements for operation of the current fleet-mix of aircraft. The planned improvements will address identified deficiencies, allowing safe and efficient operations for the existing fleet of small aircraft. The airport is not eligible for subsides for commercial air passenger service under current federal regulations due to its proximity to Burlington International Airport. Therefore, it will likely continue to operate at its present level of service for private aviation, charter service, and air taxi service. The airport's Master Plan also identifies existing conditions and constraints which make significant expansion challenging and proposes improvements that can work within the existing conditions.

Airport Service Outside Lamoille County

Currently, Burlington International Airport and the Rutland State Airport are the only airports in Vermont that provide scheduled commercial air service; larger airports in Massachusetts, New Hampshire, New York, and Canada provide additional commercial service. These airports provide services that benefit Lamoille County. Many resort hotels in the region provide shuttle transportation to the Burlington International Airport.

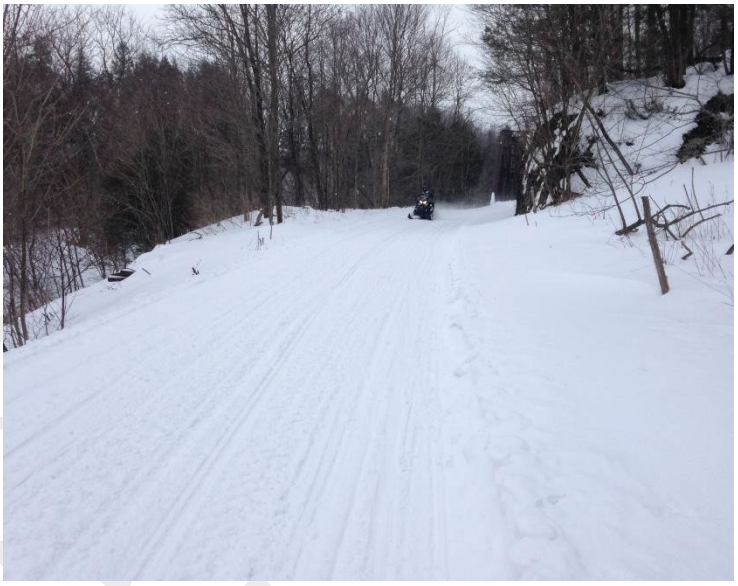
Rail Transportation

Lamoille County does not currently have an active railroad. In an effort to increase reuse opportunities and active mobility options, the railroad route that was utilized in the past has now been transformed into the Lamoille Valley Rail Trail (LVRT), but by means of the federal "railbanking" process could become an active rail line in the future if determined appropriate. Lamoille County is dependent on trucks to deliver freight through the county, as it lacks any active rail infrastructure. Truck transportation is generally more cost effective for higher value items, due in part to higher inventory costs that are saved by more timely truck freight schedules. Vermont passenger rail service has also suffered a decline in recent years. Passenger rail is nonexistent in Lamoille County, but it could serve the region's interests to support Amtrak service through nearby stations. The closest stations to Lamoille County are in Waterbury and Essex Junction.

DRAFT

Transportation-Land Use Connection

Traffic volumes and transportation mode choices are influenced by the location, density, and mixture of land uses. Dispersed low density development patterns rely almost solely on the automobile as the primary mode of transportation. As housing, employment centers, shopping, and service opportunities become further separated, roads become more congested, and the region's landscape loses its rural aesthetic. For many years, the State of Vermont has held as one of its most important ideals: promote new development in already developed areas in order to keep the open countryside open. All local and State policy decisions should consider and support this paramount goal.



By encouraging concentrated, mixed-use development within existing developed areas, commute trips can be shortened and other modes of transportation can be promoted. Municipalities can implement this strategy through infrastructure investments as well as zoning and subdivision ordinances. Promoting this type of development will minimize the need for highway network expansion while facilitating trips made by walking, bicycle, and public transit.

An important component of this strategy is ensuring, to the extent possible, that public buildings and facilities - post offices, schools, libraries, municipal offices, recreational fields, etc. are located within walking distance of developed areas. Another aspect of this strategy is the concept of mixed-use development. Mixed-use developments offer opportunities to live, work, shop, and recreate close together to minimize the need for vehicle travel.

Within Lamoille County, the VT Route 15 and VT Route 100 corridors provide vital access to employment and housing opportunities. By promoting access management strategies and thoughtful land use planning, the look and function of the rural areas along these corridors can be preserved while still allowing well-planned development.

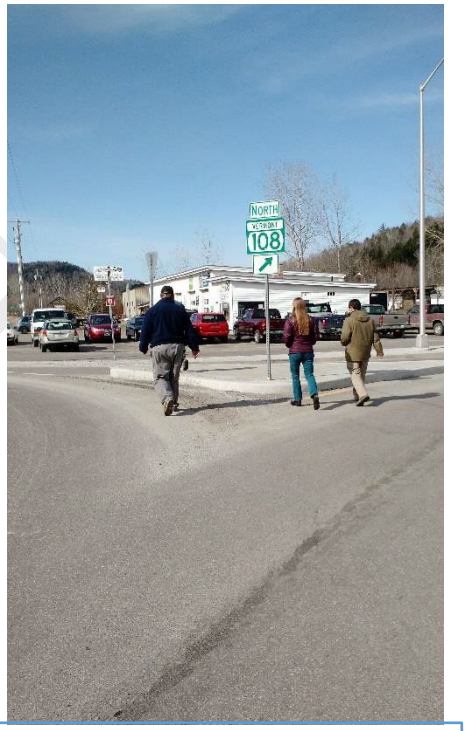
DRAFT

Healthy Community Design

There are several aspects of healthy community design that directly relate to transportation planning. The basic principles consider the integration of commercial and residential developments and the location of destinations such as schools and employment centers. Policies that support healthy community design include compact development, interconnected streets, and a network of connected sidewalks and bicycle routes. Towns are encouraged to incorporate healthy community design principles into their municipal plans, promote alternatives to automobile travel, as well as increasing physical activity by providing access to parks and bicycle and pedestrians facilities.

Access Management Access management is a strategy for maximizing the efficiency and safety of roadways by minimizing potential congestion and safety risks associated with access points along road corridors, such as driveways and side-roads. Frequent access points decrease the efficiency of streets and increase the risk of crashes among vehicles. Safety and capacity concerns can be mitigated by implementing effective access management strategies.

By incorporating access management regulations into local zoning or subdivision ordinances, municipalities can promote the efficiency and safety of traffic while preserving roadway level of service.



The roundabout in Jeffersonville (and those in Hyde Park and Morrisville) lacks pedestrian fixtures, such as a marked crosswalk or sidewalk.

Transportation Energy Burden

A 2023 report from Efficiency Vermont states that Vermont households spend annually around $3,217 on transportation fuels. There is an estimated $64,049,760 spent on transportation energy annually in Lamoille County. Lamoille County is home to communities with some of the highest Transportation energy burdens in the state. The Vermont Energy Burden Report (https://www.efficiencyvermont.com/news-blog/whitepapers/vermonts-2023-energy-burden-report.) states that lower income households generally experience a higher energy burden as it relates to transportation, especially when considering the rural nature of Lamoille County. Many towns are underserved by public transit and rely almost entirely on needing a car to get to work, access local services, healthcare

DRAFT

facilities, school, or other destinations. The regional energy burden can be addressed by facilitating access to public transit and providing opportunities for shorter commuting distances. The LCPC supports communities as they update plans and develop projects to improve availability to and proximity of alternative transportation options for all residents and visitors in the County. For more information on transportation energy burden and promoting health equity in the transportation sector visit the Lamoille County Enhanced Energy Plan.

Traffic Calming and Streetscaping

Many of Lamoille County's developed areas are on state highways. These highways play the role of providing access and mobility. The highways often serve as "Main Street" for the Villages. Traffic calming features can be implemented to increase safety for all users: pedestrians, bicycles, and vehicles. Traffic calming features are visual and physical cues to reduce speed and signal drivers to change their behavior. Examples include, but are not limited to village gateway signs, street markings, curb-extensions, landscaping, public art, lighting, etc. VTrans should further develop existing processes and standards for traffic calming on state highways within developed areas. VTrans should consider including traffic calming elements as a component of major roadway projects on the State highway system, especially in developed areas.

Corridor Planning

Corridors serve as vital connectors to statewide highways, intra-regional corridors and local roadways. Understanding the existing functions and characteristics of each corridor can help guide prioritization and design of future transportation improvement projects. Improvements to primary corridors should consider both community concerns and the safest and most efficient manner in which to move goods and people.

Lamoille County's highest traffic volume roads include Vermont Routes 100, 15 and 12. While each route has its own unique land use patterns, corridors situated within the region are characterized by scenic rural landscapes, historic village centers, and clusters of commercial development. As communities along these connector routes continue to grow, transportation investments and improvement projects should consider all modes of transportation. Existing infrastructure for bus stops, pedestrians, and bicyclists along state routes would benefit from improvements that address safety and efficiency of use. Municipalities in the region are encouraged to design future transportation and land

DRAFT

use projects in a manner that will meet the needs of all users, while preserving scenic and intrinsic resources.

Corridor Management Planning objectives typically include the following:

- Coordinate & leverage investments to maximize effective use of public funding
- Identify practical, short-term projects which can be implemented relatively easily, as well as long-term needs which require more engineering and financial planning. Understand that Asset Management principles are the foundation of this planning while also incorporating local needs in a focused and effective way
- Consider context sensitive improvements where appropriate to safely enable multiple modes of transportation, including but not limited to bus stops, park & rides, bicycle and pedestrian infrastructure, traffic calming, access management, ride sharing, etc.

Vermont Route 100

Vermont Route 100 has a north/south alignment, running from close to the Canadian border to near the Massachusetts border. Locally, it goes through two of Lamoille County's largest employment centers, Stowe and Morristown, as well as Hyde Park and Eden. The overall pattern of development along the corridor is characterized by historic villages connected by a scenic two-lane rural highway. Rural portions of the highway are dominated by large parcels of farm, forestland, and single-family homes. Transitional areas along the periphery of developed areas are commonly characterized by a mix of commercial uses, while the historic centers of towns are dominated by mixed-use development. As truck traffic and general development continues to occur along Vermont Route 100, accommodating multiple transportation modes becomes more critical for balancing safety and efficiency.

Years of traffic data and planning studies indicate traffic congestion tends to be most prevalent in Stowe near the intersection with Vermont Route 108 and in densely developed areas of Morrisville. Congestion does occur in other locations along the corridor but tends to be limited in duration and scale when evaluated in the context of national engineering analysis standards. Traffic data and analyses detailing traffic volumes, vehicle classifications, and travelling speed are available from LCPC and VTrans.

Vermont Route 15

Vermont Route 15 has an east/west alignment, running from Winooski to Danville;

DRAFT

nearly the entire width of Vermont. Locally, it goes through two of Lamoille County's largest employment centers, Cambridge and Morristown, as well as Hyde Park, Johnson, and Wolcott. The overall pattern of development along the corridor is very similar to Vermont Route 100, characterized by historic villages connected by a scenic two-lane rural highway. Rural portions of the highway are dominated by large parcels of farm, forestland, and single-family homes. Transitional areas along the periphery of developed areas are commonly characterized by a mix of commercial uses, while the historic centers of towns are dominated by mixed-use development. As truck traffic and general development continues to occur along Vermont Route 15, accommodating multiple transportation modes becomes more critical for balancing safety and efficiency.

Years of traffic data and planning studies indicate traffic congestion tends to be most prevalent in densely developed areas of Morrisville. Congestion does occur in other locations along the corridor but tends to be limited in duration and scale when evaluated in context of national engineering analysis standards. Traffic data and analyses detailing traffic volumes, vehicle classifications, and travelling speed are available from LCPC and VTrans.

Vermont Route 12

Vermont Route 12 has a north/south alignment, running from Morristown to Hartland. Locally, it goes through Morristown and Elmore. The overall pattern of development along the corridor is very similar to other Vermont Routes in Lamoille County, characterized by historic villages connected by a scenic two-lane rural highway. Rural portions of the highway are dominated by large parcels of farm, forestland, and single-family homes. Transitional areas along the periphery of developed areas are commonly characterized by a mix of commercial uses, while the historic centers of towns are dominated by mixed-use development. As truck traffic and general development continues to occur along Vermont Route 12, accommodating multiple transportation modes becomes more critical for balancing safety and efficiency.

Years of traffic data and planning studies indicate traffic congestion tends to be most prevalent in densely developed areas of Morrisville. Congestion does not tend to occur in other locations along the corridor within Lamoille County. Traffic data and analyses detailing traffic volumes, vehicle classifications, and travelling speed are available from LCPC and VTrans.

DRAFT

Vermont Route 12 serves popular recreation destinations including Elmore State Park and Lake Elmore. Future road improvement projects must consider the safety of all users along the corridor. Similar to portions of Vermont Routes 100 and 15, Route 12 lacks adequate bicycle and pedestrian facilities.

Vermont Route 108

Vermont Route 108 has a north/south alignment, running from Stowe to the Canadian border near East Franklin. Locally, it goes through Stowe and Cambridge. The overall pattern of development along the corridor is for the most part very similar to other Vermont Routes in Lamoille County, characterized by historic villages connected by a scenic two-lane rural highway. Rural portions of the highway are dominated by large parcels of farm, forestland, and single-family homes. Transitional areas along the periphery of developed areas are commonly characterized by a mix of commercial uses, while the historic centers of towns are dominated by mixed-use development.

An important distinction for Vermont Route 108 is the presence of two of the State's most popular winter sports destinations: Stowe Resort and Smugglers' Notch Resort. Vermont Route 108 also includes the Smugglers' Notch Scenic Highway, which is a federally recognized designation. The most unique feature of Vermont Route 108 is that it contains the only portion of a Vermont State Highway that is closed each winter due to maintenance challenges; the winter closure portion is more or less the designated Scenic Highway corridor. That portion of the road also has challenging topography which generally does not conform with State Highway standards; sensitive natural areas and unique geological features preclude many typical options for improving safety and efficiency.

The Smugglers' Notch Scenic Highway Management Plan documents feasible options for improvements; in recent years, some of these improvements have been implemented and/or are planned for implementation in the near future. Another effect of the challenging topography is that long vehicles such as tractor trailers are prohibited by law from passing through the Notch. Efforts are underway to deter long vehicles from attempting to pass through. As truck traffic and general development continues to occur along Vermont Route 108, accommodating multiple transportation modes becomes more critical for balancing safety and efficiency.

DRAFT

Years of traffic data and planning studies indicate traffic congestion tends to be most prevalent in densely developed areas of Stowe's Historic Village and Mountain Road Village when tourism visitation is high in winter and coinciding with summer events which draw large numbers of visitors to the Town. Congestion does sometimes occur in other locations along the corridor within Lamoille County, for example when tourist visitation is high during fall foliage season, or when a long vehicle becomes stuck in the Notch. Traffic data and analyses detailing traffic volumes, vehicle classifications, and travelling speed are available from LCPC and VTrans.

Other Vermont Routes in Lamoille County

Several other State Highways are located entirely within Lamoille County. Routes 109, 100C, 100Alt, and 15A. Two other State Highways have a relatively small portion in Lamoille County, Vermont Routes 118 and 104. The overall pattern of development along all these corridors is for the most part very similar to other Vermont Routes in Lamoille County, characterized by historic villages connected by a scenic two-lane rural highway. Rural portions of the highway are dominated by large parcels of farm, forestland, and single-family homes. Transitional areas along the periphery of developed areas are commonly characterized by a mix of commercial uses, while the historic centers of towns are dominated by mixed-use development. As truck traffic and general development continues to occur along these roads, accommodating multiple transportation modes becomes more critical for balancing safety and efficiency.

Years of traffic data and planning studies indicate traffic congestion tends to be most prevalent in densely developed areas. Congestion does occur in other locations along the corridor but tends to be limited in duration and scale when evaluated in context of national engineering analysis standards. Traffic data and analyses detailing traffic volumes, vehicle classifications, and travelling speed are available from LCPC and VTrans.

State Road Designations and Class 1 Town Highways

VTrans and LCPC can assist municipalities in understanding the distinctions between designations of State Roads and Class 1 Town Highways. In summary, Class 1 Town Highways are a portion of a State Road in which the Town has assumed responsibility for most maintenance and operational duties, while the State does assist with capital projects and some maintenance. There are formal processes for a municipality to take

DRAFT

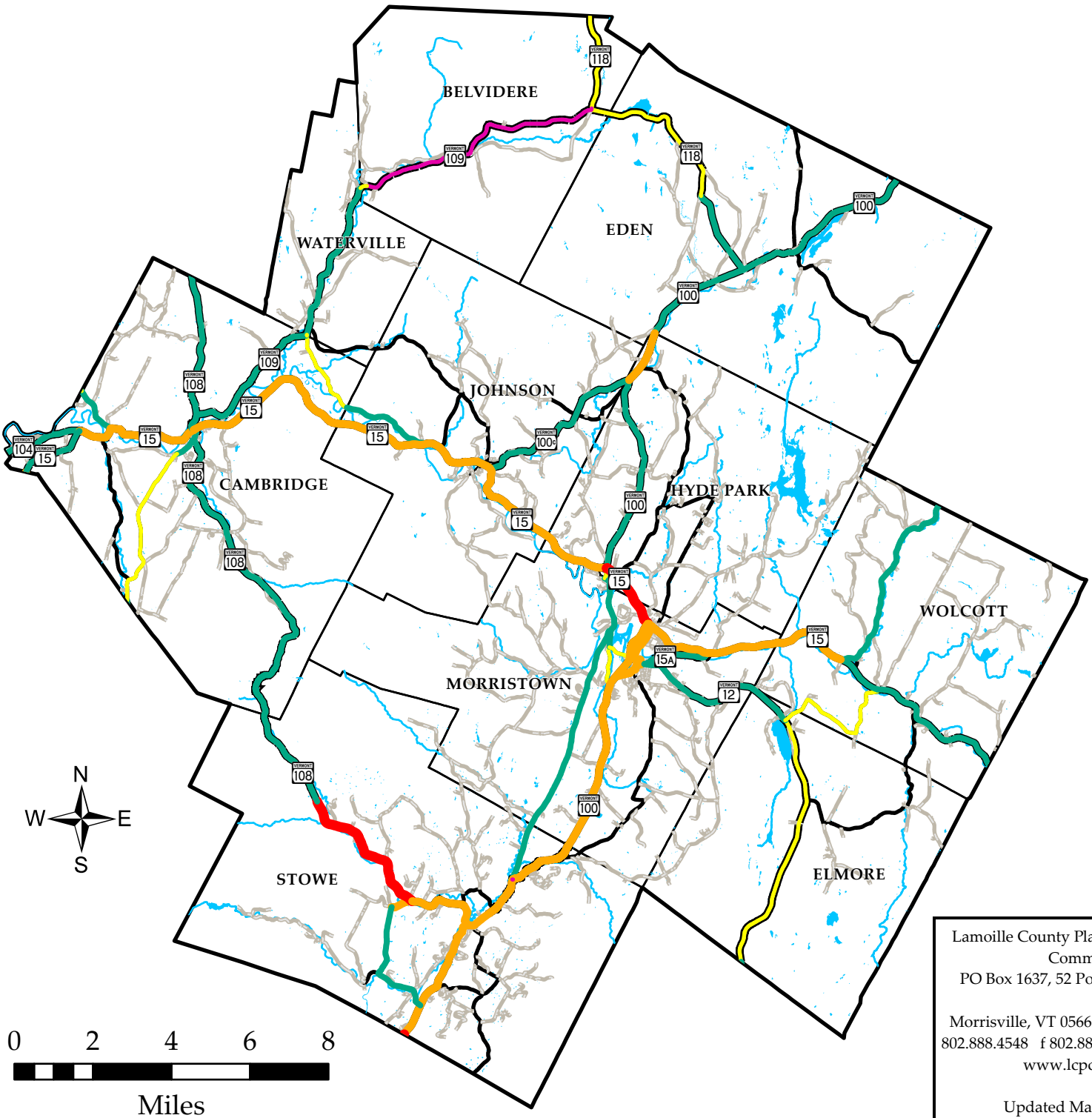
control of a portion of a State Highway, usually resulting in a Class 1 designation. Two communities in Lamoille County currently have Class 1 roads: Stowe and Morristown. There is also a formal process for a municipality to request the State take control of a Town Highway; this process is not common but can occur with assistance from VTrans and the State Legislature in accordance with State Statutes. LCPC staff may provide technical assistance upon request to municipalities seeking a change in designation either to a Class 1 Town Highway or to a State Highway.

Regional Transportation Project Prioritization

The Lamoille County Transportation Advisory Committee (TAC) prioritizes regional transportation infrastructure projects annually. TAC assists in the review of information such as operational efficiency, economic context, traffic volume, importance in context of regional traffic movement, environmental benefits, and safety issues for each project. This annual review is provided to VTrans to support the prioritization of investments of public money in transportation infrastructure projects within the State's annual budgeting process. The prioritization list for regional transportation projects is updated annually and is available at the LCPC office.

DRAFT

Lamoille County, Vermont:
2022 Average Annual Daily Traffic



N
W E
S

0 2 4 6 8

Miles

AADT

- 0 - 500
- 501 - 1000
- 1001 - 5000
- 5001 - 10000
- > 10000

Road Class

- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

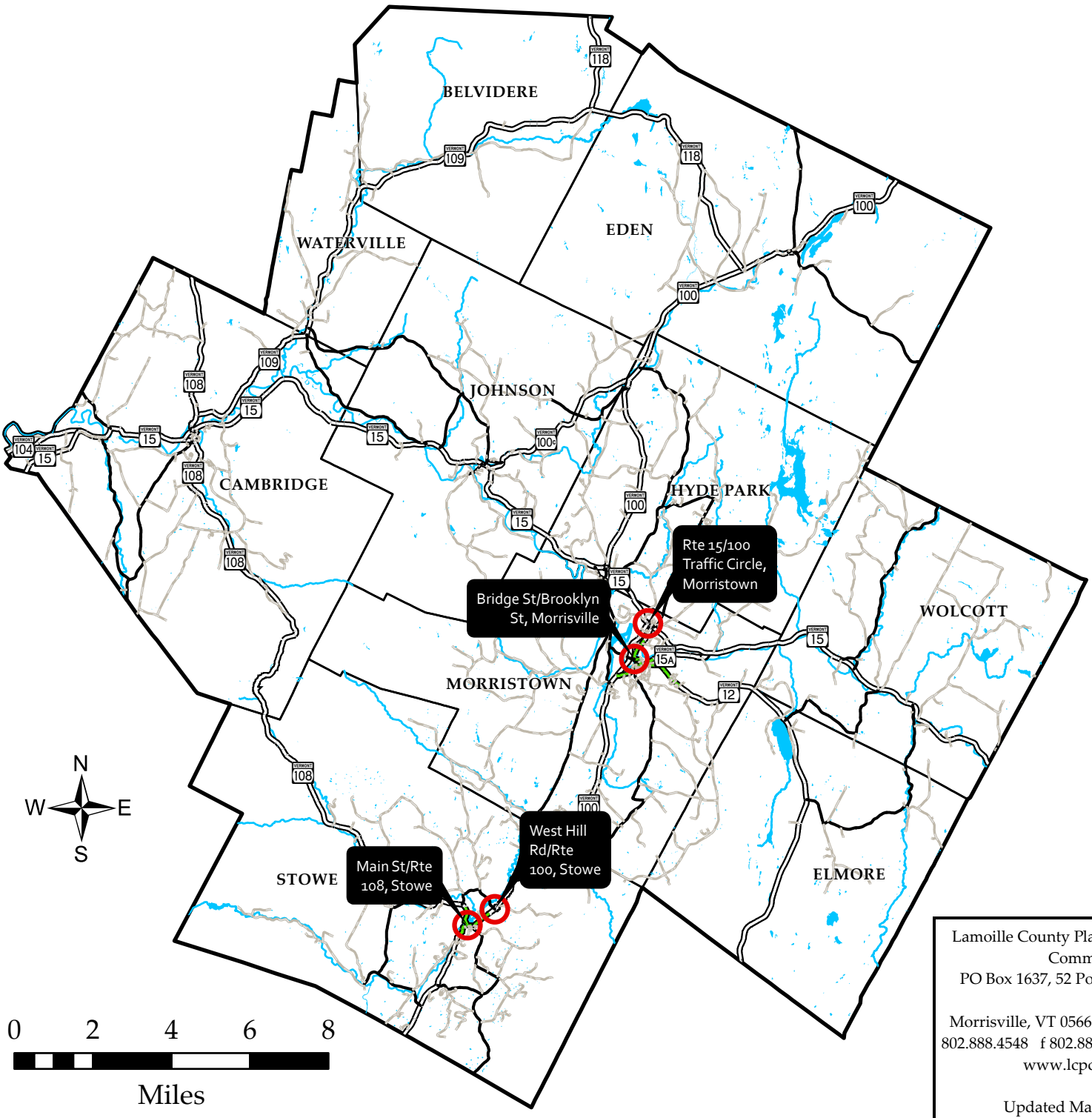
Updated May 2025

Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Lamoille County, Vermont: Points of Congestion



Points of Congestion

Road Class

State Highway

Town Highway Class 1

Town Highway Class 2

Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

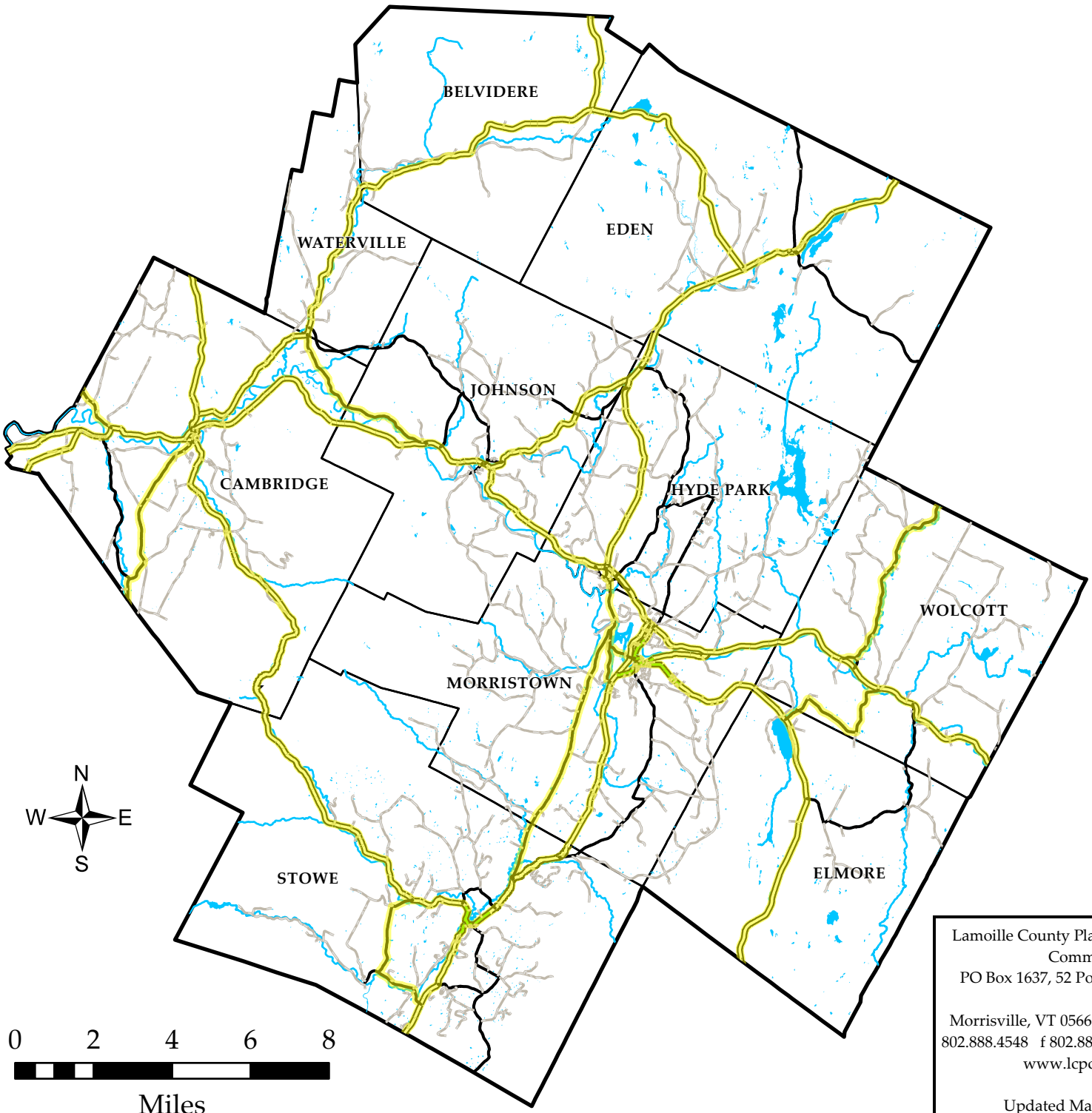
Updated May 2025

Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Lamoille County, Vermont: 2025 Federal Aid Highways



Federal Aid Highway System

Road Class

State Highway

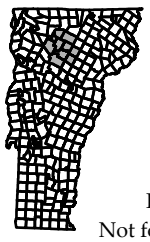
Town Highway Class 1

Town Highway Class 2

Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

Updated May 2025

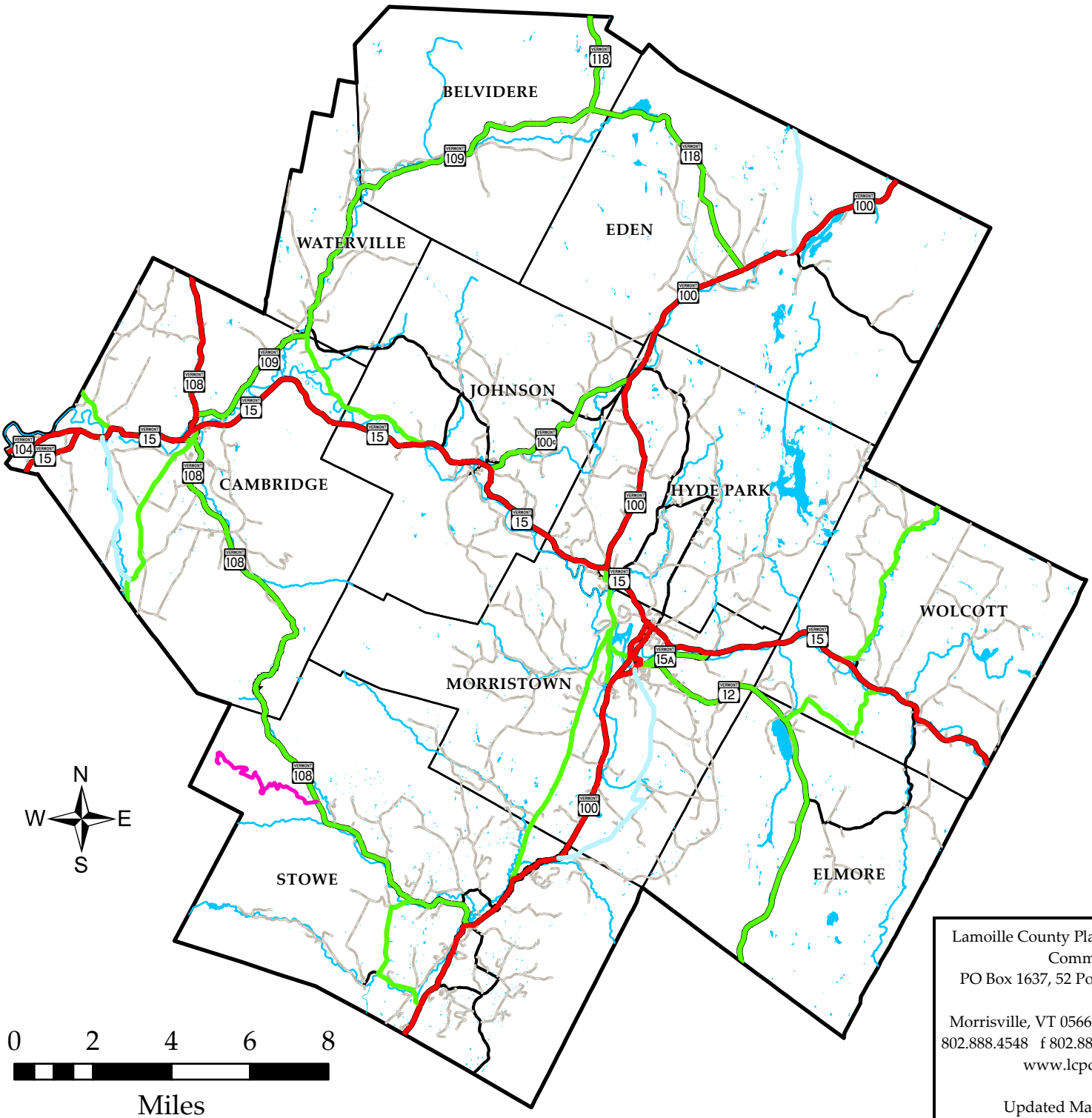


Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Lamoille County, Vermont: Highway Functional Class



Functional Class

- Major Collector
- Minor Arterial
- Minor Collector
- No Functional Class

Road Class

- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

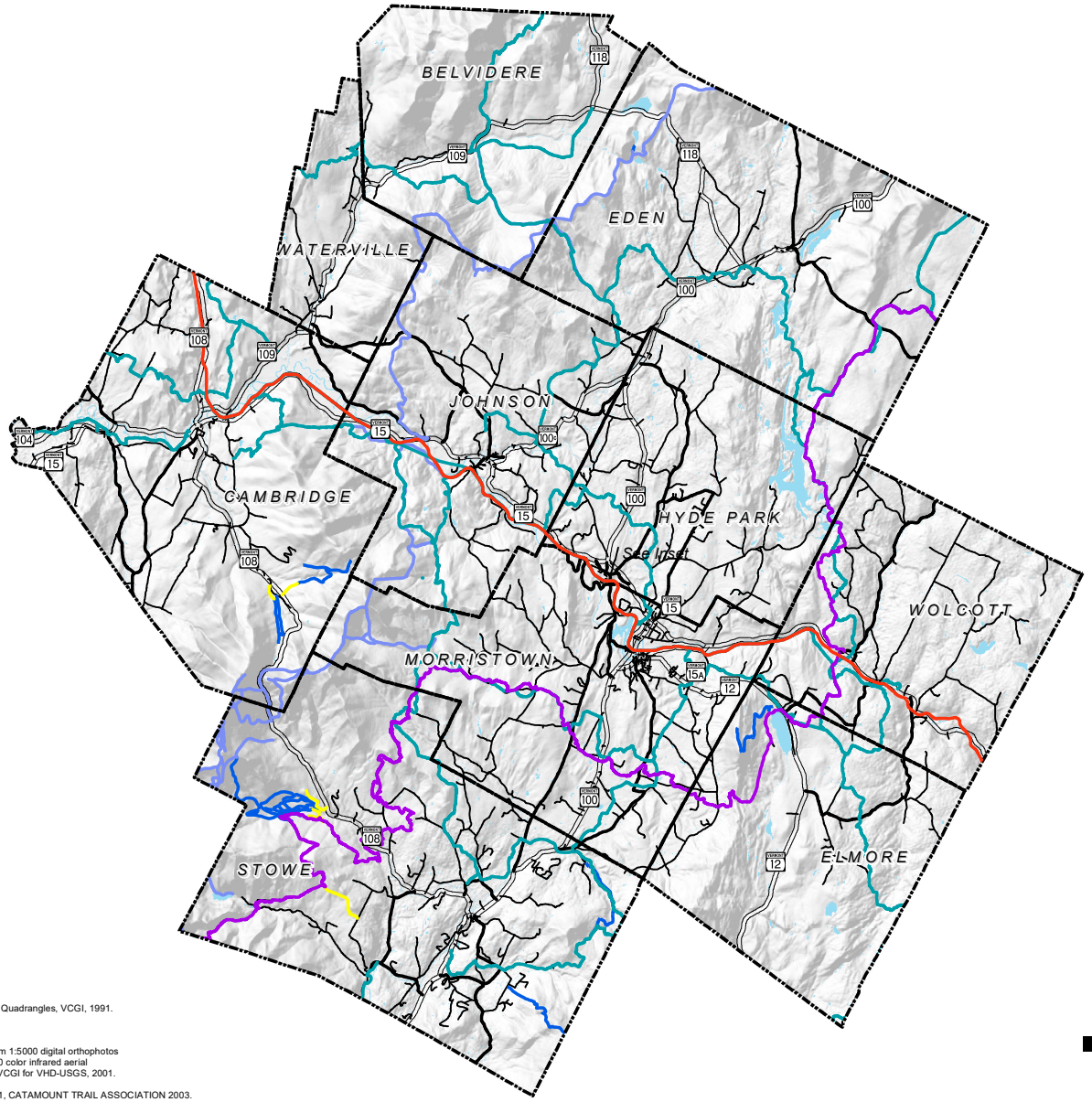
Updated May 2025

Tranverse Mercator,
VT State Plane,
Meters, NAD83

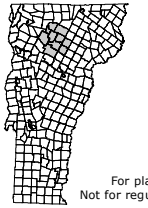
For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Lamoille County, Vermont: Regional Trails



- LVRT
- Catamount Trail
- VAST Trail
- Private Commercial Trail
- Long Trail
- State Forest Trail
- State Highway
- Town Highway Class 2
- Town Highway Class 3



Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

N

5
Miles

Lamoille County
Planning Commission

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

Created May 2022

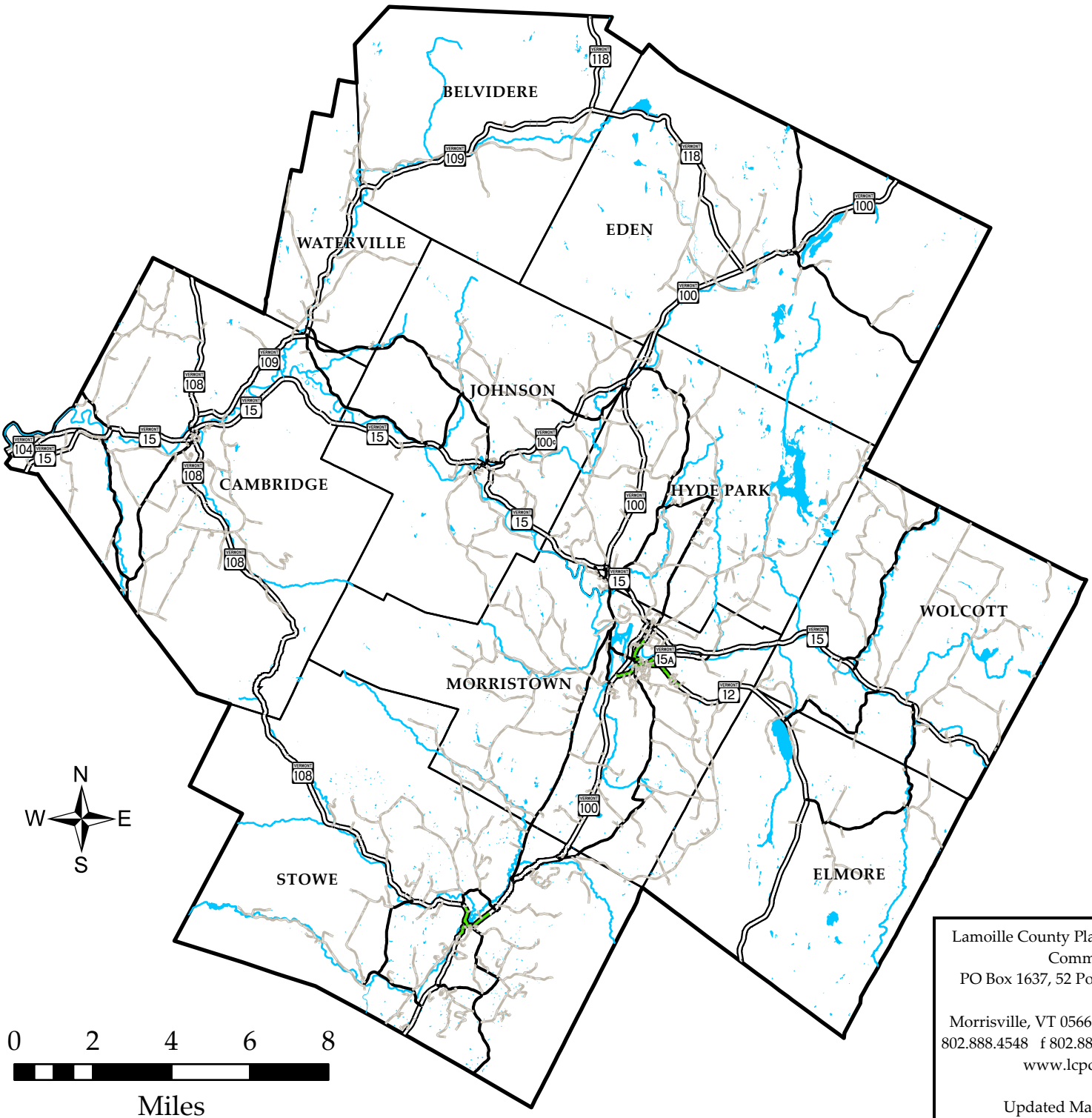
POLITICAL BOUNDARIES: 1:24000 USGS Quadrangles, VCGI, 1991.

ROADS: 1:5000 E-911 Road Data, 2019.

SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

REGIONAL TRAILS: ANR 1993, VAST 2011, CATAMOUNT TRAIL ASSOCIATION 2003.

Lamoille County, Vermont: Road Class



0 2 4 6 8

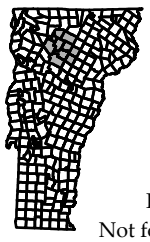
Miles

Road Class

- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

Updated May 2025

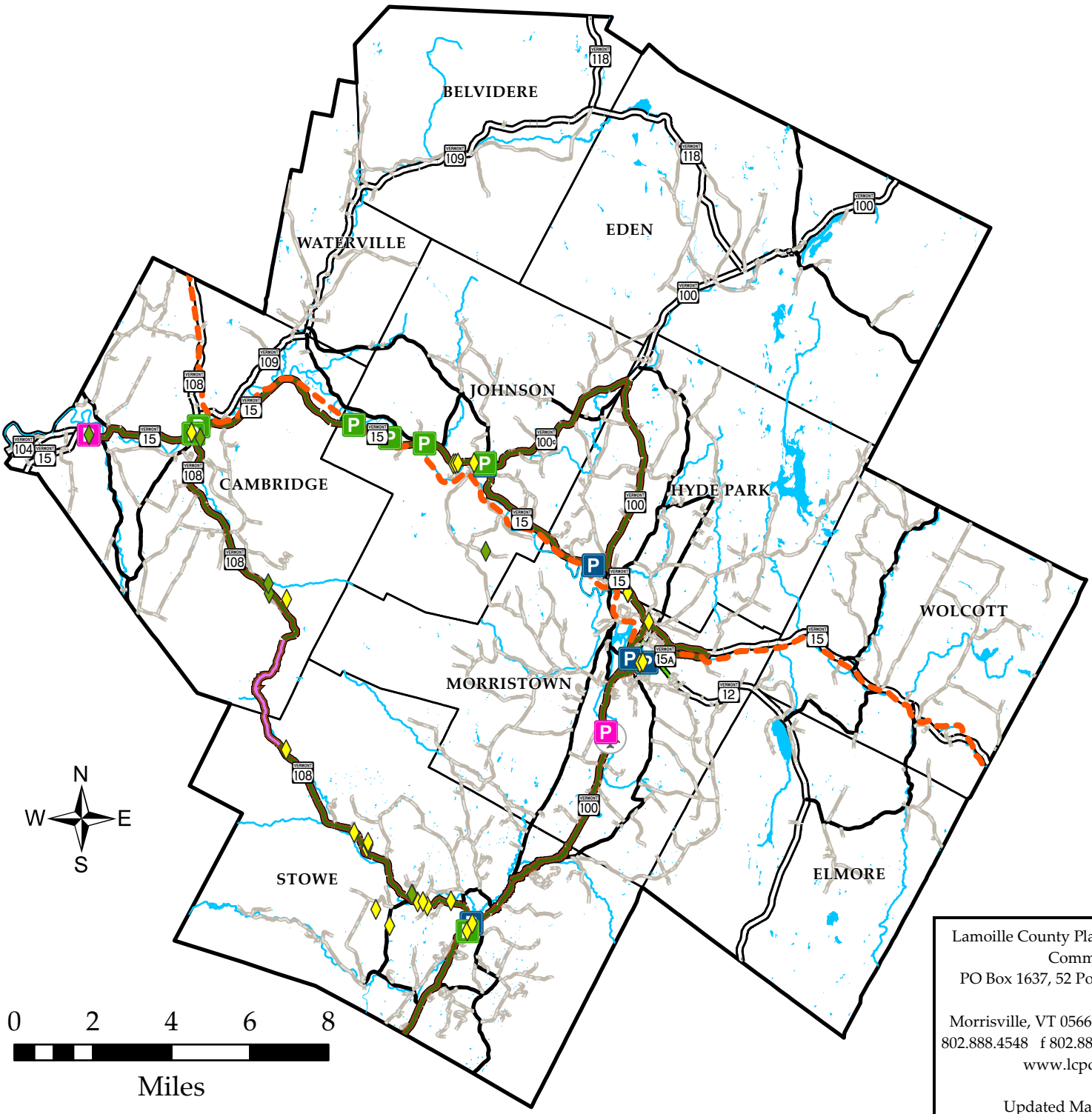


Tranverse Mercator,
VT State Plane,
Meters, NAD83

For planning purposes only.
Not for regulatory interpretation.

POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Lamoille County, Vermont: Transportation Resources



Level 1 and 2 Public Electric Vehicle Charging Stations

Level 3 Public Electric Vehicle Charging Stations

Airport

Park and Rides

- Municipal
- Other
- State

Lamoille Valley Rail Trail

Smugglers' Notch Scenic Highway

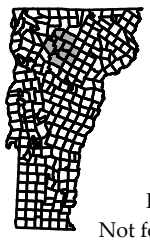
Green Mountain Byway

Road Class

- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3

Lamoille County Planning Commission
PO Box 1637, 52 Portland Street
Morrisville, VT 05661-1637
802.888.4548 f 802.888.6938
www.lcpcvt.org

Updated May 2025



Tranverse Mercator, VT State Plane, Meters, NAD83

For planning purposes only. Not for regulatory interpretation.

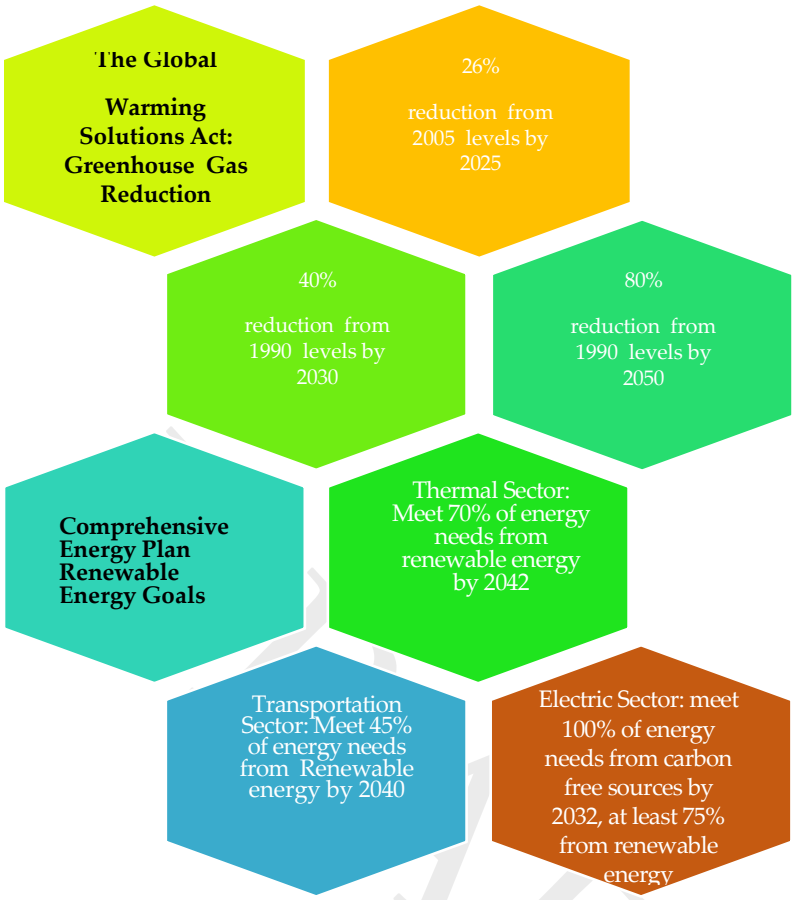
POLITICAL BOUNDARIES: VT Data - Town Boundaries, VCGI, 2025
ROADS: VT Road Centerline, VTrans, VCGI, 2022
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Energy: Strategy

Lamoille County's Energy Plan is guided by two broad state energy goals: reduce greenhouse gas emissions and meet energy needs using renewable sources. The Global Warming Solutions Act (GWSA) identifies greenhouse gas reduction requirements, and the Vermont Comprehensive Energy Plan outlines statewide renewable energy goals. Lamoille County's Energy Plan is also guided by the Vermont Climate Action Plan (CAP), which provides recommendations on the steps Vermont needs to take to meet emissions reductions requirements established in the Global Warming Solutions Act. Implementing recommendations from the CAP will help Lamoille County support statewide greenhouse gas emissions reduction, carbon sequestration, and community resilience goals.

These goals, set for year 2050, aim to decrease the overall energy consumption in Vermont by 33% and transition the state's energy use from 75% non-renewable to 90% renewable. Meeting these energy goals will set the state on a path to meeting its greenhouse gas emission reduction targets. Green House Gas emission reduction targets identified in the Global Warming Solutions Act and the 2022 Vermont Comprehensive Energy Plan goals are outlined in the diagram below. The CEP goals are structured to meet the Green House Gas reduction requirements to maintain consistency with the Vermont Climate Action Plan.

DRAFT



One strategy suggested in the initial CAP was implementation of a "Clean Heat Standard." As of May 2023, this standard was established under the Affordable Heat Act, which incentivizes reductions in greenhouse gas emissions in the thermal sector. Transitioning to heating and cooling systems that reduce carbon emissions is eligible for clean heat credits that can be traded in a competitive clean heat marketplace. Weatherization improvements, installation of heat pumps, and heat pump water heaters are all examples of eligible measures for clean heat credits. Utilities are also required to provide additional opportunities for clean heat fuel sources.

POLICIES & ACTION ITEMS

Policy: *Encourage efficient use of energy and energy conservation.*

Actions:

- Work with planning commissions and municipal officials to incorporate energy efficiency and conservation measures into municipal plans and zoning bylaws.
- Seek funding to support LCPC's capacity to work with property owners, municipalities, local energy committees, electric utilities, institutions (e.g., schools), and other regional partners on energy efficiency, education, and outreach initiatives. With the capacity expanded, promote programs and facilitate efforts to:
    - Weatherize homes, businesses, institutions, and municipal buildings.
    - Educate about residential and commercial building codes, net zero energy construction.
    - Implement district heating, and combined heat and power opportunities.
    - Install air source and geothermal heat pumps.
    - Install efficient wood and biomass heating systems for new construction, as replacements for fossil fuel furnaces and backup heat systems for heat pumps.
    - Conduct building walk-throughs for owners of rental and low-income housing.
- Promote the Thermal Efficiency Statewide Clearing House website and the resources featured at the website to Lamoille County residents, businesses, institutions, and municipalities
- Discuss with Green Mountain Technology and Career Center the potential for developing educational programs related to energy efficiency improvements, and training programs that encourage fuel dealers to become energy service providers. Additionally, support other K-12, higher education, and vocational education initiatives to bring energy ideas and solutions to the classroom.

DRAFT

- Support efforts to utilize local forest resources in the manufacturing of thermal biomass fuels. Work with municipalities and economic development partners to determine the feasibility of locating a biomass fuel production facility in Lamoille County. Identify appropriate locations and funding mechanisms in support of the biomass production facility.
- Research feasibility of locating a biogas production facility that processes biodegradables to generate energy.
- Coordinate with local utilities serving Lamoille County to promote a unified message regarding energy savings/electric incentives, programs, and new smart meter installations.

Policy: *Support development of renewable energy generation with solar, small-scale wind, hydro, biomass, and geothermal resources. All energy projects must adhere to a high environmental standard that includes avoiding or mitigating negative impacts to the natural resources listed in this plan and the plans of the host municipality.*

Policy: *Utility scale wind generation is not supported. This plan defines utility scale wind generation as facilities with total generation capacity of 1 MW or more.*

Policy: *Encourage locating energy generation facilities at the preferred locations, areas where there is electric demand, and at locations where the land has already been built and impacted. Preferred and potentially suitable areas are listed in section 5 "Siting of Renewable Energy Facilities" and shown on energy maps.*
LCPC will work with interested municipalities to explore additional preferred areas for energy generation.

Policy: *Energy projects must consider impacts to municipalities other than the host municipality, including but not limited to impacts to local roads in other communities, the ability of other communities to provide services, impacts on disadvantaged communities, and the impacts of off-site mitigation, as outlined in the Substantial Regional Impact thresholds found in this plan.*

Policy: *Promote a diversity of renewable energy and electric options for meeting electricity and heating/cooling needs in Lamoille County.*

DRAFT

Policy: *Promote opportunities to make renewable energy more cost efficient and affordable for residents, traditionally disadvantaged communities business owners, and municipalities.*

Actions:

- Coordinate with local utilities and other regional/municipal partners to assist with outreach on current energy incentives and programs to promote electric options for heating/cooling, transportation, and renewable energy generation.
- Coordinate with local utilities to host bi-annual or quarterly meetings of utilities serving the County to foster collaboration and unified messaging to Lamoille County residents and businesses including how local utilities are planning for increased demand on the local grid system due to increased demand for electric vehicles and electric heating and cooling systems.

Policy: *Share information regarding funding opportunities to support local utility grid system upgrades or safety measures.*

Actions:

- Share and post on LCPC's website funding opportunities to address hazard trees and utility safety concerns regarding Emerald Ash Borer.
- Share with municipal utilities funding opportunities to support electric infrastructure upgrades, relocation as needed, and promote local renewable energy generation and energy storage opportunities.
- Collaborate with utilities to host regional meetings to foster collaboration and information sharing of funding opportunities.

Policy: *Encourage municipalities, local businesses, and residents to shift away from gas powered vehicles and adopt electric vehicle infrastructure and vehicles when applicable.*

Actions:

- Investigate the most appropriate strategies to ensure the transition from gas powered vehicles for municipal use and county residents and businesses is as seamless as possible (See Transportation chapter for strategies promoting a switch to electric vehicles and to reduce reliance on single occupancy vehicles)

DRAFT

- Promote funding opportunities to support installation of fast electric vehicle chargers throughout the County.
- Assist municipalities with zoning bylaw updates to allow electric vehicle charging stations as a permitted or conditional use.
- Aid municipalities with developing energy plans that align with state goals for increased, Vermont-based, renewable energy generation and anticipated electricity demands.
- To enable increases in energy generation:
- Electricity transmission systems in Lamoille County must be improved. The LCPC will work to understand impacts of increased regional energy generation on utilities and their customers and incorporate this understanding into regional and municipal energy planning processes.
- Technologies must be available that allow integration of intermittent renewable energy sources with energy sources available 24/7. To that end, energy storage is essential to making a higher proportion of renewable resources a viable energy supply portfolio. The LCPC supports initiatives and incentives that will result in expanding the use of energy storage systems for renewables and making the acquisition of the storage systems affordable.
- Conduct outreach to municipalities regarding funding, including the Municipal Energy Resilience Program (MERP) administered by the Vermont Buildings and General Services. energy efficiency audits, implementation of energy efficiency, weatherization, and fuel switching practices in municipal buildings.

Policy: *Foster efficient and convenient public transit service that addresses local and regional needs. (Policy cross-referenced in Transportation Strategy section)*

Policy: *Improve the connectivity of the bicycle and pedestrian network in Lamoille County and ensure regional bicycle and pedestrian needs are met (Policy cross-referenced in Transportation Strategy section)*

Policy: *Support regional multi-modal opportunities (Policy cross-referenced in Transportation Strategy section)*

DRAFT

Policy: *Ensure transportation projects are compatible with regional land use planning goals (Policy cross-referenced in Transportation Strategy section)*

Actions:

- Actions that highlight connections between transportation and energy are listed in the Transportation Strategy section of the Regional Plan.

Policy: *Infrastructure investments, transportation improvements, and location of public buildings should reinforce the objectives of the Regional Plan. Future development should be directed to areas served by water and wastewater and other public infrastructure. (Policy cross-referenced in Land use Strategy section)*

Policy: *Land use and development should reflect site specific environmental limitations. The density and intensity of development should conform to the limitations of the land and available public services. Higher densities and more intensive uses should be in Village/Downtown Centers, Village Areas, Planned Growth Areas, Transition Infill Areas, and Enterprise Areas, while lower densities and less intensive uses should be located in Rural General, and Working Lands Areas (Agriculture/Forestry Area) (Policy cross-referenced in Land Use Strategy section)*

Policy: *Encourage future growth within Village/Downtown Centers, Village Areas, Planned Growth Areas, Transition Infill Areas, and Enterprise Areas while discouraging strip development along transportation corridors. (Policy cross-referenced in Land Use Strategy section)*

Actions:

- Actions that highlight the connection between land use and energy are listed in the Land Use Strategy section of the Regional Plan.

Policy: *Fragmentation of core forest areas and other important wildlife habitat is strongly discouraged. (Policy cross-referenced in Working Lands Strategy section).*

DRAFT

Actions:

- Actions that highlight connection between land use and minimizing forest fragmentation are listed in the Working Lands Strategy section of the Regional Plan.

Policy: *Consider equity when conducting outreach for siting of renewable energy.*

Policy: *Consider equity when supporting planning efforts for electric vehicle infrastructure, with particular focus on enhancing access in traditionally underserved communities.*

Actions:

- Evaluate the effectiveness of LCPC's current outreach strategies with a focus on enhancing outreach to underserved and traditionally disadvantaged communities.
- Evaluate if the existing Substantial Regional Impact Criteria adequately address impacts − both positive and negative − to underserved and traditionally disadvantaged communities.
- Consider potential impacts to underserved communities when reviewing proposed renewable energy development projects.
- Work with municipalities and partners to identify funding to install fast electric vehicle chargers throughout Lamoille County in areas accessible for residents and visitors.

Policy: *Fragmentation of core forest areas and other important wildlife habitat is strongly discouraged. (Policy cross-referenced in Working Lands Strategy section).*

Actions:

- Actions that highlight connection between land use and minimizing forest fragmentation are listed in the Working Lands Strategy section of the Regional Plan. The siting of energy generation facilities should prioritize the retention of unfragmented forest blocks and habitat connectors.
- Evaluate whether the cost of fragmenting forest blocks outweighs the benefit of siting an energy generation facility. Consider carbon sequestration, greenhouse gas emissions, flood resilience, and other values

DRAFT

of intact forest blocks.

EQUITY AND ENERGY PLANNING

Consideration for equity in energy planning can take many forms. Energy equity known as "energy justice" as described in the 2022 Vermont Comprehensive Energy Plan (VT CEP) "aims to make energy accessible, affordable, cleaner, and democratically managed for all communities." This section will discuss energy equity as it relates to Lamoille County, Vermont and the Thermal, Transportation, and Electric sectors. The 2022 Vermont Comprehensive Energy Plan highlights the following types of equity when planning for Vermont's energy needs. This framework was utilized below to discuss equity and energy planning as it relates to Lamoille County.

Distributive Equity is outcome based. As defined in the 2022 Vermont CEP, it "considers the disparities in allocation of resources, benefits, and health outcomes, and the inequities experienced by communities related to living conditions, political power, and the risks and vulnerabilities posed to these communities as a result." It considers whether Vermonters, regardless of racial and other socioeconomic factors, equitably share both the benefits and burdens of the energy system.

Procedural Equity acknowledges equitable planning and implementation and the right of communities to participate in decision-making around policies and programs. This considers which stakeholders and communities have seats at the table, and voices heard during the public engagement process for siting of new generation facilities and infrastructure and who benefits from those facilities.

Contextual Equity recognizes that some communities are more likely to experience adverse impacts as a result of policies and programs due to vulnerability such as being more vulnerable to natural disasters.

Corrective Equity recognizes the need for a clear process to hold decision makers accountable in communities for equity commitments such as Advisory Committees or oversight boards to review clean energy implementation to ensure impacted communities are being appropriately served. At the Regional level the LCPC holds regular meetings of the Plan and Project Review Committee to review proposed energy sitting and telecommunications projects for Lamoille County. These meetings are open to the public and offered in a hybrid format to

DRAFT

encourage engagement in this review process. This Committee's role in reviewing proposed siting projects is to determine whether or not a project is in conformance with the Regional Plan.

Consideration for Equity in Policies and Actions

The policies and action items stated above are meant to serve all municipalities and the communities within them. The Regional Plan is a guiding document that provides flexibility for municipalities to determine their own community needs when considering equable impacts of renewable energy and future development. Specific equity and energy planning policies and actions are called out elsewhere. People living in rural, remote areas may be impacted by energy plan policies due to potential power outages and longer response times. Heavy use of electric technology for heating and cooling and transportation needs will put more strain on an already limited grid system in terms of capacity. This could lead to winter blackouts. Grid system upgrades and energy storage are encouraged in the plan policies to reduce this potential impact. Lower income households will be impacted most by energy policies due to the financial burden to weatherize homes or upgrade heating/cooling systems. Charging stations are more likely to be built in denser areas such as Village Centers, which will be less accessible for people living in rural areas of the county, but more accessible for people living and traveling through Designated Village Centers and downtown areas. The plan policies promote charging stations throughout the county to enhance overall accessibility. When the LCPC Plan and Project Review Committee review energy projects for conformance with the Regional Plan, consideration should be given to the impact of the project on rural underserved areas and low income households.

Thermal Sector

Equity & Thermal Energy Use/Weatherization

According to the 2020-2024 Vermont Housing Needs Assessment and American Community Survey 5-Year Estimates, much of Vermont's housing stock is older than the national average. The average home in Vermont was built in 1974 compared to the nationwide average of 1977. Over a quarter of the housing stock in Vermont was built before 1939. In Lamoille County 78% of the housing stock was built after 1939. While Lamoille County's housing stock is younger than the statewide average, 28% of homes were built between 1940 and 1979, meanwhile

DRAFT

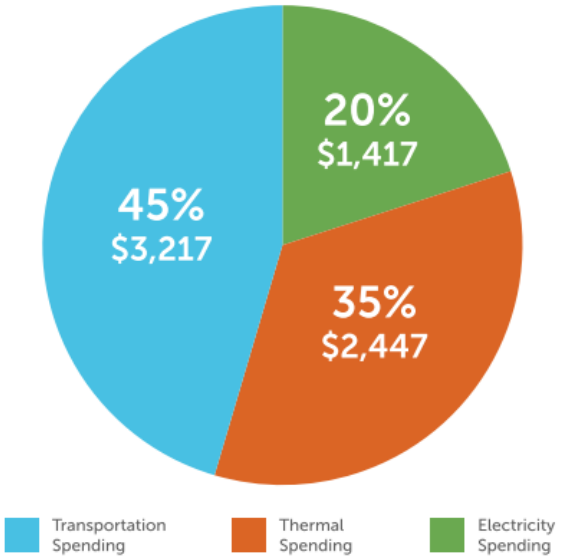
22% of homes in Lamoille County were built in 1939 or earlier. This aging housing stock presents an inequitable distribution of energy burden throughout Lamoille County in terms of the number of older homes that could benefit from weatherization services. While some communities such as Stowe (40%) and Cambridge (36%) have seen the highest increase in housing units in the County from 2000 to 2020, according to the U.S. Census, other communities have seen less growth in housing units and newer housing stock. In Lamoille County Waterville has seen the least increase (8%) in housing units during this 20-year time period. According to the 2024 Lamoille County Housing Assessment, the median age of housing stock in Waterville is the oldest (55 years old) in the County and slightly higher than the statewide average (52 years old). This correlates with Waterville being one of the highest energy burden towns in Lamoille County as noted below. These communities with less growth in newer housing stock have a higher need for weatherization of homes and a higher energy burden due to the age of homes in those communities. This outcome is a form of Distributive Equity as a result of the County's limited housing stock. An aging housing stock can present inequitable distribution of concerns regarding living conditions. Examples of issues that can arise with an older housing stock include the prevalence of lead paint and asbestos, plumbing and electrical components that do not meet fire and safety codes, and inefficient energy use.

Energy Burden in Lamoille County

According to the 2023 Vermont Energy Burden Report, Vermont households spend around $7,000 annually on thermal, electric, and transportation fuels. The figure below from the Vermont Energy Burden Report highlights household energy spending by sector across Vermont.

DRAFT

Figure 2. Statewide household total energy spending by category.



In Lamoille County the Towns with high energy burden as reported by Efficiency Vermont in 2022 were Eden, Johnson, and Waterville. This generally correlates with the Towns with lower household median incomes in Lamoille County. Communities with moderate Total Energy Burden included Hyde Park, Morristown, and Wolcott. The lowest energy burden Town was Elmore which corelates with the highest household median income in the County as reported in the 2022 Vermont Energy Burden Report. The table below shows energy burden reported in 2022 for Lamoille County, Vermont communities. This report highlights distributive inequities of total energy burden, where lower income households generally are experiencing a higher energy burden in terms of household costs for heating/cooling homes, fueling modes of transportation, and electricity costs. While this Efficiency Vermont Report provides a high-level view of Energy Burden across the County, there are some differences between municipalities in Lamoille County that are not accounted for in this demonstration of energy burden such as the difference in average commute times when considering energy burden in the transportation sector. For more information on the Efficiency Vermont Energy Burden Report visit: https://www.efficiencyvermont.com/news-blog/whitepapers/vermonts-2023-energy-burden-report.

Table 3-14 Energy Burden for Lamoille County Communities

Town	# of Households	Median Household Income	Thermal Burden	Electricity Burden	Transportation Burden	Total Energy Burden	Total Energy Burden by Town
Belvidere	179	$80,547	3%	2%	4%	9.3%	Low
Cambridge	1,376	$78,816	3%	2%	4%	9.3%	Low
Eden	571	$54,861	5%	3%	8%	14.8%	High
Elmore	464	$96,364	3%	1%	4%	7.6%	Lowest
Hyde Park	1,241	$69,323	4%	2%	5%	10.8%	Moderate
Johnson	1,284	$47,717	5%	3%	7%	14.3%	High
Morristown	2,429	$58,621	5%	2%	5%	11.4%	Moderate
Stowe	2,401	$74,065	4%	2%	4%	9.7%	Low
Waterville	183	$61,250	4%	2%	6%	12.3%	High
Wolcott	702	$62,931	4%	2%	6%	12.0%	Moderate

DRAFT

Transportation Sector

Equity & Energy in Transportation

The 2022 VT Comprehensive Energy Plan (CEP)[1] outlines four core pillars of equity and recommended equity considerations to guide energy planning activities. The VT Agency of Transportation also provides a framework for transportation equity,[2] and how to equitably plan for access to safe, high-quality, affordable, and convenient transportation options for all Vermonters. The VT Health Equity Toolkit also provides policy documents, funding opportunities, and other resources to support transportation equity.[3] Some of the policies and actions outlined in LCPC's Transportation Chapter help achieve the equitable goals outlined in both the CEP and the VTrans Transportation Equity Framework (see the LCPC Transportation Strategy section).

1 https://publicservice.vermont.gov/content/2022-plan
2 Transportation Equity | Agency of Transportation (vermont.gov)
3 Health Equity Planning Toolkit - Lamoille County Planning Commission (lcpcvt.org); https://www.lcpcvt.org/vertical/Sites/%7B3C01460C-7F49-40F5-B243-0CA7924F23AF%7D/uploads/HE_Toolkit_Resources_Table_Revised_Mar.2023.pdf

Transportation Energy Burden

Efficiency Vermont produced an Energy Burden Report in 2019, and again in 2023. [4] Both reports highlight some statistics and trends regarding thermal, electric, and transportation energy spending and burdens experienced by communities across the state. Transportation energy costs are consistently the largest portion of household energy spending and burden statewide. It is worth noting that the 2023 report disaggregates data at the Town level and may mask pockets of high energy burden neighborhoods within a community such as lower income areas within a village center.

According to the 2023 report, Lamoille County is home to communities with some of the highest transportation energy burdens in the state. Transportation fuel costs vary considerably across Lamoille County towns. Johnson and Eden have the highest transportation energy burdens at 7% and 8% respectively, (compared to the statewide transportation energy burden at 4%). Furthermore, Hyde Park, Morristown, Waterville, and Wolcott have moderate energy burdens at 5-6%. Prioritizing outreach and developing accessible transportation projects guided by the needs expressed within these communities can help advance equitable transportation and energy networks.

For example, facilitating access to public transit and opportunity for shorter commuting distances, access to health care, and educational facilities can help lower regional transportation energy burdens and spending. Communities in Lamoille County could develop additional opportunities for public transit to employment, services, and healthcare within and between communities, or to nearby hubs in St. Johnsbury, Waterbury, and the Burlington area. The LCPC can support communities as they update municipal plans, bike and pedestrian master plans, and develop projects that improve the availability and proximity of alternative transportation options for all residents and visitors in Lamoille County.

Transportation Demand Management

Lamoille County residents rely heavily upon automobiles as their primary means of transportation. This reliance is reinforced by the separation of employment

4 S.255~Anne Watson~2023 Vermont Energy Burden Report~1-25-2024.pdf

DRAFT

areas, commercial services, and housing opportunities. Supporting compact, mixed-use development discussed in the Land Use chapter of this plan can help revitalize the region's rural communities and create more walkable, bikeable, accessible places.

According to the 2022 VT Comprehensive Energy Plan, Transportation Demand Management (TDM) involves transportation infrastructure that increases the quality and types of transportation choices available. Public transit, ride share, bicycling, and walking are all alternatives to getting around by single-occupancy vehicles. One of LCPC's regional strategies is to enhance mobility by providing transportation alternatives, to provide meaningful transportation choices to children, seniors, residents, visitors, and businesses.

Creating more walkable and bikeable communities can help decrease transportation spending, energy burdens, and emissions, facilitate more access to community assets, and increase health equity. For example, extending sidewalks to local elementary and middle schools could help integrate exercise into daily routines of school-aged children, and catalyze new development in village centers and downtown areas. Improved walking and biking infrastructure can also facilitate safe movement for older adults and households without access to vehicles. Performing walking audits can help identify vulnerable transportation infrastructure and places that need to be improved for all pedestrians. Walkability in village centers also supports people's ability to age in place. Working in partnership with municipalities and underserved communities, LCPC can help identify transportation infrastructure that can be improved and increase mobility at the local and regional level.

EV Charging Infrastructure

Improving access to electric vehicles and EV charging infrastructure can contribute to a more equitable and clean transportation network. According to the 2023 Efficiency Vermont Energy Burden Report, changing from fossil fuel powered vehicles to a new or used, electric or plug-in hybrid vehicle could reduce annual household energy burdens between 9-12%. Annual savings could be between $700-$900 dollars a year. Facilitating access to the current range of programs from utilities and state agencies can help reduce the upfront costs of technologies like electric vehicles.

DRAFT

Public EV charging infrastructure can be offered at places of employment and schools. While these are important locations for some residents and employees, it's also important to consider who else may benefit from EV charging and where convenient and desirable locations may be. Engaging rural, underserved, high energy burden communities will help identify ideal locations and enable access to clean energy and transportation infrastructure.

LCPC encourages municipalities and local businesses to provide public EV infrastructure for visitors, folks travelling on longer trips, and public transit services provided to underserved communities. It is also a policy in the region to foster efficiency in transportation networks and convenient public transit services. As an example, Rural Community Transportation (RCT) is an important provider of this service in our region. RCT services a wide range of passengers through programs including the Northeast Vermont Area Council on Aging, Adult Day Health Services, and Northeast Kingdom Human Services. In order to provide clean transportation options and electrify buses providing transit to these underserved populations, it is important to have readily available EV charging stations to power electric buses with features like wheelchair lifts. Furthermore, RCT recently started a micro-transit route to replace fixed routes. Siting EV charging along these routes could help facilitate more equitable access to clean transportation energy. The LCPC should assist municipalities in updating local zoning bylaws to allow electric vehicle charging stations as a permitted or conditional use.

DRAFT

Equity & Renewable Facilities Development; Distribution of Utilities

Equity Strategies for Renewable Energy Access & Affordability

Renewed efforts across Vermont are focusing on reducing energy burdens and improving access to heating and cooling, broadband, and reliable electricity. Black, Indigenous, People of Color, (BIPOC), as well as low-income, and rural Vermonters have largely been left out from major economic, social, and environmental benefits associated with investments in climate resilience and renewable energy infrastructure. BIPOC Vermonters were seven times more likely to have gone without heat in the past year, over two times more likely to have difficulty affording electricity, and seven times less likely to own solar

panels than white Vermonters (Act 154 Sec 1.10), while rural and low-income communities consistently carry the highest energy burden.

For healthy communities to thrive, local leaders should look to programs and policies that encourage locally generated and managed fossil-fuel-free energy, while prioritizing access and affordability for historically underserved community members. Providing renewable power and services close to where it is used, also known as distributed energy resources (DERs), has multiple benefits including the potential to lower costs for consumers, improve the reliability and resilience of the grid, and increase equity among community members. DERs like community-owned solar and utility-led energy programs that promote energy savings and energy storage are both strategies that can lead to improved health and equity in Vermont communities and are explored in more depth below. Lamoille County communities are encouraged to work with LCPC to review local potential renewable energy projects and adopt an Enhanced Energy Plan that identifies and prioritizes energy efficiency and generation goals and renewable energy siting that is desirable and beneficial to the community at large.

Community-Owned Solar: Community-Owned Solar has the ability to provide a number of meaningful benefits to participants and their communities, including increased access for low- to moderate-income households, greater savings on energy costs, energy resilience, community ownership and wealth-building opportunities, and equitable workforce development. For rural areas, solar arrays can have a positive multiplying effect when combined with agriculture, also known as agrivoltaics. Additionally, siting renewable generation (possibly combined with storage) in proximity to key food resources like food shelves, community gardens/fridges, grocery stores, etc. can be a way to improve access to local, more affordable, and healthier food options.

Microgrids: Microgrids are interconnected, locally controlled power systems that can function while connected to the larger grid or completely on their own. Microgrids enhance the resilience of the power grid by providing localized power generation and storage. They can keep critical community services running during outages caused by extreme weather events or other disruptions. Low-income and disadvantaged communities in Vermont spend a higher

DRAFT

percentage of their income on energy bills and are more vulnerable to power outages. Microgrids can address these disparities by ensuring reliable energy access during extreme weather events and other instances where the larger power grid is under duress.

Utility-led Energy Programs: Increasingly, distribution utilities must play a role in providing fossil fuel-free energy infrastructure and storage to ensure reliable, affordable, clean energy for all. Some utilities offer programs for income-eligible Vermonters to help lower the cost of energy at home. For example, and further detailed by the Vermont Department for Children and Families, a household of four earning less than $50,000 a year can receive a 20%-25% discount on their monthly energy bill.

State-led Energy Programs: The Vermont Clean Energy Development Fund (CEDF), with its Affordable Community Renewable Energy (ACRE) program is encouraging distribution utilities to connect more income-qualified customers to renewable energy. Programs like these will help thousands of eligible community members reduce energy burden costs while growing new Vermont community solar.

DRAFT

Energy: Background and Inventory

1. INTRODUCTION

Energy used in Vermont is obtained from a variety of sources and is used to provide electricity, to heat and cool buildings, and transport people and products. Today, residents and businesses in Lamoille County meet their energy needs by utilizing renewable resources such as wood, sun, or wind, and non-renewable, predominantly petroleum-based products, such as gasoline or heating oil. According to the 2020 American Community Survey, 74% of Lamoille County households use non-renewable heating sources including fuel oil, liquid propane, and utility gas. Meanwhile 23% use wood for heat and 1% use electricity. Section 2 below of the Enhanced Energy Plan highlights current energy use in Lamoille County by sector (thermal, electric, and transportation). In 2011, Vermont established a goal to significantly increase the proportion of renewable sources of energy we use. The goal is to meet Vermont's total energy needs by using 90% renewables by 2050 (90x50). Lamoille County Enhanced Energy Plan is guided by the 90x50 goal, and the goal forms a basis for energy projections, strategies, and actions contained in this Plan. In 2020, Lamoille County renewable energy consumption increased to 32%. The biggest opportunities to reach 90% by 2050 include energy efficient buildings, switching to renewably powered heating, transportation, and electricity, and reducing vehicle miles travelled. Among the actions that can significantly advance our progress toward 90x50 are:

1. Widespread and extensive weatherization of the region's older housing stock.
2. A strong move toward wood heating (firewood and pellets for single homes; wood chip or pellet based central district heating systems for larger residential, commercial, and industrial complexes).
3. Greater reliance on electric heating systems such as heat pumps.
4. Greater reliance on electricity in transportation, namely an increased use of electric vehicles for personal transportation.
5. An increased emphasis on compact development patterns with most development occurring in mixed use centers.
6. Availability of employment opportunities close to workers' place of residence.
7. Effective addressing of interregional transportation issues.

DRAFT

8. Continuation of conservation and efficiency programs.
9. Advancement in developing biofuel technology

2. ENERGY PROFILE TODAY

Current Energy Usage and Energy Spending in Lamoille County

To adequately understand what strategies the region needs to implement to achieve state energy goals, it is important to understand more about the region's current energy use. Using federal, state, and regional data, the LCPC has estimated regional energy consumption for space heating, transportation, and electric uses.

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 by tons of wood pellets, gallons of propane; depending on what kind of fuel use is measured. A common measure that can be calculated for any type of energy fuel use is a British Thermal Unit (BTU).[5] 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.

Based on the LCPC's estimates,[6] the region currently uses approximately 4.3 trillion BTUs to meet energy demands of its residents and businesses. Energy required for space heating represents 48% (2 trillion BTUs) of the annual consumption. This includes electricity used for heating needs as well as other renewable and non-renewable heating sources. Demand for transportation fuels equates to 36% (1.57 trillion BTUs) and electricity usage is 16% (0.685 trillion BTUs) of the total annual use. (Note: Work completed by the Vermont Energy Investment Corporation for this project, which is discussed in Section 4, does not provide a direct comparison to this calculation due to a different methodology used to estimate energy consumption.)

DRAFT

5 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.

6 Based on 2020 American Community Survey, energy prices [7], 2020 Efficiency Vermont electricity usage estimates for residential, commercial and industrial sectors. Electricity is reflected in both the space heating (thermal) and electricity sectors in this calculation.

Table 3-15 Annual Energy Expenditures in Lamoille County

Annual Energy Expenditures in Lamoille County $181 million dollars 2021-2022 Estimates		
Electricity	$37,060,111.27	**20.48%**
Heating	$79,871,772.79	**44.13%**
Transportation	$64,049,760.00	**35.39%**

Annual expenditures on heating, transportation, and electric energy in Lamoille County are estimated at $181 million in 2021-2022. [*7]

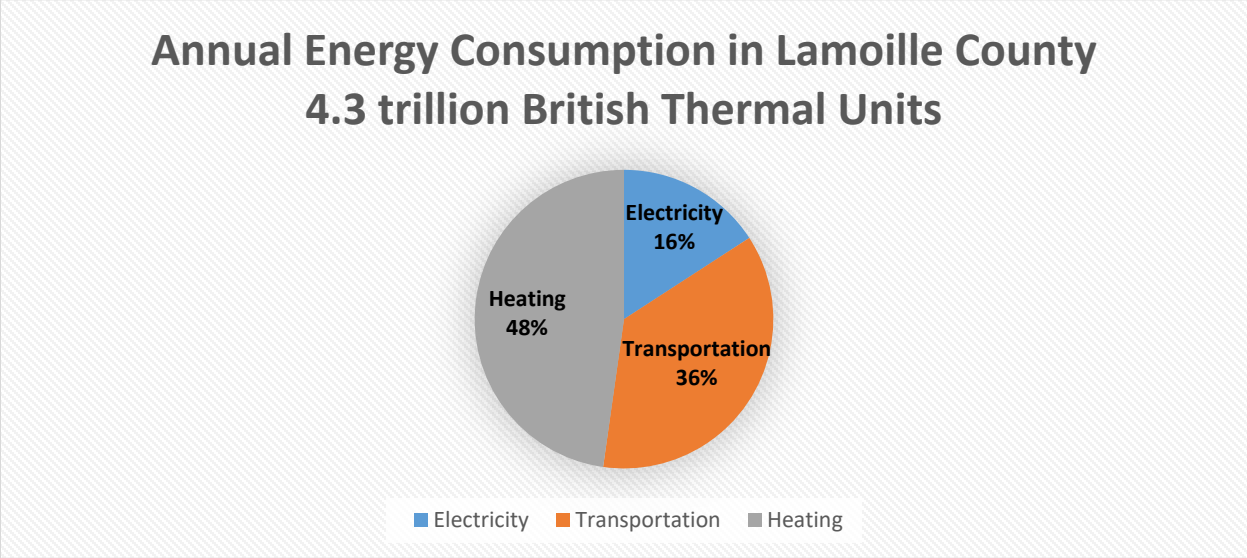


Figure 3-14 Annual Energy Consumption in Lamoille County

[6] Based on 2020 American Community Survey, energy prices [7], 2020 Efficiency Vermont electricity usage estimates for residential, commercial and industrial sectors. Electricity is reflected in both the space heating (thermal) and electricity sectors in this calculation.

7 Prices used to calculate energy expenditures are based on 2021 US Energy Information Administration data, the Vermont Fuel Rack, and June 2022 gas pump prices.

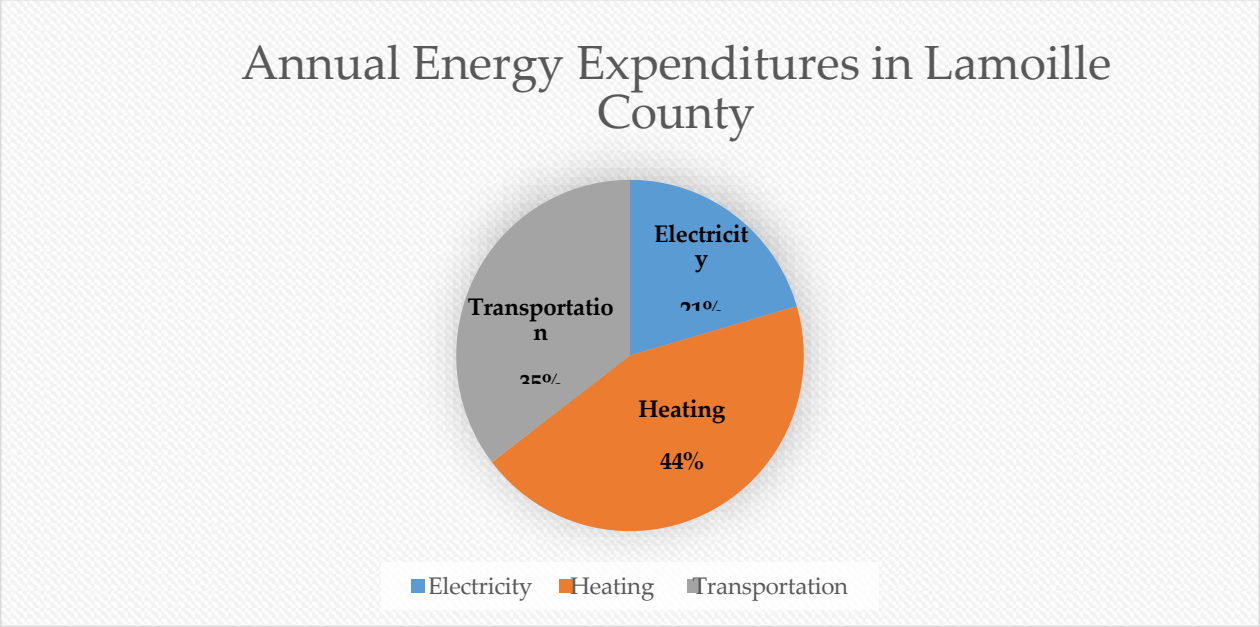


Figure 3-15 Annual Energy Expenditures in Lamoille County

Source: [7] Prices used to calculate energy expenditures are based on 2021 US Energy Information Administration data, the Vermont Fuel Rack, and June 2022 gas pump prices.

Energy Use by Sector: Space Heating

Residential Heating

DRAFT

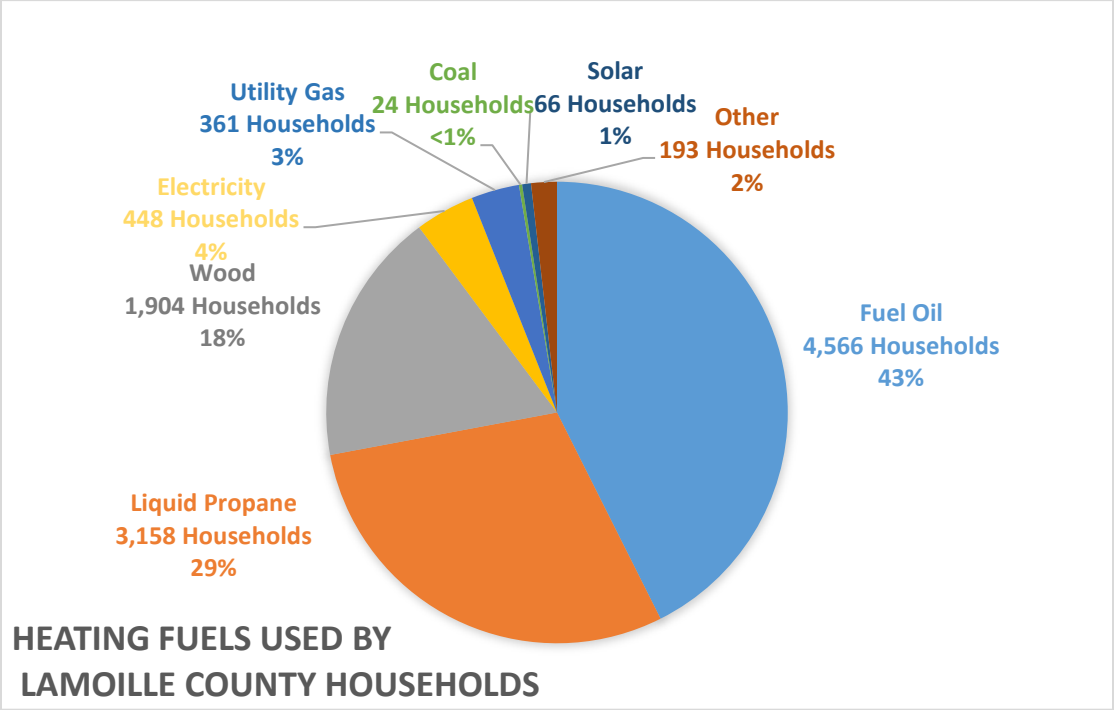


Figure 3-16 Heating Fuels Used by Lamoille County Households

Source: 2020 American Community Survey

Lamoille County residences use about 66% of thermal energy consumed in the region. Homes are heated primarily with fuel oil and propane (72% of households). Wood heat, including firewood and wood pellets, are used in 18% of homes.[7]

Types of heating fuels used vary among communities in the region. Towns with more densely developed population centers have a higher proportion of households heated with oil and propane. More rural communities, on the other hand, have a significant number of homes that use wood as a primary heating fuel. Differences in household ownership also appear to be related to fuel use and energy efficiency of housing stock. In general, owner-occupied housing units are more likely than renter-occupied units to be heated with oil or wood, while a greater number of rented units are heated using propane or electricity. Moreover, many rental housing units are in buildings with relatively poor energy performance, often large older houses that have been divided into multifamily units. The table below provides a detailed breakdown of heating fuel use patterns in owner-occupied and rental housing units.

Heating fuels used by Lamoille County Households: Focus on Owner-Occupied and Renter Households

Table 3-16 Heating Fuel Types Used by Lamoille County Households

Heating Fuel Type	Owner Households	Renter Households
Fuel Oil	44%	39%
Liquid Propane	28%	33%
Wood	23%	5%
Electricity	<1%	14%
Utility Gas	2%	7%

Source: 2020 American Community Survey

The age of the housing stock in a community is particularly important in determining how much fuel a typical home uses. Many housing units in Lamoille County are more than 50 years old, and often poorly insulated and not well air-sealed. Weatherization of older housing structures has proven to be very effective in reducing heating fuel consumption as well as home energy bills as, on average, weatherization reduces heating fuel consumption by 20-30 percent.

Commercial and Industrial Heating

Businesses and institutions in Lamoille County use about 30% of space heating energy consumed in the region. Overall, there are 1,087 commercial, industrial, and institutional establishments in Lamoille County and similar to residences, these establishments heat spaces primarily with oil and propane (83% of establishments), and to a lesser degree, wood (16% of establishments). Use of wood heat is most evident in schools. Currently, two schools in Lamoille County have wood chip heat (Johnson Elementary and Lamoille Union Middle and High Schools) and another two are heated with wood pellets (Peoples Academy and Stowe High School). As in the case of residential structures, the size, location, and nature of the use will determine the most effective strategies for reducing energy demand and determining an appropriate alternative heating fuel.

In 2021, Efficiency Vermont reported that Lamoille homes consumed about 203 million Kilowatt hours of electricity and the businesses in the region consumed

91 million Kilowatt hours of electricity in 2020. The Kilowatt hours have increased since 2015 as residential/commercial development continues in the county and households and local businesses switch to electrification to meet their energy needs. The usage will continue to increase as more heat pumps and other electrification heating systems are installed in Lamoille County.

Utilities serving Lamoille County that also have headquarters located in the County (see Electric Facilities map):

- Village of Hyde Park Electric Department (HPE): provides service to approximately 1,398 customers in Hyde Park Village, North Hyde Park Village, a section of northwest Johnson and east of Davis Hill. In 2020, HPE energized its wholly owned 1 MW solar generating facility providing about 10% of HPE electricity requirements.
- Village of Morrisville Water & Light Department: With a service area covering most of Morristown and portions of Hyde Park, Stowe, Elmore and Wolcott, Morrisville Water & Light provides electricity to approximately 4,000 customers. Morrisville Water and Light operates 4 hydro-electric dams with the electrical capacity of 10.4 MW.
- Stowe Electric Department: Providing electricity to more than 90% of Stowe's residents and businesses, the Stowe Electric Department serves more than 4,430 customers. Stowe Electric Department owns and operates a solar farm with the electrical capacity of 1 MW.
- Village of Johnson Water & Light Department: With a service area slightly larger than the Village limits, including Vermont State University, Johnson Water & Light provides electricity to more than 970 electric customers. Its largest customer is Vermont State University, Johnson.
- Vermont Electric Cooperative (VEC): a member-owned co-operative headquartered in Johnson, with 32,000 customers located across 75 communities in northern Vermont.

Other utilities serving Lamoille County:

- Hardwick Electric Department
- Village of Enosburg Falls Electric Department
- Green Mountain Power

DRAFT

Electric Efficiency

In 2022, electric and thermal efficiency measures installed by Efficiency Vermont in Lamoille County resulted in energy cost savings of $874,381 to residential and business customers. During 2022, Efficiency Vermont worked on 1,048 residential projects and 346 commercial & industrial projects in Lamoille County. 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. Examples of energy efficiency measures include lighting or refrigeration efficiencies, weatherization, or switching to a more efficient hot water or space heat system. The following statement was provided regarding limitations of this Efficiency Vermont data. "Efficiency Vermont receives billing data (customer information and monthly usage data) from Vermont electric distribution utilities for the purpose of supporting energy efficiency programs and services. As a result, the accuracy of customer counts and consumption data contained in this report is completely dependent on the quality and availability of data provided by each electric distribution utility. Electric consumption data in this report is incomplete due to gaps in data transferred from the following distribution utilities:

Hardwick Electric Department (2020, 2021, 2022)

Village of Hyde Park (2020, 2021, 2022).

The energy transformation provisions of Act 56, passed by the Vermont Legislature in 2015, tasks electric utilities with implementing programs to help their customers transition from fossil fuels to more efficient sources of energy. As an example, in 2022, Vermont Electric Cooperative in partnership with Efficiency Vermont offered all customers who install a cold-climate heat pump a one-time bill credit in addition to an additional rebate if it meets the thermal efficiency rating. VEC also offers a credit for the purchase of a new or used plug-in hybrid (PHEV) or all electric vehicle (AEV). In 2022, municipal electric utilities represented by the Vermont Public Power Supply Association (VPPSA) can choose to participate in VPPSA's electric vehicle rebate program. The customer incentive for purchasing an electric vehicle may vary depending on time of purchase. and the customer incentive for purchasing a plug-in hybrid electric vehicle may vary as well. Low-income customers will receive an additional rebate towards the purchase of a PHEV or AEV.

DRAFT

Energy Scarcities

According to the Energy Information Administration (EIA) State Profile and Energy Estimates, in 2021 Vermont consumed three times more energy than it produced, however, the total energy consumption was among the lowest when compared to other U.S. states. Approximately 57% of Vermont households heat with petroleum products, and 13% use wood, the highest share of any U.S. State. The policies in this Enhanced Energy Plan recognize energy scarcities in Lamoille County and in Vermont. This Plan acknowledges the need to diversify the use of energy resources and increase the use of renewable resources for heating, cooling, electricity, and transportation needs. There is limited resource potential for wind development in Lamoille County as a result of the mountainous topography. Small scale wind development of less than a MW of power is supported by this plan. Ground mounted and rooftop solar development is supported by this Plan as well as residential and commercial scale biomass for heating needs. This Plan recognizes the importance of preserving Lamoille County's Forest resources and unfragmented priority forest blocks. Ensuring the longevity and wise management of Lamoille County biomass resources is further discussed in the Working Lands chapter of the Regional Plan.

3. FUTURE ENERGY USE

To support the update of the Vermont Comprehensive Energy Plan and Climate Action Plan, and to achieve Green House Gas emission reduction requirements of the Global Warming Solutions Act, the Vermont Department of Public Service developed the Low Emissions Analysis Platform (LEAP Model). The outcome, shown below, projects future energy demand for Lamoille County and represents one possible scenario by which Lamoille County can contribute to achieving state energy goals. The scenario relies on increased efficiency, conservation, and electrification as ways for decreasing the overall amount of energy used. What follows is a simplified explanation of energy usage trends envisioned by the 2023 LEAP Model. The Municipal Consumption Tool developed by the Vermont Public Service Department, was used to develop estimates of current energy use for each Lamoille County Town. Municipal LEAP targets were proportioned based on total local energy shares estimated by the Municipal Consumption Tool.

DRAFT

- The figure on the next page shows the transition in the amount of energy obtained from renewable and non- renewable fuel sources. Among the most notable trends are:
- The model results show that, despite a growing population and economy, 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.
- Over time, 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 2023 Climate Action Mitigation Scenario which utilizes the LEAP Model framework, places more emphasis on an increase in electrification for heating and cooling needs. The former LEAP modeling placed more emphasis on an increase in wood heating sources. While Lamoille County residents will likely continue to utilize wood heat in some form, whether it be a primary or secondary heating source, the new LEAP targets focus on the expected increase in electrification and electric heating and cooling systems such as heat pumps. From a BTU standpoint, cold climate heat pumps are one of the most efficient and carbon free sources for heating and cooling buildings, allowing Vermonters to use less energy overall for their HVAC system needs.

LEAP Projections:

To demonstrate the magnitude of changes that would need to take place to align Lamoille County's energy profile with the state energy goals, LEAP offers very specific targets to serve as a guidepost for Lamoille County's transitions in energy use and generation. Policies and actions listed at the front of the energy plan show steps that can be completed by the LCPC to help attain the projected targets. Many other policies and implementation steps could help the region attain its energy goals, but these strategies cannot be achieved by the LCPC and require the action of state agencies, municipalities, public utilities, and private

DRAFT

individuals. The latest renewable electrical output targets from the 2023 LEAP Model were added below.

The 2023 LEAP Model also projects energy demand for core sectors: residential, commercial, and industrial. The tool accounts for multiple fuel types including, but not limited to, electricity, wood, solar, and fossil fuels. There are pathways to meet demand using a "business-as-usual" (baseline) scenario under typical energy planning and programs, and a Climate Action Plan (CAP) mitigation scenario developed to meet GWSA greenhouse gas emissions reduction targets.

Summary of LEAP Targets:

Target: Renewable electrical output from facilities located in Lamoille County

Year	2015	2025	2030	2035	2040	2050
Total Electrical Output (megawatt hours)	30,100	82,000	135,373	140,000	194,377	198,000

Projected total energy demand: Residential Sector

Year	2015	2025	2030	2035	2040	2050
Baseline Total Energy Demand (Thousand MMBTUs)	1,214	1,048	970	927	911	900
CAP Mitigation Total Demand (Thousand MMBTUs)	1,214	945	793	680	584	532

Projected total energy demand: Commercial Sector

Year	2015	2025	2030	2035	2040	2050
Baseline Total Energy Demand (Thousand MMBTUs)	672	559	551	544	542	543
CAP Mitigation Total Demand (Thousand MMBTUs)	672	549	543	538	545	556

Projected total energy demand: Industrial Sector

Year	2015	2025	2030	2035	2040	2050
Baseline Total Energy Demand (Thousand MMBTUs)	212	194	193	191	194	200
CAP Mitigation Total Demand (Thousand MMBTUs)	212	194	193	191	194	200

*Projected total energy demand: Transportation Sector**

Year	2015	2025	2030	2035	2040	2050
Baseline Total Energy Demand (Thousand MMBTUs)	401	303	278	263	249	225
CAP Mitigation Total Demand (Thousand MMBTUs)	401	295	248	201	168	141

**Passenger Vehicles*

Target: Use of renewables

Energy Sector/Year	2015	2025	2035	2050
Heating	25%	33%	43%	73%
Transportation	7%	20%	38%	86%
Electricity	27%	54%	74%	94%

Target: Percentage of Households heated with wood

Percentage/Year	2015	2025	2030	2035	2040	2050
Baseline Scenario Percentage	39.5%	36.2%	34.7%	33.4%	33.1%	32.6%
CAP Mitigation Scenario	39.5%	34.5%	31.7%	29.1%	25.9%	20.2%

Target: Households heated with electric heat pumps

Households/Year	2020	2025	2030	2035	2040	2050
Baseline Scenario	,524	1,584	3,006	3,006	4,246	4,461
CAP Mitigation Scenario	562	3,385	6,230	9,100	11,996	13,411

Target: Commercial Wood Energy Demand

Percentage/Year	2015	2025	2030	2035	2040	2050
Baseline Scenario	9%	11.3%	12.1%	13%	13.8%	15.7%
CAP Mitigation Scenario	9%	11.5%	12.3%	13.2%	13.8%	15.3%

Target: Households weatherized

Households/Year	2020	2025	2030	2035	2040	2050
Baseline Scenario	435	899	1,328	1,735	2,157	3,050
CAP Mitigation Scenario	695	2,450	4,204	5,294	6,384	8,565

Target: Residential incremental annual MWH end use for appliances

Residential Usage (MWh) for Appliances	2025	2030	2035	2040	2050
Annual MWH End Use	20,579	1,782	21,661	21,191	28,979

This data was derived from a 2022 Energy Efficiency Market Potential Study (not the LEAP Model):
https://epuc.vermont.gov/?q=downloadfile/632187/171403

DRAFT

Target: Achievable Electric Energy Efficiency Savings

Cumulative Annual Electric Energy Efficiency Savings (MWh)	2025	2030	2035	2040	2050
Residential	203,030	691,935	1,165,077	1,468,069	2,149,285
Non-residential	365,056	1,195,068	1,833,399	1,792,064	1,653,251

This data was derived from a 2022 Energy Efficiency Market Potential Study (not the LEAP Model):
https://epuc.vermont.gov/?q=downloadfile/632187/171403

Target: Passenger electric vehicle use (Passenger Cars & Light Duty Trucks)

Vehicles/Year	2015	2025	2030	2035	2040	2050
Baseline Scenario	42	482	955	2,008	3,931	8,582
CAP Mitigation Scenario	42	991	4674	10,851	16,616	23,161

Challenges to meet LEAP Targets

Lamoille County faces several challenges in achieving the LEAP targets. Despite the challenges involved, the LCPC believes that all progress toward the goals of this plan is important.

Grid Limitations

Increased distributed generation will impact the function of the electrical grid. The Vermont electrical grid was developed to have a one-way flow of electricity. As with the rest of the United States, Vermont has historically depended on a small number of centralized power plants, the vast majority of which are now located outside of the state. With growth in distributed generation, the way in which electricity is generated has changed. In some parts of the region, the grid is not fully capable of allowing the placement of all scales of renewable energy generation facilities in every community. If the region and state are going to become more reliant on distributed solar generation, or even become a net exporter of renewable energy, Vermont public utilities and Vermont Electric Power Company (VELCO) will need to increase the pace of system-wide upgrades. This may be a difficult task to complete without directly impacting

ratepayers and the cost of electricity in the state and the region. This Enhanced Energy Plan identifies several policies to work toward addressing these challenges such as coordinating with municipal partners and local utilities to provide a unified message about energy incentives, rebates, and smart meter installations, and providing outreach on funding opportunities for grid system upgrades. This plan supports energy efficiency and reduction measures as well, such as weatherizing homes and installing more efficient heating and cooling systems to reduce overall energy demand and pressure on the grid system. Land use and transportation system strategies also help reduce energy demand in Lamoille County and support alternative modes of transportation and electric vehicle charging infrastructure as referenced in the Transportation and Land Use chapters of the Regional Plan. Future growth is encouraged in compact village centers/downtown areas to minimize the impact on natural and scenic resources. Lamoille County continues to expand local trail networks and pedestrian and bicycle infrastructure to support carbon free modes of transportation while also supporting the expansion of park and rides and public electric vehicle charging stations. The section below highlights progress regarding the adoption of electric vehicles in Lamoille County as well as efficiency measures including weatherization.

DRAFT

Rate of Progress in Weatherization and Electric Vehicle Adoption

The state short-term weatherization goal for Lamoille County is to weatherize 4,981 homes by 2031. This short-term County wide goal was calculated by dividing the number of housing units in Lamoille County by the number of units in Vermont, multiplied by the statewide goal to weatherize 120,000 units. Housing unit data to estimate Lamoille County's weatherization goal was sourced from the 2020 U. S. Census. Based on the records provided by Efficiency Vermont and Capstone Community Action, between 2016 and 2019 these two organizations completed approximately 2,360 projects, which is 47% of the 2031 goal. The number of Lamoille County homes being weatherized needs to continue to increase in order to reach the state goal of 120,000 homes by 2031. Additional weatherization has likely been completed in 2020 by property owners themselves and both organizations. This suggests that weatherization efforts in

Lamoille County are increasing, and more homes are being weatherized each year. Challenges in meeting the statewide weatherization goal and Lamoille County proportion may include being able to finance weatherization practices, building and structural challenges, maintaining historic preservation, and availability of local certified contractors. The LCPC will continue to assist partners in promoting weatherization funding opportunities such as hosting webinars/workshops with local utility providers, promoting energy incentives on the LCPC website, assisting in promoting initiatives such as Button Up Vermont, and coordinating with municipalities as well on funding opportunities such as the Municipal Energy Resilience Program (MERP) administered by Vermont Buildings and General Services. Weatherization of buildings can increase capacity for additional load on the electric system, but not additional generation.

The LCPC is concerned about the ambitious target of 89% electric vehicles by 2050 since there are only 407 passenger vehicles in the County as estimated by Drive Electric Vermont in their January 2024 EV Registration Update report. This is an increase of 121 electric vehicles in Lamoille County from 2023 to 2024. According to Drive Electric Vermont, EV ownership in Vermont rose 44% from 2023-2024. As of January 2024, there were 22 public electric vehicle charging stations mapped in Lamoille County by Drive Electric Vermont. This is an increase of 18 charging stations in the County since January 2016. As Lamoille County acts as a prime tourism destination in Vermont, continuing to build out electric vehicle charging station infrastructure for both visitors and commuters is called out as a recommendation and priority transportation and energy planning action in many Lamoille County Municipal Plans. The Lamoille County Planning Commission will continue to share funding opportunities and incentives with municipal and regional partners for installing new electric vehicle charging stations as well as coordinate with local utility providers to advertise EV incentives on LCPC's website.

Local electric utility providers and VELCO (Vermont Electric Power Company) are playing an active role in planning for the projected increase in load on the grid system. The 2024 VELCO Vermont Long-Range Transmission Plan recognizes grid system load challenges and forecasts scenarios required to meet statewide energy goals and generation capacity targets by 2050. Load forecasting

DRAFT

in the Long-Range Transmission Plan projects the need for a 75-Megawatt load reduction by 2043 to mitigate expected growth in the load on the grid system. These projections include assumptions such as a constant level of increase in electric vehicles being adopted and charged on the local grid system, and an increase in heat pumps by 60% by 2043. The Vermont Roadmap Electric Vehicle Forecast in VELCO's plan predicts that electric vehicle demand during summer peak will grow from 9 MW in 2024 to 256 MW by 2043. See table below for increased grid system load forecasting identified in VELCO's 2024 Long-Range Transmission Plan.

FIGURE 6 – PROJECTED VERMONT SUMMER PEAK LOAD AND ITS COMPONENT FORECASTS

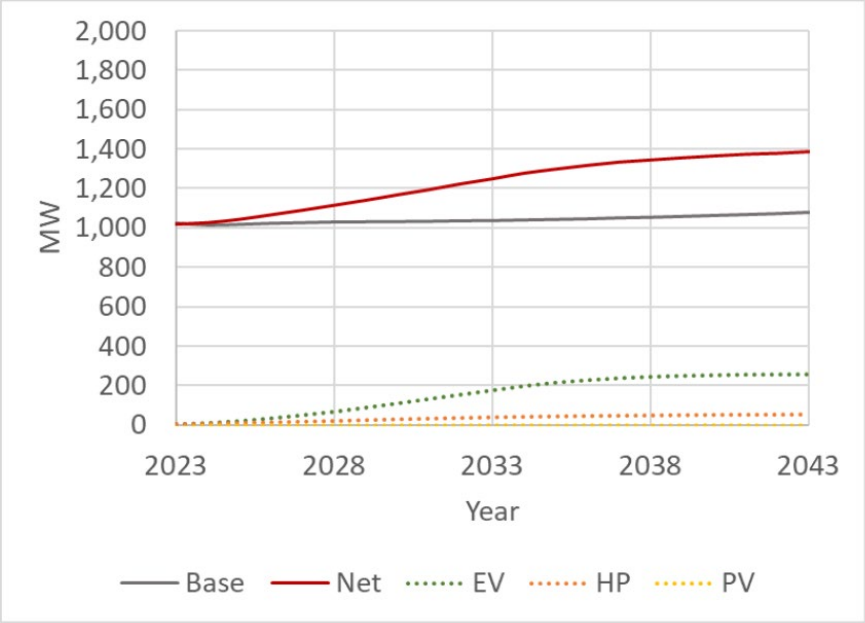


Figure 3-17 Projected Vermont Summer Peak Load and its Component Forecasts

Source: VELCO 2024 Long-Range Transmission Plan

In Lamoille County the 2024 VELCO LRTP notes that there is no additional capacity for solar PV under Optimized Distribution. Meanwhile, as described below in the Future Renewable Energy Generation section, the generation capacity target for Lamoille County by 2050 is 137 Megawatts of power. The 2024 VELCO Vermont Long-Range Transmission Plan identifies the following actions to meet anticipated grid system growth and the Vermont Comprehensive Energy

Plan statewide goals:

- Increase energy storage available during peak demand times such as in

the evening
- Grid system upgrades
- Grid system load curtailment
- Coordination between VELCO and local utilities

At the local level, electric utilities utilize similar forecasting strategies to plan for increased demand on the local grid system as identified in their Integrated Resource Plans (IRP). In accordance with 30 V.S.A. section 218c, electric and gas companies are required to update Integrated Resource Plans every 3 years. The IRP established a framework for decision making that utilities utilize to meet the public's need for energy services. It develops methods to evaluate a utility's investment and purchase decisions. Current IRPs for local utilities are filed with the Public Utility Commission and Vermont Department of Public Service as well as housed on a utility company's website. Grid system load forecasting in IRPs is based on a range of economic, technological, and weather data. Load forecasting considers both expected base load and peak load demand such as seasonal winter and summer peaks in energy use. Similar to VELCO's Plan, the IRPs consider growth anticipated due to an increase in electrifying modes of transportation and heating/cooling systems. The Stowe Electric Department (SED) Integrated Resource Plan for example forecasts a steady increase in grid system load demand between 1-2% annually. The table below from Stowe Electric Department's 2024 Resource Report demonstrates load forecasting and the expected increase in demand on the local grid system for SED's service area.

Stowe's Forecast Load MWH					
	Snow Making Load	Non-Snow Making Load	Total Stowe Load	Snow % Increase/ (Decrease)	Stowe % Increase/ (Decrease)
2024	9,019	69,962	78,981		
2025	9,109	70,739	79,848	1.00%	1.10%
2026	9,200	71,860	81,061	1.00%	1.52%
2027	9,292	72,986	82,278	1.00%	1.50%
2028	9,385	74,315	83,701	1.00%	1.73%

Figure 3-18 Stowe's Forecast Load (MW/H)

Source: Stowe Electric Department, 2024

DRAFT

Local IRPs also identify load forecasting associated with growth in heat pump installations and electric vehicle adoption. For example, the table below from Stowe Electric Department's 2023 IRP shows the heat pump sales forecast. By 2043 heat pump energy requirements reach 5,200 MWh with a maximum peak demand of 3.2 MW. Electric vehicle load forecasting in Stowe's IRP was developed in conjunction with the 2023 VELCO Long-term Forecast. By 2043 electric vehicles are expected to account for 90% of all registered vehicles in Vermont. See figure 3-17 above from the 2024 VELCO Long-Range Transmission Plan for expected increase in load demand on the grid due to electric vehicle adoption.

Stowe IRP Figure 32: Heat Pump Loads 2043

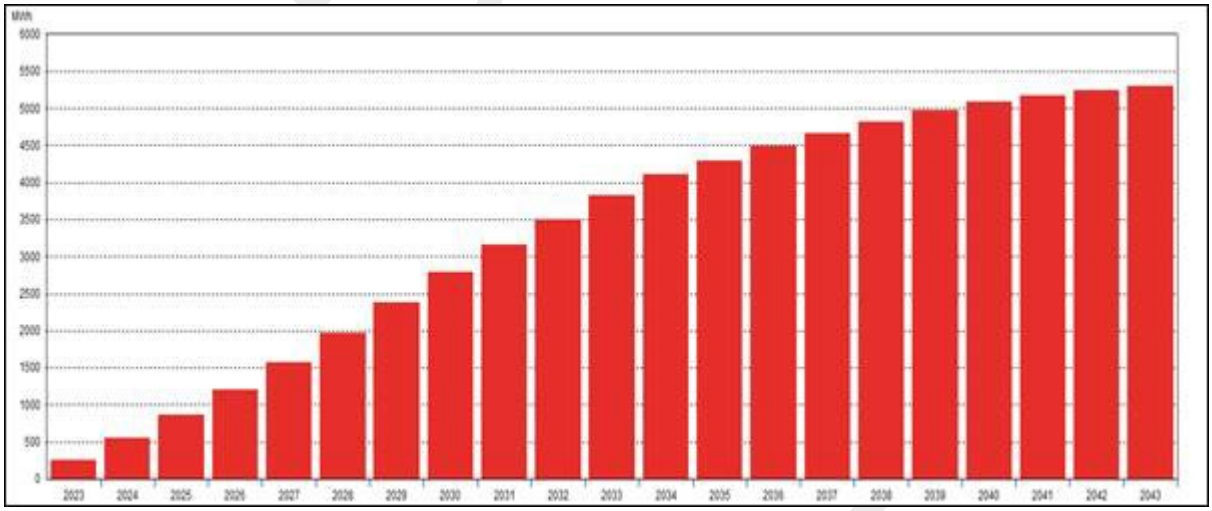


Figure 3-19 Heat Pump Loads
Source: Stowe Electric Department, 2024

As local utilities cover a smaller area for electric service, they will not see as significant a load increase as larger utility providers such as Green Mountain Power. In addition to forecasting grid system load increases, local utility providers are exploring alternatives to ensure grid reliability such as energy storage and micro grid systems. The Stowe Electric Department for example was awarded more than $1.6 million in grant funding for resiliency and infrastructure modernization, including funding for a microgrid feasibility study.

Up-front cost of energy efficiency improvements and fuel switching

Despite the demonstrated long-term savings benefits, the capital needed to significantly reduce energy consumption and switch to renewable fuels can be a significant barrier to implementation. This holds true both for thermal efficiency improvements and replacement of petroleum-based vehicles by electric vehicles.

Reliance on cord wood and biomass

The LEAP model depends very heavily on cord wood use as a single-family home heating source (and for commercial and industrial heating too). Although wood is a renewable resource that is currently available in the region, its use in the region should be monitored as this plan evolves to ensure that it continues to be harvested in a sustainable manner. As noted in the Working Lands Section of this Plan, due to past "high grading," much of the timber in Lamoille County's forests is not of high enough quality for lumber. Removing lower quality timber for cordwood, wood chips, and wood pellets to provide growing room for healthier trees can be part of a sustainable forestry management plan and is necessary in some cases to restore overall health. The continued reliance on cord wood for heating and its impacts on greenhouse gas emissions and air quality in the region should be monitored.

Lack of outreach and enforcement of Residential and Commercial Building Energy Standards

Although Efficiency Vermont has provided some outreach to local contractors and the public regarding the requirements of RBES and CBES, there is still a lack of knowledge about the programs. The state also lacks the ability to enforce the codes and the system Vermont uses to track adherence to the standards is a challenge. Currently, energy efficiency is self-certified by the building contractor, with a requirement that a completed certificate be submitted to the municipality where the building is being constructed. However, many communities are unaware of this requirement and have no way to track the submission of certificates. Towns with local code officials may enforce energy efficiency codes and towns with Certificate of Occupancy (COO) requirements must receive an Energy Code certificate before issuing the COO. Half of Lamoille County communities (5) have zoning bylaws, but only one requires a COO.

DRAFT

4. CURRENT AND FUTURE RENEWABLE ENERGY GENERATION IN LAMOILLE COUNTY

Current Renewable Energy Generation in Lamoille County

Most of today's renewable energy production in Lamoille County comes from hydro and solar facilities. According to data collected in March of 2024 from the Vermont Public Service Department, Lamoille County had approximately 873 energy generation sites. Together, these sites have a combined energy production capacity of 34.755 MW. The Community Energy Dashboard is no longer up and running. The Public Service Department is able to provide this data upon request.

Existing Hydro Generation: 8 sites

Hydroelectric energy generation is one of the lowest-cost, steady power producers available to Lamoille County. There are currently eight hydroelectric facilities in operation in the region, which account for approximately 11 MW of existing capacity. Morrisville Water & Light owns three facilities, located in Hyde Park and Morrisville, with a combined generation capacity of 9.8 MW. Hardwick Electric Department owns a hydro plant located in Wolcott with 1.63 MW capacity. Stowe hosts a smaller privately owned hydro facility with capacity of 0.1 MW. Many of these hydroelectric facilities are currently engaged in the Federal Energy Regulatory Commission relicensing process. The hydroelectric generation capacity may be reduced because of this relicensing process. Due to the results from this relicensing process, Morrisville Water & Light is working towards decommissioning the Green River Reservoir Dam. If this occurs, additional sources of renewable energy generation will need to be identified.

DRAFT

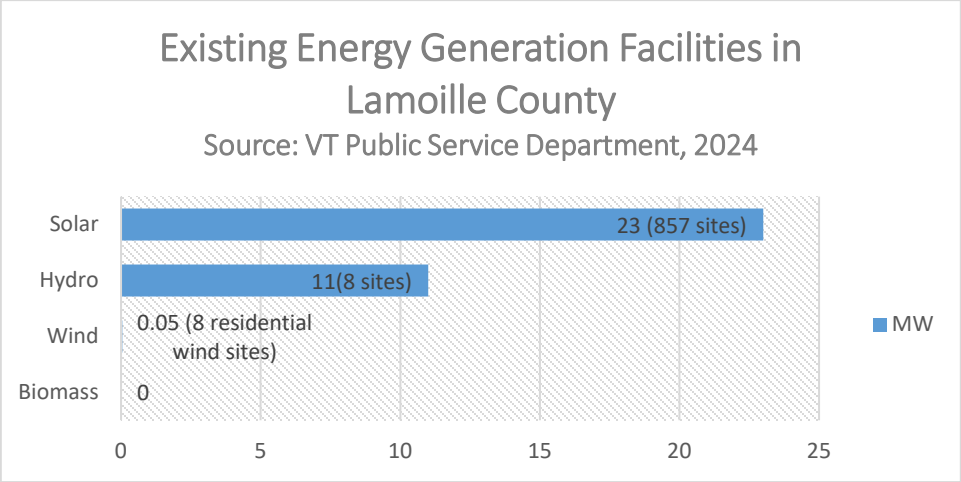


Figure 3-20 Existing Energy Generation Facilities in Lamoille County

Existing Solar Generation: 857 sites

According to data from March of 2024 provided by the Vermont Public Service Department, Lamoille County has approximately 23 MW of installed solar photovoltaic generation capacity. The largest solar arrays currently operating are two 1 MW solar projects independently owned by the Village of Hyde Park Electric Department and the Stowe Electric Department.

Existing Biomass Generation: 0 sites

Electricity can also be generated from other renewable resources, including woody biomass (especially as a combined heat and power project), and bio-digesters that use organic waste to produce methane that can be burned to generate power. There are currently no active bio-digesters in Lamoille County. There were two sites previously located at Joneslan Farm in Hyde Park and Keewaydin Farm in Stowe. These digesters are no longer operational.

Existing Wind Generation: 8 sites

The power of wind to generate electricity has to date been harnessed by eight Lamoille County residences. Residential-scale wind turbines installed at these homes have a combined generation capacity of .05 MW. There is currently no commercial or utility scale generation facility in the region, although the town of Lowell, just north of Lamoille County, hosts one of the largest wind installations in the State with 21 turbines and a generation capacity of 63 MW.

DRAFT

Future Renewable Energy Generation in Lamoille County

The Vermont Public Service Department (PSD) provides a Generation Scenarios Tool to help set targets for renewable energy generation. The 2024 tool models statewide targets for 10%, 20% and 25% in-state generation options in the future. Incremental energy generation targets are some outputs of the tool, as well as capacity targets and resource availability, with consideration given to land availability and grid headroom as possible constraints. The LCPC used the 25% in-state generation scenario to align with generation goals set forth in the 2022 Vermont Comprehensive Energy Plan.

Statewide targets are broken down by region in the PSD Generation Scenarios Tool. Under this tool, the Lamoille regional share of statewide generation is disaggregated to 4.5%, putting the region's renewable energy generation target in 2050 at 137,367 MWh (4.5% of the 25% in-state goal of 2,985,954 MWh by 2050). The Lamoille region currently generates 47,294 MWh. An additional 87,188 MWh will be needed to meet the total regional share of 137,367 MWh. As noted in the solar and wind potential sections below there is sufficient land to meet this regional generation target. The challenge in meeting this target regarding limitations to the electric system are described below under the "Electric Grid Limitation" section. The additional or incremental target of 87,188 MWh is proportionally distributed across towns, based on the average population and suitable land area. Population data used in the Generation Scenarios Tool is from the 2020 U.S. Census.

Rather than using total land area available in each town, which the tool defaults to, LCPC used "suitable" acreage for generation as the land area. Suitable acreage was based on the percentage of total land area that includes both prime and secondary acreage for renewable generation, as displayed in the Regional Enhanced Energy Plan maps. This percentage was then distributed evenly across all towns, for ground-mounted solar and wind generation. Land area does not include area needed to support hydro generation sites or rooftop solar (as these do not occur on land). However, the Generation Scenarios Tool assumes that 1 acre is needed per MW of power produced for hydro projects.

DRAFT

In order to contribute to the goal of 90% renewable by 2050, the Generation Scenarios Tool forecasts that Lamoille County will need to add new renewable facilities capable of producing an additional 87,188 MWh of renewably generated electricity. Lamoille County could meet this target with a combination of renewable energy technologies, based on current contributions to generation capacity in the region: ground-mounted solar (64%), rooftop solar (10%), wind (10%), and hydro (16%). As of this writing, ground-mounted solar is the most available generation technology and was kept at the greatest share of this technology mix. Rooftop solar may increase in availability as structures are able to support it. Large scale wind generation is not widely supported in the region, though there is some land available to support small-scale projects. Finally, the percentage of hydro represents the current percentage of energy produced in the region by this technology. LCPC supports developing "micro-hydro" projects to help meet renewable energy generation targets.

The Generation Scenarios Tool can also be used to model using technologies such as biomass. This was not considered an appropriate technology to include in the technology portfolio for the region, given that there are not currently any biomass generation facilities. Although the above combination of technologies can be used to meet the regional target, the tool also highlights Transmission Headroom as a constraint to meeting this target. Transmission and distribution infrastructure upgrades will be needed to help expand the capacity of the region to meet the proposed targets.

Using the VT Department of Public Service Generations Scenario Tool, which takes into account the presence of the renewable generation resource (sun or wind), and factoring in prime and secondary land area available for siting, the LCPC calculated Lamoille County's energy potential from sun and wind generation.[8] Rooftop solar is also included, though only for small-scale systems, and does not relate to land availability but rather the rooftop area (tool factored in satellite data from VCGI; does not account for structural limitations). Hydro power was included to an extent as well. Table 3-17 presents these calculations for the region and towns. Appendix C displays the outputs of the tool as well. It

8 http://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/Regional%20Guidance_Final.pdf

is worth noting, the tool highlights that these targets exceed both the distribution headroom and capacity most towns have to meet these targets, except Elmore and Wolcott.

Table 3-17. Incremental renewable energy generation targets for Lamoille County towns

Town	2023 Existing Generation (MWh)*	2025 Incremental output projections (MWh)	2035 Incremental output projections (MWh)	2050 Incremental output projections (MWh)	2050 Ground mounted solar: capacity target (MW)	2050 Rooftop Solar capacity target (MW)	2050 Wind capacity target (MW)	2050 Hydro Capacity target (MW)
Belvidere	77	932	2,330	3,641.5	1.8	0.3	0.2	0.1**
Cambridge	3,491	3,187.2	7,967.8	12,452.9	6.1	1.0	0.6	0.5**
Eden	348	2,110.8	5,277.0	8,247.4	4.0	0.6	0.4	0.3**
Elmore	141	1,329.6	3,324.0	5,195.1	2.5	0.4	0.3	0.2**
Hyde Park	10,485	2,214.1	5,535.1	8,650.8	4.2	0.7	0.4	0.3**
Johnson	1,140	2,588.2	6,470.2	10,112.4	4.9	0.8	0.5	0.4**
Morristown	23,354	3,586.4	8,965.7	14,021.6	6.8	1.1	0.7	0.5
Stowe	3,863	4,014.0	10,034.8	15,683.4	7.6	1.2	0.8	0.6**
Waterville	161	692	1,729.9	2,7023.7	1.3	0.2	0.1	0.1**
Wolcott	4,234	1,660.5	4,151.2	6,487.9	3.2	0.3	0.3	0.2
County total	**47,294**	**22,315**	**55,786**	**87,188**	**42.5**	**6.9**	**4.4**	**3.2**

Source: VT Department of Public Service, 2024 Generation Scenarios Tool

*Based on Vermont Public Service Department 01/31/2023 Distributed Generation Survey

**Hydro figures above indicate there is not enough hydro resources available or grid system headroom to meet the 2050 capacity target for hydro power.

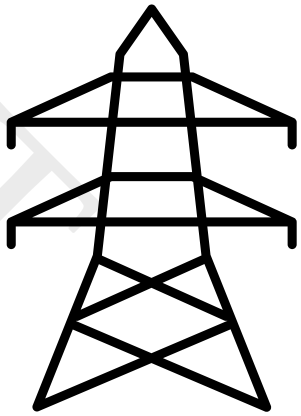
Energy Planning Standards developed by the VT Department of Public Service require that regional planning commissions divide the projected regional renewable energy production among municipalities. Table 3-17 above provides this information for both the region and its municipalities. In computing the projected production, the Generation Scenarios Tool takes into consideration municipal population shares, land availability, energy demand, and the amount of electricity already produced in the municipalities. The Generation Scenario Tool also considers grid system limitations such as transmission and distribution headroom.

While generation shares are evenly distributed across all towns in the county, there are individual sites in Lamoille County that have the potential to meet generation targets for more than one municipality. As an example, the former asbestos mine in Eden discussed below could accommodate solar arrays capable of generating enough electricity to meet combined generation goals for Eden, Belvidere, and Waterville.

Can Lamoille County Meet the 90x50 Energy Generation Goal?

Lamoille County has opportunities to generate energy from various sources including solar, wind, hydro, biomass, or geothermal reserves. Two renewable resources that appear to have the potential to contribute most substantially to meeting the 90x50 energy generation goal of 87,188 MWh are the sun and the wind. Hydro, biomass and even geothermal sources may be feasible for a production of modest amounts of electricity but would probably be insufficient to produce the output required to keep the region on track to meet the 90x50 energy generation goal.

Electric Grid Limitations



The resource potential and environmental attributes of the land are not the only factors in the consideration of whether a site is viable for the deployment of a particular technology. The capacity of the electric grid to transmit the newly generated electricity is also key and currently poses a serious challenge for meeting the 90x50 energy generation goal for Lamoille County, particularly within the grid in the northern tier of the state known as the Sheffield Highgate Export Interface (SHEI). In Lamoille County, SHEI encompasses the towns of Belvidere, Eden, Johnson, Cambridge and parts of Hyde Park, Morristown, and Stowe.

Currently, existing renewable energy generation plants within SHEI, such as Lowell Wind and Sheffield Wind, produce more electricity than can be consumed within the SHEI region. Given the lack of usage within SHEI, a solution would be to export the electricity to areas with greater electric demand. However, current physical limitations of the grid do not allow for adequate export of power, and

DRAFT

exporting the power becomes an issue to the point that existing wind turbines are being forced to curtail energy production in order not to overload the grid. Local utilities are already implementing winter curtailment plans to avoid grid system blackouts. Limitations to the electric system in Lamoille County are further discussed below.

In Section 248 proceedings conducted by the Public Utility Commission, both Vermont Electric Cooperative and Green Mountain Power have been opposing adding larger than rooftop scale arrays due to physical constraints of the electric transmission system.

The 2024 Generation Scenarios Tool provided by the Public Service Department added a new category focused on transmission and distribution headroom. Transmission headroom is the amount of extra capacity a device has available for transmitting power over long distances via high voltage power lines, while distribution headroom is the capacity available for short distances via lower voltage lines. These categories allow Lamoille County to best understand limitations to the electric system in the region. According to the 2021 VELCO LRTP, and the 2024 Generations Scenario Tool from the Vermont Public Service Department, the County has 25.5 MW of transmission headroom available. However, the 2024 VELCO LRTP shows there is 0 MW of additional "Optimized Distribution" headroom in Lamoille County, meaning that there is no longer any transmission headroom in Lamoille County for additional generation without causing harm to rate payers or hosting capacity in other regions. There remains room on the grid for additional load. The region can still encourage electrification such as installing heat pumps and electric efficiency measures. The 2024 VELCO LRTP highlights system upgrades across Vermont, many of which would benefit Lamoille County and may provide additional transmission system headroom for generation as well as for load. These potential upgrades are found in section "5 Discussion of Peak Demand Results" in the VELCO Long Rage Transmission Plan which can be viewed at:https://www.velco.com/2024-vermont-long-range-transmission-plan. The county currently has a nameplate capacity of 22.4 MW of renewable generators, which leaves the full amount of transmission and distribution headroom available for new generation. However, if the headroom is consumed by the interconnection of new generating resources, that could lead to

DRAFT

generators not being able to export energy under certain conditions. Limitations to the grid affect all sectors of planning (Transportation, Land Use, Housing, Energy, Economic Development, etc..) and the County's ability to continue to grow.

Solar Generation Potential

Due to the nature of our topography and land cover, solar is a viable source of renewable energy generation in Lamoille County. The initial mapping analysis, graphically displayed on the Solar Resource Map, identified lands in Lamoille County that are potentially suitable for solar power generation. These potentially suitable lands comprise 71,375 acres. Of this number, 7,919 acres (11%) are lands with prime solar potential and 63,456 acres (89%) are lands with secondary solar potential.

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 resource (sun) and no environmental constraints, and "secondary" solar areas, defined as areas with sufficient sun and environmental characteristics that may pose an obstacle to the development of renewable energy facilities. Areas with insufficient solar radiation or areas that have environmental constraints that will make these areas likely unsuitable for the development of renewable energy generation facilities have been removed from the map and are not shown in any way. (Note: Environmental constraint categories associated with "secondary"

Solar Generation by Facility Size:
Ground Mounted Solar PV System

Residential:
Average Array Size: 4 Kw
Estimated Output: 4.9 MWh
Acres Required*: .028 acres

Commercial:
Average Array Size: 20 Kw
Estimated Output: 26.3 MWh
Acres Required*: .14 acres

Large-Scale Commercial:
Average Array Size: 200 Kw Estimated Output: 262.8 MWh
Acres Required*: 5.33 acres

*Acres required noted above are based on assumptions provided in the 2024 Generations Scenario Tool provided by the Vermont Public Service Department. See Appendix C for a table of these assumptions.

DRAFT

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).

What about Rooftop Solar?

Roof-top solar (or solar facilities on existing structures) can supplement ground-mounted (or land based) solar installations but in order to generate enough power to meet the 90x50 goal for electric generation, roof mounted solar cannot fully replace the ground mounted installations. Lamoille County Planning Commission estimated that the region has the potential to generate around 28,078 MWh of electricity from rooftop solar arrays – nearly 20% of the region's total 2050 renewable energy output target and 32% of the region's incremental generation capacity target.

Rooftop Solar Potential Estimate

RESIDENTIAL STRUCTURES
Structures: 2785 (25% of existing) Average Array Size: 4 Kw Estimated Output for all 2785 structures: 14,637 MWh

SMALL COMMERCIAL (<40,000 sq. ft.)
Structures: 298 (25% of existing)
Average Array Size: 20 Kw
Estimated Output for all 298 structures: 7,309 MWh

LARGE COMMERCIAL (>40,000 sq. ft.)
Structures: 25 (50% of existing)
Average Array Size: 200 Kw
Estimated Output for all 25 structures: 6,132 MWh

Total Estimated Output from Rooftop Installations = 28,078 MWh

Solar at former Asbestos Mine in Eden?

In 2011, the Environmental Protection Agency, in collaboration with the U.S. Department of Energy commissioned a solar generation feasibility study for the closed asbestos mine site straddling the town line between Eden and Lowell. The study, completed in 2013, determined that up to 150 acres could be configured to accommodate solar photovoltaic arrays. The former mine site has several locations in Eden and Lowell with potential for installing large solar arrays, including a 2.2 MW array on the waste-rock area, a 4.6 MW array in the entry and building areas, and/or a 11.6 MW array on south facing slopes of the Eden and Lowell piles. This plan designates the former asbestos mine as a preferred location for a solar generation facility.

DRAFT

Wind Generation Potential

Lamoille County, due to its geography, has areas with wind speeds sufficiently strong to enable wind energy generation. The Wind Resource Map shows areas with potential to accommodate commercial and utility- scale wind generation facilities. In total, the potentially suitable wind areas comprise 95,675 acres of land of which 2,105 acres (2%) are lands with prime wind potential and 93,570 acres (98%) are lands with secondary wind potential.

The suitability potential was determined on the basis of two broad factors: presence of sufficient wind speed, digitally modeled at 50 and 70 meter hub height, and 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 certain environmental characteristics that may pose an obstacle to the development of renewable energy facilities. Areas with insufficient wind speeds or environmental constraints that will likely make these areas unsuitable for the development of renewable energy generation facilities 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 Regional Plan supports the development of residential as well as commercial wind generation facilities provided environmental impacts are mitigated and site-specific concerns are addressed. Utility scale wind generation is deemed an intensive land use incompatible with land use policies of the Regional Plan and is therefore not supported. This plan defines utility scale wind generation facilities as facilities with total generation capacity of 1 MW or more.

Wind Generation by Facility Size

Residential:
A wind turbine serving a single residence with maximum generation capacity of up to 10 KW.

Commercial:
A wind turbine system serving a business, located on business premises and having a maximum generation capacity of up to 1 MW.

Utility-scale:
A wind turbine system with total generation capacity of 1 megawatt or more. For reference, Lowell Wind is a large utility-scale project. It has 21 towers with 3 MW generation capacity each. Each tower is 83 meters (273 feet) tall. From the ground

DRAFT

Is Utility-Scale Wind Generation Appropriate for Lamoille County?

The Lamoille County Regional Plan is guided by three overall objectives which include protection of the region's natural systems and valuable agricultural and silvicultural resources, and protection of working landscapes. Areas shown on the wind resource maps as having utility-scale wind generation potential are in the Working Lands-Rural Agriculture/Forestry Area. Numerous diverse land uses in this area, such as active forest management, conservation, wildlife management, or aesthetic preservation, rely on large, unfragmented blocks of forest land. Therefore, maintaining unfragmented forest blocks is an important objective of this area. The Regional Plan calls on reducing the rate of fragmentation of agricultural and forest lands and maintaining and improving wildlife connectivity. New development should minimize forest fragmentation or disruption of productive use for timber management. Wind turbines by their very nature are difficult to cluster because of the spatial needs of turbine blades and must extend above the tree line, which puts their placement in this area in conflict with the objective of maintaining unfragmented forests. New roads should be very limited in forest areas and should be constructed with consideration of impacts on productive forest stands, wildlife connectivity, erosion and runoff, and aesthetics. Land Use development should reflect site specific environmental limitations and the density and intensity of development should conform to the limitations of the land and available public services. Higher densities and more intensive uses should be in Village/Downtown Centers, Village Areas, Planned Growth Areas, Transition Infill Areas, and Enterprise Areas, while lower densities and less intensive uses should be in Rural General and Working Lands Areas (Rural Agriculture/Forestry Area).

Land development should consider the capability of the land as it relates to topography and soil limitations, areas of steep slopes, and poorly drained or unstable soils. In areas where fragile characteristics have been identified, development should be discouraged unless it is shown that these assets will not be unduly altered or harmed.

The Regional Plan also discourages development of energy generation facilities along Lamoille County's regionally prominent ridgelines all of which are in the Forest Area and include Worcester Range and Mt. Elmore, Woodbury Range, Mt.

DRAFT

Mansfield and Sterling Ranges, Butternut Mountain and Belvidere Mountain. As mentioned in the previous paragraph, this perspective aligns with other land use policies and actions outlined in the Regional Plan (see Land Use chapter). Unless it can be shown that resources will not be unduly altered or harmed, development in the region is discouraged in areas where fragile characteristics have been identified, including at high elevations and on steep slopes where the region's prominent ridgelines are located. In addition to their environmental values, the ridgelines provide the visual backdrop for which the County is known. They are cherished for their aesthetic beauty and the regional economy thrives on recreation dollars derived, in large part, from the scenic beauty of the region. There is a strong perception in Lamoille County municipalities that wind turbines placed on the ridgelines will negatively impact the aesthetics and the economy of the region.

During the development of the energy plan, towns of Belvidere, Eden and Waterville identified the following specific ridgelines and peaks as unsuitable for utility scale wind development: Laraway Mountain, Cold Hollow Mountain Range, Mount Norris, Bean Mountain, Bowen Mountain, and Hadley Mountain.

Sound level impacts of proposed wind generation facilities are evaluated by the Public Utility Commission on the basis of state standards which impose daytime and nighttime decibel limits on wind turbines. Currently, these standards limit turbines' sound to 39 decibels at night and 42 during the day. This Plan accommodates health concerns over sound impacts of large wind turbines by replicating a policy approach adopted by the Bennington Regional Planning Commission and incorporating into the Wind Resource Map a 1-km buffer from residential structures. To compensate for the challenge of utility wind siting, the LCPC acknowledges that greater amounts of other forms of renewable energy sources, most likely solar and biomass, will be needed to meet state energy goals.

If a municipality, through its local planning process, identifies a preferred location for a utility-scale wind facility within their boundaries, LCPC may consider amending its plan to account for this local preference. Coordination and consensus will be a critical component of any process to amend the regional plan in this regard. Additionally, LCPC shall only consider such an amendment if the

DRAFT

location, or locations, identified by the municipality are not in the areas categorized by this regional plan as "likely unsuitable" and mitigate impact to environmental constraints in areas identified as "potentially suitable".

Hydro Generation Potential

Vermont has an abundance of the two principal components for generating local hydroelectric power − hills and water. Despite these natural attributes and an existing potential to develop power at over 300 existing dams, only a handful of hydroelectric sites have been restored or constructed in Vermont since 1987. Because of the potential impact on aquatic resources, hydroelectric power is the only renewable energy source required to gain approval from numerous state and federal agencies, which makes the permitting process very complex and costly. In Lamoille County, the Town of Waterville commissioned a study to determine the feasibility of a micro-hydro facility on Kelley River in 2008. The 2008 micro-hydro study revealed that establishing a hydro power facility at the old sawmill would be costly, but it has the potential to produce a return on the investment. Infrastructure needs would have to be known before design, engineering, permitting, and construction could be pursued. Due to ecological and aquatic habitat concerns, the State of Vermont is no longer promoting the permitting of new hydro power facilities.

At this writing, hydroelectric generation represents about one half of renewable energy generation in Lamoille County. This plan recommends preserving the viability of existing hydroelectric generation, as loss of this dispatchable renewable energy source will need to be replaced by solar, which increases the grid challenge significantly. This plan also supports redevelopment and development of small, environmentally sound hydroelectric sites as well to harness hydroelectric energy.

The Hydroelectric Resources map shows hydroelectric potential based on a 2007 study conducted by Community Hydro that was updated in 2020. The map shows seventeen dams in Lamoille County that could be converted into hydroelectric facilities. One dam appears to have the generation potential of more than 50 kW while the remaining dams have estimated generation potential of less than 50 kW each. The map also shows current sources of hydro generation.

DRAFT

Woody and Non-Woody Biomass Generation Potential

Electricity can also be generated from other renewable resources, including organic waste (such as manure, brewery waste, food scraps, or woody biomass. Organic waste is processed in bio-digesters. The digesters produce methane gas that fuels an engine to produce electricity. The LCPC is interested in studying the potential for methane production, including the possibility of utilizing waste from several operations, (farm and non-farm) at one bio-digester. Such a digester could generate electricity by processing food scraps gathered by the solid waste district, manure from local farms, or brewery waste from local breweries to generate electricity.

Another possibility is generating electricity by burning wood at combined heat and power facilities. Given the amount and quality of timber in the County, wood-fired combined heat and power (CHP) systems are of particular interest to our region. These systems produce electricity both for on-site consumption and sale back to the grid, while piping excess heat to help meet the thermal needs of the facility. At the community- scale, centralized CHP systems can supply heat to households and businesses within a limited radius, in what is commonly known as a "district heating" system.

To provide an attractive return on investment to any prospective developer, CHPs must be sited in proximity to a facility or group of buildings capable of utilizing a large, year-round heat supply. Ideal sites include hospitals, hotels, apartment complexes, and industrial sites. With funding from the Vermont Clean Energy Development Fund, LCPC has produced maps that identify potentially viable CHP sites which include Copley Hospital in Morristown, Vermont State University (Johnson), Fisher Bridge Industrial Park (Wolcott), North Hyde Park Industrial Park, the industrial park under consideration in Johnson at the Jewett property, and Cambridge Business Park. Smugglers' Notch Resort has assessed their property as a feasible CHP site.

5. SITING OF RENEWABLE ENERGY GENERATION FACILITIES

The development of new renewable energy generation facilities in Lamoille County is a key component of Vermont's energy future. However, in order to

DRAFT

protect our environment and critical resources while encouraging renewable energy development, Lamoille County Planning Commission developed an inventory of areas preferred and potentially suitable for renewable energy generation.

The inventory is supported by the energy maps located at the end of this chapter. The maps, and the corresponding data, can be used to inform energy planning efforts by the region and its municipalities. They may also 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." The step-by-step analysis used to develop these maps may be conducted specifically for any site where renewable energy development has been proposed, and in that sense these maps provide a model for the process that should be undertaken when evaluating the siting of a renewable energy development.

Areas Preferred for Renewable Energy Development

Areas preferred for renewable energy development are the areas identified as "preferred" in Act 174 unless these areas are identified as unsuitable by the municipal plan of the municipality in which the development is proposed. State-defined preferred areas include:

- Parking lots
- Brownfield Sites
- Landfills
- Rooftop installations
- Gravel pits
- Locations designated in an adopted municipal plan or identified by a municipal legislative body

At this writing, several municipalities identified specific locations preferred for energy generation. These locations are shown on the Regional Considerations Map.

- Wolcott's Town Plan proposes the following specific preferred locations: Former landfill (for ground mounted solar); Fisher Bridge Industrial Park (for combined heat and power generation facility); Wolcott Elementary

DRAFT

School and municipal offices (for rooftop solar).

- Hyde Park's Town Plan identifies the following specific preferred locations: Existing gravel pits (for ground mounted solar); North Hyde Park Industrial Park (for a combined heat and power generation facility); Hyde Park Elementary School, Lamoille Union Middle and High School and municipal buildings (for rooftop solar); Transfer Station (for ground mounted solar).
- Eden's Town Plan identifies the former asbestos mine as a desirable location (for ground
- mounted solar).
- Jeffersonville Village Trustees identified the Wastewater Treatment Facility as a preferred location for solar.

Areas Potentially Suitable for Renewable Energy Development

The Solar and Wind Resource Maps show areas with energy generation potential based on the presence of the resource (sun or wind) and environmental attributes of the resource areas. Areas identified on the maps as "secondary" have environmental constraints that may pose a barrier to the development of renewable generation. "Prime" areas are lands with no environmental constraints.

State-defined areas with secondary solar and wind potential possess one or several of 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
- Vermont Conservation Design Highest Priority Forest Blocks and habitat connectors**

*Due to the significant overlap between areas with solar energy generation potential and prime agricultural soils, and the need to compensate for the challenge of utility wind siting with greater amounts of other forms of renewable

DRAFT

energy, it is anticipated that some solar development will occur on prime agricultural soils.

Such development should be in keeping with the Agricultural Soils Mitigation Policies for each Planning Area outlined in the Future Land Use Section of this Plan. Consistent with the policies for other forms of commercial and industrial development, prime agricultural soils are not considered a constraint within Village/Downtown Centers and Enterprise Areas. In other areas, solar energy development may occur on prime agricultural soils when measures are taken to retain the long term agricultural viability. Such measures may include, but are not limited to, mounting panels on driven posts without concrete or floating ballasts rather than concrete or paved pads to avoid long-term impact to soils; designing the facility to allow certain agricultural practices to occur within and underneath the solar arrays (such as animal grazing, bee yards, or growing crops); placing solar facilities on fields with limited viability for commercial agriculture due to size, topography, access, and similar limitations; incorporating soil building cover crops, pollinator plantings, or other grassland habitat conservation features into the areas between panels; and/or other mitigation measures appropriate for the specific site.

** Land use development patterns with consideration for Act 171 are discussed in the Working Lands Section of the Regional Plan, as well as in the previous section discussing wind generation facilities. Maintaining intact forest blocks and habitat connectors are considered constraints for siting a generation facility, given regional policies that promote keeping them intact for their many benefits. In addition to supporting ecological function and wildlife habitat, intact forest blocks and healthy forests also act as carbon sinks by pulling carbon from the atmosphere to store in the soil, trees, and other vegetation. They can also help support climate resilience, greenhouse gas emissions reductions, and flood protection by remaining intact. These multiple benefits may outweigh the cost of clearing forests in the region to site a generation facility. To align with the state planning goals of Act 171, forest fragmentation should be avoided or minimized. Where appropriate, projects are encouraged to promote healthy, ecologically viable forest management practices in energy siting projects.

DRAFT

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 regulations. The solar and wind resource maps, refer to these areas as "solar likely unsuitable" or "wind likely unsuitable".

State defined environmental constraints that make particular areas likely unsuitable for energy generation 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

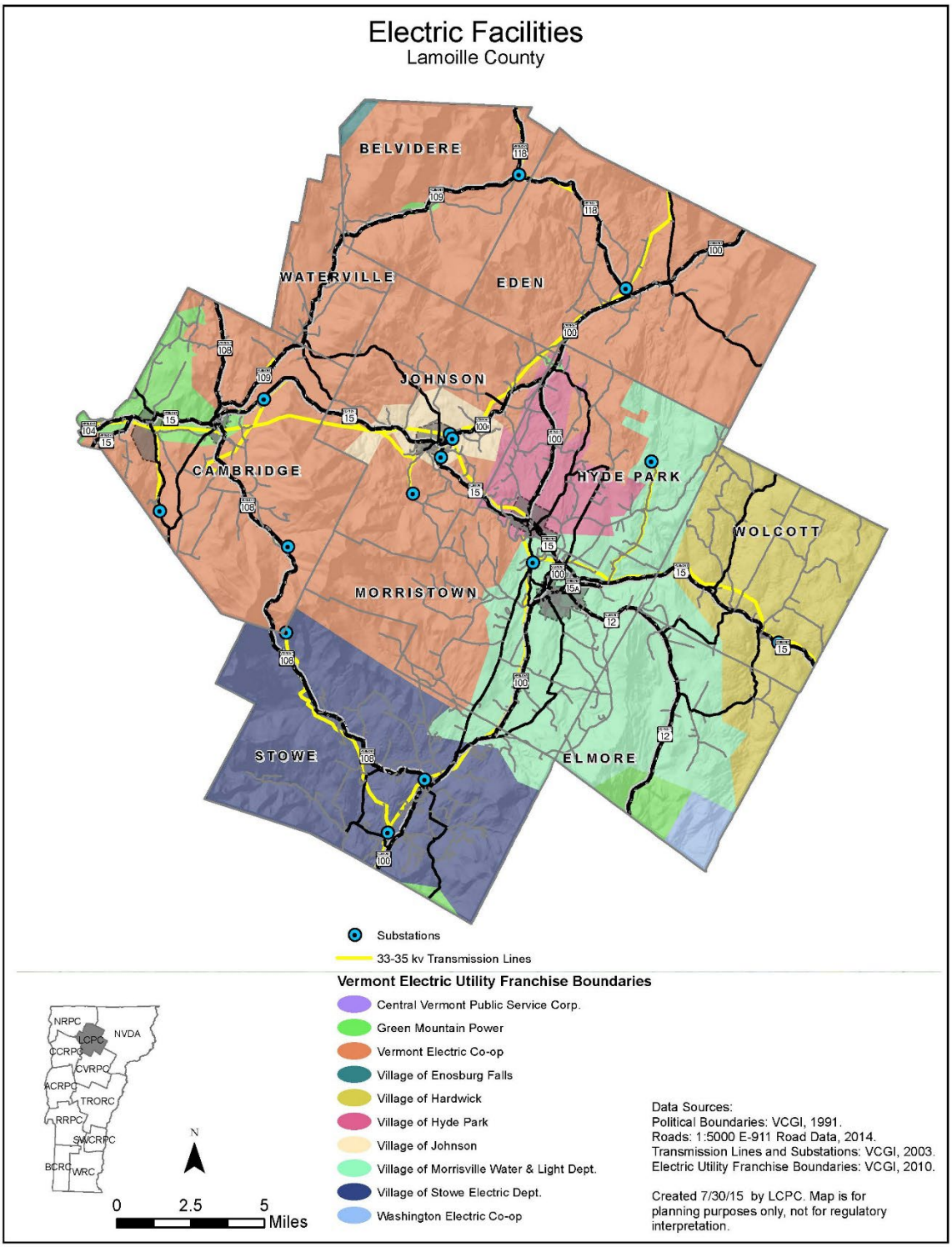
Regional Environmental Constraints
In addition to the state defined environmental constraints listed above, this plan identifies several regional constraints. The regional constraints are: Additional High Priority Forest Blocks, and Zone 1, 2 and 3 public water drinking sources Source Protection Areas.

Zone 1 Source Protection Areas, defined as a 200-foot radius around the public water source, represent an environmental constraint that signals likely, though not absolute unsuitability for renewable energy development. As such these areas shall be treated as areas likely unsuitable for renewable energy development.

Additional High Priority Forest Blocks and Zones 2 and 3 Source protection areas represent environmental constraints that may pose a barrier to the development of renewable generation. As such, these areas shall be treated as areas potentially suitable for renewable energy development.

DRAFT

The regional constraints are shown on the Regional Considerations Map. The regional constraints were not incorporated into the acreage estimates for prime and secondary solar and wind potential.



Forest Area with Biomass Potential
Lamoille County, VT

This map illustrates potential for energy development but not necessarily suitability

EDEN
BELVIDERE
JOHNSON
HYDE PARK
WOLCOTT
MORRISTOWN
STOWE
CAMBRIDGE
ELMORE

- Forest Area with Biomass Potential
- Streams
- Waterbody
- Town Boundary
- Potential Sites: Combined Heat and Power
- State Highway
- Class 2 Road
- Class 3 Road
- Class 4 Road
- Private Road
- Legal Trail

This map shows areas of potential for woody biomass harvest and potential locations for combined heat and power facilities fed by woody biomass. The map also illustrates conditions that may limit the feasibility of extensive harvesting of wood for energy use. These conditions are referred to as constraints. Physical features that make extensive harvesting infeasible include: FEMA floodways, River Corridors, Class 1 and 2 Wetlands, Vernal Pools, State-significant Natural Communities, Rare, Threatened, and Endangered Species, and Wilderness Areas.

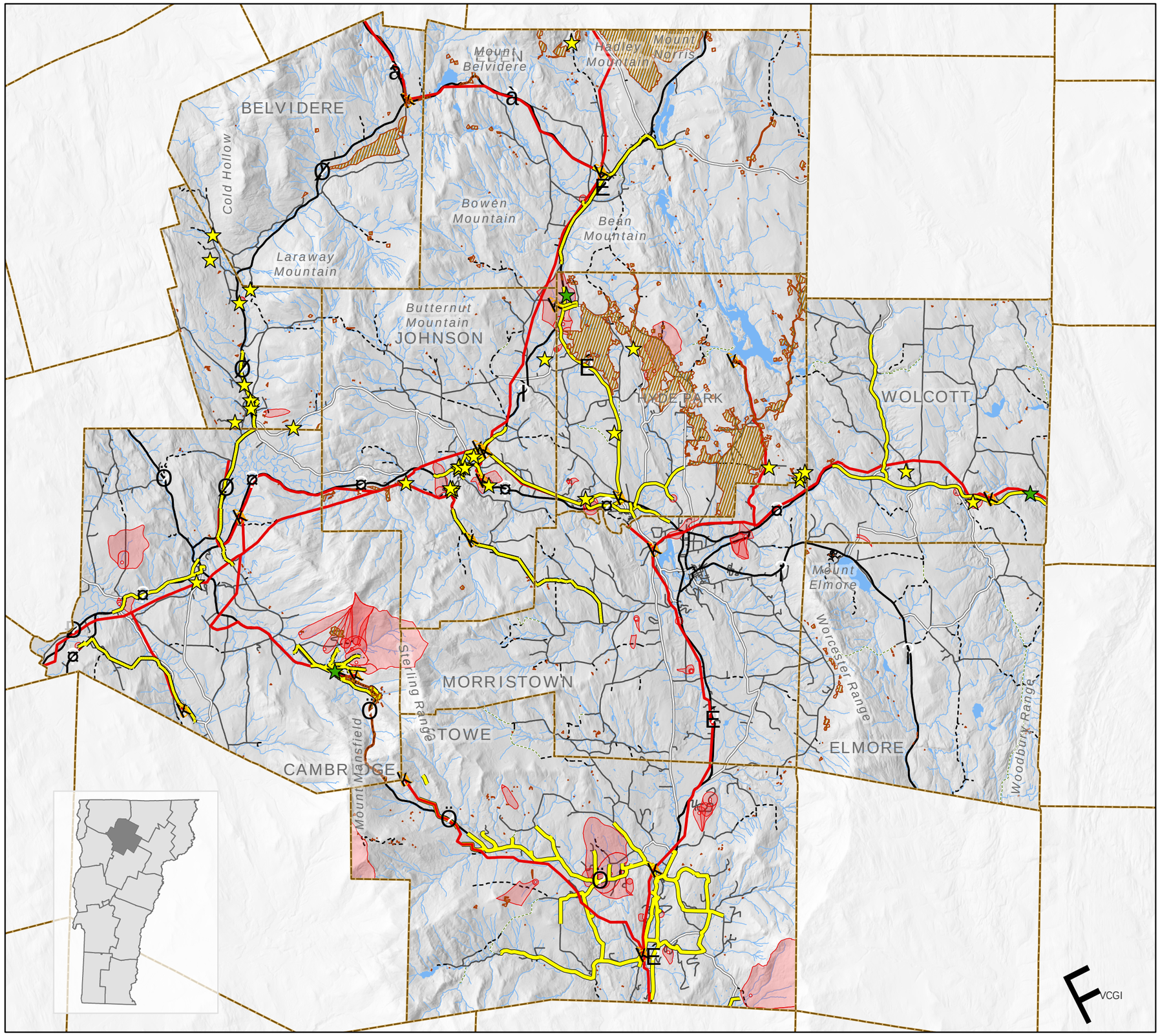
Data has not been field verified and is subject to change. Use for planning purposes only.

DATA SOURCES:
VT POTENTIAL WOODY BIOMASS AREA: VCGI, 2020
POTENTIAL SITES: COMBINED HEAT AND POWER:
LCPC, 2022
POLITICAL BOUNDARIES: 1:24000 USGS Quadrangles, VCGI, 1991.
ROADS: 1:5000 VTrans Road Data, 2021.
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Map created by LCPC, 2022

0 10 **Miles**

Lamoille County
Renewable Energy Potential:
Regional Considerations



Sites identified in Municipalities energy plans as preferred for certain types of energy generation

- Combined heat and power generation
- Solar

Other Regional Considerations

- Ground Water Source Protection Areas: Zones 1, 2 and 3
- Additional High Priority Forest Blocks

Energy Infrastructure

- Substations
- 3 Phase Power Lines
- Transmission Lines

3 Phase power line data for areas served by Morrisville Water and Light was not available.

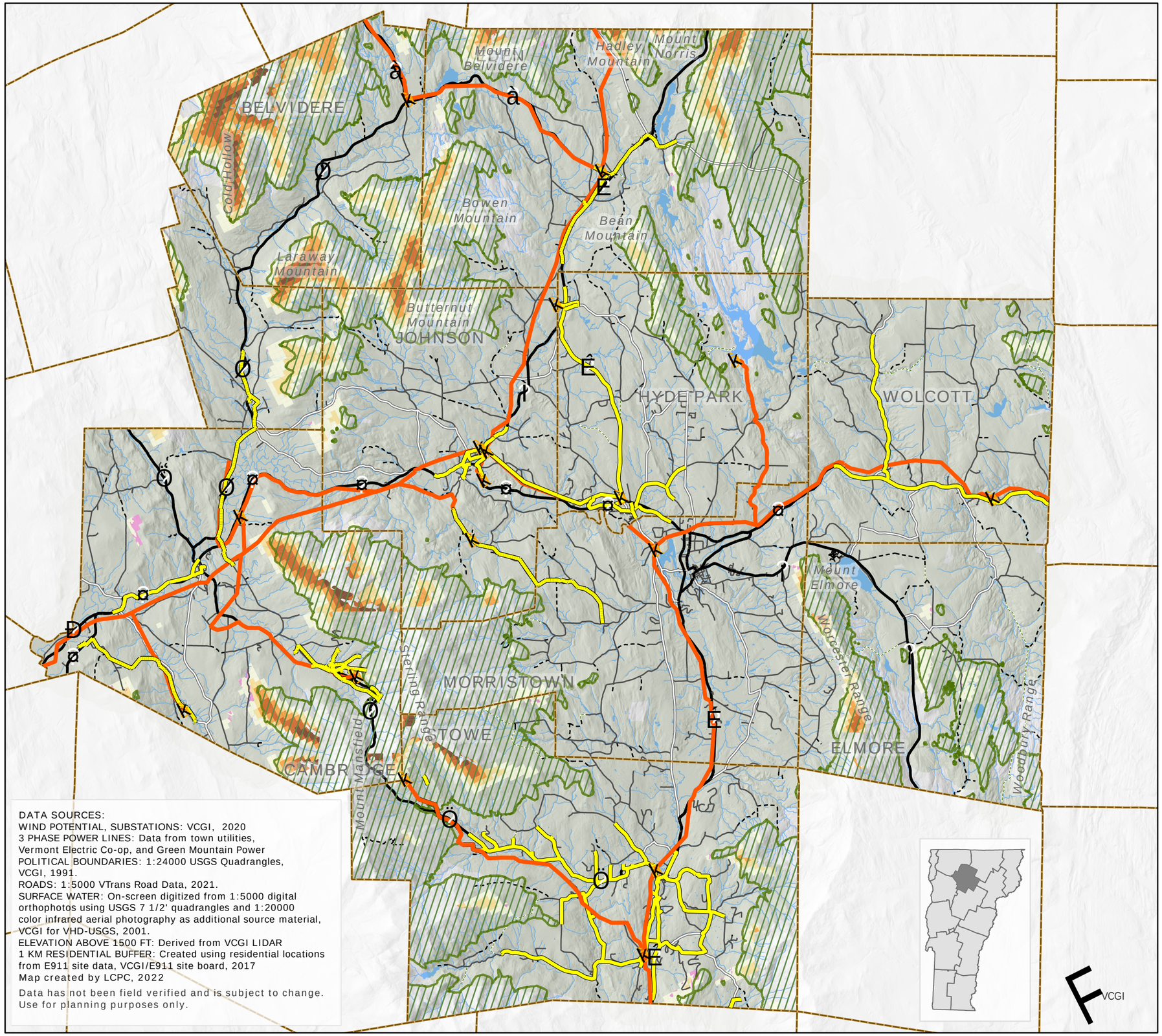
- Streams
- Waterbodies
- Town Boundary
- State Highway
- Class 2 Road
- Class 3 Road
- Class 4 Road
- Private Road
- Legal Trail

DATA SOURCES:
GROUNDWATER SOURCE PROTECTION AREAS: VCGI, 2017
ADDITIONAL HIGH PRIORITY FOREST BLOCKS: Working Forest Lands not within in High Priority Interior Forest Blocks, VCGI, 207
SUBSTATIONS: VCGI, 2017
3 PHASE POWER LINES: Data from town utilities, Vermont Electric Co-op, and Green Mountain Power
POLITICAL BOUNDARIES: 1:24000 USGS Quadrangles, VCGI, 1991.
ROADS: 1:5000 VTrans Road Data, 2021.
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.
Map created by LCPC, 2022

0 10 Miles

Lamoille County
Renewable Energy Potential: WIND

This map illustrates potential for energy development but not necessarily suitability



Wind Energy Potential

Prime Wind

Secondary Wind

Wind potential at 50 and 70 meter hub heights has been mapped.
Wind generation with smaller hub heights may be possible at lower elevations.

Energy Infrastructure

Substations

Transmission Lines

3 Phase Power Lines

3 Phase power line data for areas served by Morrisville Water and Light was not available.

Elevation above 1500 feet

1 km Residential Buffer

Streams

Waterbodies

Town Boundary

State Highway

Class 2 Road

Class 3 Road

Class 4 Road

Private Road

Legal Trail

Methodology

This map shows areas of resource potential for renewable energy generation from wind, i.e. locations where renewable energy generation would likely be most feasible according to the natural conditions of an area. This map also considers various other conditions, such as ecological zones, that may impact the feasibility of renewable energy development. These conditions are referred to as constraints.

Prime wind

Areas with high wind potential and no environmental constraints.

Secondary wind

Areas with high wind potential and environmental constraints that may pose an obstacle to development. These areas are shown on the map and include the following constraints:

Agricultural soils (local, prime and statewide classifications), FEMA special flood hazard areas, Protected lands, Act 250 agricultural soil mitigation areas, Hydric soils, Deer wintering yards, Highest priority forest blocks

Areas where wind energy is likely unsuitable

Areas with low wind potential or environmental constraints likely to prohibit development. These areas have been removed and are not shown in any way on this map. Environmental constraints are:

FEMA floodways, River Corridors,Federal Wilderness Areas, Natural Community Areas, Vernal Pools, Areas with Rare, Threatened and Endangered Species, and Class 1 and 2 Wetlands

Regionally Significant Ridgelines

Regionally Significant Ridgelines as listed in Regional Plan. They include: Belvidere Mountain, Butternut Mountain, Mount Elmore, The Mount Mansfield Range, The Sterling Range, The Woodbury Range and The Worcester Range

Municipal Ridgelines Unsuitable for Energy Development

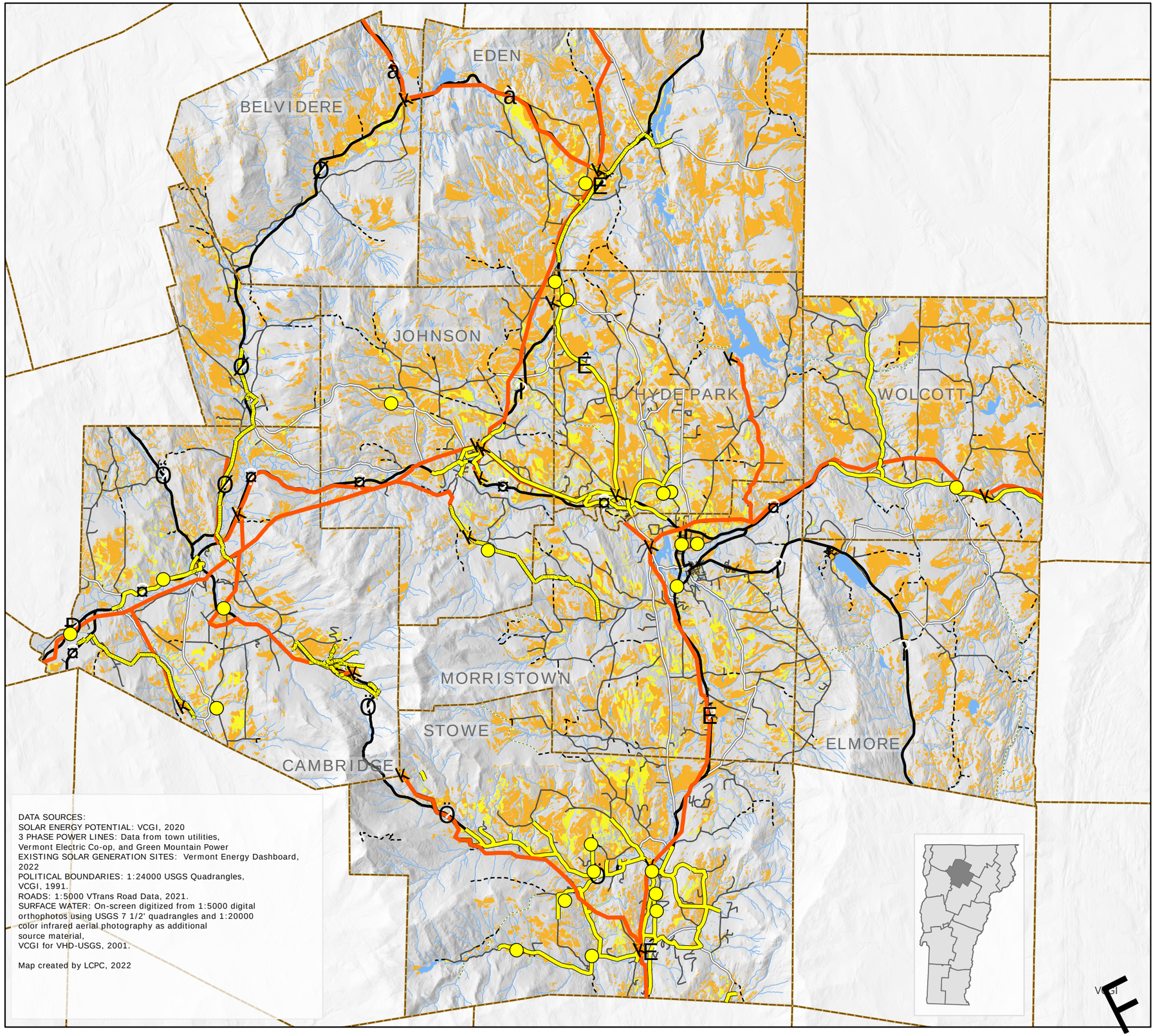
Towns of Eden, Belvidere and Waterville identified specific ridgelines or peaks as unsuitable for utility-scale wind development: :

Cold Hollow Mountain Range, Laraway Mountain, Bean Mountain, Bowen Mountain, Hadley Mountain and Mount Norris.

0 10 Miles

Lamoille County
Renewable Energy Potential: Solar

This map illustrates potential for energy development but not necessarily suitability



Solar Energy Potential

- Secondary Solar
- Prime Solar

Existing Solar Energy Generation Sites

- Solar Energy Generation Sites

Solar generation sites with >15kw capacity are shown.
Sites of all sizes are mapped at http://www.vtenergydashboard.org/

Energy Infrastructure

- Substations
- 3 Phase Power Lines
- Transmission Lines

3 Phase power line data for areas served by Morrisville Water and Light was not available.

- Streams
- Waterbodies
- Town Boundary
- State Highway
- Class 2 Road
- Class 3 Road
- Class 4 Road
- Private Road
- Legal Trail

Methodology

This map shows areas of resource potential for renewable energy generation from solar, i.e. locations where renewable energy generation would likely be most feasible according to the natural conditions of an area. This map also considers various other conditions, such as ecological zones, that may impact the feasibility of renewable energy development. These conditions are referred to as constraints.

Prime Solar

Areas with high solar potential and no environmental constraints.

Secondary Solar

Areas with high solar potential and environmental constraints that may pose an obstacle to development. These areas are shown on the map and include the following constraints:

- Agricultural soils (local, prime and statewide classifications)
- FEMA special flood hazard areas
- Protected lands
- Act 250 agricultural soil mitigation areas
- Deer wintering yards
- Highest priority forest blocks
- Hydric soils

Areas where solar energy is likely unsuitable

Areas with low solar potential or environmental constraints likely to prohibit development. These areas have been removed and are not shown in any way on this map. Environmental constraints are:

- FEMA floodways
- River corridors
- Federal wilderness areas
- Natural Communities and Rare, Threatened and Endangered Species
- Vernal pools
- Wetlands class 1 and 2

0 10 **Miles**

DATA SOURCES:
SOLAR ENERGY POTENTIAL: VCGI, 2020
3 PHASE POWER LINES: Data from town utilities, Vermont Electric Co-op, and Green Mountain Power
EXISTING SOLAR GENERATION SITES: Vermont Energy Dashboard, 2022
POLITICAL BOUNDARIES: 1:24000 USGS Quadrangles, VCGI, 1991.
ROADS: 1:5000 VTrans Road Data, 2021.
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.

Map created by LCPC, 2022

Lamoille County
Renewable Energy Potential: Hydroelectric

This map illustrates potential for energy development but not necessarily suitability

EDEN
BELVIDERE
JOHNSON
HYDE PARK
WOLCOTT
MORRISTOWN
STOWE
CAMBRIDGE
ELMORE

Hydroelectric Facilities

Operational Facilities

Potential sites

- <50 kW Capacity
- >50 kW Capacity

Energy Infrastructure

- Substations
- 3 Phase Power Lines
- Transmission Lines

3 Phase power line data for areas served by Morrisville Water and Light was not available.

Hydroelectric Likely Unsuitable

Areas with low hydroelectric potential or environmental constraints have been removed and are not shown in any way on this map.

- Streams
- Waterbodies
- Town Boundary
- State Highway
- Class 2 Road
- Class 3 Road
- Class 4 Road
- Private Road
- Legal Trail

Methodology

This map shows areas of resource potential for renewable energy generation from hydroelectric, i.e. dams that could be converted into hydroelectric facilities as well as active hydroelectric sites. Existing hydroelectric dam information was extracted from the Vermont Dam Inventory, while potential hydroelectric sites were derived from a study conducted by Community Hydro 2007. Based on estimates conducted within the report, this map categorizes dams based on their potential hydroelectric generation capacity, and the downstream hazard risk that would be involved in hydroelectric production at each site.

Data Sources:
POTENTIAL HYDROELECTRIC SITES: VCGI, 2020
SUBSTATIONS: VCGI, 2017
3 PHASE POWER LINES: Data from town utilities, Vermont Electric Co-op, and Green Mountain Power
POLITICAL BOUNDARIES: 1:24000 USGS Quadrangles, VCGI, 1991.
ROADS: 1:5000 VTrans Road Data, 2021.
SURFACE WATER: On-screen digitized from 1:5000 digital orthophotos using USGS 7 1/2' quadrangles and 1:20000 color infrared aerial photography as additional source material, VCGI for VHD-USGS, 2001.
Map created by LCPC, 2022

VCGI

0 10 Miles

Telecommunications and Broadband: Strategy

Today's society makes access to a variety of communications mechanisms an absolute necessity and one of the principle engines for growth. Lamoille County has made great progress with advanced telecommunications infrastructure, most significantly with wireline broadband, in the last five years and some improvements to cellular coverage. Significant gaps remain principally in cellular (aka wireless) coverage.

Visitors, businesses, residents, job seekers, community service and municipal organizations, especially emergency responders, rely on cellular phone coverage, high speed internet, and other forms of technology for day-to-day functions and services. Cellular coverage has improved since 2015 but is still limited in many locations due to limited service options in challenging terrains. And while significant investments by multiple wireline fiber providers have been made throughout the county, some of the most difficult – high costs-low revenue – locations remain. The Plan recognizes the critical importance of ubiquitous, reliable cellular and broadband coverage. The Plan also appreciates that attracting the capital and expertise to fill in the remaining gaps is not an easy task – especially given Lamoille's challenging topography and lack of density. That is why the Plan encourages substantial interlocal coordination and more public-private partnerships. These challenges are not insurmountable. To better position Lamoille County to attract visitors, retain residents, and build businesses, LCPC recommends focusing on completing the wireline infrastructure build out and prioritizing public and private investments in a cohesive and robust wireless network. With infrastructure in place, the Plan's additional initiatives to drive improvements in education, health, and commerce are more likely to succeed.

LCPC's objectives for Telecommunications infrastructure are:

Universal cellular coverage for all of Lamoille County. According to the Vermont Public Service Department, in 2020 71% of calls to E911 in Vermont were made from mobile wireless phones. Only 12% of Vermonters live in a landline-only household. The traditional landline is fading from memory in favor of multi-functional mobile devices. Four national carriers provide services in Vermont. Lamoille County's mountainous geography and dispersed population have made it difficult for ubiquitous coverage along state highways and local or private roads. For emergency services, business, and tourism to thrive here, reliable robust cellular service must be available to all areas. The need for universal cellular or wireline coverage will become more urgent as landline providers announce plans to retire their copper network, an effort that is well underway in many states. As technology changes and providers petition for regulatory approval to retire the landline networks, LCPC should follow the availability of legitimate alternatives. Understanding that technology is advancing faster than this plan, LCPC

DRAFT

should adopt a future plan for telecommunications, including tower siting, co-location potential, unserved areas, and a need assessment based on providers' future plans. Rather than wait for towers to proliferate across the hills, valleys, and open spaces of the county, or for the economy to lag, LCPC should be proactive in identifying high need locations and facilitating partnerships and permitting. LCPC may need to reach across county boundaries or work with state officials to encourage providers to fill in the remaining coverage areas.

Universal wireline broadband coverage, or future compatible Internet technology, for all of Lamoille County. More than 95% of Lamoille County is now served by at least one broadband provider, and multiple providers are expanding their fiber services and offering competitive multi-gigabit speeds. The state, nation, and world are moving toward a more technologically connected society, from how we are entertained, to filling out job applications, to conducting business, teleworking, telehealth, and paying taxes online. For Lamoille County to remain competitive and attractive, it must offer outstanding technological capabilities for all parts of the County. LCPC should support completion of universal broadband service to the remaining addresses – with either wireline broadband or a robust alternative. Complete wireline broadband coverage will also provide previously unavailable VoIP services which will provide alternatives to legacy landline services.

This plan recognizes that technology is evolving at a rapid pace; therefore, technology may outpace recommendations before this plan expires. LCPC will need to plan for these infrastructure components and whatever components are developed in the future, based on advice from experts familiar with the latest in information technology.

POLICIES & ACTION ITEMS

Policy*: All Lamoille County residents should have access to robust, reliable affordable broadband in order to enjoy the benefits provided by digital services*

Action Items:

- Ensure children and youth from rural areas and/or low income families are provided with the same digital opportunities as children and youth from urban areas and/or more affluent families.
- Promote the development of affordable pricing structures to facilitate broadband adoption by elderly and low income residents.
- Encourage community service partnerships in which tech literate individuals assist community members in overcoming tech learning curves.
- Work in coordination with regional partners, to provide targeted outreach to people who are hesitant to embrace technology.

DRAFT

- Through collaboration with multi-sector service providers, develop a public outreach campaign on the benefits of technology specifically geared towards "late adopters". Investigate the possibility of creating "Technology" focused committees to provide outreach to county residents who may lack the opportunity to become involved with various technology devices.

Policy: *Broadband (high speed) internet, and other forms of internet access, should be used to strengthen and grow Lamoille County's economy.*

Action Items:

- Promote the County's diverse assets, including its recreation and natural resource base, on the web, which may take the form of cooperative ventures between public and private parties.
- Encourage Lamoille County based businesses to increase their internet presence, such as assisting with the implementation of an online Lamoille County Directory, akin to the Lamoille County Phone Book.
- Promote the development of teleworking, home-based businesses, and remote offices.
- Evaluate the feasibility and safety of establishing "Tele-centers" , which are shared infrastructure hubs that house the required equipment for internet and phone service providers in Lamoille County
- Actively promote Lamoille County to large firms located in urban areas of the Northeast and Canada as a desirable place to locate a remote office.
- Work with workforce development agencies and human service providers to provide training in essential digital skills among the County's workforce. Ensure that efforts by various agencies are coordinated to minimize duplication of services.
- Assist municipalities with the creation of new or expand existing Wi-Fi hotspots for residents and visitors.
- Support Lamoille Fibernet and NEKCV Broadband Communications Union District's efforts to fund fiber infrastructure in Lamoille County.

Policy: *LCPC encourages efforts that assess and coordinate educational and employment needs for ensuring a highly skilled workforce that will meet the needs of local businesses and emerging technologies.*

Action Items:

- Work with schools, advanced educational institutions, LEDC, and other economic development agencies to identify workforce training needs to prepare youth for employment in fields requiring use of technology, including computer literacy, internet, information technology, and telecommunications.

DRAFT

Policy: *LCPC recognizes the potential benefits that broadband provides county residents and businesses, and will work to empower residents to take full advantage of these benefits.*

Action Items:

- Promote widespread understanding that broadband offers more than entertainment. Engage County residents to understand ways in which broadband can be used as a creative rather than consumptive tool.
- Utilize the potential financial benefits of broadband for businesses, non-profit organizations, government agencies, and individuals.
- Provide and promote training tailored to the specific needs of individual sectors. All sectors are under intense pressure to fulfill their "core" functions. To be successful, technology training should be incorporated into existing programs.
- Support computer and internet literacy training opportunities for adults in the region at libraries, colleges, technical centers, and other areas with public computers. Coordinate training efforts by different organizations and sectors to ensure efficient use of financial resources and personnel. Develop model best practices and curriculum for information literacy and disseminate to the appropriate organizations.

Policy: *This Plan recognizes that Broadband can reinforce, strengthen, and build community ties, and be used as a tool to actively bring communities together as well as passively move them apart. Broadband should be used as a tool to revitalize Lamoille County's rural villages and downtowns in order to reclaim their historic roles as centers of commercial and civic life, and to function as incubators for new businesses.*

Action Items:

- Encourage utilization of e-government tools to engage residents and improve the efficiency of government programs and services while continuing to use traditional means of communications to ensure that residents without broadband access are not disenfranchised or denied access to government records or services.
- Assist community anchors, such as libraries, schools, and community centers, to evolve their technology offerings to ensure the vitality of these institutions in the Digital Age, while preparing youth for a more technologically advanced society.
- Broadcast government hearings, public meetings, and other important public gatherings online.
- Develop mechanisms for residents who cannot physically attend meetings to participate remotely.
- Provide local governments and other public entities, upon request, with technical assistance on best practices for developing and maintaining a municipal website,

DRAFT

including issues such as ADA accessibility.
- Equip existing community anchors with the equipment, tools, and training necessary to serve as technology and communication hubs. When feasible, provide public access to these facilities.
- Implement tools and provide resources for public, high speed internet access in villages and downtowns. Such tools include, but are not limited to, development of public access Wi-Fi zones, establishment of tele-centers, or development of publicly accessible "internet cafes."
- Support the use of social media and online networking tools to increase community connections among residents, visitors, and local businesses.

Policy: *This Plan recognizes that although much of Lamoille County is rural and dispersed, communications should be accessible to all residents, through cellular phone service, broadband internet service, and traditional means such as newspapers, and broadcast radio or television.*

Action Items:
- Support the orderly transition from older, traditional media, such as the retirement of copper landline networks, to new forms of media, through community education and advocacy.
- For safety as much as convenience, Cellular service should be available along all state highways in the County.
- Print media and broadcast television are encouraged as communication tools to reach a wide audience, particularly those transitioning to online, digital media.
- Support investment in publicly available, free, telecommunication infrastructure in village centers, towns, and remote areas of the county.

Policy: ***Where possible,*** *telecommunication towers should co-locate antennas to avoid tower proliferation.*

Action Items:
- New and proposed replacement telecommunications facilities must be compatible with existing land uses.
- LCPC, municipal representatives, regional service providers, and developers should work together to plan for the enhancement and expansion of telecommunication infrastructure. Whenever possible, planners and permitting bodies should incentivize infrastructure owners and attachers to collaborate on forced relocates, new underground facilities, and pole replacements to minimize costs and disruption. (Dig once). As technology advances, adjust plans for telecommunication improvements accordingly.
- Review all proposed telecommunications and broadband projects to ensure compatibility with the policies contained within this Regional Plan.

DRAFT

Telecommunications and Broadband: Background and Inventory

Telecommunications are becoming increasingly more important in day-to-day functions for communication, business, education, and community relationships. Because of the growing need for and use of expanded telecommunications in Lamoille County, this section is added to draw needed attention to these facilities. This section consists of the following areas:

- Point Telecommunication Facilities (phone lines, cable lines, broadband, etc.)
- Mobile Telecommunication Facilities
- Newspapers
- Economic Development
- Communications and Disasters

Point to Point Telecommunication Facilities

Point telecommunication facilities (or point to point networks) are those that are designed to provide telecommunication services to a fixed point (your home or business). Currently, most Vermonters could potentially have up to three point facilities in their home – cable/satellite (for television), telephone lines, and wireless internet connection (if separate from telephone and television on a WISP network for instance). As mentioned above these point systems are consolidating so that it is now possible to have a single point telecommunication facility handling multiple roles – a cable line, internet, and phone (voice over internet protocol) simultaneously.

Phone lines

Consolidated Communications (from this point on referred to as "Consolidated") is the incumbent telephone company for the region, including central offices in Jeffersonville, Johnson, Morrisville, and Stowe. Small portions of Hardwick's and Craftsbury's central office codes also cover some small portions in Wolcott and Eden.

Consolidated's landline voice Service is regulated by the Public Service Board through an Alternative Regulation Plan which runs for five year increments before being renewed. Phone lines can also provide internet service over "dial up" or broadband speeds via DSL. DSL is limited to locations with certain types of phone lines and having distances within 3 miles of an office or, with newer technology, five miles or further depending on technology. DSL is available in most, but not all, communities in Lamoille County.

Lamoille County has multiple fiber network providers that deliver digital voice services and high speed internet services. With the help from federal grants, the county should have universal fiber coverage by 2028

DRAFT

By contrast, there is little to no DSL service available in Belvidere and Elmore. Download speeds are generally slower than cable broadband (approximately 3-7 Mbps) and service is distance sensitive, meaning speeds are slower at more remote locations. Residential DSL service can be purchased for around $35-$45 per month.

Available virtually anywhere there is telephone infrastructure, dial-up internet is widely used in rural areas of Vermont. Unfortunately, download speeds are insufficient (maximum of 56 Kbps) for streaming media and large file downloads. While dial-up is undesirable for most businesses, it may be possible or viable for casual internet users looking for a low-cost alternative to broadband, with prices starting around $50-60 per month.

Broadcast Television

Once available in analog, over-the-air broadcast television is now transmitted digitally. "Broadcasting" is the transmission of information through a signal. Most digital transmissions require a compatibility system, replacing the traditional antennas that previously accessed signals through the airwaves. Most Vermonters receive their "broadcast" channels through a subscription service, such as cable or satellite television. Cable companies are authorized by the Vermont Public Utility Commission to serve specific municipalities with certain conditions set forth in a Certificate of Public Good, in this context also known as a Cable franchise. Towns and villages can petition the PUC for changes to the CPG-franchise agreement when they expire. Changes could include adding public access channels or expanding service to new areas. Most municipalities have access to cable lines. Without access to a cable line or satellite, it has been difficult for many televisions to receive a signal. But now with an ever increasing broadband footprint, streaming services offer competing entertainment and news. Local broadcasters are available on many streaming services; local PEG channels may only be available through cable service or YouTube

Wireless ISP

In rural locations Wireless ISP broadband (WISP) is being marketed to homes and businesses because it is cheaper than the cost of running cable or other high speed lines. In these situations, each subscriber to the system would have a static antenna that would link to other antennas to provide the wireless network. The fixed antenna makes the system a point-system. This type of system is currently available in many places throughout Lamoille County.

For up-to-date tracking of Lamoille County's access to fiber internet you can see how many addresses are Served, Funded, Underserved and Unserved via the BEAD Final Project Area Eligibility webpage.

DRAFT

Wireline Broadband coverage

Lamoille County is a in a great position with more than 97% of addresses served by one of more broadband provider. Most Lamoille County residents and businesses in Lamoille's larger towns or village centers may have multiple options to receive broadband internet service, many constituents have only one. Cable broadband is widely available in Cambridge, Elmore, Hyde Park, Johnson, Morristown, and Stowe. Lamoille County providers such as Stowe Communications and Comcast (Xfinity) have invested private capital in extensive upgrades and now offer at least 100/20 and in many areas symmetrical gigabit fiber services. Cable broadband is generally available for about $30 a month.

Lamoille also has multiple fiber internet providers – Mansfield Community Fiber, Consolidated's Fidium Fiber, Stowe Communications, and soon in Wolcott, NEKCV CUD. Consolidated partnered with Lamoille Fibernet CUD to bring fiber services to more than 4,800 un- or underserved homes in 2024, including all of on-grid addresses in Belvidere, Waterville Eden and Johnson. Consolidated also made incremental investments in Cambridge, Johnson, Morristown and Stowe. Consoildated's Fidium service currently providers up to 2 gigabit symmetrical, and has future capacity for up to 10 gigabit.

Lamoille County has multiple carrier grade ethernet providers who are providing high capacity services to large institutional users and businesses such as hospitals and colleges. Consolidated Communications has also invested in Carriergrade Ethernet Services equipment at some locations (such as Jeffersonville). The installation allows data communications to be delivered across the internet to local businesses at speeds of 1 Mbps to 1 Gbps with products such as E-LAN (Ethernet Local Area Network), E- Line (Ethernet Point-to-Point) and E-DIA (Ethernet Dedicated Internet Access). The availability of Carrier Ethernet represents an opportunity to increase local business communication avenues and diversify the local employment base. It is important to note that many satellite or data plans have limits on how much data can be downloaded, uploaded, and used within a certain time period.

Satellite Internet

A higher speed alternative to dial-up service, satellite internet is generally more expensive (upwards of $50 per month) , with service also subject to interruption during rainstorms. However, new satellite providers have come to the forefront to offer competitive speeds when compared to DSL/broadband. Satellite coverage is nearly ubiquitous, it remains an attractive option in rural and outlying areas of the state, but it has a drawback in price and data transmission.

DRAFT

Mobile Telecommunication Facilities

As of the drafting of this plan, mobile communications are still divided into two categories − cellular and Personal Communications Service (PCS). A new emerging semi-mobile facility is that of Local Area Networks (more commonly known as "Wi-Fi" hotspots) but has limited application in terms of the distance range of wireless users.

While telecommunications and broadband technology in Lamoille County have improved in recent years, there are still significant "drop zones" on several highway corridors, including Route 15 in Cambridge, Johnson, and Wolcott, Route 12 in Elmore, Route 108 in Cambridge and Waterville, Route 109 in Belvidere, Route 118 in Eden, and Route 100 in Eden (see broadband and cellular coverage maps at the end of the chapter).

Cellular phone service

Cellular service is defined as a subset of personal wireless service (PWS) employing modulation based on a spectrum of megahertz, which changes quickly with technological advances. Cellular data's advantage is the greater range for communication, but it uses a narrower bandwidth (carries less data). Currently, cellular coverage in Lamoille County is provided by three main service providers, Verizon, AT&T, and T-Mobile. VTel now provides cellular coverage in portions of most Lamoille County Towns. See cellular service maps by carrier at the end of this chapter. A new technology that could prove to be an optimal choice for providing cellular data service to residents is 5G technology. The increased bandwidth and download/upload speeds make it viable for home use.

Wi-Fi Hotspots

Providing Wireless Internet (or "Wi-Fi") hotspots was a primary goal of the 2004 Vermont Telecommunications Plan. "Wi-Fi" hotspots are places where a computer or mobile phone user can access the internet wirelessly (sometimes for a fee and sometimes free). In the same way that PCS carries more information at the expense of coverage compared to cellular, Wi-Fi carries more information than PCS but with a significant loss of coverage. While Wi-Fi can carry voice (in the form of voice over internet protocol) it is generally used to send information. The State Telecommunications Plan set an ambitious goal of having 100% Wi-Fi coverage in downtowns and resorts by 2010 so that residents and visitors can access the internet and email while on vacation or on the road. 2014 updates to that Plan called for increasing the upload and download speeds statewide. Work is still underway to accomplish this goal.

Some municipalities have invested in or worked to provide Wi-Fi zones in village areas, including Cambridge, Jeffersonville, Johnson, and Morrisville. The development of public access Wi-Fi districts in core areas holds great potential for attracting new

DRAFT

residents and businesses. A public Wi-Fi district could also help to attract visitors and tourists to villages as they would be able to access the internet while on the road. Belvidere, Elmore, and Wolcott are the most recent towns to install public Wi-Fi hotspots for visitors and residents. There is one hotpot in the Belvidere Central School and two in Wolcott at the town office and town hall. These are invaluable assets to each community and have proven a necessity in part due to Covid-19. Please click here for a map displaying public WIFI hotspots throughout Vermont.

Radio and Emergency Service Communications
Emergency service communications operate in the UHF bandwidth (460 MHz) and VHF bandwidths (150 MHz). The State is exploring options for changing the emergency response network to a radio-based network depending on the system. Other wireless communications may exist in these bandwidths including pager services (VHF) and other businesses with dispatch systems like buses and delivery companies. HAM radio operates with repeaters in these ranges as well as at High-Frequency (HF) bands. Internet-based dispatch is also used as a form of communication, although not all towns have this service available,

One important consideration to any discussion of mobile telecommunication facilities is that of towers. In the past, towers for radio and television were hundreds of feet tall (thousands of feet tall in the west and mid-west of the US). Today towers rarely exceed 120 feet except for radio towers. Cellular companies have resorted to placing antennas on farm silos, barns, church steeples, flag poles, or anything sufficiently off the ground. The cost of taller structures does not generally provide a large improvement in coverage.

Newsmedia
Lamoille County residents have access to the following local newspapers: *News & Citizen*, *The Transcript*, *The Mountain Gazette, The Hardwick Gazette*, and the *Stowe Reporter*. The *News & Citizen* is published in Stowe and issued to Lamoille County towns and villages every Thursday. The *News and Citizen* is no longer delivered, but can be picked up at select drop off locations free of charge. LCPC and member municipalities often utilize these papers to warn the public regarding official notices and public hearings. The *Stowe Reporter* reports on happenings in the region although highlights primarily events and news within the town of Stowe. *The Mountain Gazette* reports primarily on the towns of Cambridge, Westford, Underhill, and Jericho. While focused primarily on the Hardwick region, the *Hardwick Gazette* offers significant weekly coverage of Wolcott. The closest paper with a daily circulation, upon request, is the *Burlington Free Press*. The *Free Press* provides limited coverage to events in Lamoille County. Residents also have access to several other news publications, including *Seven Days.* These news publications have the possibility of going all digital once the

DRAFT

broadband infrastructure is in place for all communities. Currently *The Hardwick Gazette* is an online only publication.

Communications and Economic Development

High-speed internet is a vital tool for home-based businesses, telecommuters, the cottage software and web development industries, the creative economy, high value-added professions or technical services careers, and even manufacturers, who increasingly rely on broadband for product specifications and advertising. Further, access to high-speed internet is pivotal to informational and transactional resources commonplace in any business in the 21st century. Access to reliable, affordable Internet service providers could be an important piece for growing the economic base and the sense of community throughout Lamoille County . Social media can be a powerful tool for connecting individuals to one another. If initiatives to bring high-speed internet access are successful, they could represent an economic boon to towns and villages. The lack of broadband availability in many Lamoille County communities represents a divide between municipalities and the full capacity of the Internet to support access to information, e-commerce, and educational resources.

Roughly 15.6% of Lamoille County residents are employed in high value-added professional, scientific, and technical services careers. This sector includes architects, engineers, graphic designers, lawyers, veterinarians, and accountants, to name a few. This sector is highly concentrated in Stowe and Morrisville but is not exclusive to those communities. Numerous small businesses are included in this sector, about 966, with a majority of those employing less than 5 employees each.

For those working in the "creative economy" (see Section 5), access to high-speed internet is essential. With the advent of online marketplaces and accessibility of personal websites, those in the creative economy, or artisans looking to supplement their primary income, rely on high-speed internet to conduct business.

Macro-Economic Trend: Technological innovation is advancing rapidly.

Technological innovation is making the labor force more productive and changing the way goods and services are transacted, allowing both the work force labor and investment dollars to make more with less. Encouraging continued growth in productivity (including new investment and a focus on work force preparedness) is key to the regional economy's ability to compete. This will challenge the companies in the region to continuously improve the ability to apply knowledge and technology to the production process better than its competitors.

Example: Universal access to broadband internet is critical for new and established businesses. Internet access will increase online sales transactions, allow workers to telecommute, and

DRAFT

increase marketability of products produced in Lamoille County. Efforts to improve workforce development and skill development are taking root in the school system by training students to use computers and computer programs, exposure to computers, tablets, videos, and other media, and strengthening courses in the sciences.

Communications and Disasters

Maintaining effective communications is essential during all phases of a disaster. At the height of a disaster, such as a major flood, fire, or medical emergency, response personnel require access to communications technology to coordinate the response. For example, access to telecommunication services and internet access played a vital role in ensuring ongoing operations of local businesses and emergency services during the COVID Pandemic. It is important to ensure that radio and telecommunications equipment used by emergency personnel, local businesses, and residents is not located in an area where it is vulnerable to flooding. For this reason, telecommunications equipment serving public buildings and/or emergency response facilities should be elevated out of base flood elevations.

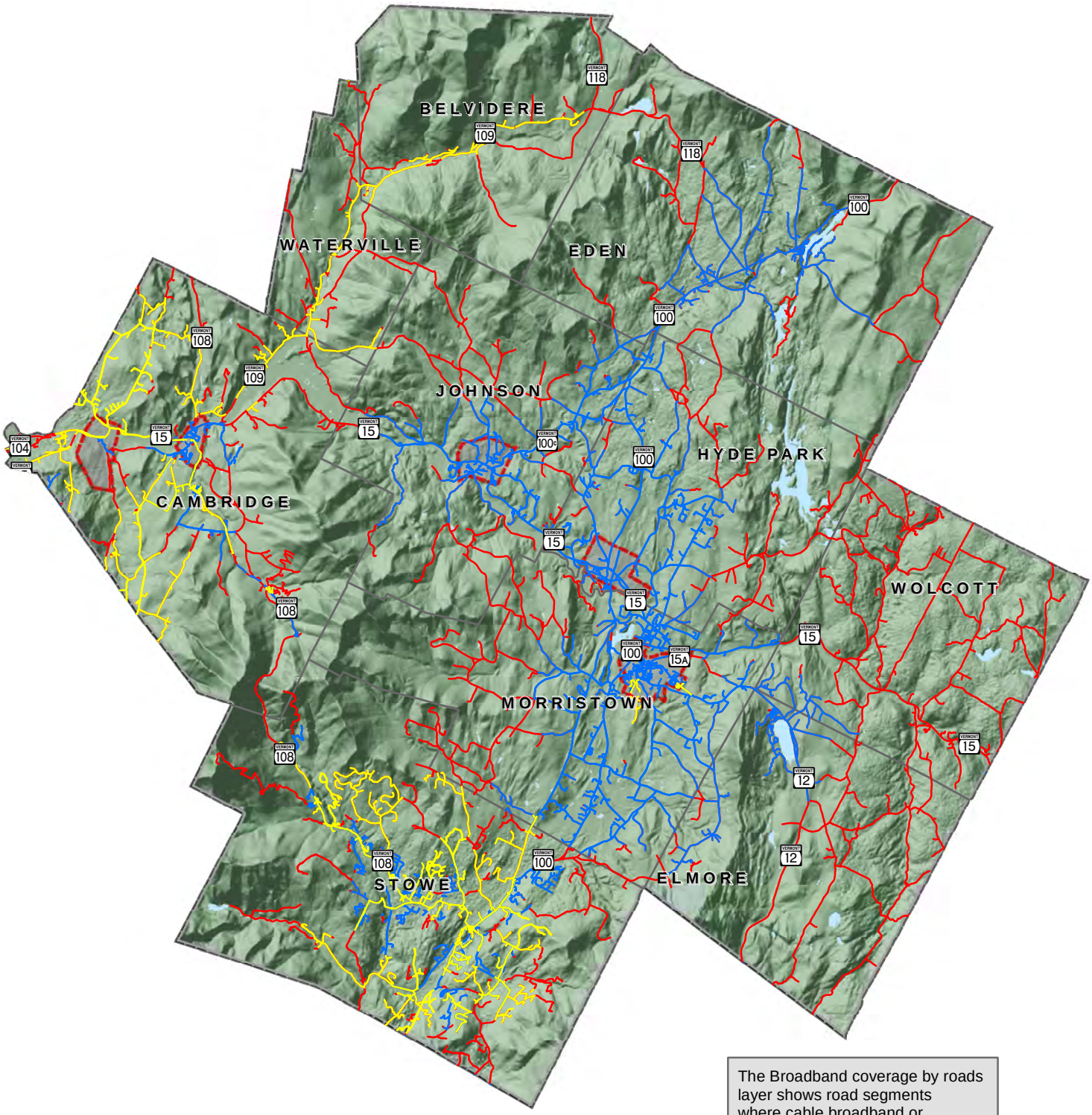
Flooding can also threaten telecommunications infrastructure itself. Utility poles located in hazard areas may be susceptible to both erosion and inundation hazards. For example, several utility poles located near the Brewster River in Jeffersonville, West Branch of the Little River in Stowe, and along the Wild Branch in Wolcott are in jeopardy due to erosion. Loss of this infrastructure could compound the effects of a flooding disaster.

Telecommunications infrastructure can also assist a community in preparing for a flood. For example, river gauges provide advanced warning, allowing responders to mobilize and residents to secure themselves or evacuate. Emergency responders across the county are working to develop simple advanced warning systems to notify residents of impending flooding via email or text message. Utilizing the State of Vermont's VTAlert system, anyone can sign-up to receive real-time alerts of impending emergencies via landline, cellular phone, text message, email, and pager. The system allows users to sign-up for notices about localized hazardous weather events, statewide hazardous weather events, or select from a menu of specific events (e.g. frost advisory, hot weather temperature warning, flash flooding watches and warnings, etc.). VTAlert can be used at the state level, regionally, locally, or through locally defined communities, such as emergency responders or all residents living on Main Street. The system is free and trainings are provided by the Division of Emergency Management.

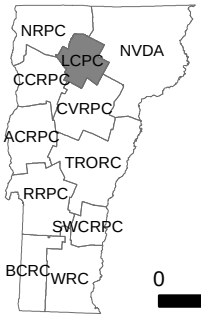
For further information on broadband in Lamoille County, visit the Vermont Public Service Department website or connect with your local Communications Union District. See CUD member town maps below.

DRAFT

Broadband Coverage on Lamoille Roads



The Broadband coverage by roads layer shows road segments where cable broadband or fiber broadband is available. Roads that show up as "No cable or fiber" may still have DSL internet in their location.



N

0 2.25 4.5 Miles

Legend

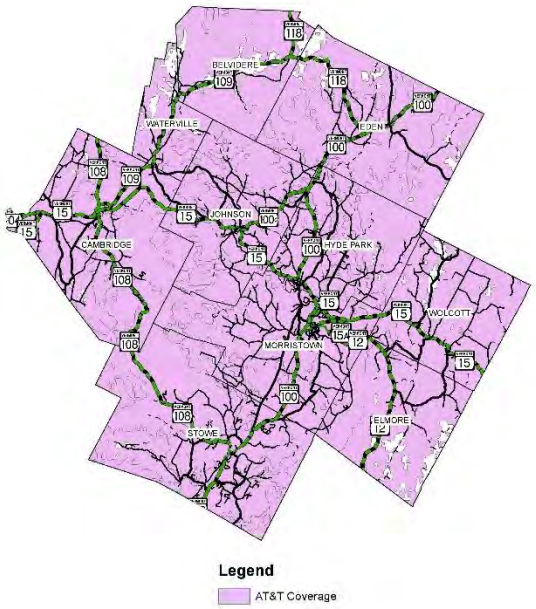
- Cable
- Fiber
- No Cable or Fiber

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Broadband: VCGI, 2024

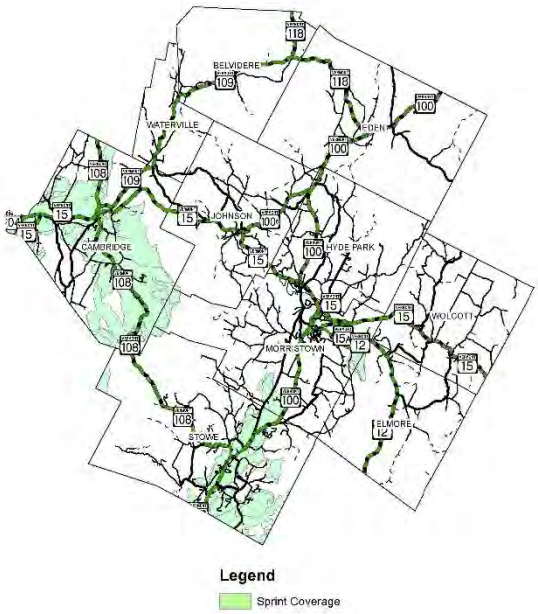
Created 8/8/22 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Mobile Service Provider Service Areas in Lamoille County

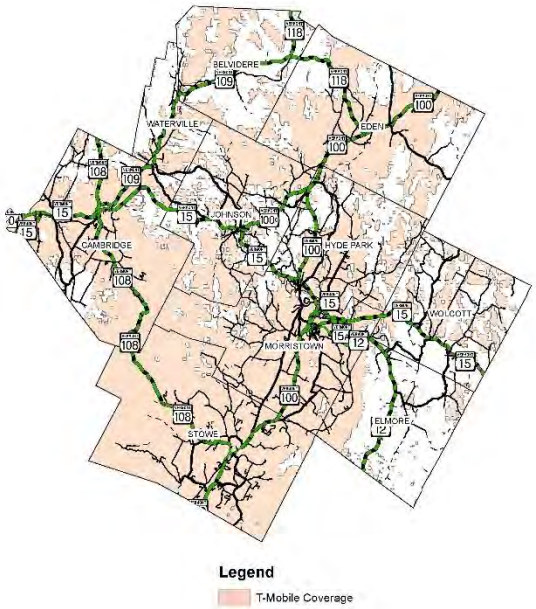
AT&T Coverage in Lamoille County



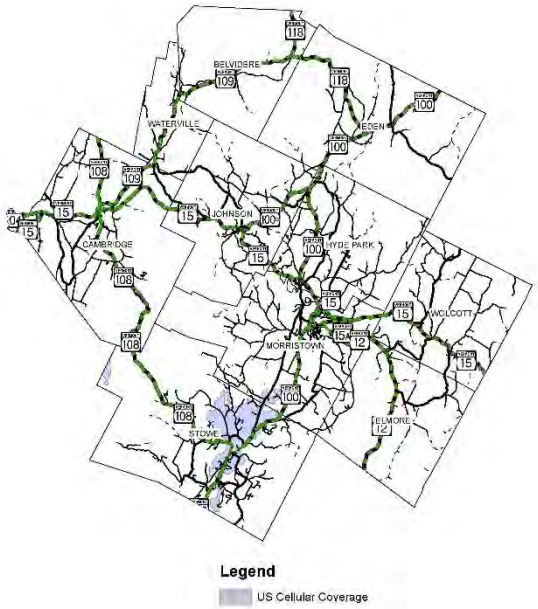
Sprint Coverage in Lamoille County



T-Mobile Coverage in Lamoille County



US Cellular Coverage in Lamoille County



Verizon Coverage in Lamoille County

Legend

Verizon Coverage

VTel Coverage in Lamoille County

Legend

VTel Coverage

Land Use: Strategy

Land use provides the framework for which many decisions are made related to growth, development, and conservation. Land use is shaped by many factors, including natural constraints such as soils and topography, flooding and other hazards, economic forces, and decisions related to transportation, infrastructure, and community facilities and services. Existing land uses in Lamoille County are the result of historic settlement patterns. The policies in this section are derived from a comprehensive review of the land use policies of Lamoille County's fifteen municipalities and the State planning goals defined by the Vermont Legislature. The intent of this Regional Plan is to support and supplement, rather than supersede, goals and policies regarding land use development at the municipal level, while ensuring that decisions in one municipality are cognizant and address impacts on other municipalities and regional resources and infrastructure.

The following Regional Plan Objectives pertaining to the Future Land Use Map and Planning Areas are expanded upon below to provide context in how they may influence future growth. Additional Regional Plan Objectives are highlighted in the Vision Statement section of the Regional Plan. When the Lamoille County Regional Plan refers to "Center Areas" it is used as a catch all phrase to describe the following Future Land Use Map Areas:

-Downtown Centers
-Village Centers
-Village Areas
-Planned Growth Areas
-Transition Infill Areas

To guide growth into and near Center Areas and Enterprise Areas outside the floodplain: *:* Centers may include new and existing settlements and range in size from small settlements such as North Wolcott and Belvidere Center to the region's most populus urban area of Morrisville. Centers can be as small as a country store, a post office, school or church, and a cluster of homes. As used in this Regional Plan, the term "Center Areas" refers broadly to Downtown Centers, Village Centers, Village Areas, Planned Growth Areas, and Transition Areas identified on the Future Land Use Map. Growth is most likely where there is adequate infrastructure to support it. Infrastructure upgrades and

DRAFT

modernization will be critical to achieving this objective. Many of Lamoille County's existing Downtown Centers and Village Centers are located in or near floodplains and/or other high-risk areas. Due to these risks, the Regional Plan includes Transition/Infill Areas in the broad description of Centers to facilitate investment in infrastructure and land use policies needed to facilitate development in safer areas less at risk to flooding.

To protect the region's natural and working landscapes: In recognition of the infrastructure limitations of many Centers, as well as the personal desires of many Lamoille County residents, it is likely that development will continue in rural areas of the County. As used in this Regional Plan, the term, "Rural and Working Lands" refers broadly to the Rural General and Rural Working Lands/Agriculture and Forestry Areas identified on the Future Land Use Map. Rural and Working Lands Areas also include many of the region's recreational resources and agricultural/forestry-based activities. Rural enterprises, small businesses, agriculture and forestry and supportive activities, and rural residential subdivisions are all expected to continue in these areas. Development in rural and working lands areas should be managed for efficient use of land including clustering housing/development to protect open space and the working landscape, sharing facilities such as sewer, water, and roads, and avoiding areas not suitable for development.

To guide growth that promotes sustainability of the region's natural systems and valuable agricultural and forestry resources*:* As discussed elsewhere in this Plan, Lamoille County's natural environment and diverse agricultural and silvicultural resources are among the assets that distinguish the region from other areas of the country and neighboring regions of Vermont. Protection of these resources will likely take a variety of forms – from stewardship by private landowners, to purchase of easements by conservation organizations, to fee simple ownership by municipal or State entities. In light of limited public resources, public conservation funds and mitigation efforts should be targeted toward those areas that best support the goals of local and regional plans.

Regional Plan Future Land Use Map and Planning Areas

State Statute directs Regional Plans to include a "land use element, which shall consist of a map and statement of present and prospective land uses" (24 V.S.A. §

DRAFT

4348). In accordance with Act 181, the Future Land Use Map identifies Planning Areas that will be used to guide land use and development in Lamoille County over the next eight-year regional planning cycle. These mapped Future Land Use Areas will also guide eligibility for statewide designation programs that provide local business and non-profit owners with access to state tax credits and Act 250 exemptions related to housing density. See the Future Land Use Map at the end of this chapter. A Town-level breakdown of the map can be found at the bottom of the LCPC Regional Plan page at https://www.lcpcvt.org/regional-plan. In keeping with the spirit of local control upon which this Plan is based, these Planning Areas are derived from municipal plans. The Future Land Use Map is intended to complement local plans and is not intended, nor should it be used, to replace any local planning effort. The Planning Areas focus on the overall pattern and form of development rather than on specific densities or use categories, which are defined at the local level. Since transportation infrastructure and investments can play a major role in shaping land use patterns, each Planning Area also contains a discussion of transportation related issues.

The Future Land Use Map also provides guidance to the Vermont Land Use Review Board (LURB) relative to agricultural soils mitigation. When a development subject to Act 250 impacts agricultural soils, mitigation of these soils is required. In general, Act 250 is structured to prefer "on-site" mitigation – that is, modifying the site design of the project so that the soils are not impacted (See VSA §6093(a)(2)). However, the District Commission may authorize "off-site" mitigation if "that action is deemed consistent with the agricultural elements of local and regional plans" (See 10 VSA § 6093(a)(3)(b)). Each Planning Area defines appropriate circumstances under which "off-site" mitigation may be approved by the LURB . See a map of agricultural soils at the end of this chapter.

Center Areas

General Description: This area consists of Lamoille County's traditional village and downtown centers as well as areas identified as nodes for compact and/or mixed-use development in local plans. This area includes, but is not limited to, State "Designated Downtowns and Village Centers". In general, these areas contain the highest densities and greatest diversity of uses found in the County. While local plans may designate zoning districts with varying permitted uses (residential, commercial, etc.), the overall pattern of development within Center Areas is one of mixed uses. All areas within the Center Area shall be considered an "existing settlement" for the purpose of Act 250 review. As used in this Regional Plan, the term, "Center Areas" refers broadly to Downtown Centers,

Village Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas identified on the Future Land Use Map. When the Plan references "Centers" or "Center Areas," it references the above Areas collectively.
The availability of municipal sewer and water infrastructure significantly impacts the density and diversity of uses possible within a Center Area including the following Future Land Use Map areas:

- Downtown Centers
- Village Centers
- Village Areas
- Planned Growth Areas
- Transition/Infill Areas

State statute includes a goal to locate at least fifty percent of new housing within Downtown and Village Centers, Village Areas, and Planned Growth Areas. Lamoille County faces significant barriers to meeting this goal based on current land use trends and existing infrastructure capacity. Many of Lamoille County's existing Downtowns and Village Centers are located in floodprone areas and therefore unsuitable for significant new housing development. Additionally, many of the existing Downtown and Village Centers face significant infrastructure limitations. Even those with water and/or sewer infrastructure face constraints such as capacity, pressure, or critical components in vulnerable locations. In order to make substantial progress toward meeting housing goals, the Region and its municipalities must consider strategic investment in infrastructure and land use tools to shift development patterns to safer, more suitable areas. Due to these factors, the Regional Plan includes Transition/Infill Areas in the broad description of Centers to facilitate investment in infrastructure and land use policies needed to support development in safer areas less at risk to flooding. The Towns of Johnson and Cambridge include Transition Infill Areas adjacent to and between existing Village Centers. These areas depict areas where the Towns or Villages may consider land use bylaws, partner with housing organizations/developers and/or invest in infrastructure to support housing development outside the floodplain. Planning in these Transition Infill Areas is especially important due to the devastating impacts of the 2023 flood in Johnson Village, Cambridge Village, and Jeffersonville.

The mapped Transition Infill Area in Belvidere depicts an area along Route 118 that is one of the few areas of the community where housing development may occur that is not located on a steep slope, in conflict with a

DRAFT

water resource, or subject to conservation protections. The corner of Route 109 and Route 118 is depicted as a hamlet, though the historic farmstead once located at this corner has been lost.

Transportation: The transportation network within the Center Area should be designed to serve diverse user groups. Formal sidewalks, bike lanes, and bike paths are strongly encouraged in Downtown Centers and Planned Growth Areas and should be required for any development within a Downtown Center or Planned Grown Area that requires Act 250 review. In the more rural setting found in most Village Center and Village Areas, expanded/wide shoulders, trail networks, and off-road paths may also be used to accommodate pedestrians and cyclists. Such facilities should be recognized as "existing facilities" by the VT Agency of Transportation and should be maintained, improved, and expanded upon in State highway projects. Transit connections within and between Centers are also highly desired. Center Areas should receive priority for new transit service and other multimodal transportation improvements. Park-and-ride facilities are strongly encouraged at the periphery of Center Areas.

Agricultural Soils Mitigation: In recognition of the Regional Plan's primary objective "to guide growth into compact settlements," mitigation of agricultural soils shall not be required in Center Areas, regardless of the physical properties of the soil, unless specifically warranted based on policies found in local plans. In Center Areas, LCPC shall advise the LURB that on-site mitigation is not consistent with the land use objectives of this Plan. If the District Commission determines that mitigation is needed, off-site mitigation should be allowed at the minimum ratio required by statute. The LCPC may participate in any Act 250 proceedings related to this issue, provided off-site mitigation is also compatible with the policies of the municipal plan of the host community and/or the findings and conditions of any municipal land use permit.

Enterprise Areas

General Description: The Enterprise Area includes locations of high economic activity and employment that are not adjacent to planned growth areas. These include industrial parks, areas of natural resource extraction, or other commercial uses that involve larger land areas. Enterprise areas may have access to water supply, sewage disposal, electricity, and freight transportation networks. Some Enterprise Areas in more rural areas of the region are served by onsite water and wastewater infrastructure. .

DRAFT

Transportation: Given that these areas are likely to rely on heavy freight and/or generate a significant amount of customer/employee traffic, use of shared access and internal circulation roads is highly encouraged.
Development of, and access to, Electric Vehicle charging stations is encouraged. Locally appropriate internal pedestrian connections are also encouraged. Connection to transit and other multimodal service is encouraged to ensure that Lamoille County residents without access to an automobile are able to benefit from the services and employment opportunities found in these areas.

Agricultural Soils Mitigation: In recognition of the need for "shovel ready" industrial land in Lamoille County, off-site mitigation should be allowed for any development that is primarily industrial in nature or will provide infrastructure needed to support industrial development (such as warehouse, distribution, and port facilities). Such mitigation should follow the minimum ratio required by statute.

Resource-based Recreation Areas
General Description: These areas include large-scale resource-based recreational facilities – specifically the Region's three major ski resorts -- that may provide infrastructure, jobs, and housing to support recreational activities. These areas include several of the largest private sector employers within Lamoille County.

Transportation: Use of shared access and internal circulation roads is highly encouraged. Remote parking areas, shuttle services, improved transit, internal pedestrian connectivity, and other Transportation Demand Management strategies are highly encouraged to meet peak season demand. Transportation planning for these areas should consider the needs of employees who reside in other communities within Lamoille County and surrounding regions.

Agricultural Soils: Offsite mitigation should be allowed for development within these areas. When development includes workforce housing, the mitigation ratio should be reduced or waived.

Rural and Working Lands Area (Rural Agriculture and Forestry)
General Description: The Rural and Working Lands Area is made up of those areas designated in local plans primarily for lower density development, agriculture, and forestry. These areas are intended to promote the preservation of Vermont's traditional working landscape and natural features. This area covers a

DRAFT

large portion of Lamoille County's land area and includes agricultural land and forest land interspersed with clusters and nodes of development. As used in this Regional Plan, the term, "Rural and Working Lands" refers broadly to the Rural General and Rural Working Lands/Agriculture and Forestry Areas identified on the Future Land Use Map.

Rural enterprises, small businesses, agriculture and forestry and supportive activities, and rural residential subdivisions are all expected to continue in these areas. Use of development tools such as conservation subdivision, Planned Unit Developments (PUDs), and Transfers of Development Rights (TDRs) are strongly encouraged in this area.

This area also contains Lamoille County's largest blocks of unfragmented forests. As noted in the Working Lands Chapter of this Plan, rural, agricultural, and forestry lands include blocks of forest or farmland that sustain resource industries, provide critical wildlife habitat and movement, outdoor recreation, flood storage, aquifer recharge, and scenic beauty, and contribute to economic well-being and quality of life. The specific use of any forest should be left to the property owner and/or land manager. However, what unites almost all these uses is that they all rely on large, unfragmented blocks of forest land. Therefore, maintaining unfragmented blocks of forest land is an important objective of this area. Development in these areas should be carefully managed to promote the working landscape and rural economy, and address regional goals, while protecting the agricultural and forest resource value. Lamoille County already meets the Vermont Conservation Goals of 30% conserved land by 2030 (does not include Current Use parcels) and 50% conserved lands by 2050 (this does include Current Use parcels). The Lamoille County Conserved Lands map at the end of this chapter demonstrates the total area in Conservation or Current Use accounts for 86.7% of the County (258,946 Acres). 42.5% of those acres are land in Current Use, and 44.2% are conserved land.

New development should be located to minimize disruptions to productive use of land currently in agricultural and/or forestry production. Development should be located along existing features such as farm and woods-roads, along field edges, or on the least productive fields or forest stands. Development should also be configured to allow for continued access to working lands by agricultural and forestry equipment. Renewable Energy Development should avoid environmental constraints including high priority forest blocks (see the Regional Plan Enhanced Energy Plan for maps depicting these areas). New

DRAFT

residential subdivisions may be required to include covenants and deed language acknowledging that the development is located in an area with active agriculture and forestry operations and prohibiting future homeowners from bringing nuisance suits against existing operations and future agriculture and forestry operations that follow applicable state regulations.

Transportation: This area contains several of the major transportation corridors through Lamoille County. Some communities allow diverse, non-residential uses along these corridors. State Planning Statute discourages "strip development," and the Land Use Review Board is enabled to deny projects deemed to be "strip development" under criteria 9(L).

State Statute defines "strip development" as "linear commercial development along a public highway that includes three or more of the following characteristics: broad road frontage, predominance of single-story buildings, limited reliance on shared highway access, lack of connection to any existing settlement except by highway, limited accessibility for pedestrians, and lack of coordination with surrounding land uses in terms of design, signs, lighting, and parking."

To avoid a project being designated as "strip development" by the LURB , municipalities may pursue several options, including access management policies that encourage or require use of shared access and parking, development of access management plans under 24 VSA § 4432(1), capital planning for bicycle/pedestrian improvements and local park and rides, site plan review that includes specific standards for signs, lighting, parking etc., context sensitive design, design review or form based codes, and/or limiting non-residential uses along corridors in rural areas.

The Rural and Working Lands Area also contains several important wildlife roadway crossings. These include the Willow Crossing Area on Route 15 near the Cambridge/Johnson town line, Route 118 in Eden and Belvidere, Route 12 in Elmore, the area of Route 100 north of North Hyde Park Village at the Eden Town Line, and the Shutesville Hill area on Route 100 near the Stowe/Waterbury town line. Transportation improvements in these areas should be designed to allow for wildlife permeability. This can be accomplished by providing oversized culverts, reducing speed limits, providing occasional breaks in guardrails, and other similar methods. Development in and adjacent to these areas should include site design techniques to maintain connectivity between wildlife habitats.

In agricultural areas, new roads should be constructed along field edges or use

DRAFT

linear features such as hedgerows to avoid fragmenting agricultural fields. New roads should be limited in forest areas and should be constructed with consideration of impacts on productive forest stands, wildlife connectivity, erosion and runoff, and aesthetic resources. Development should also be configured to allow for continued access to working lands by agricultural and forestry equipment.

Agricultural Soils Mitigation: This area should be targeted for investments in programs aimed at assisting agriculture and forestry. Actively farmed agricultural land should be targeted for protection associated with off-site mitigation from other sites within Lamoille County. Given the large portion of Lamoille County in this area, off-site mitigation may be appropriate in some circumstances. Off-site mitigation may be allowed when one or more of the following criteria are met:

- A development in which at least 50%of the total area is preserved as open space; or
- Off-site mitigation is necessary to facilitate development of farmworker housing, value-added enterprises, agricultural/forestry education facilities, or other uses that support the working lands economy; or
- Off-site mitigation elsewhere in Lamoille County better contributes to the creation of usable, unfragmented blocks of working lands; or
- The Vermont Agency of Agriculture has determined that off-site mitigation is appropriate or that mitigation is not needed.

In addition, regardless of the criteria outlined above, in recognition of the need for workforce housing in Lamoille County, off-site mitigation at the minimum ratios required by statute should also be allowed for any residential or mixed use development in which the majority of dwelling units will be affordable to households with annual incomes up to 120% of the host community's median income.

Floodplain/River Corridor Overlay Area

General Description: This Overlay includes land within the FEMA mapped 100-year floodplain and VT DEC Mapped River Corridors. An overlay will be used to denote the floodplains and river corridors. The river corridor layer is maintained by DEC. Flood Hazard Areas (as available) include Zone A, AE, AH, AO Special Flood Hazard Areas showing the extent of the 1% annual chance (100-year flood) as mapped by FEMA. Much of this area is used for agriculture due to favorable, alluvial soils and large flat fields which are absent in the more mountainous terrain in other areas of Lamoille County. Provided State Required

DRAFT

Agricultural Practices (RAPs) are followed, agriculture is an appropriate use of these floodplain areas. Best Management Practices, such as establishing vegetated buffers along stream banks, are a requirement under the RAPs. Some areas have reverted to wetlands or floodplain forests. This vegetation can greatly improve floodwater attenuation and may capture sediment and debris during large flood events, helping to mitigate downstream flood damage and debris jams.

The Overlay covers large portions of some Village Centers and Downtown Centers within the Region. Efforts to reduce flood risks to individual structures and the Centers as a whole are strongly encouraged. Development in this area must be carefully designed to minimize risks to life and property, to ensure that floodwaters are not displaced onto upstream or downstream properties, and to ensure that the velocity and erosive force of floodwaters is not increased. Any new development within this area must comply with Vermont Act 121 regarding River Corridor Protection Rules for rivers/streams with a 2 square mile or greater watershed. When new structures are constructed, they should be elevated at least two feet above base flood elevation. Use of compensatory storage or structural piers is highly encouraged to accomplish this elevation.

The LCPC has elected to represent flood hazard areas and river corridors as overlays due to the different underlying land uses throughout the Region. Varying land use contexts such as developed centers, actively farmed land, and forested slopes require different tools and approaches to adequately address flood risks.

Transportation: Construction of new roads should be extremely limited in this area. When new roads are constructed, they must be designed to ensure that floodwaters are not displaced onto abutting or downstream properties. Some elements of the existing transportation network may contribute to upstream and downstream flood damage. Undersized bridges and culverts may cause downstream erosion that destabilizes stream beds and banks and may even change the path of the stream. Berms used to elevate roads may disconnect a river from its floodplain and push floodwaters onto other properties. Redesign and retrofitting existing elements of the county transportation network to reduce flood hazards is highly encouraged. This may include increasing bridge and culvert spans, installing bypass culverts or low water crossings in berms, and development of flood benches to reconnect rivers to their floodplain.

Agricultural Soils Mitigation: This area should be targeted for conservation

DRAFT

associated with off-site mitigation from other sites within Lamoille County. When land in this area is conserved through off-site mitigation, the mitigation agreement should contain provisions for maintaining or establishing a vegetated buffer along the stream bank.

Off-site mitigation should be allowed when necessary for hazard mitigation and/or floodplain restoration. This area should also be targeted for investments in programs aimed at assisting agriculture and forestry operations within the floodplain in adapting to increasing flood risks.

Rural Conservation Area General Description:
The Rural Conservation Area includes State-owned and managed forest land and lands over 2,500 feet in elevation. Municipally owned land may be included at the request of the municipality. Privately owned land subject to conservation easements is not included in this area to reflect that decision making authority remains with the property owner and the easement holder. Future conservation easements are encouraged to connect to existing conserved lands to: reduce forest and agricultural fragmentation; provide large blocks of land that better supports wildlife connectivity; protect rare, important, and irreplaceable natural and fragile areas; and protect scenic and historic features and resources. Use of recreation on State owned and managed land is appropriate and should be encouraged when possible.

Transportation: Transportation infrastructure can fragment working lands just as much as development. New roads should be extremely limited. Roads and trails should be constructed with consideration of impacts on productive forest stands, agricultural operations, wildlife connectivity, erosion and runoff, and aesthetic resources.

Future Land Use Goals
In order to measure the effectiveness of local and regional planning efforts in establishing the development patterns outlined in the Future Land Use Map, the LCPC establishes the goals listed for the next regional planning cycle. NOTE that the purpose of these goals is to measure progress toward attaining the objectives of this Plan. **The goals listed below are not intended to be mandates for any municipality, and they shall not be used as the basis for denial, or recommendation of a denial of any development proposal, including projects with a substantial regional impact (SRI).**

- Locate at least fifty percent (50%) of new residential dwelling units in

DRAFT

Center Areas defined on the Future Land Use Map.

- Locate at least fifty percent (50%) of new or renovated commercial floor area in Center, Enterprise Areas, or Resource Based Recreation Areas.
- Increase the county-wide supply of workforce housing.
- Reduce the rate of fragmentation of agricultural and forest lands in the Rural and Working Lands Areas.
- Increase the number of public road miles in Center Areas served by appropriate pedestrian infrastructure. In rural settings, this may include expanded/wide shoulders, trail networks, and off-road paths.
- Maintain and improve wildlife connectivity, as measured through the following:
  - Increase the percentage of conserved or protected land within identified wildlife corridors
  - Increase the percentage of culverts within identified wildlife corridors utilizing aquatic organism passage (AOP) design features.

As noted above, these goals are intended solely for the purpose of measuring progress toward the objectives of this Plan, and ***shall have no regulatory effect.*** If, upon evaluation, a goal is not met, it could signify:

- ***A need to reevaluate State, regional, or local policies that may inhibit achieving the goal.*** For example, if less than 50% of new residential dwelling units are located in Center Areas, this could signify a need to revise State wastewater rules to allow more extensive alternative wastewater treatment technology and/or management structures, as outlined in the "Land Use" and Infrastructure Limitations" discussion below.
- ***A need to reprioritize funding to meet the Goal.*** For example, if less than 50% of new and renovated commercial floor area is located in Center or Enterprise Areas, this could signify a need to prioritize funding for wastewater, water supply, transportation, and telecommunications infrastructure serving these areas.
- ***A need to reexamine the goals.*** For example, if Centers are inhibited by flood hazards or already developed to build-out capacity, such that new development cannot occur, this could signify a need to identify safer areas for new Center or Enterprise Areas.

DRAFT

POLICIES & ACTION ITEMS

Policy: *Infrastructure investments, transportation improvements, and location of public buildings should reinforce the objectives of the Regional Plan. Future development should be directed to areas served by water and wastewater and other public infrastructure.*

Action Items:

- Coordinate and educate municipalities to plan for controlled and guided growth, through use of locally appropriate tools such as municipal plans, infrastructure inventories and assessments, capital budgeting, public grants and loans, and innovative financing structures.
- Develop and maintain modern infrastructure systems, including multi-modal roads, water supplies, wastewater systems, and diverse energy sources (e.g., electric vehicle charging stations), with priority given to infrastructure that supports development and redevelopment of Center and Enterprise Areas.
- Support expansion of telecommunication and broadband networks to serve all areas of Lamoille County.
- Infrastructure upgrades and extensions serving Center Areas should receive the highest priority for public funding. Efforts to extend water and sewer lines beyond Center Areas and/or outside established sewer service areas should be reviewed with consideration for the long-term growth and developmental impacts associated with expanded service areas, as well as having planning tools and bylaws in place to prevent strip development or undue adverse impacts on natural resources. Appropriate planning tools, such as zoning or subdivision bylaws containing provisions to prevent strip development should be in place prior to undertaking sewer or water line expansion beyond Center Areas or immediately adjacent Enterprise Areas.
- LCPC may support inter-municipal sewer line extensions that connect Center Areas in one municipality to wastewater treatment facilities with excess capacity in another, provided such extensions are supported by the legislative bodies of all impacted municipalities, and measures are in place to minimize strip development between the Centers.
- Community Anchors such as municipal offices, schools, post offices, churches, general stores, etc. should be located within Downtown Centers or Village Centers when reasonably practicable. In light of growing flood risks, LCPC will support the relocation of community facility "anchors" to other locations within the Village Center or Downtown, or to adjacent Village Areas, Areas Planned for Growth, or Transition Infill Areas that are outside

DRAFT

the floodplain and/or less prone to flooding. If a facility is relocated, pedestrian infrastructure to the Village Center or Downtown Center is highly recommended to ensure the facility remains accessible to all members of the community. New or relocated expanded State, County, and Federal offices and other facilities (excluding maintenance facilities, garages, and similar uses) should be located in Center Areas outside the floodplain.

- LCPC supports exploration and development of innovative wastewater treatment options, including, but not limited to, development of decentralized wastewater systems.
- As an alternative to wastewater infrastructure, LCPC supports municipal efforts to develop community wastewater management districts serving Center Areas and/or to develop low-interest loan programs for septic repair and upgrades.
- The LCPC supports revisions to the State Environmental Protection Rules to encourage greater use of "Innovative/Alternative Systems and Products" and waterless waste treatment options.
- The LCPC will work with the VT Agency of Natural Resources for allocation reform to ensure that the reserved capacities of its member municipalities' sewer plants are more closely aligned with the actual operating capacity.
- The LCPC will work with the VT Agency of Natural Resources, interested municipalities, and other Regional Planning Commissions to make State Wastewater Revolving Loan Funds available to capital projects within locally defined wastewater management districts.
- The VT Agency of Transportation must consider land use impacts of transportation projects, as outlined in the discussion of the Future Land Use Map.

Policy: *Land use and development should reflect site specific environmental limitations. The density and intensity of development should conform to the limitations of the land and available public services. Higher densities and more intensive uses should be located in Center Areas, Enterprise Areas, and Resource Based Recreation Areas in conformance with Act 47 and Act 250 legislative reform, while lower densities and less intensive uses should be located in Rural and Working Land Areas.*

Action Items:

- Land development planning should take into account the capability of the land as it relates to topography and soil limitations, areas of steep slopes, and poorly drained or unstable soils. These areas should remain in

DRAFT

resource or recreational use or at most accommodate low densities.

- In areas where fragile characteristics have been identified, development should be discouraged unless it can be shown that these assets will not be unduly altered or harmed. These areas may include, but are not limited to, high elevations, steep slopes, wetlands, floodplains, threatened and endangered species, or wildlife habitat, such as deeryards, bear masts, and core forest habitat.
- New development should be discouraged in areas prone to significant flooding unless adequate measures to reduce flood damage have been made, as outlined in the Watersheds and Flood Resiliency Chapters. Flood prone areas that also contain agricultural soils should receive high priority for protection associated with off-site mitigation from other sites within Lamoille County. Redevelopment within Center Areas that are at risk of flooding must occur with careful consideration of increasing flood risk.
- LCPC will assist communities where Village Centers/Downtown Centers are located in the floodplain to develop long-term plans for reducing flood risks within the Village, shifting development patterns to safer areas, and protecting buildings and neighborhoods that remain.
- New on-site and municipal sewage treatment facilities should be sited outside of the FEMA-delineated 100-year floodplain, to the greatest extent feasible, to mitigate the environmental impacts of flooding. Existing wastewater sewage treatment facilities located in the 100-year floodplain should be elevated or floodproofed to at least two feet above the base flood elevation, or the 500-year elevation, whichever is greater.
- Encourage municipalities to adopt Wellhead Protection Areas (WHPAs) and Source Protection Plans (SPPs) to preserve the quality of local water supplies.

Policy: *Encourage future growth within Center and Enterprise Areas while discouraging strip development along transportation corridors.*

Action Items:

- Development related to the recreation and travel industry should be encouraged in Center, Enterprise, and Resource-Based Recreation Areas. Recreational development must give consideration to off-site impacts to host and neighboring communities such as transportation and the availability of affordable housing for employees.
- Especially in Center Areas, encourage a mixture of housing opportunities to meet the needs of diverse County residents.

DRAFT

- To discourage strip development and maximize efficient use of the existing capacity of the regional transportation network, LCPC will work with municipalities to explore and implement measures, such as access management policies, that encourage or require use of shared access and parking, development of access management plans under 24 VSA § 4432(1), capital planning for bicycle/pedestrian improvements and local park and rides, site plan review that includes specific standards for signs, lighting, parking etc., context sensitive design, design review of form based codes, and/or limiting non-residential uses along corridors in rural areas.
- In determining whether or not a development constitutes "strip development," the Land Use Review Board must consider the following:
    - The unique topography of Lamoille County which is characterized by narrow valleys bounded by rivers and steep mountain slopes and which has resulted in a traditional development pattern of Downtown Center and Village Center Areas that are linear in nature; and
    - The need to foster development that supports the working landscape, such as sawmills, stock yards, feed stores, agricultural processing plants, and equipment repair/supply that are more appropriate to locate in Rural and Working Lands Areas; and
    - The diverse, alternative means of providing pedestrian access and non-motorized connectivity in rural settings, including trail systems, expanded shoulders, and multimodal paths, such as the Lamoille Valley Rail Trail and the Stowe Recreation Path.
- Connect Enterprise, Center and Resource-Based Recreation Areas to the regional public transportation and micro-transit service networks.
- Support redevelopment and reuse of existing vacant or underutilized structures and industrial and brownfield sites whenever possible.
- Work with municipalities to develop bylaws that reduce the appearance of "strip development" and enhance community greenspace along state highways, facilitate infill and redevelopment in areas of existing strip development rather than extension of strip development, and minimize pressures for additional strip development in adjacent municipalities.

Policy: *In addition to impacts and benefits to the host municipality, development must consider impacts on other municipalities and regional resources and infrastructure.*

Action Items:

- In the development of local plans and bylaws, municipalities are encouraged to incorporate issues and concerns common to neighboring

DRAFT

communities in the region.

- Work with municipalities and adjacent regions to better coordinate land use planning efforts.
- Future growth should not significantly impair the public recreational opportunities of waters, open lands, or woodlands or destroy or threaten areas of significant historical, educational, cultural, endangered, scientific, agricultural, silvicultural, architectural, or archaeological value.
- Future development must not place an undue burden on the ability to provide public and community services, such as schools, roads, water, sewer, emergency access, etc. Where such services are impacted, including services that are provided by entities other than the host municipality, the developer should be required to provide financial or other mitigation.
- Future development should not increase flood risks or flood water velocities in upstream or downstream communities.
- The LCPC will provide information and assistance to proposed projects and developers on issues that are of local, regional, interregional, and statewide concern.

Policy: *A diverse array of tools should be utilized to maintain the County's working landscape.*

Action Items:

- Encourage and promote the implementation of a range of conservation concepts in planning; i.e., the transfer and/or purchase of development rights, land trusts, conservation or river corridor easements, river corridor protection bylaws, covenants, land use tax incentives, and clustering to allow for the retention of open space whether it is scenic vistas, agricultural lands, wildlife management areas, public lands, etc.
- Encourage vegetative buffers between developments to preserve aesthetics, wildlife corridors, and buffer sound/noise levels.
- Encourage the use of transfer of development rights, purchase of development rights, and similar planning tools to:
  - Encourage higher density development in Center Areas
  - Protect agricultural and forest resources in Rural and Working Land Areas
- To reduce development pressures on Rural and Working Lands, encourage development in Center and Enterprise Areas. In Center and Enterprise Areas, LCPC may provide comments through the Act 250 process regarding appropriate circumstances for off-site mitigation, as outlined in the Future Land Use Map, regardless of whether the project

DRAFT

meets the definition of a substantial regional impact.

- Target Rural and Working Lands Areas for protection associated with off-site mitigation from other sites within Lamoille County. In order to ensure that off-site mitigation best meets the needs of local communities, off-site mitigation payments may be made to local Land Trusts with proven records of land conservation and ongoing stewardship.
- In Rural and Working Lands Areas, protect the viability of agriculture and forest lands by supporting development designed to mitigate the impacts from parcel fragmentation and to provide continued accessibility to resource lands. When development of agricultural and forest lands occurs, development should be clustered in such a way as not to negatively impact the continued viability of any remaining or adjacent agricultural operations. Consideration should also be given to the loss of open space and recreational resources when developing agricultural and forest lands.

Policy: *Increase the amount of "shovel ready" land for industrial development served by sufficient infrastructure. Such land should primarily be located in Enterprise Areas or within Center Areas as appropriate, based on local planning goals.*

Action Items:

- Inventory and map existing industrial areas to assess regional capacity for expansion.
- Identify infrastructure limitations to support industrial development in Enterprise Areas. Assist municipalities in pursuing funding and financing to address these limitations,
- Work with owners and operators of existing intensive use, such as gravel pits and other earth extraction industries, to determine if future industrial uses may be incorporated in long term remediation of the site.
- In recognition of the growing need for workforce housing within the region, and the impact of the housing shortage on regional employers and municipalities, support the conversion of some uses that have outlived their original intended purposes to housing – such as gravel pits or underutilized commercial/industrial lots.
- Within zoning districts designated primarily for industrial development, municipalities are encouraged to consider allowing some industrial uses as permitted uses rather than conditional uses. In such areas, municipalities should also consider measuring performance standards such as noise from the boundary of the industrial district rather than property lines within the district.

DRAFT

Policy: *Future development and growth should be located outside the floodplain and consider the impacts on underserved and marginalized communities in terms of providing access and /or connectivity to public services, community recreation/green space, and public transportation networks.*

Action Items:

- When engaging in planning projects at the regional and local level, recognize that housing instability can force low-income residents into areas with higher exposure to environmental hazards such as flood hazards, insufficient water or wastewater infrastructure, and lead and asbestos building materials associated with older housing stock.
- Partner with municipalities, affordable housing entities, and State agencies to encourage land use tools and infrastructure investments that support new housing in safer areas less prone to flood risk.
- Develop tools to assist households impacted by flood events to relocate to safer areas outside the floodplain within the same municipality or school district. Continue state level programs to assist low- and moderate-income households with upgrades to deficient onsite wells and septic systems. Improve equitable access to the Region's diverse recreational amenities and natural resources.

Policy: *Support Lamoille County municipalities' planning efforts to protect/expand existing drinking water systems and develop infrastructure for an alternative municipal drinking water source.*

Action Items:

- Research and share funding opportunities with municipal partners for developing alternative drinking water sources or to upgrade/expand existing municipal drinking water infrastructure.
- As applicable, assist municipalities in Lamoille County with grant applications to protect/expand existing municipal drinking water supply or identify and develop infrastructure for an alternative municipal drinking water source.

DRAFT

Land Use: Background and Inventory

Lamoille County's existing land use patterns are heavily shaped by the region's underlying topography and geography, as well as its transportation network and historic decisions related to infrastructure investments. The County is bounded to the west by the Green Mountains, including Mount Mansfield, Vermont's highest peak, and to the east by the Worcester Range. The County is then bisected by the Lamoille River and its tributaries. This topography of narrow river valleys bounded by steep mountain slopes has resulted in a settlement pattern that differs greatly from those found in the gentler landscapes of the Champlain and Connecticut River Valleys.

The transportation network has also had a profound impact on land use in Lamoille County. Route 15 (east-west) and Route 100 (north-south) are the primary transportation corridors through the region. Lamoille County is the only region in northern Vermont that does not contain an interstate highway (I-89 in Chittenden County and Northwest Vermont Regions and I-91 in the NVDA region). The region was also once served by the now defunct Lamoille Valley Railroad.

By necessity, most existing settlements in Lamoille County developed along transportation networks such as roads and railways. While linear in nature, most of the settlements constructed in the 1800s and early 1900s were compact. Most regional and local anchors, such as schools, municipal offices, general stores, places of worship, and Courthouses, are still found in these settlements. Lands surrounding these settlements were, and continue to be, utilized for agriculture, forestry, and earth resource-based enterprises.

Many of these settlements were created before modern plumbing technology. In some areas, Village governments appeared to foster development of local wastewater and water infrastructure – which are essential to tightly knit, mixed use development patterns. In the mid 1900s, better understanding of clean water needs resulted in development of public wastewater systems in Jeffersonville, Johnson Village, Morrisville, Hyde Park Village, and Stowe . The Town of Wolcott has raised funds to install a community wastewater system beginning in 2026. Many of these systems have excess capacity, creating opportunities for infill

DRAFT

within Village Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas but also present potential cost challenges to existing customers who must carry the cost of this unused capacity.

With the advent of the automobile, new auto-oriented development has occurred on the periphery of many existing settlements. In addition, the allure of a rural lifestyle and the draw of housing that is markedly more affordable than many surrounding regions, have led to low density housing development scattered through rural areas of the County. Growth in rural areas places additional demands on local transportation networks and emergency response services and can also result in fragmentation of working lands and natural resources. These fragmentations would disrupt lands being used for forestry or farming that sustain resource industries, provide critical wildlife habitat and movement, outdoor recreation, flood storage, aquifer recharge, and scenic beauty, and contribute to economic well-being and quality of life. These trends are discussed in greater depth in the Housing and Working Lands Chapters.

While Lamoille County's challenging topography and isolation from major transportation networks have created challenges for development, they have also provided opportunities for the travel and tourism industry. Two of Vermont's largest ski resorts, Stowe Mountain Resort and Smugglers' Notch Resort, are located on the western end of the County. Both resorts have major base lodge areas and have contributed to development of ancillary travel and tourism development along Route 108. Smaller recreation destinations are also found scattered throughout the region's rural landscape

Land Use and Infrastructure Limitations

For economic growth and development to reach its full potential in Lamoille County, infrastructure needs must be met. This includes adequate water systems, sewage capacity and sewer systems, the availability of three-phase power, the availability of affordable energy, access to roads and bridges, and broadband internet capabilities. This infrastructure not only sparks development but also enhances Lamoille County's attractiveness to current and future residents by allowing residents to expand their employment opportunities through telecommuting or home- based businesses. Further discussion of road infrastructure improvements can be found in the Transportation Chapter, energy and electricity can be found in the Energy Chapter, and broadband capability can

DRAFT

be found in the Telecommunications and Broadband Chapter.

Development can only occur where there is adequate infrastructure to support it. Infrastructure considerations include the location of parking, power, wastewater treatment systems, and water supply. The Future Land Use Map categorizes Village Centers and Planned Growth Areas based on the availability of wastewater and water infrastructure. For this section, Working Lands means agricultural and forest land.

Parking

While sometimes thought of as a private responsibility, parking is an important component of infrastructure. Parking can be a highly land consumptive land use but is one that is essential for economic development. Land beneath a parking lot cannot be used for new structures, cannot host an on-site wastewater system, and does not pay fees for water or wastewater. Concentrating parking in central areas such as shared lots (public or private) and on-street parking can provide for the parking needs of businesses in Center Areas while freeing up land for other forms of development. There are 14 Park and Ride lots throughout Lamoille County. Of these lots, there are 3 in Cambridge, 1 in Hyde Park, 5 in Johnson, 3 in Morristown, and 2 in Stowe. The Park and Rides Program helps to provide safe and convenient parking facilities to encourage the consolidation of travelers and the reduction of single occupancy vehicles on the road. In more urban areas, this may allow new or expanded buildings. In Village Centers without wastewater, offsite parking arrangements may provide more room for onsite septic systems on land that would otherwise be needed for parking lots.

Wastewater Treatment Systems

During the 1960s, Vermont began an aggressive campaign to clean up the state's lakes, rivers, and streams. At the time, a major source of pollution was untreated sewage, which was commonly discharged directly into many bodies of water. Throughout the 1970s and 1980s, Lamoille County municipalities invested heavily in wastewater treatment systems. These primary treatment facilities removed much of the toxic nature of the effluent and significantly improved water quality in local rivers.

As communities in Lamoille County plan for the future, wastewater treatment

DRAFT

facilities will continue to play a key role in encouraging compact development and attracting many types of industrial uses. As technology has evolved, municipalities now have an array of options when installing new systems or upgrading and maintaining existing systems. This flexibility allows communities to tailor systems to meet their budgetary and land use needs. Today, water quality standards are stricter and include provisions for quantity of nutrient loading – specifically nitrogen, phosphorous, and ammonia. Improved wastewater plants in Stowe and Johnson are examples of some of the more advanced systems available to communities. In addition, it is possible that the US Environmental Protection Agency will mandate additional phosphorous removal as part of the Lake Champlain Total Maximum Daily Load (TMDL) cleanup plan. Such a mandate would likely require many systems, including those meeting and exceeding existing Federal water quality standards, to undertake expensive upgrades. Many wastewater treatment facility operators have indicated that more cost-effective alternatives for reducing phosphorous loading in Lake Champlain exist, such as better managing stormwater and non-point source pollution.

As of the writing of this plan, there were five municipally-owned treatment plants and one large, private sewage system in Lamoille County. The Town of Wolcott plans to install a new community wastewater system to service Wolcott Village in 2026-2027. The following are the wastewater treatment facilities that existed in Lamoille County as of the end of 2025:

- *Hyde Park Wastewater Treatment System*: A Village system constructed in 1970, equipped with two septic tanks (combined capacity of 55,000 gpd) and a pair of leach fields. Based on recently revised sewage allocations, the system has a reserve capacity to accommodate additional customers.
- *Jeffersonville Wastewater Treatment Plant*: An aerated lagoon system constructed in 1989, with a 77,000 gallon per day (gpd) capacity. The plant is operated by the Jeffersonville Village Trustees and any property within the Village may apply to connect. About 50-60% of the system's capacity is currently unused; meaning, if making a conservative estimate, about 35,000 gpd is available for future development. This represents a significant opportunity for new development within the Village and Service Area. The Village Trustees have identified the need for a new aeration system, and are also investigating ways to reduce the facility's

DRAFT

energy consumption.

- *Johnson Wastewater Treatment Plant*: A sequential batch reactor facility installed in 1996, serving Village and Town residents within a designated service boundary. Connecting to the system is required of all new development within 100 feet of an existing sewer line. System capacity is estimated at 270,000 gpd and is sufficient to accommodate projected growth within, and adjacent to, the service boundary. The Village has been able to replace older sewer mains as part of other projects at relatively low cost. The Town and Village entered into an inter-municipal agreement to extend sewer service onto specific mapped areas of the Town.
- *Morrisville Wastewater Treatment Plant*: Constructed in 2009, the new Morrisville Wastewater Treatment Plant increased operating capacity by nearly 30% over the previous system, to an estimated 425,000 gpd. The Village has room to accommodate any reasonable 20-year growth projection and is actively looking to expand its line capacity and number of connections.
- *Stowe Wastewater Treatment Plant*: Stowe has a 1.0 MGD advanced wastewater treatment plant, substantially upgraded and expanded in the early 2000s, with Sequential Batch Reactors for primary treatment with both secondary and tertiary treatment for enhanced phosphorus removal prior to UV disinfection and discharge. Flows and organic loading fluctuate seasonally. The Stowe Treatment Plant operates at approximately 50% of the plant capacity. The sewer capacity is most significantly depreciated by the Lower Village Sewer Pump Station, a 48-year-old remnant of aged collection system infrastructure that serves the Village and Lower Village areas of Stowe's Sewer Service Area. The Town of Stowe is exploring funding opportunities to advance the replacement of this Pump Station in the next few years.
- *Smugglers' Notch Resort Wastewater Treatment Plant*: A privately-owned aerated lagoon system installed in 1985, with a capacity of 160,000 gpd. The plant consists of four lagoons and additional bio- enhanced treatment (a "living machine technology"), with the effluent disposed of by spray irrigation.

Note that in some Village and Downtown Centers, wastewater and water

DRAFT

capacity is available, but has not been extended to serve the full Center. Land use patterns can play a role in maximizing use of existing capacity and reducing costs. Allowing higher densities and mixed uses allows more customers to connect to the distribution system and may reduce the per customer costs of water and sewer line extensions within these Village Centers, Downtown Centers, and Planned Growth Areas. Redevelopment of existing structures and construction of new structures, is highly encouraged in areas served by water and wastewater.

Households and businesses in Lamoille County not serviced by a municipal sewer treatment facility must have an on-site septic system or connect to another private system, with design and performance regulated by the Vermont Department of Health.

Many Village Centers in rural communities are not served by municipal wastewater systems. With no municipal sewer service, the potential for denser, mixed-use development is greatly limited. Despite the limitations created by lack of wastewater, there is still potential for some small-scale businesses in these Village Center Areas. Downtown centers and planned growth areas are required to have wastewater systems in accordance with Act 181. 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 3-18 below). As a result, property owners could conceivably develop new, small businesses in existing buildings and lots within wastewater constrained Village Centers Areas. Nonetheless, the table also demonstrates the limits of this option. For example, it would be difficult to develop even a moderately sized café without additional wastewater capacity. Municipalities should consider large scale wastewater management systems as critical infrastructure to enable high density mixed-use facilities that have the potential to invigorate the local economy, increase municipal property values, and boost morale/increase housing developments.

DRAFT

Table 3-18. 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

There are a variety of tools available to municipalities to overcome these limitations, including:

- **Developing "decentralized" wastewater treatment systems:** A decentralized system refers to a wastewater treatment system that relies on a mixture of community septic (similar to the system utilized by Hyde Park Village) and on-site wastewater systems. The Town of Wolcott has investigated creating a "decentralized" wastewater treatment system to serve the Village Area. The Town conducted several studies which identified a site that can support a system serving the existing Village and providing some capacity for future development. Similar systems may also be feasible in other rural Villages. Due to the small population and limited grand list of many rural communities, it is likely that outside funding would be necessary to construct any such system.
- **Structure land use bylaws to maximize use of existing capacity:** As demonstrated in the table above, a small office, store, or even a mixed-use building with commercial space and a single bedroom apartment requires less wastewater capacity than a three-bedroom single family home. Allowing and encouraging certain types of mixed-use development, especially if it involves renovation of existing structures, may reduce demands on existing on-site wastewater treatment systems.
- **Develop Wastewater Management Districts:** Wastewater Management Districts are an alternative to developing a municipal sewage system. While not widely utilized in New England, municipalities in other areas of the country have organized Wastewater Management Districts in which the municipality ensures proper maintenance of existing on-site

DRAFT

wastewater systems. These districts may be funded through special tax assessments or user fees (similar to fees paid by sewer system customers). Since lack of regular maintenance is a major contributor to failing septic systems, such districts can extend the life of existing systems, help to preserve wastewater treatment capacity, and prevent groundwater contamination caused by failing systems. Some wastewater management districts offer low interest loans for replacing wastewater systems.

- **Facilitate agreements between private property owners:** State on-site sewage regulations require setbacks from property lines for leach fields and other system components unless an easement is granted by the adjacent property owner. Given the small size of many Village lots, this represents a major barrier to enlarging existing on-site systems or creating new ones. In some cases, soils may be available to create a small system serving 2-3 structures. Municipalities may be able to facilitate agreements between willing property owners to either grant easements or construct shared wastewater systems. The municipality's oversight may provide some assurance that the responsibilities and rights of both parties are maintained. A similar alternative could include constructing septic systems serving municipal buildings with additional capacity to allow for future shared use agreements with other properties in the district.
- **Explore alternative treatment options:** State EPRs allow for "innovative" and "alternative" wastewater treatment options. Such systems range from "pre-treatment" such as recirculating sand filters to composting toilets and greywater recycling. These systems may function on less favorable soils and/or less space than traditional leach fields and mound systems. Given that these systems are not necessarily used with great frequency, residents may not be aware that they are available. Municipalities may consider having information such as the list of approved innovative systems and relevant contact information available at municipal offices.

Water Supply

Access to a potable water source is needed for residential living, agriculture, commerce, and industry. At the municipal level, water supplies are critical to fighting fires and protecting public health. Presently, there are six municipal water systems and four co-operative systems that service Lamoille County residents. Households that do not connect to a municipal system maintain a

DRAFT

private well or are connected to a private distribution system, such as that of a mobile home park or residential subdivision. Any system with at least 15 connections, or which services 25 or more individuals for at least 60 days per year, is officially classified as a "public water system" and subject to regulation by the Vermont Department of Health.

Public water systems were first put into place primarily for two reasons. The first is to bring clean water from rural springs to the urbanized areas to protect public health from water borne diseases. By requiring proper sanitation and providing clean water, epidemics from water related sicknesses have been all but eliminated. The second reason to develop public water systems was for firefighting. Many systems in Lamoille County were developed following major fires or in an effort to protect against one.

Municipal Water Systems

Municipal water systems are owned and operated by the municipalities they serve. With the exception of Department of Health permitting for water quality, pumping rates, and schedules for drilled wells, their operations are directed by the local legislative body or designated board. This includes facility maintenance and replacement, allocation of capacity, and service area expansion. Municipal water systems are:

- *Village of Cambridge Water System* (WISD #5149): Installed in 1974-75, the Village of Cambridge system serves approximately 120 connections and has a storage capacity of 100,000 gallons. It services the incorporated Village of Cambridge, with system management contracted to a private consultant. Water for the Cambridge system is supplied from both a primary and back-up well, sited on Village-owned property. The Village purchased a forested property covering the well shield of the back-up well. While this public ownership creates a partial wellhead protection area (WHPA), there are no existing land use regulations to protect the full well shield. The Village also owns legal rights to two springs on private land in South Cambridge. The Village has no plans to extend service beyond the Village boundaries and carefully reviews all new connections, due to capacity limitations.
- *Village of Hyde Park Water System* (WISD #5154): Installed circa 1900, the Hyde Park system serves over 200 connections, with a storage capacity of

DRAFT

nearly 270,000 gallons. Operated by the Hyde Park Water & Light Department, service is provided within the Village limits and to a small number of properties along the supply line from Fitch Hill Reservoir. New connections are left to the discretion of the Village Trustees. The WHPA is protected by local zoning bylaws, limiting the character and density of development within the entire watershed. The system is adequate to serve current and future residential needs. However, additional reserve capacity and pressure may be needed to support fire suppression systems required in larger commercial development.

- *Village of Jeffersonville Water System* (WISD #5150): Originally installed in 1910 and later upgraded in 1984, the Jeffersonville system serves an estimated 200 connections, with a storage capacity of 700,000 gallons. Service is available to any property within the Village boundaries; water for the system is supplied by two local springs. While both WHPAs are identified in the Jeffersonville Municipal Plan, neither is protected by zoning or land acquisition. The Village is currently working to upgrade the size of the water mains in the Village core to allow additional pressure.
- *Village of Johnson Water System* (WISD #5156): First installed in 1895, with major upgrades completed in 2006, the Johnson Village Water System serves 330 connections, with a storage capacity of approximately 530,000 gallons. Operated by the Johnson Water & Light Department, service is available to residents within the Village limits and new connections are permitted by the Village Trustees on a case-by-case basis. The Village owns two wells—the French Hill Surface supply and Nadeau well. In 2003-04, the Village acquired property where a new water supply well was drilled and tested. The WHPA for the new well is owned by the Village and state, and is therefore protected.
- *Village of Morrisville Water System* (WISD #5160): Installed during the late-1800s, the Village of Morrisville Water System is the largest in Lamoille County, serving 1,200 connections, with a storage capacity of more than 2 million gallons. Operated by the Morrisville Water & Light Department, the system serves residents of the Village and portions of town along Vermont Routes 100, 15, and 12. The water service area can be expanded at the discretion of the Village Trustees. The Village owns three wells, although only Well #3 is used as a primary source. Each well is protected by local zoning and through the purchase of properties within the WHPA.

DRAFT

The Water & Light Department has significant capacity for expansion and is open to opportunities to supply new connections. In 2007 a bond vote authorized the construction of a high service water storage facility (i.e. a replacement reservoir) adjacent to the current 500,000 gallon reservoir. According to the Morristown Municipal Plan, the most important considerations for the Village water system are to protect the water sources, identify and correct system losses, ensure proper water pressure, and upgrade the aging distribution system (several areas are 80-95 years old).

- *Stowe Village Water System* (WISD #5163, 5164): Installed during the late-1800s and upgraded in 1997, the system serves more than 500 connections with an estimated storage capacity of 1.7 million gallons. Operated by the Town of Stowe Water Department, the system serves the unincorporated Stowe Village and properties along Mountain Road (Vermont Route 108) up to Stowe Mountain Resort. Stowe does not have a fixed water service area; anyone within proximity of a water main may apply to hook onto the system. Water is supplied by two wells − Edson Hill #2 and the Village Green Well. Each has an approved Source Protection Plan.
- *Smugglers' Notch Water System* (WSID #5151): The Smugglers' Notch Management Company owns and operates a public community water system serving Smugglers' Notch Resort. The village section of Smugglers' Notch was developed in the 1960s and has been expanding since that time. Smugglers' Notch Management Company approximates that two thirds of the domestic water currently used by the Smugglers' Notch village comes from 8 drilled wells, with the balance coming from a surface source within lands owned by the State of Vermont. This surface water source also provides water for snowmaking purposes and fire protection. The Smugglers' Notch Water System Well Head Protection Area is located in the Town of Cambridge.

Fire Districts

Municipal fire districts are created by a municipality's legislative body, upon the application of 20 or more residents, to provide for a variety of fire protection needs, including the construction and maintenance of water works (20 V.S.A §171). By Vermont Statute, municipal fire districts are operated by a Prudential Committee, elected by vote of the district members. In Lamoille County, there

DRAFT

are nine incorporated municipal fire districts with license to operate public water systems, including:

- *Hyde Park Fire District #1* (WISD #5153): Established in 1958, with an estimated 12,000-gallon storage capacity, this system services the unincorporated village of North Hyde Park and the North Hyde Park Industrial Park. Capacity is sufficient to accommodate the build-out of the remaining eight lots within the industrial park.
- *Stowe Fire District #2* (WISD #5168): Formed in 1987 as a merger between two privately owned water systems, Fire District #2 serves Gold Brook Circle, Wood Road, and portions of Dewey Hill and Gold Brook Road. The system has limited expansion capacity.
- *Stowe Fire District #4* (WISD #5523): Formed in 1993 to serve the needs of the Glen Brook area of Mansfield View properties. The system was previously unreliable, but underwent major upgrades in 2008, including the installation of new waterlines and the addition of a back-up generator. Like Fire District #2, Fire District #4 also has limited capacity for expansion.

In addition, other smaller fire districts within Lamoille County include Stowe Fire District #1 (inactive), and Stowe Fire District #3 (operated by the Stowe Water Department), Morrisville Fire District #1, and Waterville Fire District #1. In the future, it is possible that one or more private water systems within the county could apply to become municipal fire districts.

Cooperative Systems

Water cooperatives are private, non-profit organizations created to administer a public water system. There are three such systems in Lamoille County:

- *Cadys Falls Water Cooperative* (WSID #5159): Serving 19 connections in the Cadys Falls area of Morristown, the system was installed in 1947 and has a storage capacity of 3,500 gallons. The Town of Morristown and Village of Morrisville are jointly planning the construction of a waterline connecting Cadys Falls to the Village of Morrisville Water system. Funding for said waterline was approved on the 2015 Morristown Town Meeting ballot.
- *Elmore Water Cooperative* (WSID #5152): Installed in 1950 and later upgraded in 1985, the system has a 4,300-gallon storage capacity and services approximately 20 connections in the Lake Elmore village area. In

DRAFT

2011, the Town of Elmore passed a bond vote to upgrade Elmore Water Cooperative and incorporate it as a municipal system. In the coming years, the town anticipates developing regulations and establishing a water district, which may extend beyond the current cooperative boundaries.

- *Morristown Corners Water Cooperative* (WSID #5158): Serving more than 50 connections in the Morristown Corners neighborhood, the system was built during the 1940s and has a storage capacity of nearly 35,000 gallons.

DRAFT

Vermont's smart growth principles:

1. Maintains the historic development pattern of compact village and urban centers separated by rural countryside.
2. Develops compact mixed-use centers at a scale appropriate for the community and the region.
3. Enables choice in transportation.
4. Protects the State's important environmental, natural, and historic features, including natural areas, water quality, scenic resources, and historic sites/ districts.
5. Strengthens agricultural and forest industries; minimizes conflicts of development with these industries.
6. Balances growth with the availability of economic and efficient public utilities / services.
7. Supports a diversity of viable businesses in downtowns and villages.
8. Provides for housing that meets the needs of a diversity of social and income groups in each community.
9. Reflects a settlement pattern that, at full build-out, is not characterized by:
    a. Land consumptive, scattered development outside compact urban and village centers;
    b. Development that limits transportation options, especially for pedestrians;
    c. Fragmentation of farm and forestland;
    d. Development not serviced by municipal infrastructure or requiring extension of municipal infrastructure across undeveloped lands outside compact centers;
    e. Linear development along well-traveled roads and highways that lacks depth.

Smart Growth vs. Strip Development

Many of Vermont's land use objectives and regulations are intended to discourage strip development while encouraging "smart growth". " Strip development" is a highly land consumptive development pattern in which single use structures, usually for commercial uses, line a highway. Strip development has the potential to negatively impact and fragment natural resources. Due to the reliance on single occupancy automobiles and individual access points, strip development can also burden the regional transportation network by creating unnecessary turning movements that could be avoided if accesses where better managed and consolidated and other modes of transportation were utilized.

To date, Lamoille County has managed to avoid the most negative aspects of strip development. While the North End of Morrisville is an auto-oriented area, the municipality and private developers have created a grid network of streets and installed pedestrian infrastructure which may allow infill to occur over time. Several municipalities have created planning areas along State highways that direct new development into "nodes" rather than strips along the highway or require shared access for new developments and subdivisions.

DRAFT

Smart Growth stands in contrast to "strip development". While strip development refers to low density, disconnected development scattered along a roadway and accessible only by automobile, Smart Growth envisions centers, nodes, and clusters of development accessible by pedestrians and cyclists as well as cars. These centers may include a mix of uses, allowing someone to easily walk from home to work and then to services. Where strip development is "long" smart growth is "deep."

Lamoille County's topography of narrow river valleys surrounded by steep mountain slopes, coupled with the lack of infrastructure in many centers, creates inherent limitations to the denser, deeper development patterns that typify smart growth. As a result, many of the existing settlements in Lamoille County are linear in nature.

Vermont Statute defines "strip development" as:
linear commercial development along a public highway that includes three or more of the following characteristics: broad road frontage, predominance of single-story buildings, limited reliance on shared highway access, lack of connection to any existing settlement except by highway, limited accessibility for pedestrians, and lack of coordination with surrounding land uses in terms of design, signs, lighting, and parking
(10 V.S.A. § 6001(36))

State policy makers must recognize that the dense, multi-block pattern seen in regions with gentler topography may not be achievable in much of Lamoille County. Even so, there are some steps municipalities can take to implement "smart growth principles" even in rural settings with multiple limitations, including:

- Reducing or eliminating frontage requirements and setbacks to allow more densely built development.
- Allowing multiple uses within a single structure without requiring additional land area.
- Using alternatives to minimum lot size to regulate the intensity of development, such as lot coverage and floor to area ratio.
- As locally appropriate, allowing multiple principal uses per lot to replicate the traditional "running ell" and "carriage house" development pattern found in many villages.
- Reducing and eliminating parking requirements, and allow alternative

DRAFT

arrangements such as shared peak parking and offsite parking. Where feasible, construct common or municipal lots or on-street parking.

Brownfields Redevelopment

Brownfield contamination sites are scattered throughout Lamoille County. The use of chemical compounds used at, stored onsite, or transferred to sites may lead to contamination. This includes old gas stations, foundries, dry cleaners, and other industrial sites often found in historic villages and downtowns or along the rail bed of the former Lamoille Valley Railroad.

Brownfields contamination can substantially hamper redevelopment of these areas. Developers and businesses avoid these sites due to potential liability. Left unaddressed, brownfields sites are often underutilized and may fall into disrepair. As this occurs, they can devalue an entire Main Street or neighborhood.

LCPC has been an active participant in the Environmental Protection Agency's (EPA) Brownfields Program since 2005. The program provides Federal funding for assessing and remediating brownfields. Property owners who are not responsible parties to contamination and undertake prescribed remediation receive protection from liability.

Once remediated and redeveloped, brownfields have the potential to become valuable to the surrounding community. Redeveloped properties not only generate tax revenues, jobs, and stimulate economic growth, but they also turn blighted sites into places that are both productive and aesthetically pleasing or attractive. Examples of successful brownfields redevelopments include:

Arthur's Department Store – Located on Main Street in Morrisville, Arthur's served as the anchor of the region's largest downtown for decades. Past use as a dry cleaner left many private investors leery of the site. Occupying three attached buildings, demolition of Arthur's would have greatly disrupted the fabric of downtown. After a successful assessment, LCPC was able to assist the property owner in leveraging funds for remediation and redevelopment. In 2014, the buildings were rehabbed to include 19 new units of housing. Local businesses are now open in the building's street level storefronts.

DRAFT

Johnson Community Housing – Located in one of the Region's most economically depressed communities, a former electric utility site has been successfully remediated and redeveloped as a mix of family and senior housing. The site is located within walking distance of the Village Center and the local Elementary School.

Former Railroad Engine House/ MSI – This former railroad facility in Morrisville has been remediated and converted into MSI, one of the Region's fastest growing manufacturing firms. MSI is also incorporating the Engine House into a major expansion of its manufacturing facility.

Assessment, remediation, and redevelopment projects currently underway include a former lumber mill in Jeffersonville, a rail yard in Wolcott, the Wolcott Town Forest, multiple sites that will be utilized as trailheads for the Lamoille Valley Rail Trail, the Gristmill/Creamery in Morrisville, a dry cleaner in Morrisville, and a former foundry in Morrisville.

Jeffersonville Granary – This former granary has been remediated and converted into a commercial space for multiple food and recreational businesses.

Village and Downtown Designations

Vermont's land use policies, as well as the goals of this Regional Plan, are generally oriented toward directing new growth and development toward compact village and urban centers. In order to revitalize Vermont's traditional villages and downtowns and to encourage new development close to these areas, the State of Vermont has developed several "designated center" programs, including Village Center Designation, Downtown Designation, Neighborhood Development Area Designation, and Growth Center Designation. These designations are granted by the Vermont Downtown Board at the request of the municipal legislative body. The requirements and benefits vary between the various designation programs. A summary of these programs and associated benefits is provided below.

Village Center Designation

As of the drafting of this Plan, there were 16 Designated Village Centers in Lamoille County, including Cambridge Village, Jeffersonville, Notch Glen Area,

DRAFT

Johnson Village, Elmore Village, Hyde Park Village, North Hyde Park Village, Belvidere Center and Belvidere Junction, Moscow Village, Stowe Village, Waterville Village, North Wolcott Village, and Wolcott Village. Municipal plans also identify several potential areas for Village Center Designation.

State statute defines a "Village Center" as:
The core of a traditional settlement, typically comprised of a cohesive mix of residential, civic, religious, commercial, and mixed use buildings, arranged along a main street and intersecting streets that are within walking distance for residents who live within and surrounding the core. Industrial uses may be found within or immediately adjacent to these centers.

Village centers are typically smaller in scale than downtowns and are characterized by a development pattern that is consistent with smart growth principles. As stated in Act 181, "The passing of Act 181 replaced the process of municipalities having to apply to the Community Investment Board (previously the Downtown Development Board) for approval of state designations. The Regional Plan Future Land Use areas will be the boundaries of the state designations. State designation is automatic once the Regional Plan is approved by the Land Use Review Board. The state designation program provides a series of financial incentives overseen by the Community Investment Board. This process allows for the Regional Planning Commissions to expand current village centers and establish new village centers to incentivize and facilitate increased housing production and other development."

This new legislation has allowed for the creation of new designated village centers and expansion of existing village centers in Lamoille County. With the passing of Act 181 and once the 2025 Lamoille County Regional Plan Amendment is approved by the Land Use Review Board, Lamoille County will have the following new Designated Village Centers:

-Notch Glen Area south of Jeffersonville
-Belvidere Center
-Belvidere Junction
-Moscow Village

Other areas in Lamoille County may be considered in the future as potential village center areas such as Eden Mills and may follow the proper procedures per

Act 181 to obtain Village Center Designation status in the future through the Vermont Community Investment Board.

Benefits of Village Center Designation include:

- state and federal tax credits toward the rehabilitation of historic buildings,
- tax credits for façade improvements,
- tax credits for code improvements, including electric and plumbing, sprinkler system,
- access improvements such as lifts and elevators,
- priority consideration for a variety of grant programs, including Municipal Planning Grants, Community Development Block Grants, Transportation Alternatives Grants, as well as other state and federal funds.

These tax credits have the potential to offset some of the additional costs of working with historic structures as well as overcome some of the challenges posed by infrastructure limitations in many rural village settings.

Downtown Designation

Downtown Designation is similar to Village Center Designation, but requires more robust planning and implementation efforts at the local level. In order to receive Downtown Designation, a municipality must:

- Demonstrate a commitment to protect and enhance the historic character of the downtown through provisions in local bylaws.
- Provide a community reinvestment agreement that has been executed by the authorized representatives of the municipal government, businesses, and property owners within the district, and community groups with an articulated purpose of supporting downtown interests.
- Maintain an up to date capital budget and program that includes funds to improve or preserve public infrastructure within the district, including facilities for public transit, parking, pedestrian amenities, lighting, and public space.
- Identify a source of funding and resources necessary to fulfill the community reinvestment agreement, including commitments from the legislative body of the municipality.
- Organize a downtown organization that will collaborate with municipal departments, local businesses, and local nonprofit organizations for the social and physical benefit of the downtown.

DRAFT

- Provide evidence that any private or municipal sewage system and private or public water supply serving the proposed downtown district is in compliance with State regulations and has sufficient reserve capacity to serve future needs of the designated area.

As a result of these more stringent requirements, Designated Downtowns are eligible for a wider array of benefits than Designated Village Centers. These benefits include:

- All the tax credits and grant incentives available to Village Centers,
- Access to the Vermont Downtown Transportation Fund, which provides loans, loan guarantees, or grants up to $100,000 for capital transportation and related capital improvement projects (grants may not exceed 50% of a project's cost.),
- Traffic calming options, including authority to post speed limits of less than 25 mph to help calm traffic and make the downtown a more pedestrian-friendly environment,
- Expanded signage options, such as the ability to erect and post informational signs to help guide visitors to downtown and to significant historical, educational, recreational, or cultural landmarks,
- The ability to create special assessment districts (also known as special benefits district or business improvement districts) to raise funds for both operating costs and capital expenses to support specific projects in downtown,
- Streamlined Act250 review for developments within the Designated Downtown,
- Eligibility for "Sales Tax Reallocation," meaning that sales taxes collected as a result of private development in a Downtown are returned to the municipality to support related infrastructure improvements,
- Eligibility for other, periodic funding opportunities, such as grants to install electric vehicle charging stations.

Stowe Village is currently the only Designated Downtown in Lamoille County. Other areas may be eligible for municipalities willing to commit to the program's planning and implementation requirements. Morrisville is in the process of renewing their downtown designation and could have it reinstated by the time this Regional Plan is adopted.

DRAFT

Neighborhood Development Area Designation (NDA)
The Neighborhood Development Area Designation encourages municipalities and/or developers to plan for new and infill housing in the area within walking distance of a designated downtown or village center. Areas eligible for designation must be within a quarter mile of a Village Center or a half mile of a Designated Downtown. Local land use bylaws must also allow for residential densities of at least four (4) dwelling units per acre.

Benefits of Neighborhood Designation are primarily related to state taxes and permitting processes. These benefits include:

- Higher thresholds of Act250 review for "mixed income" developments. (meaning Act250 review is not needed for some developments that would require it elsewhere),
- Reduced Act250 application fees and ANR wastewater permit fees,
- Exemption from the land gains tax.

There are currently no Designated Neighborhood Development Areas within Lamoille County. As noted in the Housing Section, Lamoille County has experienced steady housing growth and increasingly provides workforce housing for households priced out of the market in adjacent regions. The benefits provided for Neighborhood Development Areas could create an incentive for private developers to redirect new housing from rural areas of the County to areas within, or in closer proximity to, Centers.

Unfortunately, current interpretation of enabling statute inhibits many Lamoille County communities from benefiting from this program. As one of the fastest growing regions in Vermont, in terms of both population and new housing units, LCPC recognizes the potential benefit of Neighborhood Development Areas directing development to more appropriate areas AND encouraging municipalities to strengthen subdivision bylaws and address infrastructure limitations. To achieve these benefits, LCPC encourages minor revisions to program rules to make it more effective in rural areas, which are discussed in greater detail in the Land Use Strategy Section.

Growth Center Designation
State statute defines a Growth Center as an area of land that (A) is within or adjoining a downtown, village center, or new town center designated under this

DRAFT

chapter; and (B) has clearly defined boundaries that can accommodate a majority of commercial, residential, and industrial growth anticipated by the municipality or municipalities over a 20-year period. A growth center must support and reinforce any existing Designated Downtown or Village Center located in the municipality or adjacent municipality by accommodating concentrated residential neighborhoods and a mix and scale of commercial, civic, and industrial uses that are consistent with the anticipated demand for those uses within the municipality and region.

To be eligible for Growth Center Designation, a municipality must have undertaken extensive planning, including local bylaws with provisions related to density, design, and form of development in the growth center; a capital plan that includes existing and planned wastewater treatment, water, stormwater, and transportation infrastructure, public spaces; existing and planned infrastructure adequate to meet the municipality's 20-year growth needs; policies on the extension of water and wastewater lines that include a defined service area and allocation plan to support the growth center; transportation standards and policies for street connectivity aiming to create a comprehensive, integrated, connected network for all modes; and bylaws and other programs to minimize impacts on agricultural lands, forests, wildlife habitat, and other important natural resources located outside the proposed growth center.

Benefits of Growth Center Designation include:

- Ability to utilize the state portion of the property tax bill for Tax Increment Financing for infrastructure and improvements,
- Vermont Economic Development Authority (VEDA) incentives,
- Priority consideration for Agency of Natural Resources funding of new, expanded, upgraded, or refurbished wastewater management facilities, technical and financial assistance for brownfields remediation, Community Development Block Grants, transportation alternative grants, State housing renovation and affordable housing construction assistance programs,
- Access to the Vermont Downtown Transportation Fund,
- Reduced mitigation requirements for impacts to agricultural soils,
- Streamlined Act250 review for developments within the Designated Growth Center.

DRAFT

There are currently no Designated Growth Centers within Lamoille County.

Industrial Uses and Enterprise Areas

Lamoille County is fortunate to be home to a vibrant manufacturing section. The region's industrial base is composed largely of locally held businesses. Industrial firms still form an important employment sector for the region, usually at above average wage levels for the County. Some light manufacturing uses may be located in Center Areas without conflict. However, some industrial uses produce off-site impacts, such as noise and heavy truck traffic that are best mitigated if located in areas specifically designated for industrial growth. These areas are designated as Enterprise Areas and include industrial parks, gravel pits, and other commercial uses that require larger amounts of land. Such areas in Lamoille County include:

- The proposed Trombley Hill Industrial Park in Morristown
- The Airport Enterprise Area in Morristown
- Portions of the North End/Uptown in Morristown
- The Jewett parcel in Johnson
- The North Hyde Park Industrial Park
- The Fischer Bridge Industrial Park in Wolcott
- The Cambridge Enterprise Park

Unfortunately, many of these areas lack at least one piece of critical infrastructure, are limited by topography, or are owned by property owners who do not currently wish to sell or develop their property. Lack of direct access to an interstate also creates a barrier for industrial development. As a result, the Lamoille Economic Development Corporation has identified the lack of "shovel ready" land for industrial uses as a major impediment to realizing the region's full economic development potential. Remediated gravel pits should be considered as potential locations for new housing developments.

LCPC can assist in overcoming this obstacle by providing assistance in planning for infrastructure needs, such as upgrades to water, wastewater, transportation, and transmission infrastructure. LCPC can also work with municipalities to develop land use regulations that are supportive of industrial development in appropriate areas. Examples include allowing light industrial activities within Enterprise Areas as permitted rather than conditional uses, reducing the potential for future land use conflicts within Enterprise Areas by new, non-

DRAFT

industrial uses such as residential, retail, and office/service type uses, and revising performance standards related to noise and other impacts to reflect an industrial rather than residential context.

Consumer Durables Manufacturing

Consumer Durables Manufacturing manufactures products to be sold to the final consumers or to final consumer dealers. These are "heavy" goods that have a life span of three or more years. Examples include cars, furniture, household goods, or toys. This sector is strong in Lamoille County. Major employers in this sector include:

- For over 30 years, Hearthstone has manufactured stoves (gas, pellet, and wood) in Morrisville.
- Started in North Troy, Vermont, in 1960, House of Troy moved to Hyde Park in the mid-1980s when new owners took over the business. House of Troy continues to make classic lighting as part of the Framburg & Co. line of lighting. The business employs 50-99 people.
- Vermont Precision Woodworks was started in the early 1900s. Its business has expanded over the years to include wood products for musical instruments and furniture, including beds, bunk beds for dorms and residences, and children's furniture. Lumber is sourced locally. Vermont Precision Woodworks employs about 50 people.
- Manufacturing Solutions Inc., located in Morristown, is an example of a company that underwent a successful assessment and adaptive use of a former brownfields site. MSI is now a major, growing employer, and is expanding to properties in other Lamoille County communities.

Recreation Equipment

While recreation plays a significant role in Lamoille County's economy, and indeed the State of Vermont's economy, few firms specialize in manufacturing recreation equipment. Concept2, based in Morrisville, is a major regional firm in this industry. The company was started by two brothers out of the back of a bread truck and now employs over 50 people. Concept2 is one of the largest manufacturers of oars and rowing machines in the country.

Consumer Non-Durables Manufacturing

Non-durable goods are typically goods that are immediately consumed (food

and drink) in one use or have a lifespan of less than three years. Examples of the type of manufacturing in this category include food and beverage, textiles and apparel, petroleum products, and chemical products. Textiles are described in more detail below.

Examples of successful companies in this sector include alcoholic beverage producers who continue to thrive in Lamoille County. Smugglers' Notch Distillery in Jeffersonville and Green Mountain Distillers in Stowe and Morristown have both made successful forays into the alcoholic beverage market. Trapp Family Lager in Stowe is currently undergoing an expansion of its brewery while Rock Art Brewery in Morristown recently expanded to accommodate increased production capacity and better visitor visibility. Another brewery, Lost Nation Brewing, has been recently established in Morristown. Lamoille County has seen various microbreweries pop up and that has further strengthened the county as a premier destination for beer enthusiasts. Finally, maple producer Butternut Mountain Farm, with a retail store in Johnson and manufacturing operations in Morristown, has been operating for 35 years. It recently completed an expansion of the Morrisville warehouse and packaging facilities. Many of these companies practice socially responsible business practices, providing living wages for employees, using recycled packaging, and, in the case of Butternut Mountain, using renewable energy such as solar power.

Specialized Textile Products and Services

This category is defined as firms specializing in the manufacture of specialized textile products, either apparel or other products, and providing specialized services to textile producers. Regional firms in this category include Turtle Fur, Inc., Vermont Fleece Company, and Johnson Woolen Mills. Johnson Woolen Mills has been in production since 1908. Their signature "Made in the USA" clothing products are sold nationally and internationally. The company is still family-owned and employs about 50 people. Turtle Fur Group moved into the Morrisville Industrial Park and the Vermont Fleece Company is located in the Hyde Park Industrial Park. The Turtle Fur Group includes four separate brands, with the earliest started in 1966, and now manufactures hats, neck warmers, socks, and gloves, for example. In 1971 it expanded to include Vermont Originals, which sells hand-knit wool hats. Together, the Turtle Fur Group and the Vermont Fleece Company employ roughly 100 people.

DRAFT

Natural Resource Based Manufacturing

Natural resource based manufacturing, once the pre-eminent industry in Lamoille County, is used in this context to classify wood product manufacturing. This category includes lumber, plywood, wood flooring, assembling wood products, and transforming and making wood products. Today, fewer than four sawmills remain in Lamoille County. Sawmills are dispersed throughout the County, with sawmills in Hyde Park, Johnson, Morristown, and Wolcott. Numerous businesses in this category, both large and small, produce wood products such as furniture, sheds, cabinetry, toys, and other woodenware. There are roughly 20 producers of these products in at least eight Lamoille County towns. Many of these producers are secondary job activities or of such small scale that they are not captured in employment data. Innovations in the natural resource-based manufacturing category include small- scale or "backyard" sawmills that perform similar work on a very different scale.

Land Use Tools

Communities have a wide variety of tools available to assist them in achieving their land use goals. Local communities are best positioned to select the tools that will be most effective in achieving their objectives. These tools are divided into "Regulatory" and "Non-Regulatory" Options.

Regulatory Tools

There are two primary types of local land use regulations. **Zoning** regulates the uses of land and the dimensions, construction, repair, and removal of structures; establishes dimensions of land, areas, yards, and distances between structures; and sets densities of population and intensity of use. **Subdivision regulations** apply to the creation of new lots and establish standards related to size, shape, location, and density of lots. Subdivision regulations also outline rules related to how roads, utilities, and other infrastructure serving a new development are laid out and constructed. 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. It becomes important then to determine which tool is correct to accomplish a goal. For some districts, such as the flood hazard district, the regulation of the use of the lot is most critical to achieving the goal. In other districts, such as a rural district, subdivision regulations are more important. As a general rule, zoning is more important to achieving goals in

DRAFT

dense or urban areas while subdivision regulations are more important to accomplishing goals in rural or less dense areas. Some communities have combined their zoning and subdivision regulations into a **Unified Bylaw.** Unified bylaws can reduce the potential for contradictory standards or duplicative review.

Simply having regulations does not ensure that a community will achieve its goals or that development will reflect the desires of the community. It is also important that the regulatory tools be properly selected for the local setting and the objectives of the community. Some examples of provisions communities can consider in their land use regulations include:

Alternatives to Large Lot Zoning

Many communities rely on "Large Lot Zoning" to control densities in rural areas. Large lot zoning refers to the practice of requiring multi-acre lots for each residential structure. While large lot zoning can effectively reduce the overall density within a rural area, it may also result in unnecessary fragmentation as each new home site must be accompanied by large amounts of land. Large lot zoning may also require the construction of extensive new road networks to serve new developments, resulting in additional fragmentation of working lands and natural resources. Fortunately, there are alternatives to large lot zoning which can maintain low overall densities while reducing forest fragmentation.

One commonly used technique is the **"Planned Unit Development" or PUD**. PUDs allow a landowner or developer to "cluster" development in one area of a parcel while leaving the remainder of the parcel undeveloped. The undeveloped land is often subject to development restrictions, such as an easement, and may be owned by a homeowners association, an individual, a land trust, or a municipality.

One potential drawback of PUDs is that they are often most applicable when a sizeable number of lots are developed at the same time and require some degree of master planning on the part of the applicant. Much of the development in rural areas of Lamoille County occurs as an incremental process in which a landowner may only subdivide a single parcel at a time. In some cases, the benefits of PUDs may be achieved with a more simplified subdivision process.

DRAFT

One option is to allow **"density averaging"** over an entire parcel. Also called **"fixed area zoning,"** density averaging allows a landowner to create new building lots smaller than the district minimum lot size, provided that the total number of new lots does not exceed the number that would usually be allowed within the zoning district. The example below provides an illustration of "density averaging:"

A parcel contains 100 acres. The parcel is located in a zoning district with a 10 acre minimum lot size. The owner could create a total of ten lots. Applying fixed area zoning, the owner can create nine one acre building lots over a period of several years, while maintaining ownership of the remaining 91 acres. The remaining 91 acres can continue to be managed as a private forest or sold to another party, but may not be subdivided into additional building lots.

Density Bonuses

Vermont Statute allows municipalities to offer "density bonuses" through their PUD provisions. Density bonuses are usually offered to forward an objective of the municipal plan, such as providing affordable housing, conserving an important natural resource, or providing public access to a trail network. Density bonuses are most effective when the regulations provide clear guidance and standards regarding when a bonus may be awarded.

Transfers of Density

Another regulatory tool authorized by statute is a zoning tool called "**Transfer of Development Rights" (TDR**). Under a TDR, a municipality could identify a critical resource area as a "sending zone." The allowable density for a parcel in that zone can be "sent" to a different parcel located in a "receiving" zone where the Town desires more dense development.

Using the hypothetical 100 acre parcel, in a zoning district with a ten acre minimum lot size, the rights to develop ten units of housing on that parcel could be transferred to a parcel in a different area; perhaps in a village center where the availability of infrastructure allows for greater density. A ten acre receiving parcel in a district allowing two units per acre (20 units total) could be developed with 30 units if the development rights were transferred.

TDRs have had limited success in rural communities, largely due to the lack of large enough receiving zones with the infrastructure needed to accommodate

DRAFT

higher density development. This would likely be a challenge in Lamoille County's more rural communities. However, communities with sewer and water infrastructure in their downtowns and Village Centers may find TDRs to be a useful tool for conserving forest land while allowing property owners to realize an economic benefit from the development value of their land. Recognizing the limited applicability of TDRs, some communities have developed a **Hybrid TDR/PUD approach.** In this hybrid scheme, the development rights from one parcel can be transferred to another parcel, also in a low- density rural location. The result is one parcel with a "cluster" of development and another, non-contiguous parcel that remains undeveloped, basically containing the open space portion of the two-parcel PUD. This tool allows rural communities to focus development in areas where it is most suited (for example, where soils can support greater onsite septic capacity) while preserving undeveloped tracts of forest land. Wolcott's Land Use Regulations allow for density transfers through its PUD provisions, while Stowe's Zoning Regulations contain a traditional TDR approach.

Both traditional TDRs and hybrid TDR/PUDs require the administrative capacity to document and track transfers of development rights. In order to ensure documentation, it may be wise to record such transfers as notes on the actual Mylar recorded in the Town Land Records.

Overlay Districts

An overlay district refers to a zoning district that is tied to a specific feature. Overlay districts may follow a natural feature such as a stream, deeryard, or wetland; a topographical feature such as all lands above a certain elevation; or infrastructure such as a highway corridor or planned sewer line extension. An overlay adds provisions in addition to the standards of the underlying zoning district. Stowe and Hyde Park have utilized overlay districts to protect viewsheds by requiring developers to take measures such as maintaining forested backdrops on hillsides. Some communities have also established overlays to prevent contamination in the public water supply wellhead protection areas. While not currently used in Lamoille County, some communities in more densely developed areas of the State have developed "access management overlays" that require additional consideration of shared access points on important regional transportation routes.

DRAFT

Alternative Techniques to Manage Density and Intensity of Development in Downtown and Village Centers

Traditional zoning regulations rely primarily on minimum lot size and setbacks to control density. These are often not the most effective tools in a Village setting and can encourage, or even inadvertently require, new development to take the form of "strip development". Alternative approaches for managing density include **lot coverage** – which sets a maximum percentage of the lot that the building footprint and other impervious surfaces may cover. A similar approach is **floor to area ratio (FAR)** which expresses the relationship between the amount of useable floor area permitted in a building (or buildings) and the area of the lot on which the building stands. Lot coverage is more common in Village settings, in which buildings are generally less than three stories tall, while FAR is more effective in downtowns with multistory buildings.

"Character of the Neighborhood" Standards

Many municipal plans express the importance of maintaining the traditional "character" of Village and downtown areas. However, traditional zoning regulations are usually vague on how to address this and leave much discretion to local review boards. This can create uncertainty and unpredictability in the permitting process.

Form Based Code is a relatively new concept in planning that considers development based primarily on "form" (the basic appearance of the building and the way in which it is laid out) and provides more flexibility regarding use. Many form based codes include provisions for administrative review of minor developments. Form based codes may also contain standards related to new public and semi-public infrastructure such as roads, sidewalks, and streetscape amenities.

Design Review is another tool that can be used to maintain the traditional "character of the neighborhood." Design review is often administered through an overlay district and usually consists of very prescriptive standards related to the architectural design of new buildings. Unlike form based code, design review may also dictate issues such as colors and building materials. Design review usually requires developments to be reviewed by an additional board

DRAFT

such as a Design Review Board or a Historic Preservation Commission.

Non-Regulatory Tools

Infrastructure Investments and Capital Planning
In some cases, municipalities may have greater impacts on development patterns through their infrastructure investments than through their land use regulations. Coordinating infrastructure investments with local planning goals is critical to meeting a community's long term objectives. For example, zoning land within an existing area primarily for low density development may result in widely spaced development that does make efficient use of a system's capacity.

Many major infrastructure investments require a significant amount of capital – often more than a municipality can fund in a single year. By adopting a **Capital Plan and Budget** municipalities may make annual contributions to reserve funds for major investments, thus spreading the cost over multiple fiscal years.

Tax Stabilization Agreements
Municipalities have the authority to enter into tax stabilization agreements with landowners for the municipal portion of property taxes. Most municipalities use this authority to stabilize taxes on working lands such as farms to better reflect the "use" rather than the development value of land. The Town of Hyde Park has established a tax stabilization program to encourage businesses to locate in its three locally defined growth areas (Hyde Park Village, North Hyde Park, and Garfield). Under this program, upon approval of the Selectboard, a portion of the taxes on a portion of the increased property value will be reduced for a defined period of time.

Conservation Commissions, Energy Committees, and other Advisory Groups
Communities have the ability to organize local citizens into official town bodies such as Conservation Commissions and Energy Committees. The goals, activities, and agendas of these groups may vary from community to community. Many Conservation Commissions organize educational programs related to natural resources, assist in management of municipal properties such as Town Forests, and maintain local trail networks. Conservation Commissions can also be empowered to provide input on municipal planning decisions. Energy

DRAFT

Committees can be established to educate residents about issues such as energy efficiency, assist in development of local energy resources, or conduct energy audits of public buildings and facilities. The role of these groups is invaluable, as education is often more effective at achieving goals than regulation.

Homeowners' associations and road associations are also examples of non-regulatory local organizations. A homeowners association (HOA) is an organization in a subdivision, planned community, or condominium building that makes and enforces rules for the property and residents. Those who purchase property within an HOA's jurisdiction automatically become members and are required to pay dues, which are known as HOA fees. Some associations can be very restrictive about what members can do with their properties while others may give residents more freedom. Road associations can provide a way for road users to formally manage their roads in an organized and cost-effective manner. An effective camp road maintenance program is a major step towards having a safe and drivable road and helping protect your local body of water from the negative impacts of soil erosion from your road.

Public Buildings

Municipalities can have a profound impact on development patterns based on where they locate public buildings. When community anchors such as municipal offices, schools, and post offices are located in Center Areas, they contribute to the vitality of the village or downtown. Conversely, when these anchors are located in rural areas or corridors typified by "strip development," they move activity and customer base outside of the center. For this reason, reasonably practicable, community anchors should be located in Center Areas. If and when public facilities are relocated outside of the floodplain, consideration should be given to pedestrian accessibility and a walkable environment.

Public Land and Land Conservation

Purchase of public land or conservation easements is often the most effective means of conserving a specific natural resource. Lamoille County contains several large State Forests. These are included in the Rural Conservation Future Land Use map layer, which also includes town priority conserved land and land above 2,500 feet. The Vermont Land Trust has been active in conserving land throughout the County. The Stowe Land Trust and Northern Rivers Land Trust

DRAFT

(whose service area includes Wolcott) have also conserved land in their respective areas.

Several municipalities have also established "Town Forests". The size and management objectives of Town Forests vary greatly across communities, ranging from the 300-acre Morristown Municipal Forest which is actively managed for timber, wildlife, and recreation, to Moss Woods, a six-acre forested parcel in the heart of Hyde Park Village, owned and managed by the Village Trustees for "its preservation as an irreplaceable natural area." The Wolcott Community Forest is a new 735-acre town forest established in 2024 that provides a natural link between the nearby Green River Reservoir State Park, Elmore State Forest, and East Hill Wildlife Management Area.

State Designation Programs

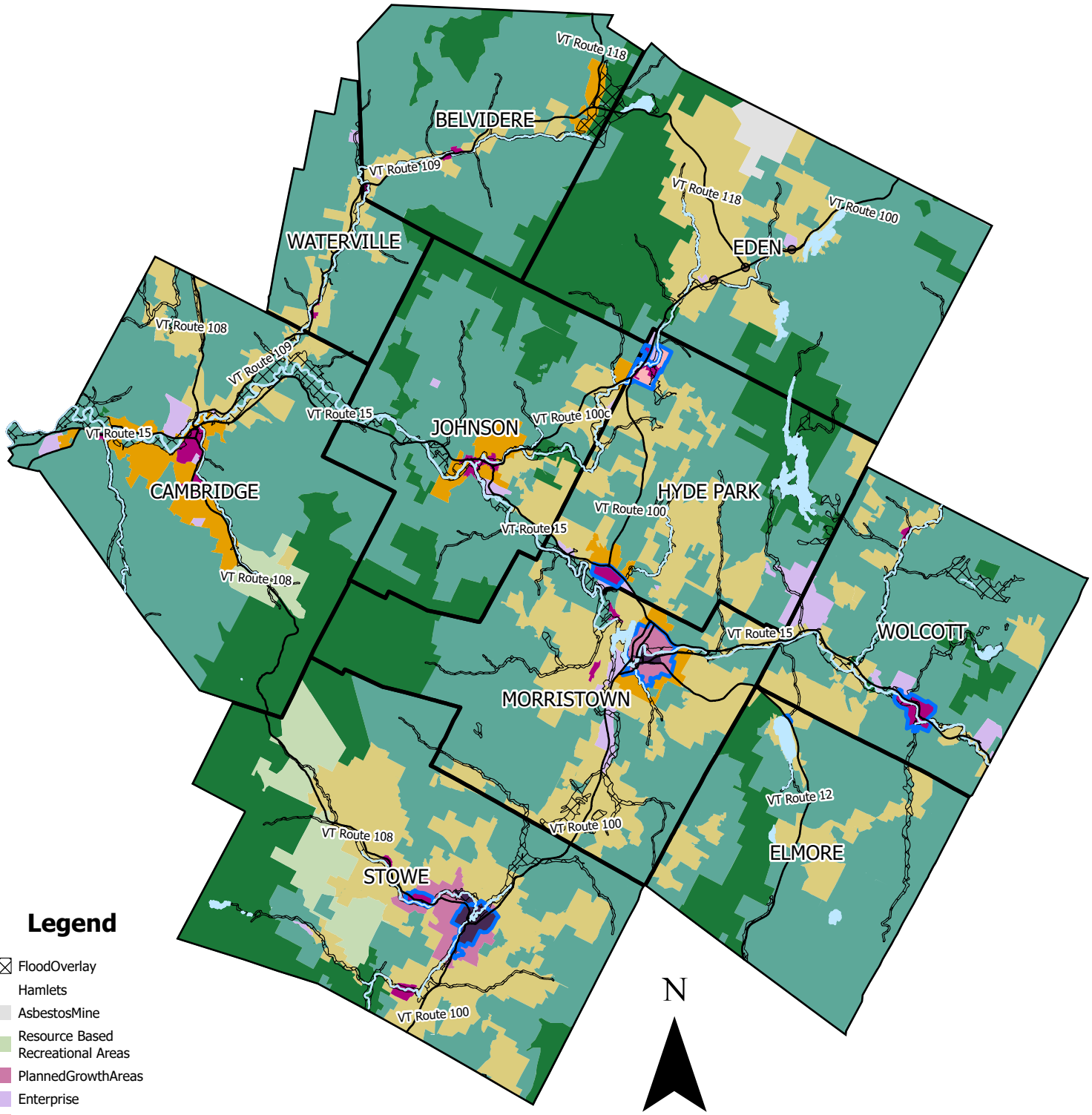
By pursuing State Designations (discussed above), municipalities can harness a variety of incentives to encourage development and redeployment in their traditional centers. Some communities have dedicated staff available to assist property owners in completing the applications required for tax credits. The Union Bank has also been an important partner in purchasing tax credits from individual property owners who do not have the tax liability to qualify for a tax credit. A break-down of the Regional Future Land Use Map at the Town-level can be found at the bottom of the LCPC Regional plan page at https://www.lcpcvt.org/regional-plan.

Land Use Related Findings from the 2025 Regional Plan Survey

Question 5 (See Appendix B) of the 2025 Regional Plan Survey asked "From the options below, what types of land use would you like to see more of in Lamoille County's future? In response to this question, 78% of respondents selected "Small Scale Recreational Assets", 68% of respondents selected "Housing" and 56% selected "Conserved Land". Less frequently selected options include "Restaurants, Hospitality, Hotel" (38%), "Retail, Office and Service" (38%), "Industrial" (18%), and "Large Scale Recreational Assets" (6%). These results reveal that Lamoille County strongly supports new recreational assets similar to trail networks and river access, but demonstrate opposition to new or expanded large scale recreational assets such as ski resorts or other facilities that require extensive land use.

DRAFT

DRAFT Lamoille Future Land Use



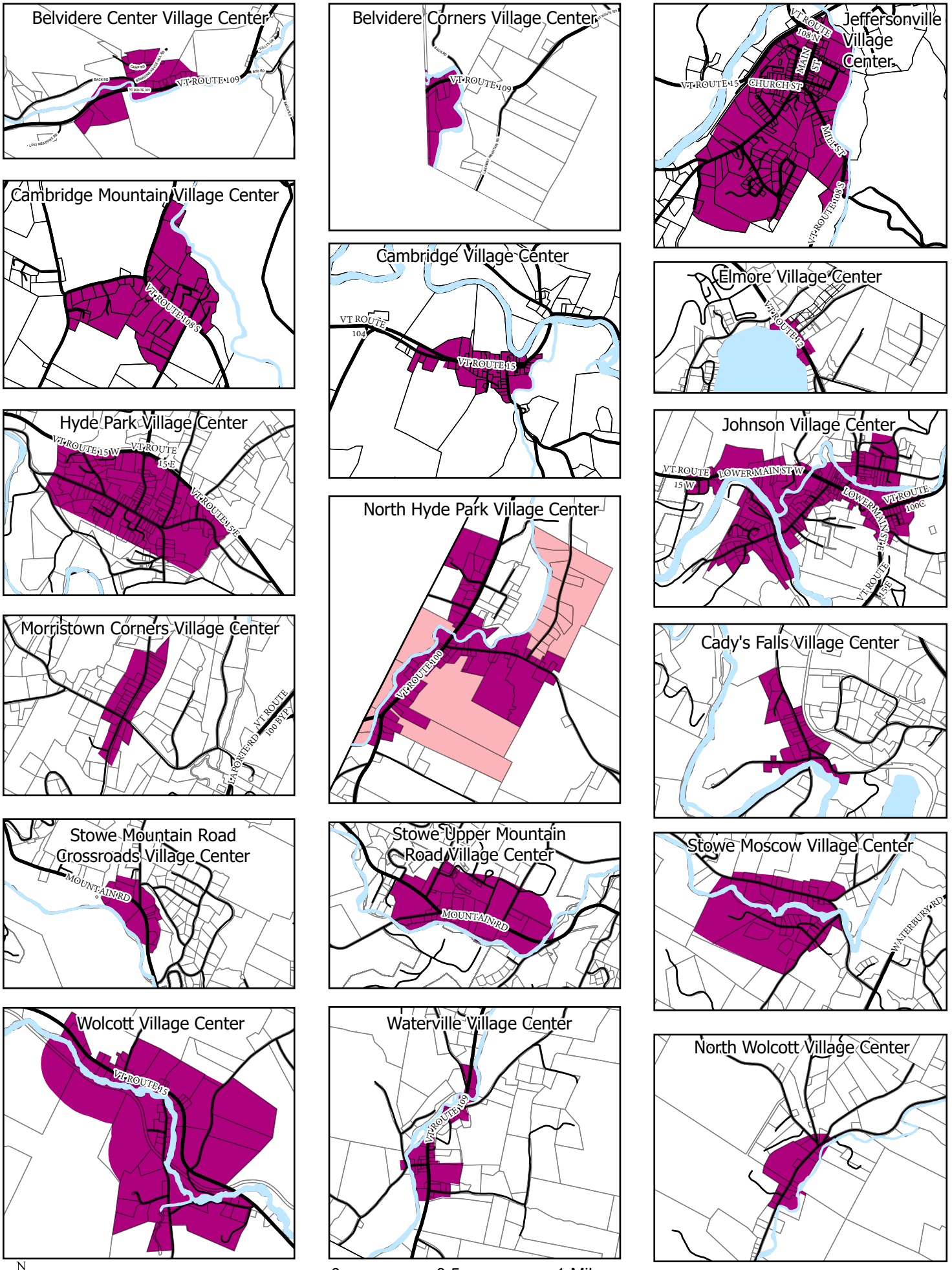
Legend

- FloodOverlay
- Hamlets
- AsbestosMine
- Resource Based Recreational Areas
- PlannedGrowthAreas
- Enterprise
- VillageAreas
- VillageCenters
- TransitionInfill
- DowntownCenters
- RuralConservation
- RuralAg_Forestry
- RuralGeneral
- Tier 1B Eligable Area
- Surface Water

0 3.75 7.5 15 Miles

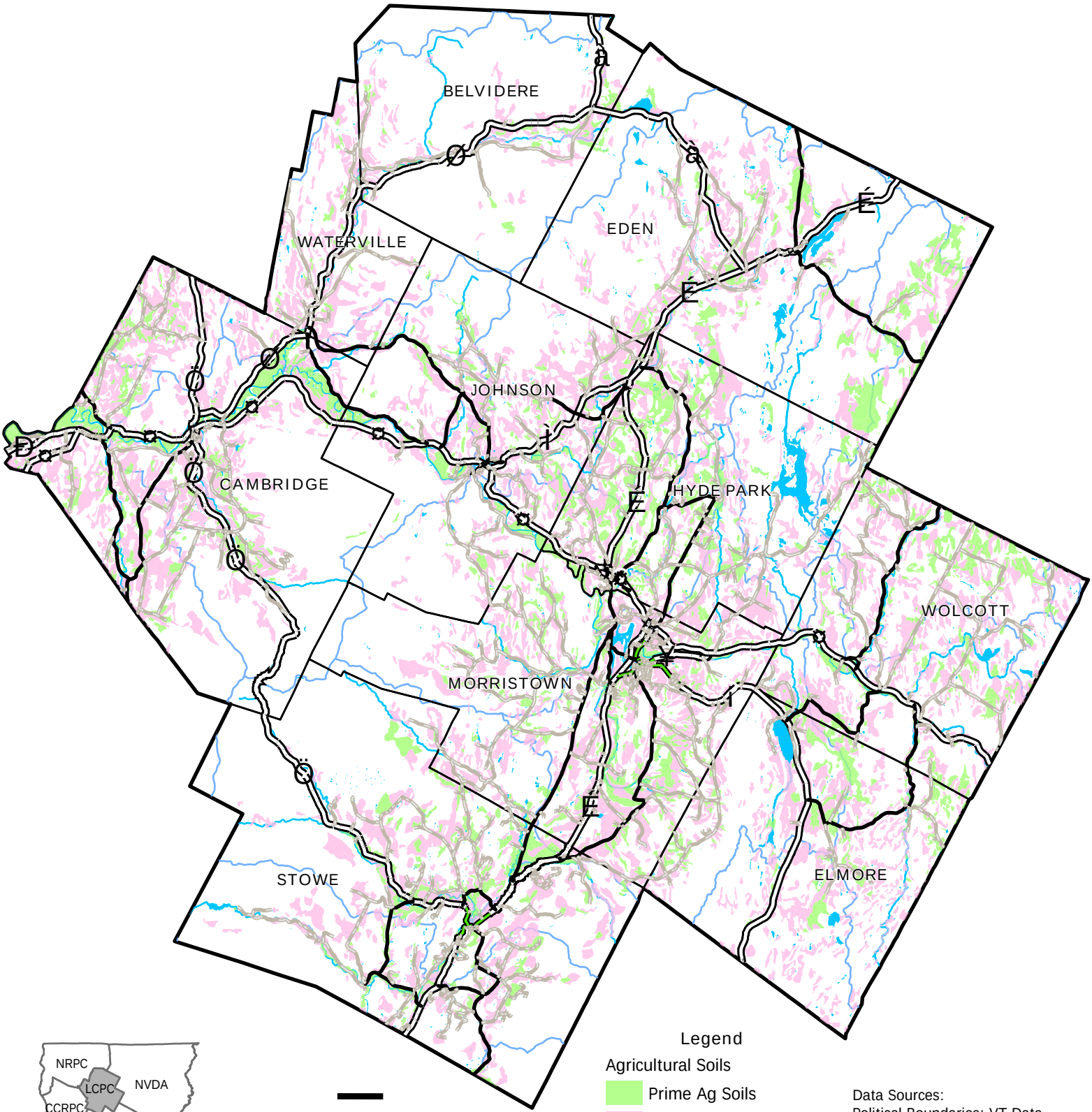
Future Land Use layers were digitized by LCPC staff in 2025.Staff coordinated with Town Selectboards, Planning Commissions and Village Trustees. This map is for planning purposes only and not for regulatory use.

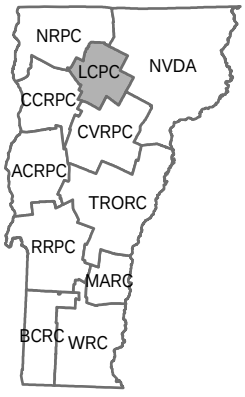
Lamoille County Village Centers and Village Areas



Agricultural Soils

Lamoille County, VT





0 1.5 3 4.5 6

Miles

Legend

Agricultural Soils

- Prime Ag Soils
- Statewide Soils

Road Class

- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3
- Stream/River
- Lake/Pond

Data Sources:
Political Boundaries: VT Data - Town Boundaries, VCGI, 2025
Roads: VT Road Centerline, VTrans, 2022
Surface Water: VCGI for VHD-USGS, 2001
Soils: USDA-NRCS soil maps, VCGI, 2022

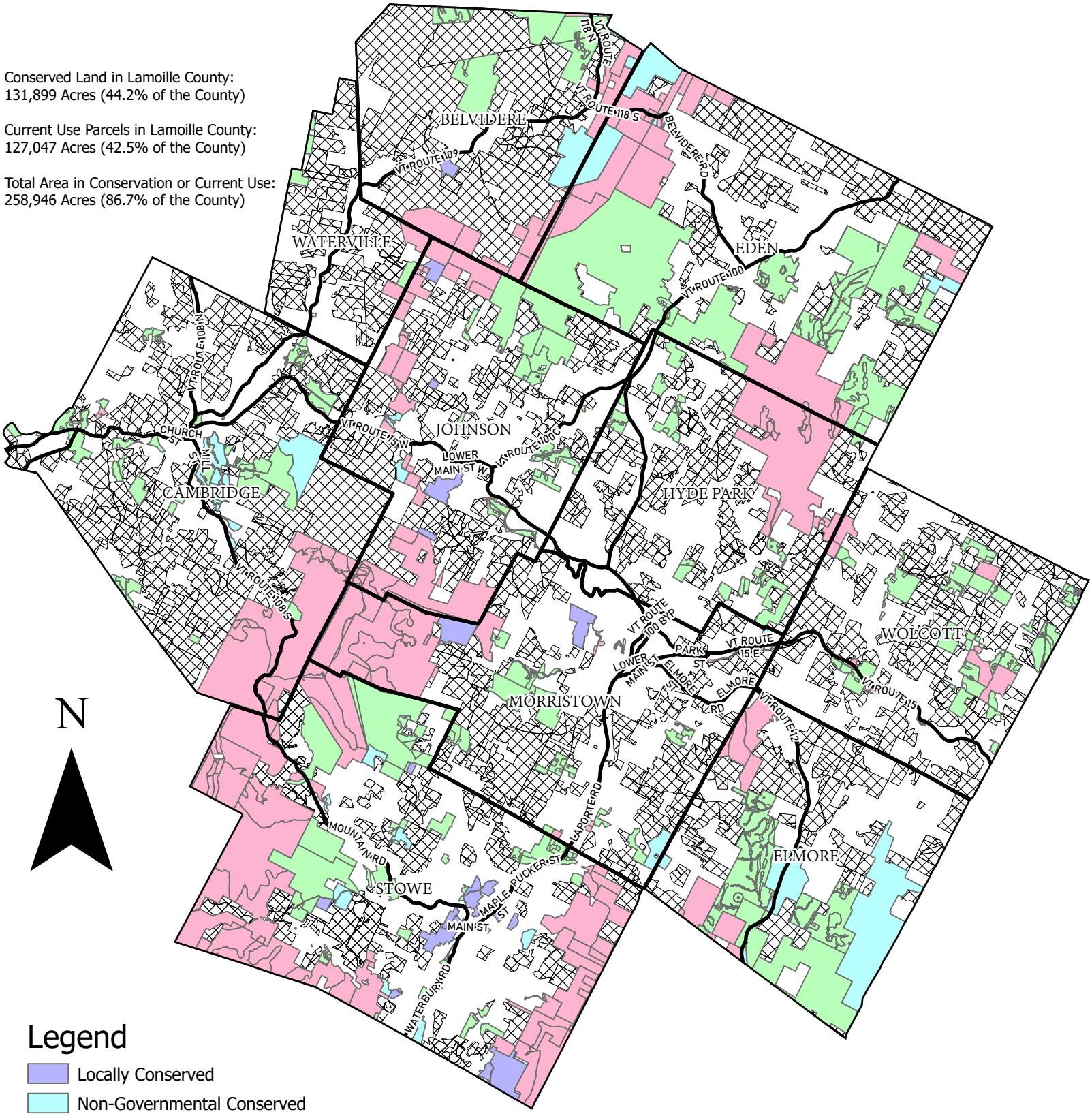
Created 9/22/25 by LCPC. Map is for planning purposes only. Not for regulatory interpretation.

Lamoille County Conserved Lands

Conserved Land in Lamoille County:
131,899 Acres (44.2% of the County)

Current Use Parcels in Lamoille County:
127,047 Acres (42.5% of the County)

Total Area in Conservation or Current Use:
258,946 Acres (86.7% of the County)



Legend

- Locally Conserved
- Non-Governmental Conserved
- Privately Conserved
- State Conserved
- Parcels in Current Use

0 2 4 8 Miles

Sources:
Conserved Lands: Vermont Conserved Land Inventory (2024)
Current Use Parcels: Use Value Appraisal Database (2025)

Section 4: Our Sense of Place

Recreation, Working Lands, Water Resources, and Flood Resilience

Recreation: Strategy

Recreation plays a central role in shaping the character and economy of Lamoille County. To residents, recreation is more than a hobby, it is a passion, the backbone of the economy, the way of life, and a primary reason many people choose to live in Lamoille County. To visitors, it is a way to explore the region and test the abilities of the body. To some, recreation is the key to improving the health and welfare of the population. The following key strategies must be recognized to balance these interests as recreation continues to evolve and shape Lamoille County:

Ensure Lamoille County integrates recreation into the daily functions of the built environment. Nationally, Vermont has one of the lowest obesity rates in the United States, due in large part to a culture that encourages and values recreation. Incorporating recreation into daily life, such as providing sidewalks, footpaths, inter-municipal trails, and bike lanes as major travel corridors, is important to keeping Lamoille County healthy. With abundant access to recreation, the health and well-being of Vermont's population, including Lamoille County, will continue to ensure Vermont remains rated as one of the healthiest states in the country.

Lamoille County's recreation network requires public landowners, private landowners, and user groups to thrive. Some towns have invested local resources to create Town Forests, build recreation paths, or provide parking for trailhead access. User groups need to work together to build a coordinated regional approach to recreation and marketing of resources. Recreation is a powerful way to connect communities to one another, such as the multi-town Lamoille Valley Rail Trail, and most require joint partnerships.

Private property owners are the primary stewards of the County's recreational opportunities. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic and the importance of traditional activities, such as hunting and

DRAFT

fishing, and working with recreation groups to minimize conflicts over use of land. At the same time, new residents must also be educated on respectful use and appropriate etiquette for using private land for recreation.

Recreation is pivotal to Lamoille County's economy. The ski industry brings thousands of visitors to Lamoille County each year and employs a significant portion of the workforce. Wildlife based activities such as hunting, fishing, boating, and camping are an important component of the Region's culture and economy. Sound management of the working landscape can enhance and protect these resources while maintaining a diversity of year-round recreation and ensuring the County's economy can adapt to changing recreation trends and a warmer climate pattern. Cycling, especially mountain biking, has continued to increase in popularity in the region. Vermont Highways should incorporate wider road shoulders for both biking and walking. Municipalities should also continue to emphasize the importance of cycling in the community and economy, monitoring the social, economic, and ecological impacts where possible.

The working landscape provides diverse outdoor recreational opportunities, which also contribute to the regional economy. Recreation includes traditional activities such as hunting and fishing, as well as newer activities such as mountain biking, back country skiing, and dog sledding. With sound land management and cooperative planning, diverse recreational opportunities can coexist with each other and with agriculture and forestry operations while preserving these resources into the future.

Much of the recreation that is available in the region is the direct result of the geographic landscape—hiking, skiing, hunting, cycling, and snowmobiling on open spaces and in parks; fishing, boating, and swimming in the many lakes and rivers. The recreational opportunities in the region are available to and appreciated by residents and visitors of the region alike.

DRAFT

This section is focused on the link between recreation and the use of land, economic development, transportation, and natural resources, and looks at the provision and use of the region's recreational resources. The provision for recreation throughout the region varies depending on the size of the town.

Larger towns in the region depend on a combination of town owned and private recreation facilities. These towns often have populations concentrated in their village centers but serve nearby rural residents as well.

Partnerships between village "hubs" and surrounding rural towns help make facilities and programs available to more of the county's residents and visitors. Public recreational facilities are available at schoolyards as well as public parks and recreational areas. Trail systems are made possible through partnerships with private landowners. Private recreational opportunities such as guide services, equestrian stables, golf courses, ski resorts, and other activities are found throughout the region.

Because recreation is such an integral part of life for Lamoille County, many sections of the Regional Plan include a connection to recreation. More recreational information can be found in the Transportation, Working Lands, and Land Use Chapters of the Plan. A map of recreation resources is at the end of this section.

POLICIES & ACTION ITEMS

Policy: *Support and strongly encourage creating and maintaining recreational facilities and opportunities for all community users – with special attention to the needs of people with disabilities, youth, elders, those with low incomes, and people from a variety of ethnic groups who may not be current users.*

Action Items:

- Ensure coordinated efforts between LCPC, partner agencies, and member municipalities in planning for and managing outdoor recreational facilities and opportunities.
- Assist municipalities and interest groups in upgrading and

DRAFT

expanding existing community recreational facilities, especially those located at schools and community parks.
- Assist in identifying new recreational opportunities on preserved, conserved, or otherwise protected lands.
- Work with local communities to conserve outdoor space and natural areas for outdoor recreation in or near areas of population concentrations.
- Support recreational infrastructure projects that are designed for multiple types of users.
- Increase the number of trails and other outdoor recreational facilities meeting ADA standards.

Policy: *Encourage new residential and mixed-use developments to include sidewalks, walking and biking paths or trails, outdoor open space, recreational facilities, and community gardens.*

Action Items:
- Work with municipalities, developers, and state and regional partners to incorporate outdoor recreational facilities and amenities into future plans, including sidewalks and connections to existing recreational facilities or trails.
- Work with municipalities, developers, and state and regional partners to ensure continued public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails, and identify, provide, and protect these opportunities wherever appropriate.

Policy: *Support efforts to incorporate shared-use trails and bike lanes in development planning to connect communities, schools, and other facilities, and to increase residents' options for physical activity.*

Action Items:
- Continue to support efforts that will lead to regional year-round, multi-use trails that link municipalities within Lamoille County and to neighboring municipalities, such as the Lamoille Valley Rail Trail and Stowe-Morristown Path.
- Create regional plans that address recreation, such as open space,

DRAFT

bicycling, or other recreation plans.

- Assist interested municipalities in identifying locations of future recreation areas in land use plans and regulatory documents, such as zoning bylaws.

Policy: *This Plan recognizes that much of Lamoille County's recreation is the result of private property owners acting as stewards of the land. LCPC supports State and local efforts to ensure recreation is available to all residents and visitors of the region.*

Action Items:

- As Lamoille County's population increases, work to educate new residents who may not be accustomed to Vermont etiquette or Vermont's unique recreational culture, such as laws allowing public access on private land for hunting, swimming, hiking, and other activities, and about the economic, cultural, and ecological benefits these activities provide. Educate new residents about respectful use and appropriate etiquette for using private land for recreation.
- Continue efforts to plan for and construct multi-use trails with willing landowner involvement, such as the Stowe- Morristown Path.
- Recognizing that land is being conserved and recreation is an important economic driver, explore how best to responsibly incorporate appropriate public access into publicly funded conserved land.

Policy: *LCPC supports locally initiated and led efforts to maintain, improve, and ensure access to the region's recreational activities, facilities, resources, and amenities.*

Policy: *Encourage regional and inter-municipal cooperation and coordination on planning for new or expanding recreational offerings.*

Action Items:

- Support local efforts to create and manage town forests.

DRAFT

- Support local efforts to expand recreational opportunities through new and improved facilities or amenities such as playgrounds, municipal parks, athletic fields, trailheads, kiosks, and signage.
- Encourage recreation user groups to form associations, organizations, or advocacy groups to pool resources, construct and maintain facilities, and encourage growth of new activities.
- Facilitate interested municipalities and regional partners in developing recreational projects that cross municipal or regional boundaries, such as the Stowe- Morristown Path or Lamoille Valley Rail Trail.
- Upon request, provide technical assistance to municipalities in creating recreation committees.
- Assist with creative funding mechanisms to ensure recreational activities, facilities, and amenities are financially feasible and sustainable for the long-term.

Policy: *The economy of Lamoille County should continue to encourage and enhance recreation and related recreational activities, organizations, and industries to ensure the vitality of the Region's tourism industry and quality of life.*

Action Items:

- Work with local recreation groups to increase understanding of recreation's benefits to community economic development.
- Ensure regional growth does not diminish the value and availability of outdoor recreational activities.
- Use recreation as a tool to preserve land and promote land stewardship while encouraging economic development opportunities that consider impacts to natural resources.
- Encourage new businesses and entrepreneurial activity in recreation sectors.

Policy: *Lamoille County's recreation network is disjointed. In order to remain competitive and robust, encourage collaboration and coordination of recreation assets.*

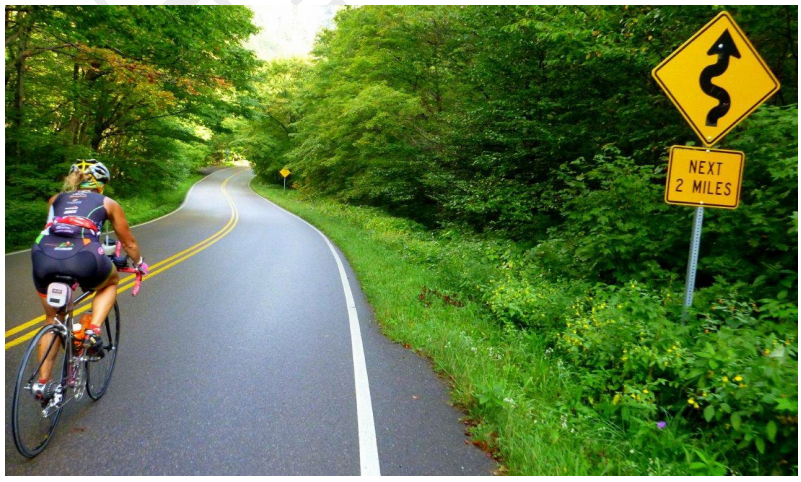
DRAFT

Action Items:

- Working with strategic public and private partners, assist in developing a regional marketing plan that unifies the Region's diverse recreational offerings.
- Encourage the publication of local and regional recreation guides to highlight the Region's recreational offerings and provide funding opportunities to user groups to create guides or maps.
- Encourage a coordinated trail system and network that connects similar uses to one another throughout the County, building on the strengths that each facility provides.
- Foster communication and cooperation between schools, municipalities, and sporting organizations to build a coalition of recreation enthusiasts in small communities.
- LCPC should assist and support community led organizations as needed to build a strong recreation network of user groups.

Policy: *This plan recognizes that climate change may impact the tourism industry, particularly winter recreational activities. LCPC is committed to providing year-round economic and recreational opportunities in order to sustain economic vitality.*

Action Items:



- Assist municipalities in planning for recreation facilities that provide ample opportunities to meet future climate change needs, such as year-round recreation opportunities or making recreation an active part of daily life.
- Work closely with municipalities and business owners to diversify recreational opportunities through emerging trends and new investments or re-investments in existing recreation infrastructure.

DRAFT

Recreation: Background and Inventory

To many residents and visitors, Lamoille County's sense of place and quality of life is defined by its recreational assets. Recreation is an important component of the lifestyle and livelihoods of many of the county's residents; it is the cultural and economic identity of the region, often transcending other aspects of life in the County. Recreation is undeniably a four-season industry in Lamoille County. In spring and summer, residents and tourists enjoy activities such as wildlife viewing, fishing, and photography along trails and in any of the area's ponds, lakes, and rivers where they can also participate in swimming, kayaking, canoeing, and boating. Summer seasonal homeowners populate areas such as Lake Eden and Lake Elmore, with public beaches and picnic areas. Hiking and bicycling are major activities throughout the county. Mountain biking is a trend gaining traction in northern Vermont as new trails are added to local parks. Local entrepreneurs gear new and expanded businesses towards adapting to the needs of recreationists. Municipal plans address recreation needs, goals, and recommendations for improved facilities.

Winter activities play a strong role in the County's economy, most notably around the ski resorts. Two of Vermont's biggest ski resorts are found in Lamoille County. Not only do the ski resorts and related services employ much of the region's workforce, the towns offer a variety of recreational assets utilized by residents and visitors, such as snowmobiling, mountain biking, and hiking trails. In addition to Alpine and Nordic skiing and snowboarding, Lamoille County hosts trails along the Vermont Association of Snow Traveler's (VAST) route between Elmore and Hyde Park. VAST trails allow for snowmobiles, Nordic skiing, and snowshoeing across its extensive membership network. The Catamount Trail is Vermont's north-south cross-country ski trail, passing directly through Lamoille County on public and private land. Eden is home to the Eden Mountain Dog Sledding Club, which offers tours, lessons, and lodging. Winter biking is a new and rapidly growing trend in the County.

DRAFT

With increased demand for more diversified facilities like multi-use trails that support a variety of activities, public land managers are faced with the challenge of maintaining recreational trails and structures in light of the increased and diversified use. A variety of recreational opportunities may also have a positive impact on Vermont's adult obesity rate, which stands at 26.2%. The Centers for Disease Control and the Robert Wood Johnson Foundation reported that 14% of Vermont's youth (ages 10-17) were also overweight or obese, putting them at risk for diabetes, high blood pressure, and other diseases. While these numbers are low compared to other states, obesity rates continue to rise. As obesity rates continue to rise, the population ages, and trends and issues surrounding recreation evolve, so too will recreation. Adapting to new issues and expanding new opportunities will continue to be a challenge in the future.

Available Recreational Assets

Much of the recreation available in rural towns in the Region occurs on privately owned lands, which showcases the Region's strong ties to recreation. Open space preservation and continued public access to these land and water resources can help counter the lack of town-owned, developed, recreational activities and facilities. In rural communities that are unable to provide developed recreational options, private landowners as well as state and federal agencies are critical recreation providers. Developed recreation facilities found in the region's rural towns are often indirect beneficiaries of other infrastructure projects, such as school ball fields and playgrounds, and Class 4 roads. See the Lamoille County Recreation Facilities map for locations of major recreation facilities.

State Forests, Parks, and Recreation Areas

Lamoille County is home to three state parks: Elmore State Park, located in Elmore, the Green River Reservoir in Hyde Park and Eden, and Smugglers' Notch State Park, located between Stowe and Cambridge. There are five state forests in the region: Putnam, Long Trail, Mt. Mansfield, Morristown Bog, and the Cambridge State Forest. The State also has a number of nature areas in the County, including: Mt. Mansfield Nature Area, Daniel's Notch Nature Area, the Morristown Bog Nature Area, and Moss Glen Falls Nature Area.

The Vermont Department of Forests, Parks, and Recreation is responsible for overall management of state lands and administers the State Park and Forest System. State lands in Lamoille County provide day use access to important natural features and scenic areas. These forests and parks also host hiking trails, and some link together other important conserved lands. The region's State Parks offer camping and picnicking opportunities. Most notably, Stowe Mountain Resort and Smugglers' Notch Resort both have leases with the State of Vermont to use Mt. Mansfield for downhill skiing.

State fishing access areas can be found in Elmore, Lake Eden, Cambridge, Morristown, and Wolcott. Fishing access at Fischer Bridge in Wolcott was modified to be wheelchair accessible. Additionally, the Wild Branch Wildlife Management Area is located in Eden and the East Hill Wildlife Management Area is in Wolcott.

Town Forests

Most Town Forests, or forest land owned and managed by municipalities, were created in the early 1900s through legislation authorizing the establishment of "endowment forests" as part of a statewide effort to reforest the State and promote good forest management practices.

In a 1931 report from the Vermont Commission on Country Life, the value of these resources was described as "a source of public education. Schools as well as the general public can help secure firsthand information that often is obtainable in no other way. Such a forest area may well be the recreational center for the community, and when properly managed and administered, should become a source for revenue."

Historically, municipal forests were managed for timber harvesting. While this is still the case in many instances, recently there has also been a shift to management of these forests for recreational and educational uses as well. Many towns maintain signed hiking trails and wildlife viewing areas as well as other recreational opportunities, and encourage use of the forests by residents and school groups.

DRAFT

Town Forests in Lamoille County include:

Cady Hill Forest (320 acres): Stowe Land Trust, in partnership with the Town of Stowe, acquired Cady Hill Forest in 2011, raising nearly $1.5 million to make the project a reality. Cady Hill Forest provides permanent, year-round public access for all forms of non-motorized recreation, and is specifically incorporated into a series of mountain bike trails in Stowe and Waterbury through the Vermont Ride Center. It also provides protection of prime deer wintering habitat, sustainable timber harvesting to enhance deer wintering habitat and providing revenue for ongoing maintenance of the property, and viewshed protection from the Route 100 corridor.

Gomo Farm Town Forest: The Gomo Forest is approximately 141 acres and is owned by the Town of Johnson. The Forest is located along the border between the Towns of Johnson and Waterville and is bounded by the Long Trail State Forest to the north and south; Butternut Mountain to the east; and the North Branch of the Lamoille River valley to the west. The property includes beaver ponds and associated wet meadows and scrub-shrub wetlands, riparian habitat along several small streams, upland forests, small openings with predominately herbaceous plants and some trees, and some formerly open field habitat that is reverting back to young forest. The Johnson Conservation Commission currently manages the Forest for some timber production, firewood, recreational uses, and habitat enhancement.

Morristown Municipal Forest: The municipal forest, over 300 acres in Mud City, is actively managed for timber, wildlife, and recreation. With the help of the State's Department of Forests, Parks, and Recreation, recent activities are intended to create a model for local forest management at this site.

DRAFT

Moss Woods: Located in the Village of Hyde Park, this six acre forested area provides a significant cultural contribution and substantial ecological resources to the Village. The Village considers it an irreplaceable natural area important to maintaining the character of the Village. As of the drafting of this plan, the Village is in the process of formalizing this as a Village Forest.

Sterling Forest (Stowe-1,500 +/- acres): Sterling Forest was acquired in 1994 and is subject to a forest management plan prepared by the Stowe Conservation Commission. This plan includes detailed information concerning the natural resources found on the property and prescribes ongoing management activities designed to balance timber harvesting with wildlife habitat protection, water quality, and recreation. The Town has recently completed two phases of a three-phase timber management plan for Sterling Forest. In 2007, lumber cut from Sterling Forest was milled on site and used to build nine bridges along the Catamount Trail in Sterling Forest.

Wolcott Town Forest (709 acres):
In 2021, a vote was passed to establish the Wolcott Town Forest.

Trail Networks
Lamoille County also has a plethora of recreation trails. Trails include state trails, such as the Catamount, maintained by private organizations such as those by Vermont Association of Snow Travelers (VAST), and trails owned and maintained through partnerships, such as the Lamoille Valley Rail Trail.

Road Network

Our state and local road networks are important for recreational uses, which are perhaps the most frequently used resource for routine recreational uses for residents. In the absence of sidewalk infrastructure, roads are used for a variety of recreational purposes, such as walking, jogging, bicycling, equestrian and other uses. Variable widths of the existing roadway shoulders may limit recreational uses. Additionally, many class 4 town highways are used for snowmobiling, snow shoeing, and cross country skiing; however, their use is subject to local rules and restrictions. In accordance with Vermont's Complete Streets Law (Act 34, 2011), accommodating all modes of travel (i.e. walking and bicycling) is to be considered in all state and municipally managed transportation projects.

The Lamoille Valley Rail Trail (LVRT) which was completed in 2022, is a 93 mile long trail that crosses northern Vermont from East to West. This

DRAFT

trail is the longest single rail trail in New England and will connect to other trails spread throughout Vermont to add to the continued story of Vermont exploration. The LVRT provides year-round recreational opportunities for users from St. Johnsbury to Swanton, passing through Wolcott, Hyde Park, Morristown, Johnson, and Cambridge.

The Long Trail is known as Vermont's "footpath in the wilderness." Built by the Green Mountain Club between 1910 and 1930, the Long Trail is the oldest long-distance trail in the United States. The Long Trail follows the main ridge of the Green Mountains from the Massachusetts-Vermont line to the Canadian border as it crosses Vermont's highest peaks. The Long Trail passes through Belvidere, Johnson, Waterville, and through Smugglers' Notch State Forest in Stowe, Cambridge, and Morristown.

Open to the public in the winter, the 300-mile Catamount Trail is North America's longest cross-country ski trail. This winter-use only trail, which starts at the Vermont-Massachusetts border, winds its way for 300 miles through the heart of the Green Mountains to the Canadian border. The trail runs through Eden, Elmore, Morristown, Stowe, and Wolcott, generally following along the spine of the Green Mountains. Cross-country ski trails are also maintained by private businesses, and can be found in the Mt. Mansfield area.

The Vermont Association of Snow Travelers (VAST) is responsible for the maintenance and grooming of an extensive snowmobile network across the state. One of the oldest snowmobiling groups in the U.S., VAST is a non-profit, private group that includes over 24,000 members. Eighty percent of VAST's trail system is on private land and permitted by agreement with each landowner. During winter months, the VAST snowmobile network connects Eden to virtually anywhere in the state. VAST trails also pass through Johnson and Wolcott.

Many local hiking trail networks are used extensively for day hikes and wildlife viewing and can be found in most municipalities. Extensive trail networks specifically designed for mountain biking exist countywide and are continuing to expand as popularity in the sport grows.

DRAFT

Water Access

The region also boasts a variety of water based recreational opportunities. The Lamoille River and its tributaries bisect the entire county with ample river based activities such as canoeing, kayaking, fishing, and swimming. The Lamoille is not the only source of water based recreation in the region, with the Wild Branch, Gihon, North Branch, and Little Rivers also providing significant river activity. It is important to note the many lakes throughout the County, particularly in the northern and eastern areas. Streams and ponds throughout the region provide recreational opportunities. Many informal swimming holes exist along the network of streams and rivers in the region.

Many sections of the Lamoille are currently under-realized for potential recreation and economic development. In order to encourage diverse recreational users to begin or end their journeys in Lamoille County, and hopefully frequent Lamoille County based businesses, municipalities can consider boat launch points along rivers or incorporate portages with recreational trails. Safe access points to rivers and streams lessen the risk of degrading stream banks and encourage more use.

A 2009 survey of Vermont residents found that the protection of fish and wildlife resources, habitats, and lands as well as the opportunity to participate in wildlife-related recreation was important to 97 percent of Vermont residents surveyed. In Lamoille County, there will continue to be the need to balance the protection of fish and wildlife resources with wildlife-related recreation.

Unmet Needs

As important as recreation is to Lamoille County's residents, tourism industry, and quality of life, there are still unmet needs in the recreation system. Many of these are common to the entire state, as evidenced in Vermont's 2019 Comprehensive Outdoor Recreation Plan. Some of the regional recreational issues and unmet needs include:

- More funding
- Overreliance on volunteers
- Expanded recreational opportunities
- Better access to existing recreational activities
- Better regional and inter-municipal coordination
- Increased recreation organization through community clubs and organizations, e.g. VAST and Vermont Mountain Bike Association (and other local mountain bike clubs)
- Improved communication between private landowners and recreation users to mitigate conflict.

Expanded recreational capacity, resources, and facility needs

Low or non-existent recreation budgets in most towns limit the ability of municipalities to adequately plan and provide recreational options. Few municipalities in the Region have a recreation commission or recreation department. The cost of expanding or developing a town forest is often not in a municipal budget, neither is the creation of athletic fields or other facilities.

The capacity of many groups to identify recreational needs, organize sports leagues, conduct feasibility studies for proposed recreational facilities and plan for facility maintenance and enhancement, on top of seeking out new recreational opportunities, is often insufficient. Towns with no recreation director or commission are at an even greater disadvantage and often depend on neighboring towns' recreational facilities and programs.

More recreation lands have been cited as a need for many municipalities. Connecting municipalities through trail networks, for example, is desired but the costly price tag and lengthy planning time slow down the process.

DRAFT

While municipalities may have trouble maintaining existing facilities, there is a recognized need for additional basic facilities such as ball fields and trail networks to meet recreational needs at the local level. Related infrastructure, such as better informational signs, updated equipment for school playgrounds, and extensive budgeting, are also needed in order to meet facility needs.

Access to recreational opportunities

Access to recreational opportunities is inhibited by transportation, conflicting uses, and cost. The distribution of recreational areas and facilities is concentrated in larger population centers, making access difficult for residents of the region without transportation. Because of the nature of recreation, trailheads, lake access points, and other opportunities are often outside of any public transportation system and generally inaccessible to residents who do not have their own transportation. Automobile dependence could be decreased by better access to facilities by bike or foot travel. Currently, there are few bike/pedestrian connections that link recreational facilities between municipalities.

Loss of access to water resources is also a concern, and towns with important water resources recognize the need to maintain public access points to these resources for those not owning shoreline property. Conflicts between types of recreation and the desired characteristics of the experience can also affect the enjoyment of recreation in the region. Recreation takes many forms in the region, ranging from motorized ATV and snowmobile touring to activities requiring greater solitude, such as wildlife viewing and backcountry hiking and camping.

Lastly, it is important to consider who has access to recreation. As the population ages and the health benefits of recreating become more evident, there is a need to provide a diverse array of recreational opportunities, including free and fee-based activities, for all types of users, including those with disabilities. Winter ski programs, biking, and exposure to new athletic trends, such as yoga, at area schools offer youth opportunities to try new activities through traditional physical education

DRAFT

classes in the school system. These activities are critical so that children develop an early interest in physical activity.

Regional and inter-municipal coordination

Recreational resources that are open to the public are not fully marketed to the Region's residents or its visitors. Resources that the Region does have should be meeting the needs of both populations, as well as identifying the recreational resources of the Region that make it a unique place to live and visit. Recreational resources could be more widely used if there was more publicity of opportunities, structured and informal, or better coordination of recreational offerings at a county level.

Municipalities that develop recreational opportunities do not always communicate with one another about proposed facilities. Improving coordination between municipalities would strengthen the recreational network and improve linkages between resources, fostering greater use of the facilities and inspiring new economic opportunities.

Trail networks well maintained by user groups are utilized most frequently.

While a greater awareness of the recreational opportunities would satisfy users looking for new adventures, this could also increase the use of facilities that may already be overused or in need of maintenance – a separate, but related need.

Increase recreational organization, e.g. VAST and Vermont Mountain Bike Association (and other local clubs)

With limited funds and limited resources, recreational users, and the State of Vermont have found that user groups are vital to sustaining free or low-cost recreational activities. User based groups build a community around new recreational activities, such as mountain biking, and provide a forum for addressing statewide issues, such as the role of VAST in building a snowmobiling network. User groups are also active in supplementing State resources for new activities on State-

DRAFT

owned land, such as the Vermont Mountain Bike Association cutting mountain biking trails or ice climbers in Smugglers' Notch State Park.

Strengthening these groups strengthens and encourages active participation in athletics and in maintaining a recreational network that caters to all current and future users. User groups that serve the local community can also help build relationships between the municipality and the users. One example is the idea of a backcountry ski organization; as this sport becomes increasingly popular, there may be conflicts between land access and skiers.

User groups have also demonstrated their role in providing materials, such as trail guides or maps that show recreational resources and paths. For example, the Cambridge Trails and Greenway Coalition published a local trails guide and the Stowe Conservation Commission has been instrumental in developing and funding various guides to activities in Stowe.

Communication between private landowners and recreational users to mitigate conflict

Undeveloped recreational areas — sledding hills, swimming holes, hunting lands, etc.— serve important recreational needs in almost every town in the Region. Private lands comprise roughly 85 percent of lands in Vermont. It has been a long-standing Vermont tradition for private landowners to allow the public access to their land for hunting, hiking, and fishing, as Vermont's constitution gives people the right to hunt, hike, and fish on unposted land throughout the state. Although landowners allow recreational uses on private property, users recreate at their own risk in these spaces.

Loss of access to private lands is increasing due to liability concerns and the reluctance of landowners to keep their land open to unknown users. Loss of these private lands threatens to eliminate many of the free recreational opportunities available across the Region, especially in smaller towns that do not have the resources to provide municipal recreational facilities. Many private landowners do not post their land,

DRAFT

allowing access for hunting, fishing, hiking, biking, snowmobiling, and other activities.

Current Trends

- Continued loss of access to recreational opportunities on private land.
- Potential loss of recreational opportunities and related tourism associated with open space development and fragmentation.
- Changing trends in recreational activities, e.g. mountain biking, backcountry skiing, increase in community gardening.
- Nature-based recreational activities need increased planning attention as they are recognized as an important component of economic and community development.
- Increased demand for motorized recreation such as snowmobiles and off-road vehicles, leading to identification and creation of appropriate areas and support infrastructure.
- Increased management of recreational facilities for a variety of potentially conflicting uses to accommodate increased demand for motorized recreation as well as wildlife viewing and hiking opportunities.
- As the Region's population becomes more diverse it will be important to focus on health equity and allowing all people to enjoy the outdoors. Health equity can be incorporated into implementation projects and/or policies.
- Increased demand for non-competitive recreational infrastructure (biking/hiking/walking trails, dog parks, etc.) as recreation's role in quality of life and general health and well-being becomes more recognized. Lifestyle shifts and increasing obesity throughout the country emphasize the need for communities that support active lifestyles.
- As the Region's population continues to age, the need for well-maintained, thoughtfully-located sidewalks and walking paths, as well as recreational programs focused on meeting the needs of this population, will become an important component of recreational provisions.
- Provide recreational opportunities with health equity in mind.

DRAFT

Meeting Current and Future Needs

Given that financial resources for recreation are limited throughout the county, communities and organizations should sustain and expand recreational resources. Sharing of resources at the local, State, and Federal level, and with the private sector, is equally important. Partnerships in this area are key when considering elements like the management of shared-use parking areas and traffic issues near Stowe Mountain Resort. Statewide trends indicate the total number of recreational participants and days of participating are increasing. Increased demand will put additional pressure on a fixed public land and water base, especially for developed recreational sites and nature viewing activities, where Vermont may add over 100 million participants by 2060.

Local, regional, state, and federal agencies in Vermont should coordinate growth management planning and policies to determine the best places for growth to occur. Public agencies should work with private businesses to ensure that recreational services complement, and do not compete, with each other. A variety of public, private, and non-profit funding sources are available to support expanding recreational opportunities to incorporate healthy activities into daily functions, such as sidewalks, bike paths, municipal parks, and community gardens.

On a nice day, parking lots to popular recreation spots can be tight.

Agencies, businesses, and organizations providing recreation should work to share feedback from users with each other so that services can be adjusted and coordinated to most effectively meet user needs. The tourism and ski industries are seeking to expand four-season offerings in order to meet user demand and adapt to changing weather conditions. In some cases, this may mean shifting currently managed forest land to recreational use. Ensuring compatibility between existing and future land uses will create new opportunities and challenges.

Additional continued funding for public facilities upgrades and maintenance will be necessary. Smaller, more rural towns may consider grouping resources when applying for recreation related grants and when forming recreation commissions. Community endowments and other private support are also important components to municipal recreational programs.

Changes to the tax code at the State level providing tax relief to landowners who allow recreational use of their property could also help keep access to privately owned recreational opportunities open.

Recreation, Tourism, and Economic Opportunity

Tourism is a critical component of Lamoille County's economic development. Many consider Lamoille County "The Heart of Recreational Vermont." Recreational elements are an integral part of Lamoille County's tourism economy and, as such, should continue to be considered in tandem with economic development efforts.

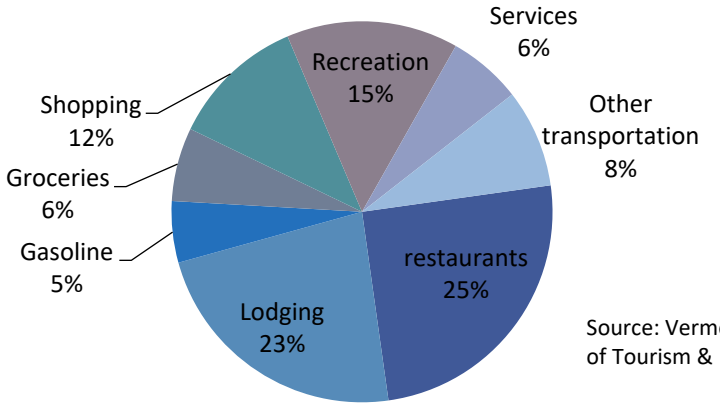
There is no denying the importance of tourism for Vermont's economy. A 2017 report from the Vermont Department of Tourism and Marketing found:

- Visitors made an estimated 13 million trips to Vermont for leisure, business, or personal travel;
- Direct spending by visitors for goods and services totaled $3 billion (see Figure 4-1 below);
- Visitor spending supports an estimated 30,000 jobs for Vermonters (approximately 10% of all Vermont jobs); and
- Visitor spending contributed $347 million in tax and fee revenues to the State of Vermont.

DRAFT

Lamoille County's two major ski resorts make it a destination location in the winter, but abundant natural resources make it a destination location year-round. It is estimated that $700 million is spent in Vermont during the ski season. In low snowfall years, that drops to $46 million. As the climate changes and the northeast warms, the ski industry has found ways to adapt. Smugglers' Notch and Stowe Mountain Resort, for example, have invested in snow-making equipment and expanded their services and amenities.

Figure 4-1. Vermont visitor spending patterns, 2017



Source: Vermont Department of Tourism & Marketing, 2017

Smugglers' Notch spent over $1 million in snow-making equipment in 2012 alone. Stowe Mountain Resort has a performing arts center, golf course, and a fleet of summer activities. The Trapp Family Lodge has a large disc golf course, farm operations, and a micro-brewery and has expanded its services to become home to Nordic ski tournaments. Many resorts are adding mountain biking trails as part of local, state, and international networks.

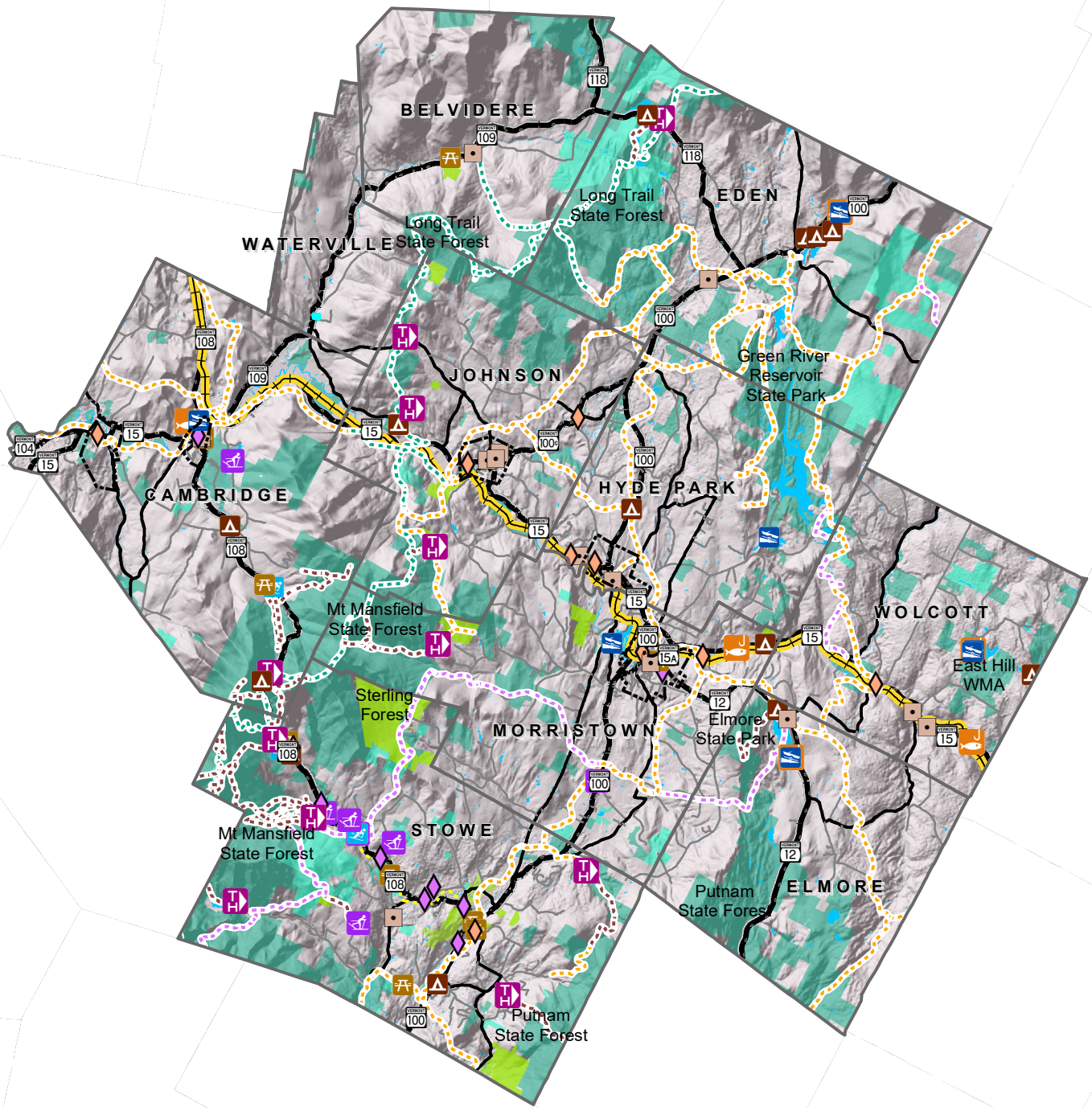
One of the more recently identified challenges to the tourism industry is the growing importance of Vermont's northern neighbors – appealing to Canadian visitors. When Canadians come to the United States, they see a need for improvements at the border. Border crossings can be intimidating, lengthy, or otherwise cumbersome. When they arrive in Lamoille County, there are few resources translated into French. Bike maps, for example, printed in English and French, could broaden the appeal for cycling tours throughout Lamoille County's rural communities, as would roads, shoulders, and trails that provide adequate room for safe multi-modal transportation.

When Canadians leave the United States, they face problems taking certain foods across the border, such as wine and cheese. This leaves

opportunities for Lamoille County to be part of larger discussions to work with Canadians, particularly the province of Quebec. For visitors to Lamoille County, there is a need to show where recreational activities are located, where to park, and how to use the facilities. As demand grows for recreational facilities and new trails, paths, and trailheads are added, the lack of updated guides, maps, and brochures showing connections between recreational facilities is difficult for both residents and visitors alike.

DRAFT

Recreation Facilities
Lamoille County



Recreational Sites

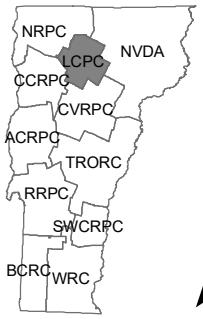
- Campground
- Trailhead
- Cross-Country Ski Area
- Downhill Ski Area
- Picnic area
- Private Commercial Recreation area
- Public Recreational area
- School Athletic Fields
- Lake or River Access
- Fishing Access

Regional Trails

- VAST
- Long Trail
- Catamount Trail
- Local Recreational Path
- Other Trails
- Lamoille Valley Rail Trail

Public Conserved Lands

- State
- Municipal
- Other Non-Profit/ Private Orgs



N

0 2.5 5 Miles

Data Sources:

Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Regional Trails: ANR 1993, VAST 2011, Catamount Trail Association 2003.
Recreation Sites: Vermont Department of Forests, Parks and Recreation, 2022.

Created 10/10/22 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Working Lands: Strategy

The working landscape is a central component of the character and economy of Lamoille County and has shaped the region's human settlements and transportation networks. This landscape is the result of centuries of active land management by generations of Lamoille County residents. The following key strategies must be recognized:

Ensure the viability of diverse agricultural and forest-based enterprises as a key component to maintaining the County's working landscape. Without agriculture and forestry, much of the working landscape would be lost. Agricultural and forest-based enterprises, including agritourism, must be provided with the flexibility to adapt to changing conditions.

Private property owners are the primary stewards of the County's working landscape. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic, and the importance of traditional activities, such as agriculture, hunting/fishing, and forestry in order to minimize conflicts over use of land.

Public Lands contribute to the County's working landscape. Public lands may range from small, community owned parks to large State Forests. Some towns have invested local resources to create "Town Forests" or operate local Land Trusts. Acquisition of new public land should occur in consultation with the host community, and public lands should be open to diverse public uses.

Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat. Wildlife based activities such as hunting and fishing are an important component of the Region's culture and economy. Sound management of the working landscape can enhance these resources, while fragmentation of habitat can undermine its quality.

The working landscape provides diverse outdoor recreational opportunities, which also contribute to the regional economy. Recreation includes traditional

DRAFT

activities such as hunting and fishing, as well as newer activities such as mountain biking and dog sledding. With sound land management and cooperative planning, diverse recreational opportunities can coexist with each other and with agriculture and forestry operations.

POLICIES & ACTION ITEMS

Policy: *Support and strongly encourage the continued diversification of the agricultural and forest products produced in Lamoille County.*

Action Items:

- Work with communities to ensure that regulations in the Rural and Working Lands Areas (Rural General, Agriculture/Forestry Areas on the Future Land Use Map) allow for diverse farm and forest operations, including onsite value added production, and expanded definitions for State Required Agricultural Practices. Modernize regulations to reflect growth of non-traditional activities (such as agritourism, back-yard saw mills, on-farm cafes, etc.).
- Support expansion of workforce training (adult education and vocational education) efforts related to the agricultural and forestry industries. Examples include the GMTCC Forestry and Land Management Program and the Vermont Woodworking School.

Policy: *Encourage development of the secondary industries needed to support the working landscape, such as food processers, saw/lumber mills, storage/warehousing facilities, and incubators (such as the Vermont Food Venture Center).*

Action Items:

- Work with municipalities, LEDC, and other economic development agencies to identify viable uses for the County's lower quality timber, such as siting of a biomass co-generation station, wood pellet manufacturer, or similar facility in the region.

Policy: *Support efforts to increase access to local foods and other locally produced agricultural and forest products.*

DRAFT

Action Items:

- Work with Regional and State partners to encourage better utilization of local farm and forest products, (such as food, timber, and firewood) at local institutions, schools, resorts, and other major employers.

Policy: *This Plan recognizes that much of Lamoille County's working landscape is the result of private property owners acting as stewards of the land. LCPC supports State and local efforts to ensure the viability of the agricultural and forestry industries.*

Action Items:

- As Lamoille County's population increases, work with regional and non-profit partners to educate new residents who may not be accustomed to aspects of the working landscape, such as agricultural operations and hunting, and about the economic, cultural, and ecological benefits these activities provide.
- Publicize efforts to promote active land management through resources such as Vermont Fish and Wildlife Landowner/Hunter Access Registry Landowner - Hunter Connection | Vermont Fish & Wildlife Department
- Increase awareness of the Region's diverse fish and wildlife populations and the Region's importance in sustaining populations of rare, threatened, and endangered species, such as loons and Peregrine falcons.
- Support the protection of unfragmented forest blocks and habitat connectors as wildlife corridors to allow for wildlife migration.
- Support efforts by the Vermont Department of Fish and Wildlife and the Lamoille Fish and Game Club to introduce new residents and the younger generation to traditional outdoor activities such as hunting and fishing.
- Encourage forestry operations that protect unfragmented forest blocks for wildlife corridors and ecological processes and reduce further fragmentation of priority forest blocks.
- Encourage the Current Use Program to allow multiple landowners to combine parcels in order to meet minimum acreage requirements.

Policy: *LCPC supports locally initiated efforts to conserve farm and forestland. Once conserved, plans for management of such lands shall be developed in consultation with the host community.*

DRAFT

Action Items:

- Support local efforts to create and manage town forests. Encourage efforts that include outreach to private landowners regarding sound forest management techniques and operations in accordance with Acceptable Management Practices.
- Support municipalities and local landowners in the conservation and protection of priority forest blocks and habitat connectors on conserved farm and forestland.

Policy: *Whenever a State or Federal agency considers a new land acquisition, it shall consult with the local legislative body prior to making any purchase.*

Action Items:

- Engage any public entity considering a new land acquisition in Lamoille County early in the process to ensure local concerns are addressed.

Policy: *Given the large amount of State-owned land within Lamoille County, public use of this land for recreation, wildlife management (including hunting), timber management, and maple sugar production should be allowed and encouraged.*

Action Items:

- Work with the Vermont Department of Forests, Parks, and Recreation to determine if areas of State Forest land within the County should be open to maple sugar production. Only areas that would not degrade recreational use or ecological integrity of the forest should be considered. If such areas are present, the Department should consider piloting a test program allowing maple sugar production on State Forest land in Lamoille County.
- Explore opportunities for use of State lands for renewable energy development with consideration given to wildlife, watersheds, scenic resources, carbon sequestration, and other potential impacts.

Policy: *This Plan recognizes the value of the County's forestland in providing recreational opportunities and the important role that all forms of outdoor recreation play in the Region's economy.*

DRAFT

Policy: *Regionally significant ridgelines, such as Mount Elmore and the Worcester Range, Mount Mansfield and the Sterling Range, the Woodbury Range, Butternut Mountain, and Belvidere Mountain, should be protected from major development.*

Policy: *Fragmentation of core forest areas and other important wildlife habitat is strongly discouraged.*

Action Items:

- To prevent undue fragmentation of farm and forestland, work with communities to investigate innovative tools for maintaining the working landscape. Tools include alternatives to traditional "large lot zoning" such as density averaging and Planned Unit Developments, density transfers/transfer of development rights, and overlay districts.
- Work with federal, state, regional, and municipal partners to promote the protection of high priority forest blocks and habitat connectors to support biodiversity and allow for the movement of wildlife.
- Work with communities to explore forestry operations that improve forest health and maintain wildlife habitat, including: pruning; planting; reforestation; pest, disease, and invasive species control; fertilization; and timber harvest.
- Work with forestry and conservation partners to explore funding opportunities to protect priority forest blocks and wildlife habitat connectors. This may include funding to purchase, conserve, or maintain priority forest blocks for critical wildlife habitat, wildlife migration, and recreation.

Policy: *State transportation and infrastructure projects shall consider impacts on wildlife connectivity.*

Action Items:

- Work with municipalities to obtain funds to improve wildlife passage through the transportation network.

DRAFT

Working Lands: Background and Inventory

Lamoille County's topography has shaped the region's landscape, human settlements, and transportation networks. The County is bounded to the west by the Green Mountains, including Mount Mansfield, Vermont's highest peak, and to the east by the Worcester Range. These ranges provide the visual backdrop for which the County is known. Much of the higher elevations are largely undeveloped and contain large swaths of unfragmented forestland and wildlife habitat that are critical to the movement and survival of many species of animals. The summit and surrounding area of Mount Mansfield contain the highest concentration of fragile areas in the County.

In some cases, the underlying geography of these areas is rare itself. For example, the cliffs of Smugglers' Notch contain one of only 11 documented examples in Vermont of a Cold Calcareous Cliff Community. This community type is characterized by large exposures of moderately base-rich bedrock, usually at high elevations, with frequent natural disturbances such as ice fall and rock fall. These cliffs also constitute one of only a few active Peregrine falcon nesting sites in the State of Vermont.

The mountain summits and ridgelines also provide the headwaters for streams flowing into the Lamoille River. As these streams run down the mountains, they form numerous waterfalls, cascades, and gorges that are themselves important features of the County's landscape. These features create an attractive recreational resource. They also provide an important educational resource by illustrating the geologic history of the region and offer specialized habitats and microclimates for many species of flora and fauna. Lamoille County is home to twelve hydrogeological features as documented in *Waterfalls, Cascades, and Gorges in Lamoille County* (December 1991) prepared by the Lamoille County Planning Commission. This report evaluated these sites for their potential for loss due to landowner attitudes towards access, adjacent land uses and development, and overuse. The report concluded that, while many of these features are protected by public ownership or land use regulations, communities should recognize the valuable public benefit the private property owners are providing by keeping access open. Efforts should be considered for public or semi-public acquisition where possible.

DRAFT

The biophysical regions of Vermont characterize the landscape into distinct units that share features of climate, geology, topography, soils, natural communities, and human history. Although each region has variation within it, all are widely recognized as units that are more similar than they are different. Lamoille County lies almost entirely within the biophysical region of the Northern Green Mountains, with its westernmost corner lying within the Champlain Valley biophysical region.

The Northern Green Mountains are characterized by high elevations, cool summer temperatures, and acidic metamorphic rocks. The characteristic natural communities include Northern Hardwood Forests and the high elevation communities of the Spruce-Fir Northern Hardwood Forest. The Green Mountain range has a marked influence on the climate of the region, with temperatures in higher elevations typically cooler than at lower elevations and with higher elevations receiving significantly more precipitation than low lying areas.[1]

The Northern Green Mountains today are comprised of primarily metamorphic rocks, mainly schist, phyllites, gneisses, and quartzite. These rock types are generally acidic. Glaciation has influenced the surface geology and topography of the region. Smugglers' Notch is an old stream valley that was significantly enlarged by the passing glaciers. Except for the higher elevations of the Northern Green Mountains where there are extensive areas of exposed bedrock, much of the biophysical region is covered with glacial till[2].

The highest elevation peaks in Vermont are found in the Northern Green Mountains. The Chin of Mount Mansfield (4,393 feet) stands the tallest. Other prominent peaks within Lamoille County include Belvidere (3,360 feet), Elmore, Laraway, and Butternut Mountains. Besides the primary range of the Green Mountains, Lamoille County contains the secondary ranges of the Worcester, Sterling, Cold Hollow, and Lowell Ranges. The Worcester Mountains include Elmore Mountain and Mount Hunger and are separated from the main range by the Stowe Valley. The Lowell Mountains extend from near Lake Memphremagog southwest to Eden. The Cold Hollow Range begins just north of Route 109 in Belvidere and extends into Franklin County. The Sterling Range lies just east of

1 Thompson E. and Sorenson E. (2005) Wetland, Woodland, Wildland; A Guide to the Natural Communities Of Vermont.
2 ibid

DRAFT

Route 108 and south of the Lamoille River Valley. Bisecting the Green Mountains, the Lamoille River valley provides topographic diversity in the region. Because of its generally steeply sloping topography, the Northern Green Mountain region has no natural lakes and substantially fewer wetlands than other parts of the state.

This rough topography has shaped human settlement patterns and the economy of the region. Traditionally, villages and downtowns were located at key routes along the rivers, roads, and railroads cut into the lowland river valleys. The narrow river valleys have provided opportunities for agriculture, but not nearly at the scale possible in the wider Champlain Valley. After rapid deforestation in the early 1800s, forests returned to the County's steep hillsides and eventually became an important component of the region's economy. Finally, the hills themselves became valuable for the mineral resources beneath them. All of these economic forces shaped the landscape of Lamoille County. Thus, while Lamoille County is rich in natural resources, it must be remembered that the County is not an "unspoiled wilderness" but rather a working landscape shaped, for better or worse, by current and past generations.

Agriculture

The Changing Face of Agriculture

While only 17% of land in Lamoille County is actively used for agriculture, farming continues to play an important role in shaping the economy and character of the County. Most of the agricultural activities in the County occur in the Lamoille River Valley and its primary tributary basins – where the land is level, tillable, and productive. Aside from providing locally produced farm products and employment, agriculture is a critical part of the Vermont way of life and contributes to the County's traditional settlement pattern by providing a diversity of land uses and open space that is characteristic of northern Vermont.

According to the 2017 USDA Census the market value of products sold was $84,319. The total market value of products sold in Lamoille County was $27.74 million. A thorough analysis could be conducted in the future to fully evaluate how Lamoille County agriculture compares to its neighbors; Caledonia County farm sales to the east average $72,076 while Orleans County farms to the north

DRAFT

average $164,875. Washington County farms average about $55,565 of sales. To the northwest, Franklin County farms average $254,614 worth of sales.

The face of agriculture in Lamoille County is currently in a state of change. Traditionally, dairy farming was the predominant type of agriculture within the County. While dairy remains an important component of the County's agricultural industry, it is not as dominant as it once was. Of the $27.74 million worth of agricultural products sold by Lamoille County farms, more than fifty percent is from milk and other dairy products. .

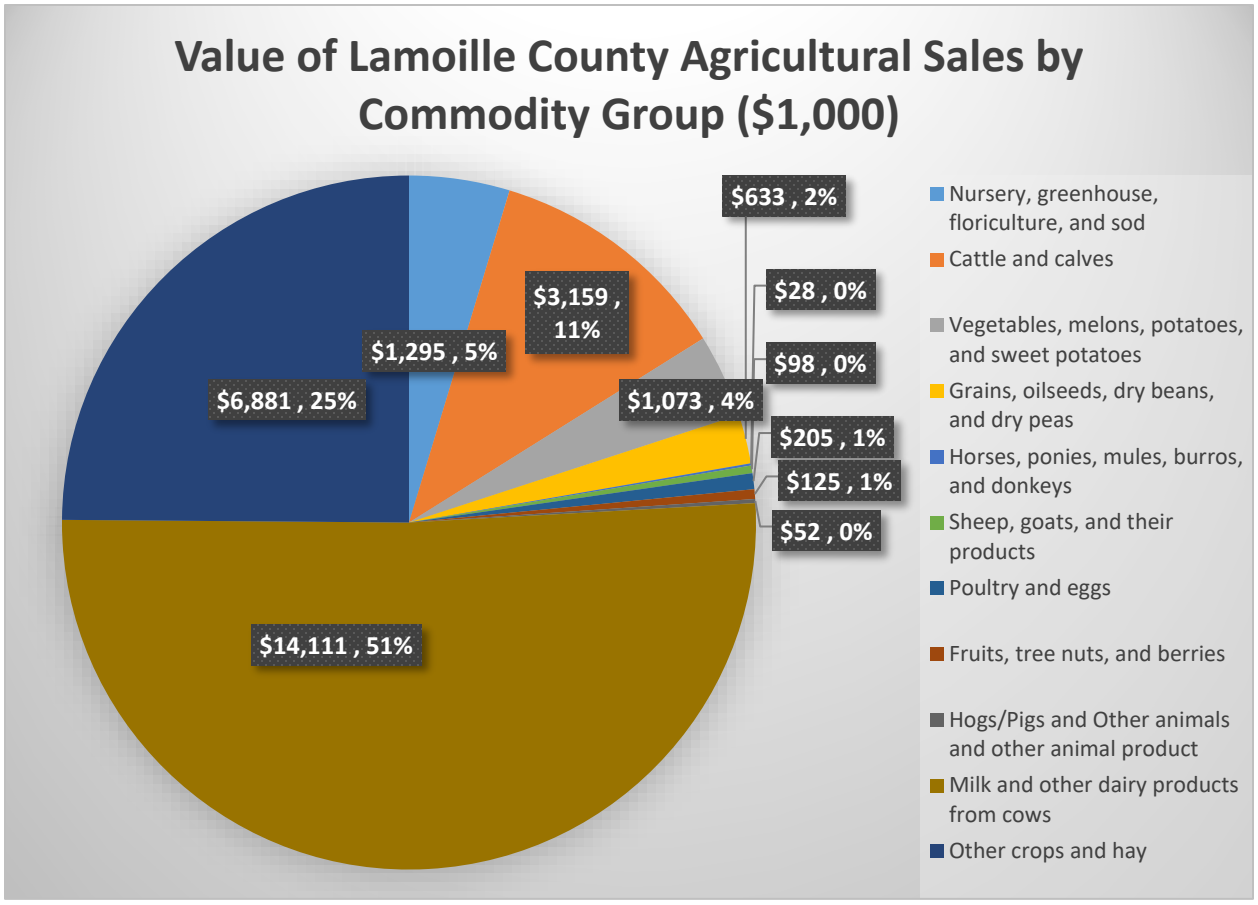


Figure 4-2. Value of Lamoille County Agricultural Sales by Commodity Group ($1,000)
Source: USDA Census of Agriculture, 2017

The number of dairy farms decreased according to the USDA, falling to 24 dairy farms. This apparent decrease has lead to the emergence of new agricultural products and has led some to say that Vermont is experiencing an "Agricultural Renaissance." New agricultural products being produced in Lamoille County include organic produce, wine, organic beef, seed, saffron, marijuana, nursery

production, and specialty products such as cheese and bread. This trend can be seen in the growing variety of commodities represented in the graph above. Many of these new agricultural enterprises rely on "direct marketing" of products to the consumer while traditionally farmers sold a commodity (such as bulk milk) to a producer who then processed the product for sale to the consumer. Under direct marketing, the farmer sells a product, either raw or processed, to the consumer.

Agritourism

Visiting an agricultural enterprise to enjoy, be educated, or participate in, an activity has taken on a life of its own in Vermont, known as agritourism. Agricultural operations in Lamoille County have diversified their offerings, hosting farm-to-table dinners and special events, adding special events barns, hosting corn mazes, and providing opportunities to enjoy the scenery and inner workings of an active farm. These activities allow agricultural operations to earn new income and cater to larger audiences of visitors to the region. Agritourism is not without its challenges. Many of these activities do not qualify for state or local "Agricultural Exemptions", and some local zoning codes may unintentionally restrict agritourism related activities in rural areas.

What is a Farm?

The U.S. Census defines a farm as any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. Products include crops such as cash grains, field crops, vegetables, fruits and tree nuts, horticultural specialties, and livestock such as beef cattle, hogs, sheep, goats, dairy cattle, poultry, eggs, animal specialties, and general livestock. Note that this definition does not necessarily account for small agricultural operations or value-added operations that are becoming more common in the County.

Nationally, the number of large farms is growing while the number of small farms is also increasing. These smaller farms are becoming more diversified, thus representing agricultural-related operations rather than specializing in one area, i.e., a dairy farm. Agri-related operations which include aquaculture, apiary, value-added processing (such as cheese operations), and crop diversification are redefining agriculture in Vermont and Lamoille County.

DRAFT

Table 4-1. Number and Average Size of Farms, 1910- 2012

Year	Number of farms (Lamoille County)	Average land in farm – Lamoille County (acres)	Number of farms (Vermont)
2017	329	162	6,808
2012	349	149	7,338
2007	300	166	6,984
2002	317	170	6,571
1997	297	165	5,828
1992	227	182	5,436
1987	213	211	5,877
1982	255	231	6,315
1978	244	230	7,273
1974	248	223	5,906
1969	312	223	6,874
1964	443	246	9,247
1959	586	219	12,099
1954	826	189	n/a
1950	954	170	n/a
1945	1223	143	n/a
1940	1195	135	n/a
1935	1316	136	n/a
1930	1424	141	n/a
1925	1459	129	n/a
1920	1599	129	n/a
1910	1629	129	n/a

Source: USDA Census of Agriculture 2007, 2012, 2017

Number and size of Farms

The USDA conducts a Census of Agriculture every five years. The most recent Census in 2017 counted 329 farms in Lamoille County. This is a 6% decrease from 2012. There was a slight increase in the number of farms in the County between 1987 and 1992 and again between 1997 and 2002, but there is no consistent pattern.

Based on historical data collected through the Census of Agriculture, the average size of a Lamoille County farm has fluctuated over time. The average size of Lamoille County farms decreased over the fifteen-year period between 1978 and 1992 from 230 acres to 182 acres. Today, the average size of farms is 162 acres. Note that the land in these reports is based on ownership and does not include leased-land farming activities (Table 4-1).

DRAFT

Farming trends can be evaluated by examining the amount of land used for agriculture over time. This number has also been fluctuating. In 2017, agricultural land in Lamoille County amounted to 53,155 acres, an increase compared to 2012. This increase does not follow the statewide trend. (Figure 4-3).

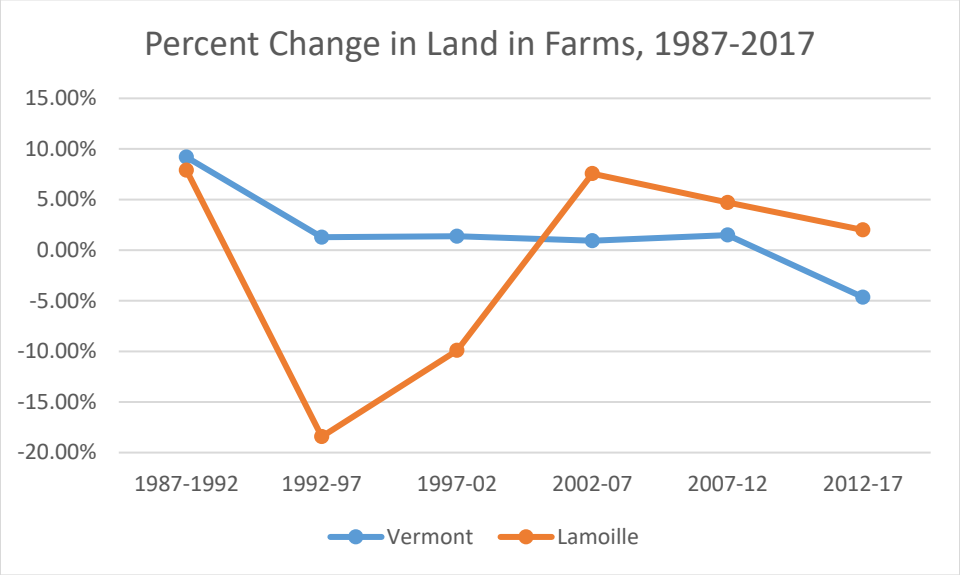


Figure 4-3. Percent Change in Land in Farms, 1987-2017

The Challenging Demographics of Farming

According to the 2017 USDA Census, the average age of a farmer in Lamoille County was 52.7, which is younger than the State average of 55.9 years old. In Lamoille County, less than half of the principal operators of farms count farming as their primary occupation, meaning many farmers are working off-farm at another job.

Given the average age of farmers in Lamoille County, one of the major challenges facing the future of agriculture is finding new, young farmers to continue the industry once the current generation retires. The cost of land and equipment can be insurmountable for many young farmers. "Vermont Land Link," operated by the Lamoille Economic Development Corporation, represents one tool for addressing these challenges. This tool connects farmers with landowners interested in leasing their land. The Vermont Land Trust Farmland Access Program also provides a mechanism for beginning farmers to purchase land at more affordable prices.

Support Industries

In addition to farm enterprises themselves, a vibrant agricultural economy relies on the availability of appropriate infrastructure, including roads, utilities, processing, and storage capacity. Notable gaps in the existing support infrastructure include: the need for additional meat processing and cold storage capacity; the need for facilities for processing and packaging of fresh vegetables, eggs, and other produce; and the lack of facilities for milling and processing wood products. Unless these gaps are addressed, Lamoille County's farm and forest economy will be unable to reach its full potential.

Agricultural Soils

According to the USDA Natural Resource Conservation Service, Lamoille County contains 19,727 acres (6.5%) of prime agricultural soil and 61,908 acres (20.4%) of potentially good (Statewide Importance) agricultural soils. These soils are primarily found along the Lamoille River and its tributaries. These prime agricultural soils come under the scrutiny of Vermont's Land Use and Development Law, Act 250, which considers the productivity of agricultural land when large developments are proposed. Under this Statute, when a development subject to Act 250 impacts agricultural soils, mitigation of these soils is required. In general, Act 250 is structured to prefer "on-site" mitigation – that is, modifying the site design of the project so that the soils are not impacted (see §6093(a)(2)). However, the District Commission may authorize "off-site" mitigation if "that action is deemed consistent with the agricultural elements of local and regional plans" (see 10 VSA §6093(a)(3)(b)). Specific policies related to mitigation of agricultural soils and other natural resources are found in the Land Use Section of this Plan.

Forestry

Today, forests are the dominant land cover in Lamoille County. The County's forests provide a wide range of services which support the region economically, environmentally, and socially. Forests provide economic benefits such as jobs in the woods and the mills and physical products such as lumber. Habitats for numerous game and non-game woodland animals and protection of valuable water resources are among the ecological benefits of the County's forests. Finally, forests provide quality of life factors impossible to quantify, such as hunting, recreation, clean, cool air, and aesthetic pleasure.

DRAFT

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 diversity of habitats for woodland animals, trails for recreationalists, and a blanket of color on our mountains and ridgelines for both residents and visitors.

Approximately 80% of Lamoille County is forested (covered in forest) – totaling nearly 240,000 acres. The region is characterized by a diversity of landscapes and elevations, creating a wide variety of vegetative types and natural communities, including: early succession forests; northern hardwood and spruce-fir forests; sub-alpine forests; cliffs; rock outcrops; and wetlands. According to the U.S. Forest Service, 235,500 acres (98.5%) of the region's forest is categorized as timberland-forestland producing, or capable of producing, crops of industrial wood (>20 cubic ft./ac./year) and not withdrawn from timber utilization. Most of the timberland in the County is dominated by maple, beech, and birch, with spruce-fir occurring mostly at higher elevations. A majority of both the acres and volume of the region's timberland are of sufficient size and quality to be considered saw timber. Sugar maple, yellow birch, beech, and red spruce represent the most abundant species in this size-class.

Despite these characteristics, much of Lamoille County's forests are not currently commercially viable for timber management due to the health and quality of the growing stock and current market forces. According to surveys by the U.S. Forest Service, statewide increases in the volume of growing stock are twice that of harvesting rates. Past harvesting practices have selectively removed only the highest quality stems (high-grading) resulting in roughly 15% of northern Vermont's growing stock being of such poor quality that it is of little or no commercial value (live culls). This, in combination with irregular markets for wood chips, places further demand on the high-quality stems, as landowners and managers need to generate a return from the land. What is needed, according to some forest economists, is a large reduction in the standing volume of both live culls and thinning over-stocked stands, along with management and harvesting

DRAFT

practices that encourage the regeneration of native species to improve overall forest quality and economic value.

Old-growth forests serve as a reservoir for plant and animal species, which when logged can result in issues evident in young forests. Old-growth forests have unique ecological characteristics such as diverse tree structures that allow for diverse wildlife habitat. These areas have not been logged and may be referred to as virgin forests.

Timber and Wood Products Manufacturing

Forests are a source of raw materials which support traditional forest products industries, such as hardwood veneer, lumber, pulpwood, fuel wood, and chipwood. In 2019, 0.84% of the State's hardwood harvest was derived from Lamoille County, making it the second highest contributing county in the State. Most of the large-scale harvesting occurs in the upland forest areas of the region as these areas are characterized by high quality soils and relatively easy access. For example, the Atlas Timberlands consist of approximately 26,789 acres of upland forest that have been actively managed and harvested for at least a century.

Forest Resource Harvest Summaries from the Vermont Division of Forestry provide a picture of how our forest resources are being utilized. As a result, we can understand the relationship between forest productivity and the commercial demand for wood by consumers. This information becomes even more critical with increasing economic pressures within the wood product industry. Total harvest declined over the last decade in Lamoille County and the state as a whole (Figure 4-4).

DRAFT

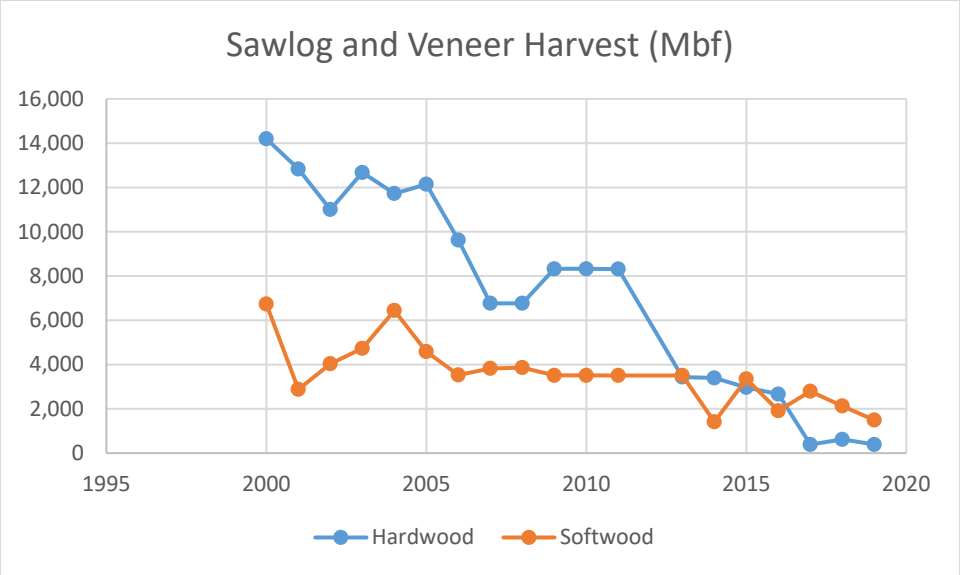


Figure 4-4: Sawlog and Veneer Harvest (Mbf)

The number of sawmills (both active and dormant) has also decreased, reflecting the lower harvest figures. The past decade has been characterized by significant economic challenges to the Vermont sawmill industry, and with only one operating sawmill in the region, Lamoille County has not been immune to such challenges. The decline of the housing market, the recent recession, and the subsequent decline of construction is further compounding this challenge. An inadequate number of sawmills throughout the region undermines quality forest management and forest diversity. As the number of sawmills declines, the increased transportation distance saw logs must travel to a mill increases the cost of production and harvesting which in turn results in a decreased profit margin on marginal species and grades. This trend significantly reduces the economic incentive for landowners to actively manage forests and can contribute to the conversion of forest land to other uses. Currently, due to the lack of adequate local processing facilities as well as the overall lack of production volume, most of the region's hardwood is filtered into established major supply routes throughout the Northeast. Much of the local hardwood is transported via Interstate 91 to Canadian sawmills for production. As the number of sawmills declines, there is a point where the number becomes too small to adequately support a diverse market.[3]

3 Vermont Department of Forests, Parks and Recreation (2011). 2010 *Vermont Forest Resources Plan Division of Forests*

Quarterly Workforce Indicators (QWI) from the Census provide an indicator for Vermont's forest industry based on employment and salaries. The QWI counts jobs, rather than employed workers, and does not include self-employed workers and independent contractor employment. The QWI statistics for Lamoille County for the categories Forestry and Logging and Associated Forestry are largely missing, possibly due to the fact that the vast majority of forest workers in the County are self-employed. Employment statistics for the wood products manufacturing industry as a proxy for forestry related employment is not available for Lamoille County.

There is 1 operational sawmill in Lamoille County. While it may be increasingly difficult to operate an economically viable, traditional sawmill, as with agriculture, diversification may represent an opportunity to maintain the forest products industry in Lamoille County. Small "backyard" mills, portable mills, firewood suppliers, and cottage furniture makers and wood turners all represent potential opportunities to create local employment while adding value to raw timber materials produced in Lamoille County.

Maple Products

While timber harvesting and the wood products industry appear to be in decline, the use of Lamoille County's forests for maple products is growing. Lamoille County has witnessed a significant expansion within the maple products industry over the past decade, characterized by the growth of existing small and medium scale maple sugaring operations as well as the addition of new operations. Both the number of taps and the total amount of syrup produced in Lamoille County have increased over the last decade (town level data is not available). Lamoille County is still the second highest maple syrup producer of any Vermont county (Figures 4-5 and 4-6). Lamoille County is home to one of the State's largest producers of maple products with merchandise exported worldwide. Through the Lamoille County Planning Commission's 2011 Forest Stewardship Project, several consulting foresters reported that land previously managed for timber production is now being managed for maple syrup production.

A large portion of Lamoille County's forestland is located within a State Forest. Under current State policy, land within a State Forest cannot be used for maple

DRAFT

syrup production. In the past, syrup production and timber harvesting have been viewed as conflicting management goals. Traditional sawmills operated on volume and remained profitable by "keeping the saws running." As a result, trees that had been tapped for sugaring were considered unusable as tap holes contained imperfections and made the lower 5-6 feet of a tree unmillable. This may not be the case for more modern, precision mills that produce more specialized products.

Today, there may be a niche market for furniture and turned wood that contains evidence of tap holes. Given the growth of maple syrup production in the region and changes in the timber industry, the County could consider working with the Department of Forest, Parks, and Recreation to begin a test project of maple production on State land.

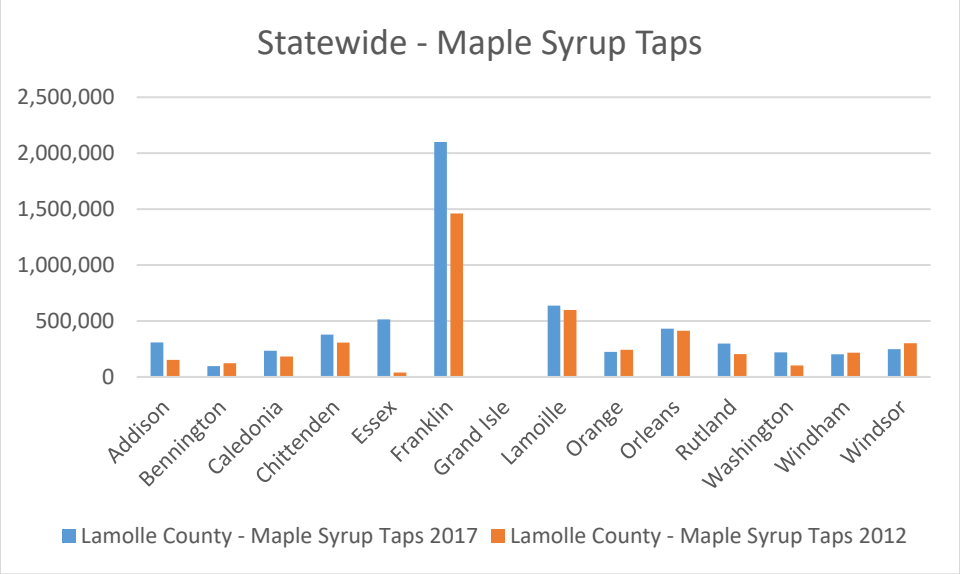


Figure 4-5 Vermont Maple Taps by County 2012-2017
Source: 2017 USDA Census

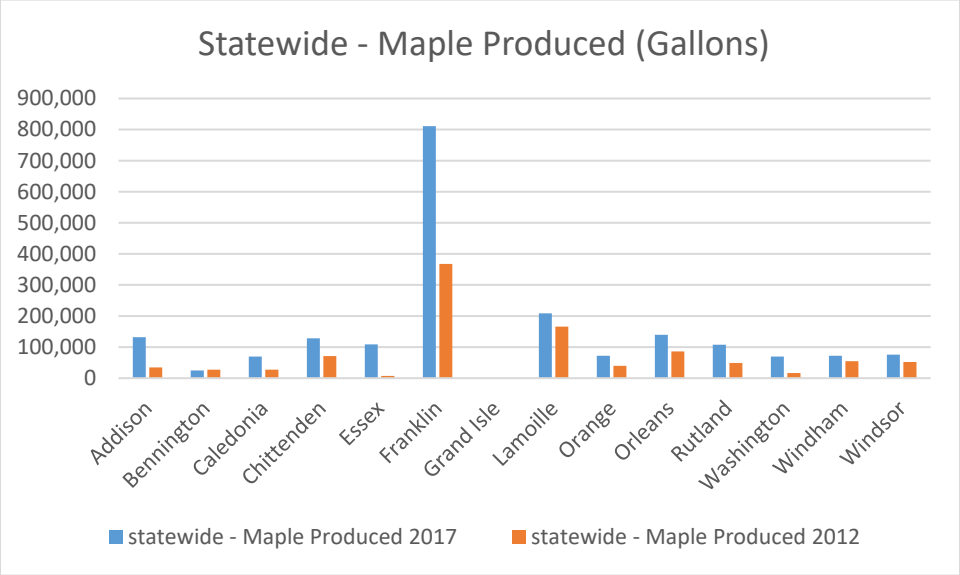


Figure 4-6. Vermont Maple Syrup Production by County
Source: 2017 USDA Census

Wood for Energy

In addition to timber, wood is also harvested for energy. In the past there has been an overall increase in demand for wood energy, recognized at both the commercial and institutional level. The Department of Forests, Parks, and Recreation has a practical guide for schools and affordable housing units to utilize when considering modern wood heating. Personal consumer demand has remained strong with over 38% of Vermont homes heated in full or partly by wood. The wood burning systems have become much more efficient and cleaner. Use of wood for energy represents an opportunity to continue to manage Lamoille County's forests despite the poor timber market and lower quality growing stock, as some wood that may not be suitable for timber may be suitable for wood chips, wood pellets, or cordwood.

It should be noted that cordwood is a major medium by which invasive species spread. As a result, the Vermont Agency of Natural Resources recommends that firewood not be transported more than 50 miles from where it originates. Currently, Lamoille County's forests are relatively free of many invasive insects. It is important to understand that Emerald Ash Borer is beginning to become a concern for the county, an invasive species that could be spread by moving

DRAFT

cordwood from infested areas. Better marketing of locally cut cordwood to County residents, as well as visitors to the numerous area parks and resorts, could increase opportunities for local businesses and forestland owners, while also preventing the spread of unwanted pests.

Other Forest Products

While the term "forest products" is often used synonymously with "wood products," a wide variety of non-timber forest resources could be derived from the County's forests. As noted earlier, due to past practices of high grading, much of Lamoille County's existing forests contain timber that is of low commercial value. Since management of a forest for non-timber products often requires less acreage than management of a forest for timber, these products may represent an opportunity to adapt to the challenges related to parcelization. New opportunities for forest landowners that create an economic incentive to manage and maintain woodlands within the County may include the following non-timber forest products:

- Fiddleheads were once primarily foraged and consumed on a personal level. There is a growing demand at specialty restaurants and grocery stores for fiddleheads which grow well in forested riparian and wetland areas.
- Shiitake mushrooms, often grown in newly cut beech trees, could improve the health of those stands as well as associated black bear habitat. As Lamoille County's climate warms, other commercially grown mushrooms, such as Morels, Chanterelles, and Black Trumpets, may be grown in the County's forests. Due to climatic reasons, Vermont restaurants currently import most of their supplies of these high-priced delicacies from the Pacific Northwest.
- Spruce tips were once a traditional ingredient in ale. Several Vermont based brewers, including Rock Art Brewery in Morristown, now produce beers flavored with spruce tips. Spruce tips can be used for a variety of culinary uses.
- In the past, Lamoille County's forests supplied several commercial stills which produced cedar and pine oil. These products were wholesaled to national manufacturers. New, smaller scale producers may be able to develop niche markets for Vermont "brand" oils or for incorporation into other Vermont value added products.

DRAFT

- Medicinal and herbal products such as ginseng and golden seal.
- Decorative products, including holiday greenery and vines.
- Edible wild products such as ramps, fruits, and various nuts.
- Specialty products such as brown ash used for basketry.

Ecological Benefits of Forests – Air Quality

Overall, within Lamoille County local air quality concerns are primarily related to emissions from traffic, heating systems (e.g. woodstoves), and some agricultural practices. Lamoille County occasionally experiences "bad air days" in which air quality standards are exceeded during the winter months as a result of "cold air" inversion. This is the process by which dense, cold air traps pollutants close to the ground surface. It is important to note that as of this writing, neighboring Chittenden County is at risk for non-attainment status due to the amount of particulate matter and ground-level ozone present. The cumulative effect of these sources may increase with additional growth and may have greater impacts on local air quality. Tree and forest canopies can have a significant positive impact on air quality through the sequestration of air-borne pollutants. Simultaneously, the release of volatile organic compounds from trees influences the production of ground level ozone. Maintaining Lamoille County's working forests is thus essential to maintaining air quality.

Other concerns include impacts on air quality resulting from out-of-state activities that pose a serious threat to fragile high elevation ecosystems. For example, acid rain, caused in part by coal-fired energy plants operating to the west of Vermont, has damaged plant communities in the vicinity of Mount Mansfield.

Ecological Benefits of Forests – Water Quality and Flood Water Attenuation

Forest cover plays a significant role in the maintenance of water quality and quantity. Upland forests contain the majority of the Class A headwaters in the region as well as many larger streams that include fisheries, waterfalls, swimming holes, and other recreational and scenic resources. Upland forests retain and filter groundwater, an essential resource in a county where many residents draw their water from private or community wells. In addition, forest cover helps to regulate water temperatures. This is extremely important for fish species, such as trout, which rely on cool oxygen rich environments.

DRAFT

While much attention is given to the role of floodplains, which are primarily located on the valley floor, upland forests also play a critical role in reducing flooding and erosion hazards. Forested land attenuates water much more effectively than cleared land. This is especially important on steep slopes with erodible soil. Maintaining upland forest landscapes ultimately reduces the amount of water entering the floodplain and provides protection for human settlements along the County's water courses.

Fish, Game, and Other Wildlife

A new report by the U.S. Department of Commerce's Bureau of Economic Analysis finds that Vermont is fourth among states when measured by contribution of outdoor recreation to Gross Domestic Product. Hunters alone spend more than $292 million in Vermont annually according to the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation conducted by the U.S. Fish and Wildlife Service and the U.S. Census Bureau. About $190 million is spent on equipment, more than $39 million is trip-related, and more than $162 million is spent on other items. As discussed below, Lamoille County contains extensive and diverse wildlife habitat, making it an attractive location for hunting. Similarly, the County's ponds and rivers are attractive areas for people interested in fishing, bird watching, swimming, and other water-based recreational activities.

The figures below (4-7,4-8) reflect harvest data for four "big game" species tracked by the Vermont Department of Fish and Wildlife (deer, wild turkey, black bear, and moose). The annual harvest is showing an upward trend for each of these species with the notable exception of Moose. While the figures below are aggregate harvest data on the County level, town level data is also available. Based on this data, Belvidere and Eden had the highest harvests in the County in the last ten years. This data illustrates why two state roads through Eden and Elmore (Route 118 and Route 12) are referred to locally as "Moose Alley". The Forest Ecological Resources map (below) records animal/automobile collisions and confirms the large number of moose crossing these roads.

DRAFT

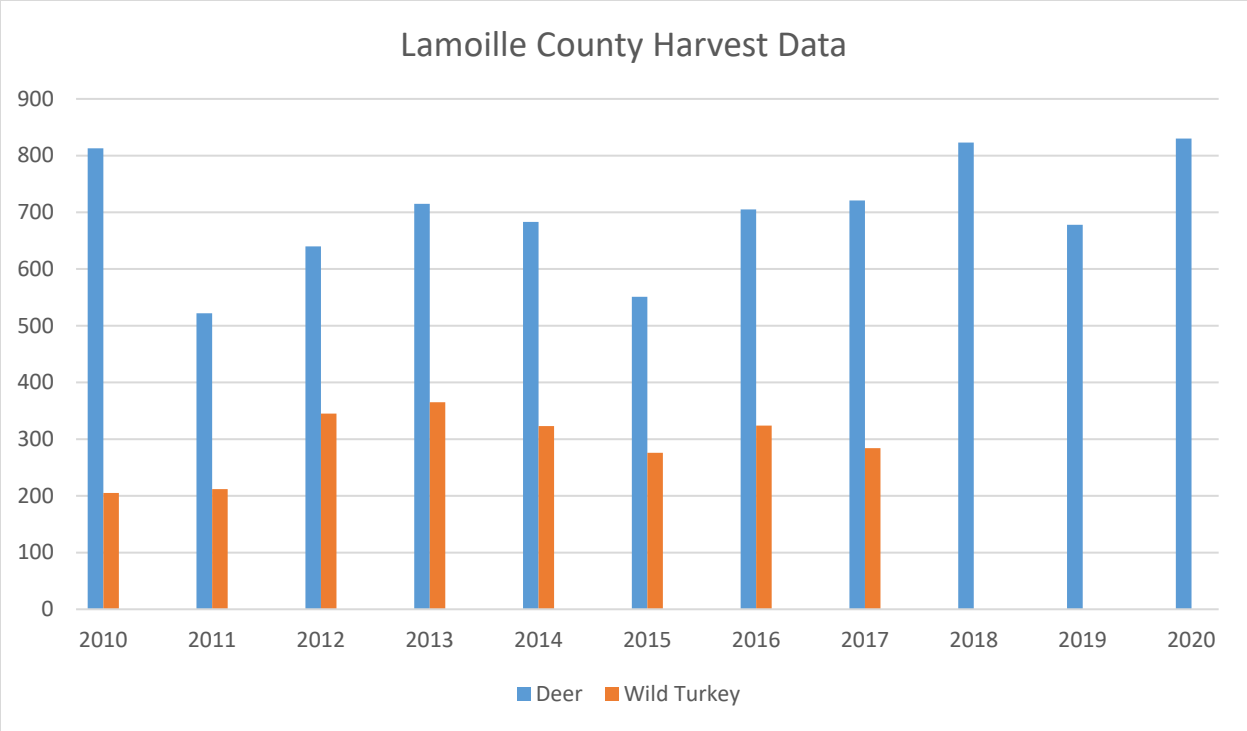


Figure 4-7 Lamoille County Harvest Data

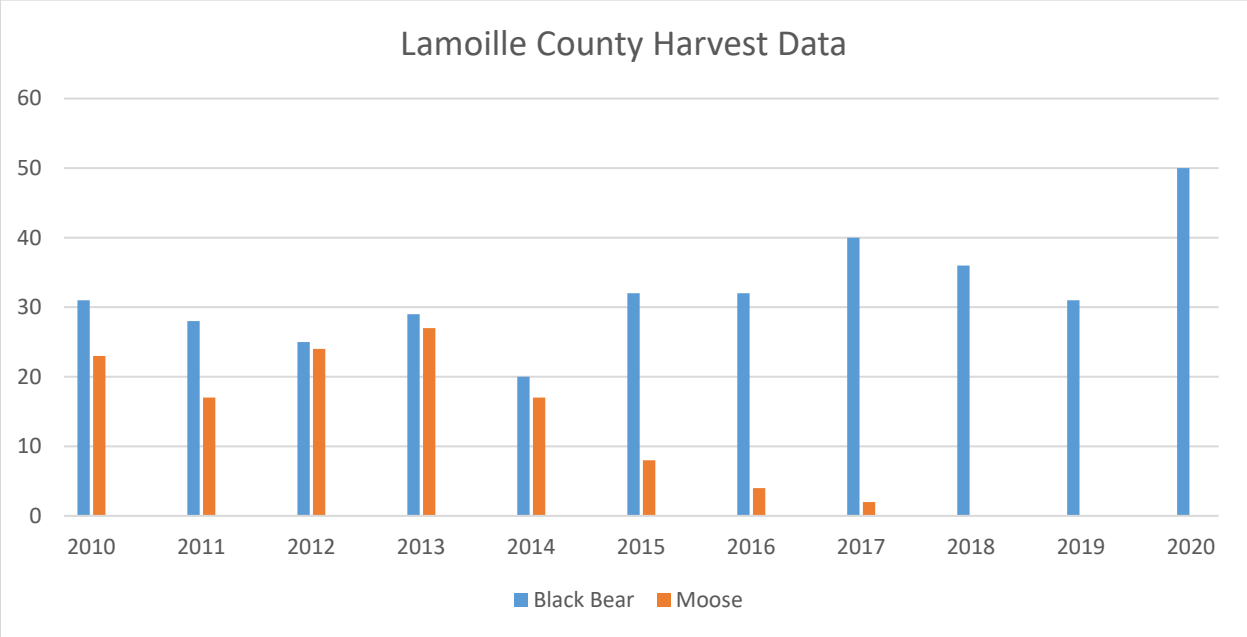
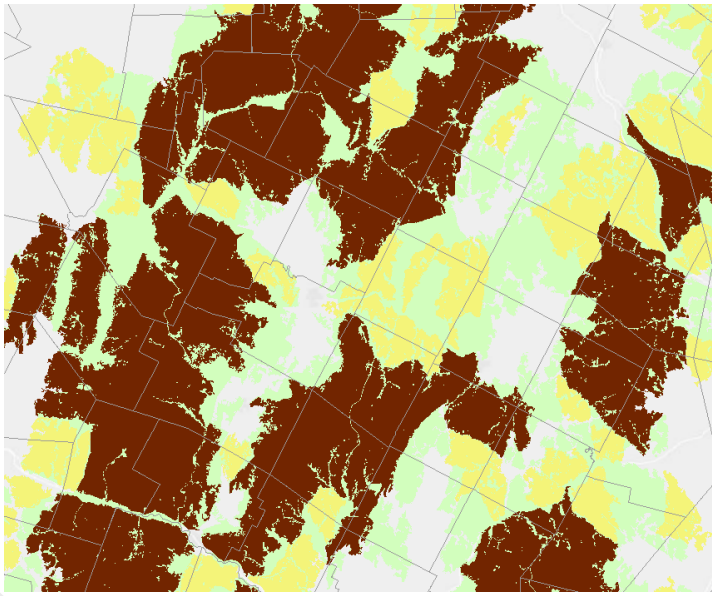


Fig. 4-8 Lamoille County Harvest Data

Core Habitat

Core Habitat refers to large blocks of unfragmented forestland. These areas provide important mating, nesting, feeding, and denning habitats for species that cannot survive in close proximity to human habitation. Species that rely on such areas include hawks, owls, songbirds, fisher, moose, bobcat, and black bear. Mammals such as deer, moose, bear, bobcat, fisher, and coyote may require very large contiguous forest acreage of up to 600 to 7,500 acres.



The Vermont Department of Fish and Wildlife Divides Core Habitat into two distinct areas, represented below:

- **Anchor Blocks,** or blocks of unfragmented forestland greater than 10,000 acres in size. Anchor blocks provide large blocks of contiguous critical habitat for species such as black bears, spotted salamanders, moose, and barred owls. These are the primary homes for many animals. Anchor blocks are the dark brown areas identified in the graphic above. These areas are found primarily at the outer edge of Lamoille County, in Belvidere, Eden, Elmore, Stowe, Cambridge, and Waterville.
- **Connecting Blocks,** or blocks of unfragmented forestland between 2,000 acres and 10,000 acres. Connecting blocks provide critical habitat for species because they have good forest cover but are not necessarily large enough to maintain populations of wide-ranging species. Connecting blocks are identified in the graphic above as the yellow areas. These areas are at the edge of the anchor blocks.

Fragmentation of large forest blocks through subdivision and development diminishes the ability of wildlife to access core habitat functions. Fragmentation (the process of dividing large, contiguous blocks of habitat into isolated patches) produces less attractive wildlife habitat than contiguous forestland. As a result, wildlife species can change from aesthetically pleasing and recreationally

DRAFT

important (deer, moose, bear, bobcat, otter) to less attractive, often undesirable, nuisance species (pigeons, sparrows, starlings, rats, skunks). In addition, as larger blocks of forestland are divided into subdivisions, less land is available for hunting and other traditional activities. The largest blocks of unfragmented Core Habitat in Lamoille County are generally found along the region's ridgelines and mountainous areas.

To assure a high likelihood of native wildlife species, contiguous blocks of habitat should be connected through wildlife corridors. These areas are sometimes referred to as connecting lands (see the green areas above). Connecting lands include unfragmented blocks of forestland less than 2,000 acres in size. These might include individual road sections where wildlife is likely to cross. Wildlife corridors provide for both seasonal and special needs of different species. For example, a wildlife corridor may connect habitat blocks that allow black bears to access important food resources during different seasons of the year (seasonal), or it may prevent isolation of bear populations by allowing free exchange of breeding adults (spatial). Ultimately, wildlife corridors help to ensure that the habitat, movement, migration, and behavior requirements of most native plants and animals are available across a broad landscape. The broader ecological value of connecting habitat is to join fragmented pieces of habitat, thereby reducing the deleterious effects of habitat fragmentation and population isolation.

Maintaining, improving, and protecting wildlife corridors and connecting lands also aligns with Act 171. In 2016, Act 171 was passed in Vermont to encourage and address protection of high priority forest blocks and habitat connectors, while supporting the local forestry industry. In addition to forest blocks, riparian habitat along rivers and streams, strips of forest cover between developed areas, and even hedgerows and fencerows, all represent potential connecting habitat. Coordinated planning for and active management of wildlife corridors is critical to allowing the movement, migration, and dispersal of animals and plants as well as the functioning of ecological processes. Municipalities are encouraged under Act 171 to prevent forest fragmentation and protect wildlife corridors. For more information, please refer to the Act 171 guidance document on the Agency of Natural Resources website: https://anr.vermont.gov/act171_forestplanning.

DRAFT

Deer Wintering Areas

While deer generally accommodate human populations, they require specialized habitat to survive winter conditions. Critical deer wildlife areas are defined and delineated by the Department of Fish and Wildlife. These areas are designated as critical winter habitat for Vermont's deer population because of their vegetation, slope, aspect, and other factors that shelter the deer from the harsh winter. These areas are referred to as deer wintering areas or more commonly "deeryards" and generally consist of areas where coniferous forests dominate. Not only are these sites important, so too are corridors linking them together and to other undeveloped areas in order to facilitate the deer's annual migration from summer to winter habitats. One community's deer wintering areas may serve a population from several miles around. In addition to deer, nearly half of Vermont's vertebrate wildlife species rely on coniferous forests for at least part of their life needs. It is important to note that deer wintering areas are often located on the "edge" between Core Habitat Areas and areas with more densely populated human settlements.

Bear Habitat

In addition to the deer herd, nearly two-thirds of Lamoille County serves as year-round or seasonal black bear habitat. Bears rely heavily on unfragmented, Core Habitat Areas. These are remote areas and travel corridors, often at least ½ mile from development, containing the mass producing, nut bearing trees and wetlands which support breeding populations of bear. Impacts from forest fragmentation can also make it impossible for bears to move from one habitat to another.

Wetlands, Riparian Areas, and Aquatic Habitat

Impacts on fisheries can be categorized as shoreline encroachment, floods, beaver habitats, water withdrawal, erosion, sedimentation, sewage and agricultural runoff, road crossings, and pond construction. Development that occurs too close to a lakeshore or stream bank can cause erosion and destruction of native vegetation which may, in turn, alter the water temperature and lead to eradication or relocation of many aquatic species. Road crossings can inhibit the ability of fish to move from one place to another for feeding and spawning and overall habitat loss. Pond construction, including the sedimentation caused during construction, while benefiting some species, seriously impacts others.

DRAFT

Avian (Bird) Habitat

Lamoille County is at the epicenter of loon recovery in Vermont. The Green River Reservoir, which hosts one of the longest unfragmented shorelines in the state (19 miles in all), and the neighboring Zack Woods area is one of the highest productivity loon nesting areas in Vermont. Similarly, the cliffs of Smugglers' Notch are one of only a dozen suitable nesting areas for peregrine falcons in the State.

As State Parks, both Green River Reservoir and Smugglers' Notch host numerous human visitors. Left unmanaged, these visitors could have negative impacts on these bird recovery efforts. However, appropriate close contact can also engender understanding and support for recovery of these bird populations. As a result, this Plan supports continued education of the public, specifically visitors to the State Parks.

Rare, Threatened, and Endangered Species

There are at least six threatened and four endangered species known to exist in Lamoille County, as well as another 24 rare species, all of which can be found in the Smugglers' Notch area (Table 4-2).

Table 4-2. Threatened and Endangered Species in Smugglers' Notch

Plant Species		Heritage Rank	VT Legal	Date Last Status Documented
Asplenium	viride	S1/G5	Threatened	1994
Calamassp	grostisstricta	S1/G5	Endangered	1908
Carexatra	tiformis	S1/G5	Threatened	1994
Castilleja	septentrionalis	S1/G5	Threatened	1990
Draba	lanceolata	S1/G4 G5	Threatened	1990
Gentiana	amarella	SH/G5	Threatened	1961
Minuartia	rubella	S1/G5	Threatened	1992
Plagiobryum	zierii	S1/G3 G4	Endangered	1989
Lyro	laminor	S1/G5	Endangered	1896
Woodsia	alpina	S1/G5	Endangered	1994
Draba	lanceolata	S1/G4 G5	Threatened	1990
Gentiana	amarella	SH/G5	Threatened	1961
Minuartia	rubella	S1/G5	Threatened	1992
Plagiobryum	zierii	S1/G3 G4	Endangered	1989
Lyro	laminor	S1/G5	Endangered	1896
Woodsia	alpina	S1/G5	Endangered	1994

DRAFT

Table 4-3. Fragile areas in Lamoille County

Fragile Area	Location	Acreage	Critical Features
Mt. Mansfield	Stowe & Underhill	200	Significant extent of alpine tundra, several rare and endangered species
Cambridge Pine Woods	Cambridge	22	Old-age white pine and hemlock stanc
Smugglers' Notch	Cambridge	1,424	Arctic plant species, Peregrine Falcon nesting sites, and geologic features
Miller Brook Cirque	Stowe	1,200	Significant example of mountain valle glaciation
Molly Bog	Morristown	20	Exemplary postglacial bog

Fragile Areas and Natural Areas

Fragile and natural areas in Vermont comprise many of the irreplaceable components of the State's habitats and ecosystems. These resources provide educational, economic, visual, historical, and natural benefits to the State's residents and visitors, both now and in the future. Many of these sites provide important links to our past and aid in our understanding of how our natural environment has changed or may change in the future. Lamoille County hosts five fragile areas, more than any other County in the State. These areas total approximately 2,800 acres. Three of these fragile areas are located on, or in close proximity to, the summit of Mt. Mansfield.

In addition to fragile areas, a Natural Areas Inventory of the State was completed prior to the Fragile Areas Registry. In fact, many of the sites found on the Registry were originally documented in the Natural Areas Inventory which was conducted jointly by the Vermont Natural Resources Council and the State Planning Office during the mid-1970s. There are 47 natural areas listed in Lamoille County, several of which are deer wintering areas, glacial features, and bogs (Table 4-3).

Protecting the Working Landscape

Preserving agriculture and forest industries is achieved through a number of regulatory and non-regulatory tools, many of which are profiled in the Land Use chapter. In particular, conservation efforts have achieved significant permanent protection of agricultural and forest land through legally binding agreements between a landowner and either a government agency or land protection organization (land trust) that ensures a parcel will be protected indefinitely from

DRAFT

certain types of development. Conservation easements are typically created to conserve farm or forest lands, to protect ecologically sensitive areas, or to protect land that has particular importance to an individual, family, or community. Easements are sometimes donated but can also be purchased.

Three land trusts are active within Lamoille County. **The Vermont Land Trust** is a statewide organization that facilitates the implementation of permanent conservation easements to preserve farms, forests, wetlands, and other open space. The organization has conserved more than 360,000 acres of productive forest lands across the State of Vermont. The Vermont Land Trust was active in the conservation of the Atlas Timber Lands in Eden, Belvidere, and Elmore. **The Stowe Land Trust** is an active local land trust in the Town of Stowe. Since its creation in 1988, the organization has completed 28 conservation projects, five of which are owned and managed by the Stowe Land Trust, and has conserved over 3,200 acres, including the Mayo Farm and Kirchner Woods. **The Nature Conservancy** is an international land protection organization that has protected land in Lamoille County, such as the Babcock Nature Preserve in Eden.

Other land trusts active in Lamoille County include the **Waterville Land Trust**, and the **Northern Rivers Land Trust**, which includes the Lamoille County towns of Wolcott and Elmore, as well as Craftsbury, Greensboro, Hardwick, and Woodbury. Residents of other communities have expressed interest in developing a local or countywide land trust. Smaller communities may have difficulty maintaining the resources and expertise necessary to administer a land trust which must raise funds and draft and oversee easements. Even if it is impractical for a community to develop its own land trust, local residents can still play a vital role in land conservation by informally discussing conservation with willing landowners, identifying landowners who might be interested in conserving their land, and raising funds for conservation purchases.

Regional partnerships can also be a meaningful way to conserve and protect landscapes into the future. One regional example is the **Cold Hollow to Canada Project**, a partnership of community members working together towards a common goal of land stewardship and wildlife habitat conservation. Local conservation commissions, public entities, and non-profit organizations are collaborating with a shared vision of healthy forests and wildlife for future

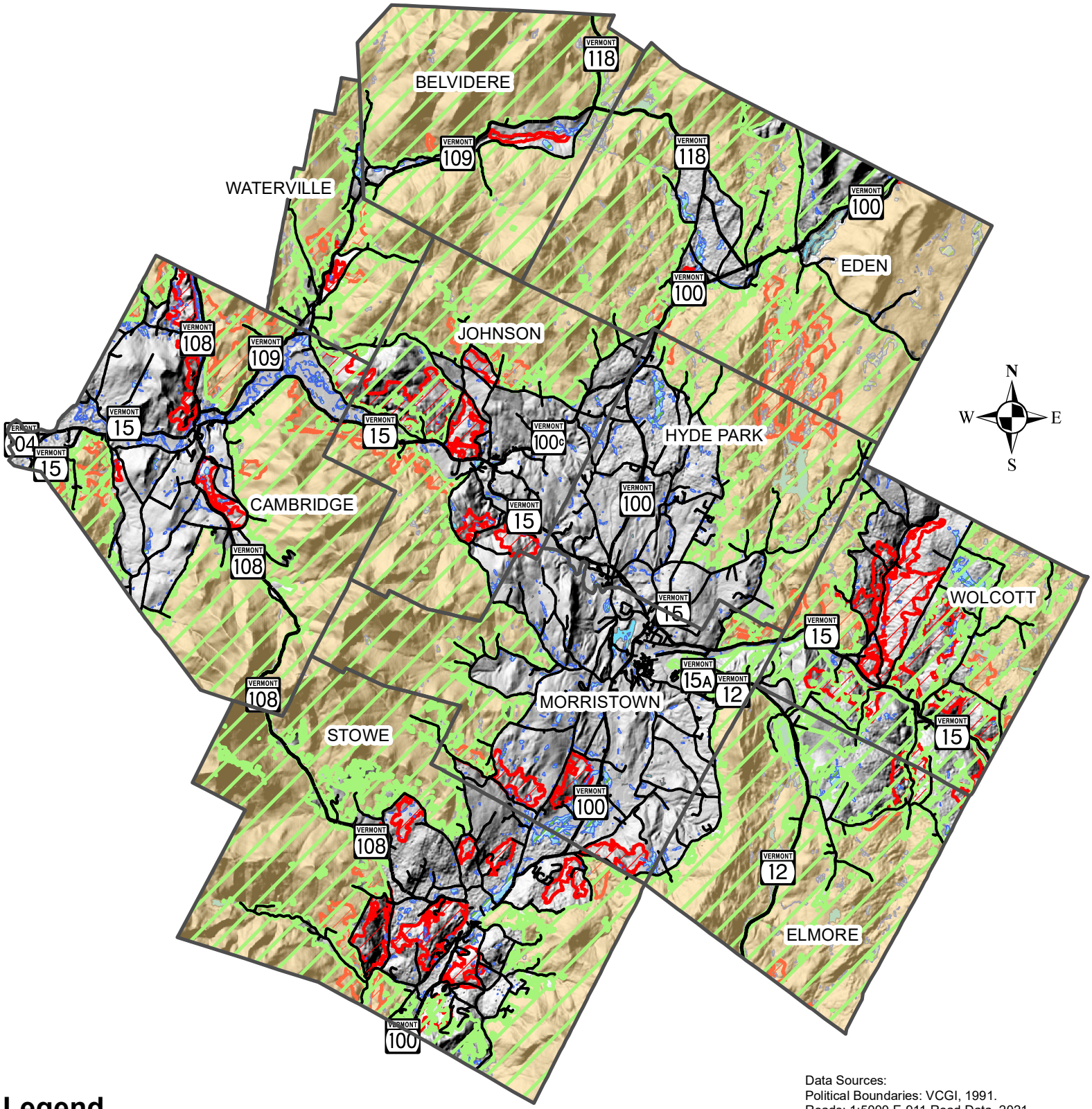
DRAFT

generations. Through education about sustainable forest stewardship and outreach to empower local forest owners and individuals, the partnership promotes resilient and connected ecosystems in Northern Forests across the region. Waterville and Belvidere are included in the geographic range of this project. For more information, please visit www.coldhollowtocanada.org/.

DRAFT

Priority Interior Forest Blocks and Connectivity Blocks

Lamoille County



Legend

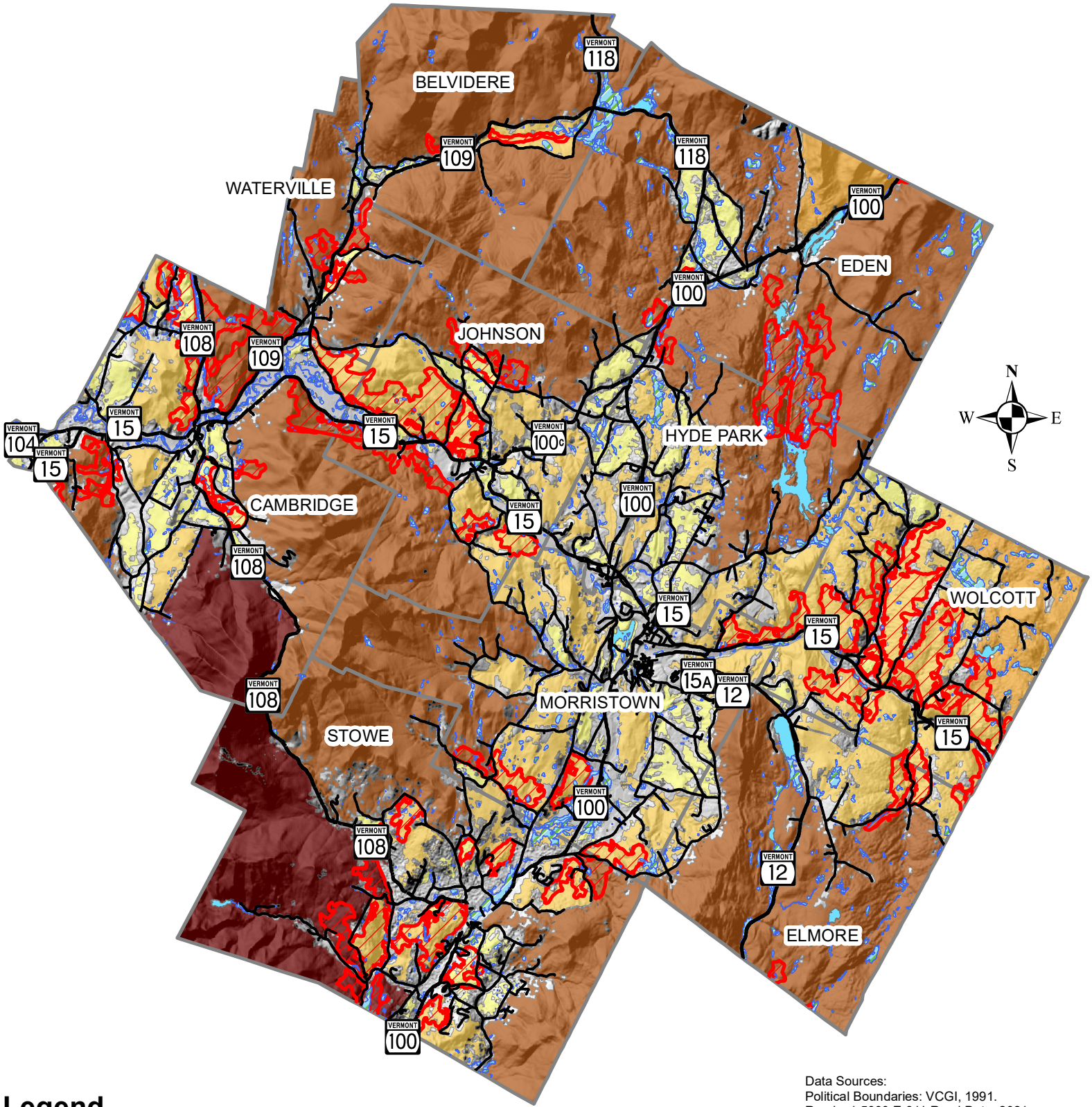
- Highest Priority Connectivity Blocks
- Deer Wintering Areas
- Highest Priority Interior Forest Blocks
- Wetland

0 3.5 7 Miles

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Wetlands: Vermont significant wetland inventory, Vermont Agency of Natural Resources.
Wildlife Habitat Blocks: Vermont Department of Fish and Wildlife,
Vermont Agency of Natural Resources. Vermont Land Trust.
Deer Wintering Areas: Vermont Department of Fish and Wildlife, 2022.

Created 11/14/22 by LCPC.
Map is for planning purposes only, not for regulatory interpretation.

Habitat Blocks
Lamoille County



Legend

Habitat Blocks

- 20 - 500 acres
- 501 -5,000 acres
- 5001 - 10,000 acres
- 10,001 - 50,000 acres
- >50,000 acres
- Wetland
- Deer Wintering Areas

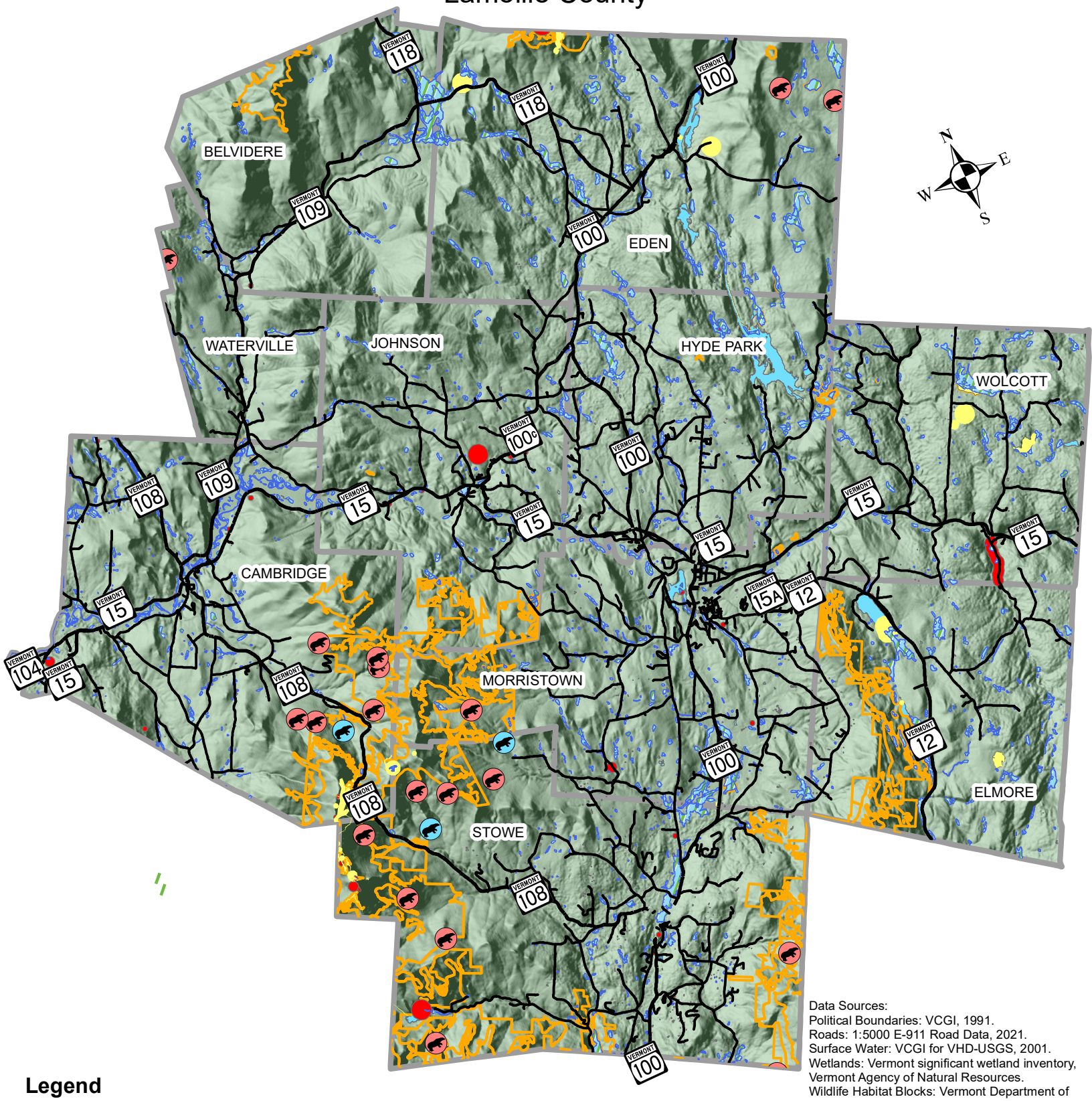
0 3.5 7 Miles

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Wetlands: Vermont significant wetland inventory, Vermont Agency of Natural Resources.
Wildlife Habitat Blocks: Vermont Department of Fish and Wildlife,
Vermont Agency of Natural Resources. Vermont Land Trust.
Deer Wintering Areas: Vermont Department of Fish and Wildlife, 2022.

Created 11/14/22 by LCPC.
Map is for planning purposes only, not for regulatory interpretation.

Natural Communities

Lamoille County



Legend

- Bear Mast Area
- Bear Wetland Feeding Area
- Wetlands

Rare Species and Communities

- Animal
- Plant
- Significant_Natural_Communities

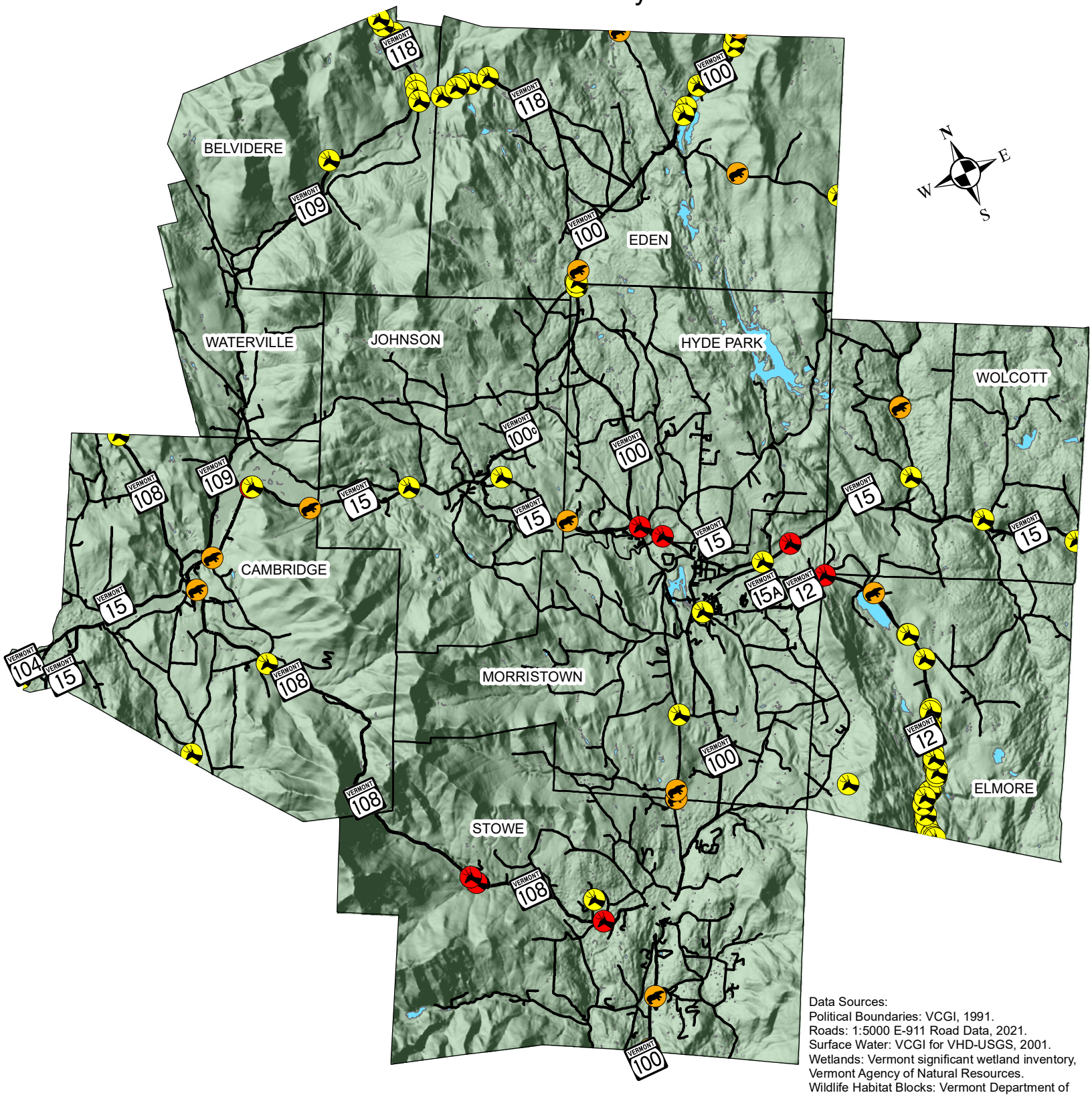
0 3 6 Miles

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Wetlands: Vermont significant wetland inventory, Vermont Agency of Natural Resources.
Wildlife Habitat Blocks: Vermont Department of Fish and Wildlife,
Vermont Agency of Natural Resources. Vermont Land Trust.
Rare Species and Communities: Vermont Nongame and Heritage Program, Vermont Agency of Natural Resources, 2022.
Deer Wintering Areas: Vermont Department of Fish and Wildlife, 2022.
Bear and Moose Data: Vermont Department of Fish and Wildlife.

Created 11/14/22 by LCPC.
Map is for planning purposes only, not for regulatory interpretation.

Wildlife Collisions

Lamoille County



Legend

- Bear Collisions
- Deer Collisions
- Moose Collisions
- LamoilleCountyTowns

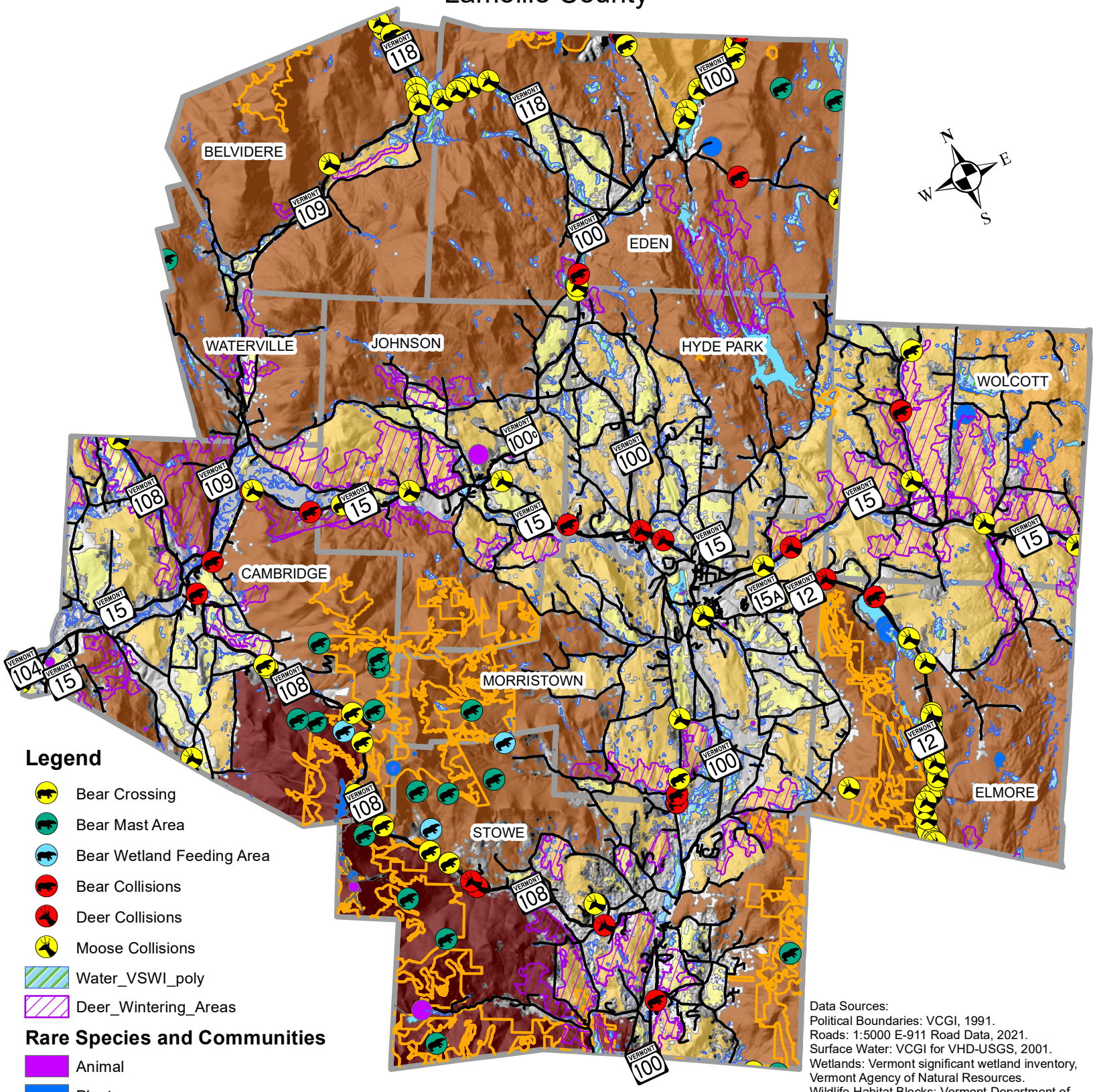
0 3 6 Miles

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Wetlands: Vermont significant wetland inventory, Vermont Agency of Natural Resources.
Wildlife Habitat Blocks: Vermont Department of Fish and Wildlife,
Vermont Agency of Natural Resources. Vermont Land Trust.
Rare Species and Communities: Vermont Nongame and Heritage Program, Vermont Agency of Natural Resources, 2022.
Deer Wintering Areas: Vermont Department of Fish and Wildlife, 2022.
Bear and Moose Data: Vermont Department of Fish and Wildlife.

Created 11/14/22 by LCPC.
Map is for planning purposes only, not for regulatory interpretation.

Wildlife Resources

Lamoille County



Legend

- Bear Crossing
- Bear Mast Area
- Bear Wetland Feeding Area
- Bear Collisions
- Deer Collisions
- Moose Collisions
- Water_VSWI_poly
- Deer_Wintering_Areas

Rare Species and Communities

- Animal
- Plant
- Significant_Natural_Communities

Habitat Blocks

- 20 - 500 acres
- 501 -5,000 acres
- 5001 - 10,000 acres
- 10,001 - 50,000 acres
- >50,000 acres

0 3 6 Miles

Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Wetlands: Vermont significant wetland inventory, Vermont Agency of Natural Resources.
Wildlife Habitat Blocks: Vermont Department of Fish and Wildlife,
Vermont Agency of Natural Resources. Vermont Land Trust.
Rare Species and Communities: Vermont Nongame and Heritage Program, Vermont Agency of Natural Resources, 2022.
Deer Wintering Areas: Vermont Department of Fish and Wildlife, 2022.
Bear and Moose Data: Vermont Department of Fish and Wildlife.

Created 11/14/22 by LCPC.
Map is for planning purposes only, not for regulatory interpretation.

Water Resources: Strategy

Human activity, both on the land and the water, must consider its impact on the delicate and intricate balance and relationships between land and water resources. Increasingly, Vermonters are placing more and more consumptive demands upon the state's water resources for development and recreation. Demands for commercial and residential developments, transportation and utility corridors, and water withdrawals have the potential to impact both the quantity and quality of these valuable resources. At the same time, we are becoming more appreciative of these resources for their beauty and quality. The competing values and demands placed on the County's water resources must be balanced through the planning process. Planning at the local level has both the responsibility and power to ensure water resource's long-term protection. Planning at the regional level should ensure water resource protection efforts are coordinated, comprehensive, and completed in a way that ensures limited resources are distributed evenly.

The following strategies are proposed for the continued enjoyment and protection of our water resources.

Lamoille County has abundant high quality water resources that support a variety of recreational, ecological, and economic uses. At the heart of recreational Vermont are Lamoille County's water resources. Water resources take on a variety of forms and functions. They include rivers and lakes that support many important recreational uses including boating, fishing, swimming, wildlife observation, hunting, and the enjoyment of aesthetic values; water for snow-making; groundwater for private and public water supply; and wetlands to store flood waters and filter natural and man-made contaminants. Surface waters and wetlands provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic and recreational activities.

Healthy riparian areas are restored and maintained. Maintaining vegetated buffers along our rivers and streams will help to stabilize the stream banks and thereby improve flood resilience, will benefit fisheries and wildlife by providing natural shade and cover, and will enhance scenic and recreational uses.

Water resources that provide public recreational opportunities or are areas of significant historical, scenic, and recreational value are protected. A coordinated planning effort at the local and regional level ensures that current and future development retains rather than impairs the value of our water resources.

Wetlands and floodplains are restored and protected. Rivers should have access

DRAFT

to floodplains wherever possible to establish and maintain stability. Wetlands and floodplains serve valuable functions including flood water storage, sediment trapping, nutrient filtering, and aquifer recharge. These functions benefit flood resilience as well as fish and wildlife.

Lamoille County's groundwater and surface waters are uniformly of high-quality. A coordinated regional and local effort to monitor water quality and address impairments, to develop and implement appropriate wastewater treatment systems, and to implement green stormwater infrastructure wherever possible, will improve and protect the water quality in Lamoille County watersheds as well as in the Lake Champlain Basin.

POLICIES & ACTION ITEMS

Policy: *Preserve the quality of the region's lakes and rivers as a resource for human recreation and wildlife.*

Action Items:

- Support efforts by lake associations, watershed associations, and other water-related groups to protect water resources and recreational experiences.
- Support adopt-a-river campaigns and annual river clean ups.
- Support sustainable fisheries management.
- Support state water quality regulations

Policy: *Healthy riparian areas are critical to stream bank stabilization and fisheries and wildlife habitats; therefore, riparian areas should be restored and protected.*

Action Items:

- Strongly encourage restoration of riparian buffers of at least 50 feet along all surface waters.
- Existing riparian and shoreland vegetation should be protected through such tools as management zones, river corridor, riparian buffer, and shoreline zoning.
- Support riparian corridor education efforts.
- Winter snow piles should be located an adequate distance from any riparian buffers according to current State standards.
- Assist lake associations and watershed groups in obtaining grant funding to support their efforts.
- Support the intent of State water quality rules.

DRAFT

- Support educational trainings on knotweed and other invasive species

Policy: *Future growth should not significantly impair the public recreational opportunities of waters or destroy or threaten areas of significant historical, scenic, or recreational value.*

Action Items:

- If a development impacts an important water resource identified in a municipal plan, the developer is encouraged to coordinate layout of the development to retain locally defined values.
- Work with developers and municipalities to protect regionally significant waters and water resources of historical, scenic, or recreational value.
- Encourage communities to protect significant water resources that provide public recreational opportunities or are areas of significant historical, scenic, or recreational value as determined by this regional plan and applicable municipal plans.
- Work with developers and municipalities to protect very high quality rivers, lakes, ponds, and wetlands identified as high-priority in the DEC tactical basin plan.
- Encourage the use of ANR's online mapping tools such as Biofinder and the Natural Resource Atlas to identify significant water resources.
- Support State land-use regulation to further the protection of important scenic and recreational water resources as determined by this regional plan and applicable municipal plans.

Policy: *Public access to the region's rivers should be improved and made safe.*

Action Items:

- Support local efforts to acquire and/or improve river access points.
- Safe and accessible river access points should be made available at strategic locations in order to give the general public access to the region's rivers.
- Educational signage should be provided for recreationists about water and other hazards.

Policy: *Wetlands play an invaluable role in storing large volumes of water during flood events and by filtering and purifying surface waters as they make their way to other water bodies and therefore need to be protected.*

Action Items:

DRAFT

- Support federal and state wetland protection rules.
- Encourage municipalities to protect wetlands through zoning and subdivision regulations, shoreland protection bylaws, health ordinances, and flood hazard regulations.
- Support efforts to map and verify vernal pools.

Policy: *Rivers should have access to floodplains wherever possible to establish and maintain stability in order to minimize stream bank erosion and avoid conflicts with human infrastructure.*

Action Items:

- Identify flood hazard areas and river corridors, based on maps provided by the Secretary of Natural Resources pursuant to 10 V.S.A. § 1428(a) or maps recommended by the Secretary.
- Mitigate floodplain encroachments wherever and whenever possible. Mitigation may include "compensatory storage," removal of infrastructure, floodplain reconnection/re-vegetation, and/or implementation of projects identified in a river corridor plan or local hazard mitigation plan.
- Complete the remaining geomorphic assessments as identified by LCPC and the Vermont Department of Environmental Conservation.
- Work with State partners, communities, and community partners to further refine and revise the statewide river corridors map to better reflect actual on-the-ground conditions.
- Assist municipalities in implementing wetland, river corridor, and riparian buffer protections to preserve these resources.
- Work with municipalities, developers, and regional partners to encourage land use practices that use appropriate erosion control techniques.
- Stabilization of eroded stream banks is encouraged in accordance with appropriate professionally accepted standards.
- Support State stream alteration regulations.

Policy: *For the safety and protection of human resources and infrastructure, new construction within floodplains should be avoided or mitigated and measures should be taken to protect existing structures within the floodplain.*

Action Items:

- Flood hazard mapping (Flood Insurance Rate Maps) should be updated.

DRAFT

- Provide technical assistance to communities wishing to explore or enroll in the National Flood Insurance Program (NFIP).
- Support flood mitigation projects such as flood proofing, property acquisitions, removal of floodplain encroachments, and the development of flood storage space to reduce damage to property in flood hazard areas.
- Compatible land use activities within floodplains, such as agriculture and recreation, are encouraged.
- Encourage communities to adopt bylaw standards above and beyond the minimum National Flood Insurance Program (NFIP) and river corridor standards, to encourage existing buildings in hazardous locations be made safer from flood damage and less costly to insure.

Policy: *All potable water sources should be protected in accordance with State and municipal regulations.*

Action Items:

- Support regional and local coordination to identify potential sources of groundwater contamination.
- Work with municipalities to develop and implement long-term groundwater protection measures.
- Support municipalities acquiring title or easements to the wellhead protection areas and recharge areas serving municipal and community water supplies.
- Support State drinking water regulations.
- Wastewater systems and stormwater discharge should be directed away from Source Protection Areas and installed according to appropriate State standards.

Policy: *Water quality in Lamoille County should meet Vermont Water Quality Standards. Efforts should be made to reduce point and non-point sources of water pollution.*

Action Items:

- Work with regional and state partners to monitor water quality, particularly in an effort to determine impaired waters and remediate impaired waters.
- Work with ANR and municipalities to implement actions required under the new Water Quality rules.

DRAFT

- Municipalities are encouraged to have and maintain back-up plans and treatment systems for protecting the water resources.
- Work with municipalities to conduct periodic wastewater facilities analysis to determine the remaining capacity of systems based on projected growth and to determine if any system weaknesses exist.
- Municipalities are encouraged to provide tertiary treatment of wastewater.
- Work with municipalities to develop and maintain a capital facilities plan for wastewater facilities.
- The use of tested and approved alternative septic systems in place of traditional systems is encouraged; especially in areas of marginal land/soil.
- Land uses that contribute to non-point sources of pollution should be adequately buffered from surface waters.
- Acceptable Agricultural Practices (AAPs), Acceptable Management Practices (AMPs) and Best Management Practices (BMPs) should be used.
- Encourage landowners to participate in State and Federal cost share programs that reduce non-point source pollutants.
- Planning and implementation of water quality remediation projects should engage the local community where the problems are occurring.

DRAFT

Water Resources: Background and Inventory

Watersheds, Rivers, and Water Bodies

A watershed, or basin, is a distinct land area that drains into a particular waterbody either through channelized flow or surface runoff. A watershed is defined by topography instead of traditional political boundaries. Lamoille County primarily overlaps the Lamoille watershed, but also contains portions of the Winooski and Mississquoi watersheds (Figure 4-9). All three watersheds flow into Lake Champlain, making them part of the larger Lake Champlain Basin. While the Regional Plan focuses on Lamoille County, water resource planning ideally should be at the watershed level. The Agency of Natural Resource's planning efforts to improve or maintain water quality at a watershed level has been conducted since the 1970s. The state is divided into seventeen planning basins for this purpose. The Agency is responsible for preparing basin plans for each of the 17 major basins and updating them every five years after the plan is originally approved. Much of the information presented in this chapter was derived from the assessment reports and basin planning documents available on the Agency's website (http://www.vtwaterquality.org).

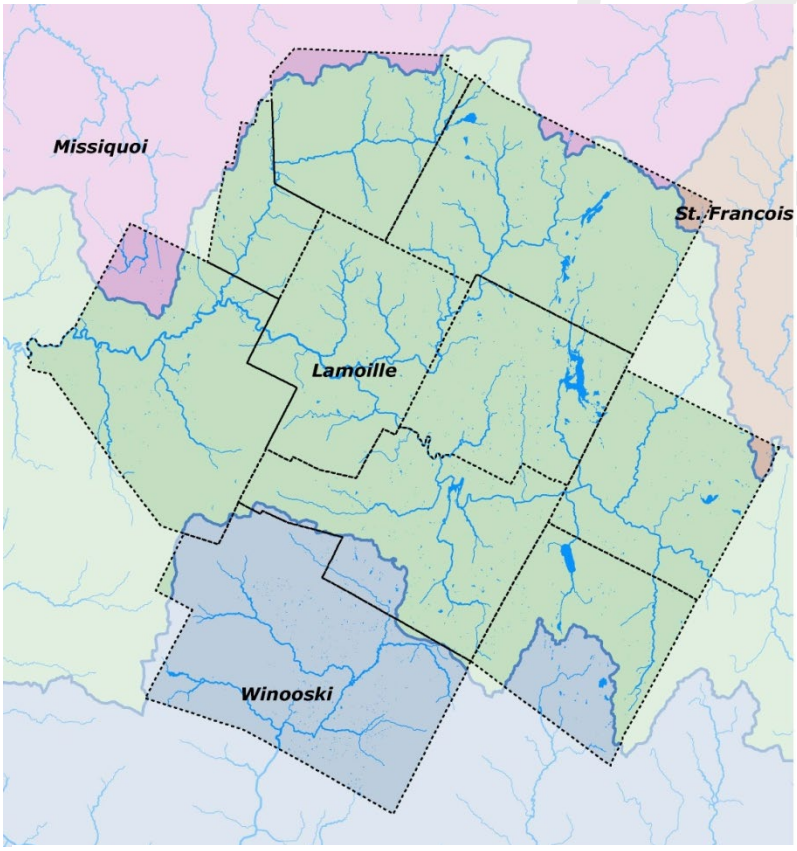


Figure 4-9. Lamoille County Watersheds

Rivers

The Lamoille River, the state's third longest, bisects the county from east to west on its way to Lake Champlain. Within the region, major tributaries to the Lamoille River include the Wild Branch (39 square miles), Green River (22 square miles), Gihon River (66 square miles), North Branch (37 square miles), Brewster River (21 square miles), and Seymour River (21 square miles). The Little River in the town of Stowe is a major tributary in the Winooski River Basin to the

south. There is also a small portion of the Missisquoi River Basin in the towns of Belvidere and Eden.

The County's rivers and streams and the lands adjacent to them provide numerous recreational opportunities in addition to important fish and wildlife habitats. The region's rivers and streams also provide several important non-recreational functions including assimilation of properly treated wastewater, drinking water, water for agricultural and industrial uses, aquifer recharge, and hydroelectric use. Water resources including rivers, lakes, floodplains, fluvial erosion areas, ground and surface water source protection areas, wetlands, boating and fishing accesses are shown in ensuing maps.

The rivers and streams of the region also have played an important role in the region's history and settlement patterns. Indigenous cultures depended upon the rivers as an important transportation network as well as for water and fisheries. For over 10,000 years, these river basins defined community and hunting territories, and provided geographic markers and access to the region. There are over 1,300 prehistoric and historic archaeological sites listed on the Vermont Archeological Inventory, and 390 river miles with known archaeological sensitivity in the state. Approximately 45 river miles in Lamoille County, all within the Lamoille River Basin, are of expected moderate to high archaeological sensitivity.

European settlers first used the rivers for access routes into the wilderness and later cleared the riverbanks and flood plains for agriculture during the eighteenth century. The early industrial period of the nineteenth century harnessed the river's power to supply local mills, water systems, tanneries, forges, and furnaces. Statewide, there are over 364 historic sites located within 1/4 mile of a river, including historic districts, mills, and covered bridges. In Lamoille County, 23 historic sites − of which 16 are on the National Historic Register − are located close to a river.

Riparian Areas

A riparian zone or riparian area is the interface between land and a river or stream. Undisturbed, vegetated riparian areas can prevent water pollution and preserve wildlife habitat, as well as provide open space and scenic beauty, minimize erosion, and provide access to public waters. Riparian vegetation is a key biological component in water quality functions of a riparian area.

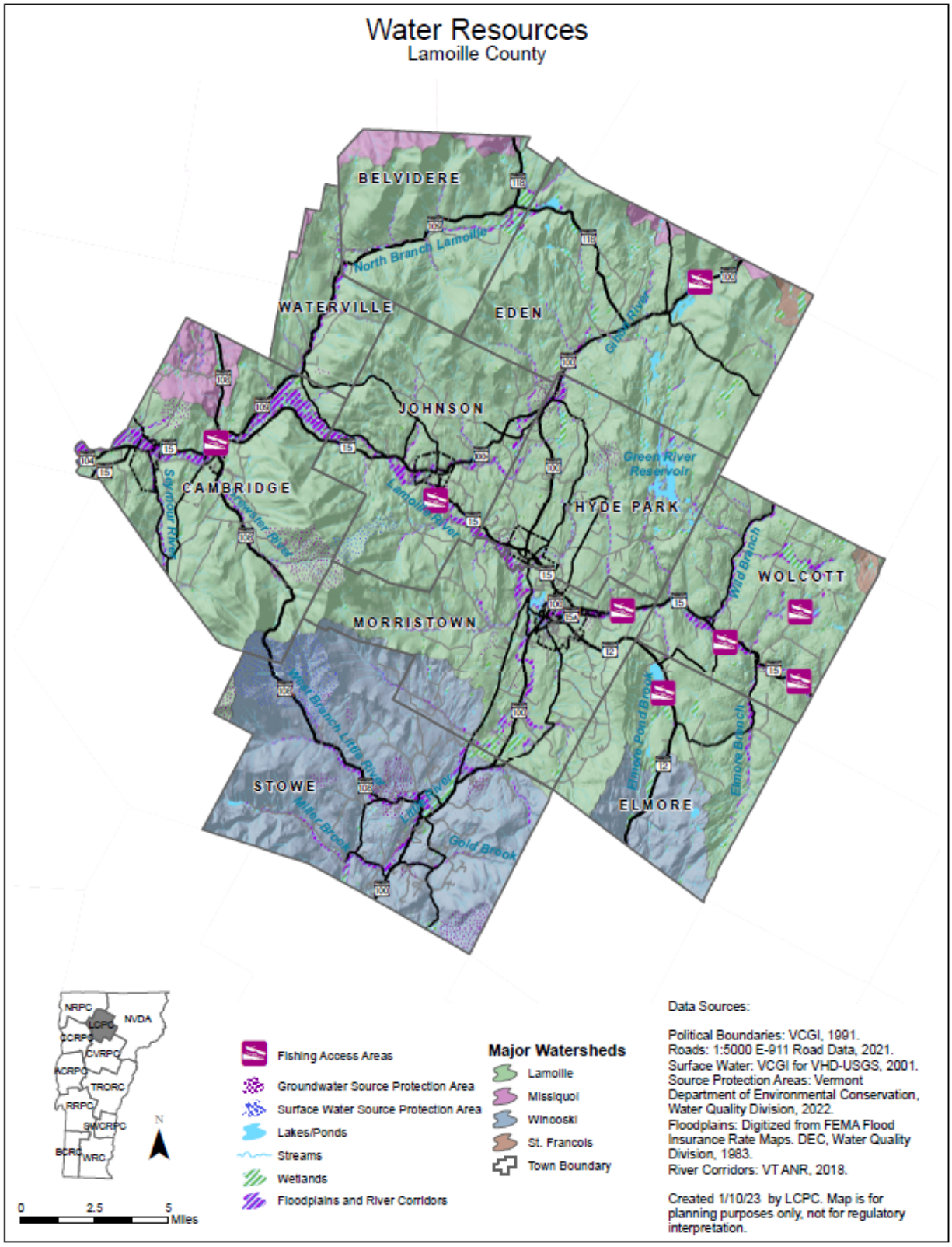
DRAFT

Vegetation reduces the amount of erosion along a riparian buffer, filters runoff before it reaches a stream, provides habitat, and regulates water temperature, which is essential for fish species such as trout. Lamoille County has over 97 miles of game fish habitat in 26 stream segments. These segments provide an important cold-water fish habitat primarily for rainbow, brown, and brook trout. Riparian areas also play an important role in the habitats of deer, moose, beavers, otters, mink as well as smaller mammals, waterfowl, and other birds and amphibians. In order to maximize the effectiveness of riparian areas, a buffer of undisturbed soil and vegetation should be maintained in these areas. LCPC, in partnership with the Lamoille County Conservation District, has engaged in a process to identify stream segments that could benefit from re-vegetation and to implement riparian restoration projects along these segments.

Lakes and Ponds

Lamoille County is within the Lake Champlain Basin, which, in 1990 received national attention through the Lake Champlain Special Designation Act as part of the Great Lakes Critical Programs Act. The Act added Lake Champlain to a list of 10 water bodies eligible for the establishment of a lake water quality demonstration program. The Act also authorized the establishment of the Lake Champlain Management Conference to coordinate activities between federal, state and local governments in Vermont, New York, and Quebec. The Management Conference is charged with developing a comprehensive pollution prevention, control, and restoration plan for the lake. Many of the associated activities directly involve land use and resource management issues throughout the Basin.

DRAFT


Water Resources
Lamoille County
BELVIDERE
WATERVILLE
EDEN
JOHNSON
CAMBRIDGE
HYDE PARK
WOLCOTT
MORRISTOWN
STOWE
ELMORE
North Branch Lamoille
Green River Reservoir
Seymour River
Lamoille River
Wild Branch
West Branch Little River
Miller Brook
Gold Brook
Elmore Pond Brook
Elmore Branch
NRPC
NVDA
LCPC
CCRPC
CVRPC
ACRPC
TRORC
RRPC
SWCRPC
BCRC
WRC
N
0
2.5
5
Miles
Fishing Access Areas
Groundwater Source Protection Area
Surface Water Source Protection Area
Lakes/Ponds
Streams
Wetlands
Floodplains and River Corridors
Major Watersheds
Lamoille
Missiquoi
Winooski
St. Francois
Town Boundary
Data Sources:
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Source Protection Areas: Vermont Department of Environmental Conservation, Water Quality Division, 2022.
Floodplains: Digitized from FEMA Flood Insurance Rate Maps. DEC, Water Quality Division, 1983.
River Corridors: VT ANR, 2018.
Created 1/10/23 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

There are 55 lakes and ponds within Lamoille County. Of these, 13 are lakes or ponds 20 acres or greater in size, and thus considered public waters subject to state protection. These lakes and ponds are listed in the table below. In addition, a small portion of Waterbury Reservoir is located in Lamoille County. While less than 20 acres in size, Sterling Pond is notable due to the fact that it is the highest elevation trout pond in the State of Vermont.

These lakes and ponds provide a variety of benefits to county residents and visitors, including boating, swimming, fishing, hydroelectric power, snow-making, water for fire suppression and wildlife, plant, and fisheries habitat. Several of these ponds, notably the Green River Reservoir, Wolcott Pond, and Zack Woods Pond, also form an important network that provides habitat for migrating waterfowl such as loons. While a great majority of these lakes and ponds are supporting their designated uses (see the section on Water Quality) and have generally good water quality, they are threatened by sources of pollution including erosion and sedimentation, adjacent land use activity, aquatic nuisances such as Eurasian milfoil, and by those who use them for recreational purposes. The removal of vegetative buffers, leaching septic systems, over development of the shoreline, and erosion and sedimentation, all inhibit our ability to use and enjoy these resources.

Table 4-4. Lamoille County Waterbodies 20 Acres or Greater

Lake	Town (Outlet)	Lake Area (Acres)	Watershed Area	Public Land /Access
Lake Eden	Eden	194	2,347	Mun/State
Lake Elmore	Elmore	219	5,574	Mun/State
Green River Reservoir	Hyde Park, Eden	653	9,075	State
Hardwood Pond	Elmore	44	284	None
Lake Lamoille	Morristown	148	142,100	None
Little Elmore Pond	Elmore	24	316	None
Long Pond	Eden	97	723	None
Lake Mansfield	Stowe	35	1,557	None
Schofield Pond	Hyde Park	39	936	None
South Pond	Eden	103	1,382	None
Wapanacki Lake	Wolcott	22	285	None
Wolcott Pond	Wolcott	74	920	State
Zack Woods Pond	Hyde Park	23	36	State

On the local level, there is a need to develop means to protect these resources through local planning. These include information on the resource and the

threats to it, and the implementation of measures that encourage the maintenance and improvement of the water quality and the many uses they sustain. Similar to riparian areas, establishing and protecting vegetated shoreland buffers is an important measure now regulated through the Vermont Shoreland Protection Act (see above) that will improve habitat and water quality.

Recreation

There are numerous recreational uses of Lamoille County waters, including whitewater and quiet water boating, swimming, fishing, hunting, and canoe camping. Lamoille County also contains many scenic water features such as gorges, waterfalls, wetlands, and pristine ponds. Some of the most well-known and significant features are described here.

Boating

A number of locations in Lamoille County are good whitewater boating stretches. The Lamoille main stem is used extensively for flat water canoeing and kayaking by several local outfitter businesses as well as the general public (Table 4-5). Motorized boats are regulated by the individual local water body regulations.

The Lamoille River from Pottersville to Wolcott is a nice 1.4 mile stretch of whitewater called the "Wolcott Ledges." It is considered "highly important" in part because the Class III rapids can be run in wet summers and fall. The North Branch of the Lamoille River is a challenging and noteworthy stretch of whitewater enjoyed by many boaters, which is described as pristine and having "excellent to outstanding" scenery. Another whitewater section in the watershed is a 1.5 mile stretch on the Gihon River, which is a Class IV and Class V reach used by only expert paddlers. The Wild Branch, although it can only be paddled during snowmelt or periods of high water, is considered an important local whitewater resource.

DRAFT

Table 4-5. Recreational Boating Locations in Lamoille County

Location	Documentation	Rating	Characteristics tha support use	Put in	Take out
Lamoille River - Wolcott Ledges (1.4 miles)	*Vermont's White Water Rivers*	Highly important	Class III can be run in wet summers and fall	Behind the Pottersville Dam powerhouse	Downstream of Wolcott Village
Lamoille River (34 miles) Morristow to Fairfax	*Vermont's White Water Rivers*	Highly important	Class II-IV, whitewater and general touring	Duhamel Road, Morristown below Cadys Falls	Upstream of Fairfax Falls (man portages)
North Branch (9 miles)	*Vermont's White Water Rivers*	Not rated	Class II-IV, excellen to outstanding scenery and pristin	Bog Road Bridge, Belvidere	Church Street covered bridge, Waterville
Gihon River (1.5 miles)	*Vermont's White Water Rivers*	Not rated	Serious Class IV and V used by expert paddlers	Whitcomb Island Road, Johnson	Pearl Street, Johnson
Wild Branch (7 miles)	*Vermont's White Water Rivers*	Important	Fast, twisty and highly technical Class II-III	North Wolcott Road upstream of Wolcot Craftsbury line	Route 15 at State bridge
Waterman Brook	*Let it Rain*	Not rated	Class IV and V used by expert paddlers	Waterman Road covered bridge, Johnson	River Road East, town bridge, Johnson
Kenfeld Brook	Vermont Paddlers Assocation recommendations	Not rated	Class IV, outstanding scener	Tyndal Road, Morristown	Duhamel Road, Morristown

DRAFT

Swimming

There are a number of popular swimming holes both on the Lamoille River mainstem and its tributaries. The locations described in the table at right are also generally some of the most scenic and aesthetically pleasing spots on the river and are enjoyed by picnickers, photographers, and anglers. Dog's Head Falls and Sloping Falls in Johnson are well-used recreation areas, as is Picnic Ledges in Wolcott. A number of swimming holes also exist on various tributaries to the Lamoille. Many culturally important swimming holes are also identified in the Vermont Swimming Hole Study (1992) and The Waterfalls, Cascades and Gorges of Vermont (1991).

Swimming Site Name	Town	Location
Dogs Head Falls,-lower pool - Lamoille River	Johnson	Patch Road
Picnic Ledges - Lamoille River	Wolcott	Route 15 east of village
Lamoille River, Wolcott Village	Wolcott	Route 15 in village
Terrill Gorge - Kenfield Brook	Morristown	Duhamel Road - F&W parking
Elmore Branch	Wolcott	East Elmore Road
Sheep's Hole - Foote Brook	Johnson	Foote Brook Road
The Ledges - Foote Brook	Johnson	Cherry Hill Road
Power House Bridge Falls - Gihon River	Johnson	School Street
Rogers Bridge - Seymour River	Cambridge	Lower Pleasant Valley Road
Brewster River Gorge	Jeffersonville	Canyon Road by covered
Codding Hollow Covered Bridge - North Branch	Waterville	Codding Hollow Road
Clavale Brook Cascades	Eden	Route 118

Fishing

People fish throughout the Lamoille River and its tributaries. Some notable fishing sites include many of the same sites listed as swimming holes. The Vermont Department of Fish and Wildlife owns 25 different riverbank segments totaling 62,000 linear feet (almost 12 miles), which provide riparian zone protection and direct public access for fishing. The Department's acquisition program assures continued access for fishing in the face of increasing residential development.

Wetlands

The term wetland is used to refer to areas that are, or seasonally are, inundated or saturated with water. They are commonly known as swamps, marshes, bogs, or fens. Wetlands comprise 9,154 acres, or 3%, of Lamoille County's land area. All wetlands share three basic characteristics: the presence of water at or near the surface (wetland hydrology); the presence of water loving plants (hydrophytic vegetation) occurring on the site; and common types of soil (hydric soils) that

DRAFT

have formed as a result of the presence of water. Wetlands serve a variety of important functions including storm and floodwater retention, surface and groundwater protection, fisheries and wildlife habitat, timber, recreation, and erosion control. Wetlands comprise an important element in Lamoille County's landscape, habitats, and ecosystem that must be protected. State and federal regulations govern wetlands, which are categorized as Class I and Class II. Class III wetlands are regulated at the Federal but not at the State level.

The Vermont landscape has undergone vast changes over the past 200 years. These changes have seen the deforestation of the state for agriculture and, as sheep and dairy farming declined, subsequent reforestation to the 78% forested landscape of today. Growth and development over the past twenty to thirty years have also played a role in the destruction of Vermont's wetlands. Historically, some loss of wetlands has been due to draining and filling for agricultural purposes.

According to the Vermont Significant Wetlands Inventory (VSWI) completed by the Department of Environmental Conservation, there are a total of approximately 300,000 acres of wetlands in Vermont, accounting for approximately 5% of the state's land area. It is estimated that over 90% of Vermont's wetlands are privately owned. Over half of the state's wetlands are forested with nearly equal amounts of broad-leaved deciduous and evergreen tree species. Less than one third are classified as scrub-shrub wetlands, with the remainder comprising emergent wetlands (marshes and wet meadows).

The significance of any one wetland in Vermont is not based on its size, but rather the degree to which it serves various wetland functions. A variety of values and functions can be directly attributed to the presence of wetlands. Many of these functions provide direct and indirect economic benefits to landowners and communities, as well as many social benefits such as ecological diversity and aesthetic value. While some wetlands may provide only one or two functions, others may fulfill several at one time. Even though only one specific function may be supported, that function may be very important to the area. Regardless of the wetland's size and the functions it may provide, the determination of any one wetland's value must be done on a case-by-case basis.

DRAFT

Wetlands associated with rivers and streams (riverine wetlands) provide for the storage of floodwaters by acting as a sponge to absorb the runoff and release it slowly over time. It is often assumed that wetlands with a surface area of 1% or more of the total drainage basin may be important for storm water retention. Wetlands also play an important role in erosion control by trapping sediments, absorption of storm flow, and dissipation of wave and current energy along shorelines.

Many wetlands are important to the recharge of groundwater aquifers and serve to filter impurities and nutrients from surface water sources. This function is very important in helping to ensure and protect potable water supplies. In some areas, the filtering abilities of wetlands are being harnessed to perform limited wastewater treatment functions.

Finally, wetlands provide an important habitat for several game and non-game wildlife species, as well as critical habitat for several threatened or endangered plant and animal communities. Many large mammals utilize wetlands during their seasonal cycles, while many fish, reptile, amphibian, and bird species are entirely dependent on wetlands for food, shelter, and spawning. Wetlands provide habitat for over 43% of the federally recognized threatened and endangered plant species found in Vermont. Wetlands are also used extensively for agriculture and silviculture.

The implementation of state and federal wetland programs have been responsible for creating incentives for reducing, or mitigating, wetland loss. The Vermont Wetland Rules were adopted by the Water Resources Board in 1990 to implement the statutory requirements of the Vermont Wetlands Act (10 VSA §905 7-9). These rules classify all wetlands in the state according to their importance in fulfilling one or more wetland functions. Some wetlands (Class 3) are not protected under the Vermont Wetland Rules but may still be subject to federal regulation. Certain activities, such as most agricultural and some silvicultural activities, are permitted in a wetland without any review. All other development in or near a wetland requires a Conditional Use Determination from the Secretary of the Agency of Natural Resources ensuring no undue adverse impacts on protected functions.

DRAFT

Vermont's wetlands also receive state review and protection under Act 250. In addition to state protection, the U.S. Army Corps of Engineers has the responsibility of administering Section 404 of the Clean Water Act which regulates the dredging or placing of fill into any wetland over one acre in size. The Environmental Protection Agency and the U.S. Fish and Wildlife Service have review authority over any Army Corps permit. Several other federal agencies, including the National Park Service and the USDA Soil Conservation Service, administer grant programs, which encourage the protection of wetlands. Finally, town plans and local land use regulations may also provide additional protection and consideration of wetlands.

Vernal Pools

Vernal Pools are seasonal wetlands, filling with snowmelt and spring rains, but often drying up by summer, creating a cycle of flooding and drying that prohibits permanent fish populations. These pools provide critical habitat for many salamanders, including some "medium" priority Species of Greatest Conservation Need, such as the Blue-Spotted, Spotted, Jefferson, and Four-toed salamanders, and other vernal pool-dependent invertebrates such as fairy shrimp, and several freshwater snails and dragonflies. The loss of a single vernal pool in any given area could easily cause the demise of the local wood frog population, along with any pool-breeding salamanders, and would certainly cause the extirpation of the pool's fairy shrimp.

Vernal pools are critical habitats of incredible diversity and productivity. However, vernal pools often receive little or no protection under federal and state regulations. In Vermont, vernal pools are not recognized as significant wetlands under the 1990 Vermont Wetlands Rules, and while they may qualify for protection as "wildlife habitat" under Act 250, they are not considered critical wildlife habitat, a designation necessary for legal protection. As a result, vernal pools are not currently protected if a development is not subject to Act 250 review. This could become an issue in the future as there are over 100 vernal pools in Lamoille County.

Floodplains and River Corridors

Floodplains are lowlands along rivers, streams, and lakes which periodically become inundated with water during times of high rainfall or spring runoff.

DRAFT

Floodplains serve valuable ecological functions, including flood water storage, sediment trapping, nutrient filtering and aquifer recharge. Infrastructure within the floodplain poses both a direct hazard to the inhabitants and an indirect hazard to those living downstream of that infrastructure. Vermont statutes governing the use of areas within the floodplain have been developed to protect people as well as natural resources. Two types of areas have been defined, flood hazard areas and floodways. Flood hazard areas (Title 10 VSA Chapter 32) are areas that have a 1 in 100 chance of being inundated by flood in any given year. If the flood hazard area is improperly used and unprotected, a flood can create a serious threat to the public, private investments can be destroyed, and significant natural resources can be damaged. A floodway (Title 10 VSA Chapter 32) is the channel of a river or other watercourse and the adjacent land area that must be reserved to discharge the 100-year floods without cumulatively increasing the water surface elevation more than one foot. The floodway is the most hazardous section of a flood hazard area. Developments in a floodway are likely to increase the flood height and velocity and probably would be damaged in the event of a flood. Flood hazard areas have been designated by both federal and state governments. New development in these designated flood hazard areas should be discouraged, and existing development should be secured and flood-proofed in accordance with FEMA guidance.

By providing space to dissipate flood waters, floodplains serve an important function in maintaining the stability of river systems, where there is minimal erosion and a balance between water and sediment moving downstream through the system. Modification of watersheds and stream channels through natural processes (landslides, severe storms, fires) and human alterations (de-forestation, ditching, dredging, and armoring), causes an imbalance in water and sediment loads that leads to adjustments in river and floodplain geometry until balance is re-established. Since European settlement, repeated watershed and stream channel modification related to intensive land use has caused widespread loss of floodplain function. Nearly every Vermont watershed has streams "in adjustment." Streams and rivers have become confined to deeper, straighter channels and no longer have access to historic floodplains. Rivers that have down cut and lost access to their floodplains will erode their banks until new floodplains are formed. Without floodplains and meanders, rivers deposit the eroded soil and nutrients into the lakes and reservoirs.

DRAFT

As was evident in 2011 during Tropical Storm Irene, catastrophic changes in river channel location and dimensions can occur during a large flood event (Municipal Guide to Fluvial Erosion Hazard Mitigation). Most flood related damage in Vermont is caused by fluvial erosion rather than inundation. The increased power of larger floods, contained within the channel, has led to higher rates of bed and bank erosion. The average $18-$20 million being spent annually in Vermont to keep rivers disconnected from their floodplains and static in the landscape has become unsustainable. Erosion hazards and flood losses are increasing. (Floodplains Key to the Health of Lake Champlain White Paper, DEC).

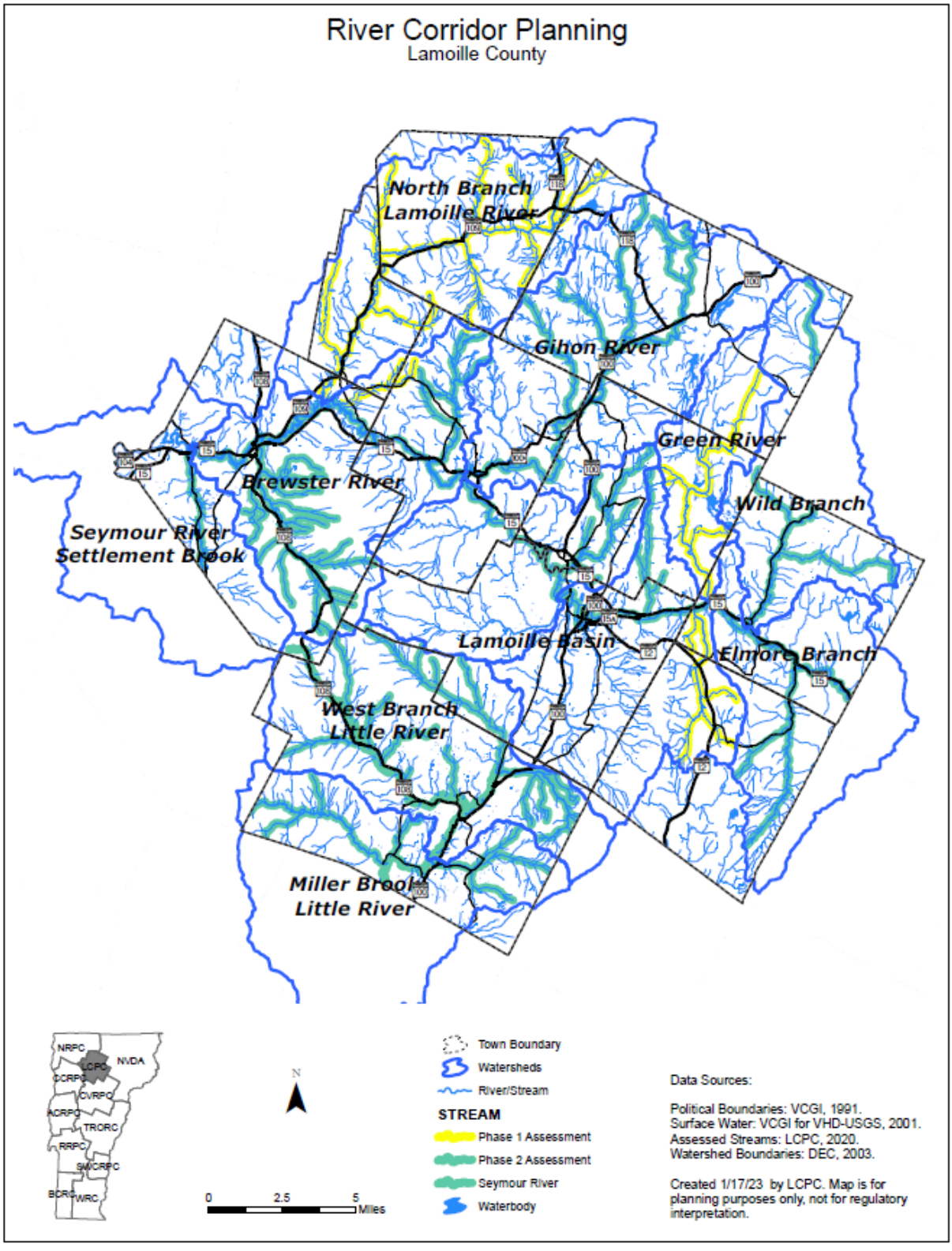
The Vermont Department of Environmental Conservation seeks to better understand river behavior through the science of fluvial geomorphology, the physical interrelationship of flowing water and sediment in varying landforms. Since the late 1990s, the Vermont River Management Program has been working with Towns and Regional Planning Commissions to conduct stream geomorphic assessments throughout the State. There are many reasons to do a stream geomorphic assessment, ranging from learning about the natural environment and the effects humans have had on the landscape over time, to identifying high quality aquatic habitats, to characterizing erosion and flood hazards. Part of this process involves delineating river corridors- identifying the area the stream needs for physical adjustment, so that it can attain/maintain a stable equilibrium condition. Limiting the number of new structures placed in defined river corridors prevents unnecessary threats to life and property and reduces the need for flood control measures.

The Vermont Department of Environmental Conservation and LCPC have completed 10 geomorphic assessments in Lamoille County. The completed Geomorphic Assessments are in: Little River (Stowe), West Branch (Stowe), Elmore Branch (Elmore, Wolcott), Gihon River (Johnson, Hyde Park, Eden), Centerville Brook (Hyde Park), Foote Brook (Johnson), Green River (Hyde Park), Lamoille River Mainstem (Johnson, Hyde Park, Morrisville, Wolcott), Wild Branch (Wolcott, Eden), and Rodman Brook (Morristown, Hyde Park). In addition to mapping river corridors, the assessments identify and prioritize restoration opportunities. The identified projects will reduce sediment and nutrient loading to downstream receiving waters such as the Lamoille River and

DRAFT

Lake Champlain, reduce the risk of property damage from flooding and erosion, and enhance the quality of in-stream biotic habitat. Many of these projects involve conservation and re-vegetation of riparian areas. Since many of these areas are privately owned property, coordination and collaboration with property owners will be especially important to implement these projects. The Vermont Department of Environmental Conservation has an up to date statewide map of river corridors. This map can be viewed via the online ANR Natural Resources Atlas (see map on next page).

DRAFT


River Corridor Planning
Lamoille County
North Branch
Lamoille River
Gihon River
Green River
Brewster River
Wild Branch
Seymour River
Settlement Brook
Lamoille Basin
Elmore Branch
West Branch
Little River
Miller Brook
Little River
NRPC
NVDA
LCPC
CCRPC
CVRPC
ACRPC
TRORC
RRPC
SWCRPC
BCRC
WRC
N
0
2.5
5
Miles
Town Boundary
Watersheds
River/Stream
STREAM
Phase 1 Assessment
Phase 2 Assessment
Seymour River
Waterbody
Data Sources:
Political Boundaries: VCGI, 1991.
Surface Water: VCGI for VHD-USGS, 2001.
Assessed Streams: LCPC, 2020.
Watershed Boundaries: DEC, 2003.
Created 1/17/23 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Groundwater

Groundwater is a precious and essential resource -- one that is critical to the day-to-day activities of rural Vermonters. Groundwater is used for domestic, commercial, and industrial uses and for irrigation of crops. According to the Vermont Department of Health, 3 out of 10 Vermonters, roughly 193 thousand people, obtain their domestic water from groundwater sources. On average, every day we require 75 gallons of water per person for domestic use − toilets, bathing, cooking, drinking, etc. In Lamoille County, this translates into nearly 1.9 Mgal/d − nearly all of which comes from groundwater sources.

Groundwater contamination can come from any number of sources including land use activities and air and surface water pollution. Land use activities have the potential of seriously impacting both the quality and the quantity of groundwater in a given area. The presence of leaking underground storage tanks, road salt application, leachate from landfills, domestic wastewater and sewage, industrial wastes, and agricultural applications of pesticides and fertilizers all pose a potential threat to groundwater sources.

Groundwater in Vermont is protected by the Groundwater Protection Law (10 VSA Chapter 48). The law provides for the classification of groundwater into four types based on existing and future use, and required the Agency of Natural Resources to develop a Groundwater Protection Rule and Strategy. The purpose of this strategy was to develop a process for the identification and delineation of the four classes of groundwater and to protect these sources through existing regulatory programs and the coordination of groundwater management statewide.

Table 4-6. Delineated wellheads in Lamoille County

Water Source Name	Number of Wellheads
Birch Hill Water System	1
Cadys Falls Water Coop	1
Cambridge Village Water System	2
Covered Bridge Highland	1
Elmore Water Co-Op	1
Hyde Park Water System	1
Jeffersonville Water System	2
Johnson Village Water Dept	1
Mansfield View Water Company	2
Morristown Corners Coop.	2
Morrisville Water & Light	2
Mountainside Resort	1
North Hyde Park F.D. #1	1
Pinecrest Mhp	1
River Road Apartments	1
Smugglers' Notch	7
Sterling View Mhp	1
Stowe F.D. #2 Gold Brook Circle	1
Stowe F.D. #4	1
Stowe Village Water System	1
Stowe Water Dept	1
Village of Johnson	1
Waterville Water Coop	1

DRAFT

Class I groundwater: 1) is suitable for public water supply, 2) has a character that is uniformly excellent, and (3) is not exposed to activities that pose a risk to its current or potential use as a public water supply. Class II groundwater is the same as Class 1 with the exception that it may be exposed to activities that pose a risk to its current or potential use as a public water supply. Class III is suitable as a source of water for individual domestic water supply, irrigation, agricultural use, and general industrial and commercial uses. Finally, Class IV groundwater is not suitable as a source of potable water but suitable for some agricultural, industrial, and commercial use. By statute, all groundwater in Vermont is designated Class III unless specific areas are reclassified to Class I, II, or IV. The purpose of reclassification to Class I or II is to delineate areas of groundwater requiring extra protection for current or future public drinking water supplies. The purpose of reclassification to Class IV is to prevent people from accidentally drinking non-potable groundwater and to prevent spreading of subsurface contamination.

Protection measures for groundwater at the state level include identification and monitoring, and the prohibition of certain land uses, namely landfills, injection wells, and leach fields, within each Groundwater Classification Area with the most stringent restrictions placed in Class I areas. Where private property is included in a Class I area, the Agency must go to the Legislature for approval for permanent protection.

In addition to the Groundwater Protection Strategy, the Agency is also responsible for the implementation of the state's Wellhead Protection Program pursuant to the requirements of the Federal Safe Drinking Water Act (SDWA). In Vermont, a wellhead protection area is the surface and subsurface area that serves a public drinking water supply, which is defined as serving fifteen or more connections or 25 or more people. The Vermont Wellhead Protection Program is designed to coordinate various state and local agencies and drinking water providers in the long-term protection of their wellhead protection areas from potential sources of contamination. Within this effort, water systems (both municipally and privately owned) must delineate their wellhead protection areas, identify potential sources of contamination, and develop plans and programs to minimize the risk of contamination. Lamoille County has 34 delineated wellheads, which are listed in Table 4-6.

A 2002 study funded by the Clean Water Act and prepared by LCPC identified land uses within the region's wellhead protection areas and made

DRAFT

recommendations for their protection through municipal planning. While many of these water sources are undeveloped and relatively protected for the short term, recent growth rates and patterns of development suggest that many will need to adopt more long-term protection measures over the coming years. Large areas within the rural forested landscape areas support critical public water supply protection areas, including groundwater and surface water protection areas for local municipalities.

The Vermont Department of Environmental Conservation has developed a manual, *An Ounce of Prevention; A Groundwater Protection Handbook for Local Officials*. This handbook outlines a variety of tools ranging from public education to model groundwater protection ordinances, which can be employed to protect groundwater. Whatever the situation or approach to groundwater protection, the loss of this precious resource will be a limiting factor in the continued growth and prosperity of any community. It remains up to the local communities in the region to adequately protect groundwater sources from contamination. At the local level, this effort translates into land use planning and municipal coordination. Rather than the traditional approaches to groundwater protection − control, monitoring, and clean-up − there must be a much more proactive and cost-effective approach to preventing contamination. The first of these is learning the location of wellhead protection areas and Class 1 & 2 groundwaters, and identifying potential sources of contamination. Secondly, through public involvement, long-term protection measures for these sources should be developed and implemented.

Surface Water Quality

The Agency of Natural Resources is charged with the assessment of water quality in the state through the requirements of the Federal Clean Water Act. The water quality of Vermont's surface waters is assessed by evaluating the ability of water bodies to support a set of designated uses. Water uses include, but are not limited to, drinking, aquatic life, recreation, fish consumption, and agriculture. For each use, the waterbody or stream segment is evaluated to determine whether the use is fully supported, stressed, altered, or impaired. Fully supported and stressed waters are those that meet the goals of the water quality standards. Impaired waters do not meet goals of the water quality standards because of one or more particular pollutants. Altered waters do not meet water quality standards because of non-pollutant effects (e.g., alteration of flow to

DRAFT

generate electricity). The four use support categories are described in greater detail as follows:

Full Support - This assessment category includes waters of high quality that meet all use support standards for the water's classification and water management type.

Stressed - These are waters that support the uses for the classification but the water quality and/or aquatic biota/ habitat have been disturbed to some degree by point or nonpoint sources of pollution of human origin and the water may require some attention to maintain or restore its high quality; the water quality and/or aquatic habitat may be at risk of not supporting uses in the future; or the structure or integrity of the aquatic community has been changed but not to the degree that the standards are not met or uses not supported.

Altered - These are waters where human activity has altered the natural hydrologic flow and/or has modified the river channel, OR where the occurrence of exotic species has had negative impacts on designated uses.

Impaired - These are surface waters where reliable data collected through monitoring efforts reveals 1) an ongoing violation of one or more of the criteria in the Water Quality Standards and 2) a pollutant of human or human-induced origin is the most probable cause of the violation. In accordance with EPA guidelines, Vermont DEC reports a List of Impaired Waters determined to be impaired and needing a pollution budget determination otherwise known as a Total Maximum Daily Load (TMDL) determination.

A determination of use support is made by following the Vermont Surface Water Assessment Methodology and using information gathered and provided to the Department of Environmental Conservation by water resources personnel, fish and wildlife biologists, aquatic biologists, lake and river organization members, and other qualified individuals or groups (*State of Vermont 2018 Water Quality Integrated Assessment Report*).

Each of Vermont's 17 basins is assessed on a rotating schedule. The most recent *Lamoille Basin Water Quality Assessment* (2016) found that all the rivers and streams in Lamoille County either partially or fully supported their uses, and all lakes and ponds, with the exception of Lake of the Clouds, either partially or fully supported their uses. In this lake, water quality is impaired due to high acidification. In addition to Lake of the Clouds, a tributary to the Brewster River is identified as impaired due to iron seepage from an inactive leachfield. Remediation via lime treatments has been applied to this tributary. In the most recent Winooski Basin Water Quality Assessment (2018), the West Branch Little River in Stowe is identified as undergoing active adjustment processes. On the majority of the West Branch, historic fluvial erosion has lowered the elevation of the riverbed leaving the floodplain inaccessible. As a result, high flows that

would normally access the floodplain are contained within the channel; causing extensive bank erosion, channel widening, loss of aquatic habitat, and general channel instability. Highly erodible soils are a major contributor to these dynamics of the channel adjustment process.

The map at the end of the chapter shows the impaired and priority surface waters in Lamoille County. For a detailed listing of these surface waters, see the Vermont Water Management's "Assessment of the Condition of Vermont Waters" webpage at http://www.vtwaterquality.org/mapp/htm/mp_assessment.htm.

Stormwater

Stormwater runoff is generated when precipitation from rain and snowmelt flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment, or other pollutants that can adversely affect water quality. Rapid discharges of stormwater can also adversely impact the hydrology of a water body, leading to erosion or flooding downstream and damage to the built environment. Sediment carried in stormwater can adversely affect aquatic wildlife, and may also be bound with pollutants such as phosphorous.

The State of Vermont regulates stormwater impacts from developments which create more than one acre of impervious surfaces. However, much of the development occurring in Lamoille County falls under this threshold. Therefore, management of stormwater is largely left to local municipalities. In some cases "Low Impact Development" can be used to address stormwater impacts. Low Impact Development techniques include reducing the width of roads and driveways, directing runoff away from impervious surfaces and into vegetated areas, and infiltrating runoff into soil before it reaches surface waters through use of rain gardens or similar techniques. Both Eden and Elmore Lakes have Watershed Action Plans

The 3 Acre Rule was adopted by DEC in February of 2019. Three-acre sites are defined by DEC as "existing sites with three or more acres of impervious surface that lack a stormwater permit based on the 2002 Stormwater Management Manual." It includes standards applicable to the general permit, as well as all

DRAFT

stormwater permitting. Per Act 64 (Vermont Clean Water Act) and Lake Champlain TMDL Plan requirements, the Vermont Department of Environmental Conservation (DEC) is required to adopt a new rule and general permit for stormwater management from "three-acre sites."

Lake Champlain TMDL Plan

In 2016, the Lake Champlain TMDL Plan was adopted. Section 303(c) of the Clean Water Act requires states to establish water quality standards that identify each waterbody's designated uses and the criteria needed to support those uses. Such water quality standards must be sufficient to ensure, wherever attainable, a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. Section 303(d) of the Clean Water Act requires states to develop lists of impaired waters that fail to meet Water Quality Standards set by jurisdictions even after implementing technology-based and other pollution controls. The Environmental Protection Agency's regulations for implementing CWA section 303(d) are codified in the Water Quality Planning and Management Regulations at 40 CFR Part 130. The law requires that states establish priority rankings and develop Total Maximum Daily Loads (TMDLs) for waters on the list of impaired waters (40 CFR 130.7). A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet applicable water quality standards.

Lake Champlain Action Plan

The 2022 Action Plan brought stakeholders together to outline steps that will be used over the next 5 years in order to protect and restore Lake Champlain and the basin. The focus will be on climate change and invasive species.

DRAFT

Flood Resilience: Strategy

Resilience is the capability to anticipate, prepare for, respond to, and recover from, significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment. This section focuses specifically on resilience to flooding, including the capacity to plan for, respond to, and recover from floods.

The following strategies are proposed for building flood resilience in Lamoille County:

Communities are flood resilient when they are able to anticipate, prepare for, respond to, and recover from, significant floods with minimum damage to social well-being, the economy, and the environment. In the last 50 years, severe storms have gotten more common in Vermont and across the Northeast. While the future is not fully predictable, current models of climate change suggest this trend will continue. We need to take careful steps to ensure that our communities are prepared for and resilient to increasingly frequent floods.

Development is concentrated in areas safe from flooding. As of April 2025 in Lamoille County, there were 354 residential structures, 72 commercial facilities, and 41 critical facilities in the flood hazard area. Locating new development outside of hazardous areas is one way to reduce future losses. Moving existing buildings, especially critical facilities, out of hazardous locations may be prudent in some cases. Extending foundational infrastructure (water/sewer) will help transition communities and critical facilities into safer areas. Communities need to examine their public and critical facilities to be sure they are accessible, safe, and functional when needed.

Development in flood prone areas is protected from flooding damages and does not cause an adverse impact to downstream areas. For those buildings and other infrastructure that can't be moved, steps can be taken to help them experience less damage in the next flood. Some measures include elevating the bottom floor of the building, elevating utilities, changing a below-ground basement into an above-grade level crawl space, and providing vents for flood water to enter and leave the crawl space. Conversely, filling in a floodplain area will only exacerbate flooding downstream and should be avoided.

Floodplains and upland forested areas are protected. Protecting our intact floodplains and river corridors is the single most cost effective way to prevent

DRAFT

future flood damage. When we protect these critical areas we give rivers more room to spill over their banks and release their energy when severe storms occur. Over time, rivers connected to their floodplains become rivers less prone to catastrophic flooding. Likewise, forested areas provide multiple watershed benefits including capacity to retain precipitation and moderate flows. Forests in the watershed and even individual trees can help temper peak flows from small storms and larger events. Forests, particularly on higher and steeper locations, provide self-renewing areas that retain and delay water and reduce sediment loading. Branches and trees in the stream channel slow waters, and trap sediment appropriate to an equilibrium condition. Protecting forested lands in the watershed is an important strategy to prevent damaging peak flows. If water is not intercepted, retained, and delayed in forest cover then more water may come sooner and quicker, exacerbating flash-flooding and erosive impact.

Ditches and water control structures for transportation infrastructure such as roads, trails, culverts and bridges are adequately designed, constructed, and maintained. Currently, most road crossing structures are undersized, leaving the transportation infrastructure ripe for injury, loss of emergency services, and economic disruption. In the event of a disaster, the loss of services can be devastating and the unbudgeted costs for repairs can be formidable. On the other hand, a transportation network with appropriately sized culverts, bridges, and ditches can withstand flooding events. Culverts, bridges, ditches, roads and trail networks should be adequately sized/designed to withstand a range of flooding events. In light of recent flooding events, bridges and large stream culverts are being designed to reduce damage in flooding events up to a 500-year flood. Municipal bridge and culvert upgrades should comply with the latest VTrans Road and Bridge Standards. Improvements to municipal road drainage and ditching should comply with the Municipal Roads General Permit. To establish and maintain a reliable transportation network requires an assessment of needs, prioritization of infrastructure upgrades, and budgeting for future upgrades. There are state and federal funding sources available to help Towns fund repairs and replacements to safe and resilient standards.

Local communities are well-prepared for flooding emergencies. Communities that are well-prepared greatly reduce the loss of life and property damage when a disaster occurs. Preparedness is a responsibility of residents, business, and government and includes emergency personnel acquiring suitable equipment and conducting training and exercises, developing and updating local emergency

DRAFT

operations plans, and establishing evacuation procedures and communication protocols for disasters. Even simple preparedness measures like having disaster supplies on hand, maps of emergency shelters and available resources, installing smoke detectors, and knowing basic first aid, help to lessen the impact of a disaster.

POLICIES & ACTION ITEMS

Policy: *Discourage new development in flood hazard areas and river corridors.*

Action Items:

- Identify flood hazard areas and river corridors, based on maps provided by the Secretary of Natural Resources pursuant to 10 V.S.A. § 1428(a) or maps recommended by the Secretary.
- Encourage municipalities to adopt flood hazard regulations that prohibit new development in the flood hazard areas and river corridors and encourage mitigation of existing development within these areas.

Policy: *Protect areas that help to attenuate flooding, such as wetlands, floodplains, river corridors, and upland forests.*

Action Items:

- Encourage the protection of wetlands, floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property.
- Restoration of riparian buffers of at least 50 feet is strongly encouraged along all surface waters.
- Existing riparian vegetation should be protected through such tools as management zones and shoreline zoning.
- Support riparian corridor and upland forest education efforts.
- Support federal and state wetland protection rules.
- Connect towns with interested partners to protect upland forest and river corridors.
- Assist municipalities in drafting and adopting River Corridor Protection bylaws per Vermont Act 121.

DRAFT

Policy: *Rivers should have access to floodplains wherever possible to establish and maintain stability in order to minimize stream bank erosion and avoid conflicts with human infrastructure.*

Action Items:

- Mitigate floodplain encroachments wherever and whenever possible. Mitigation may include "compensatory storage," removal of infrastructure, floodplain reconnection/re-vegetation, and/or implementation of projects identified in a river corridor plan or local hazard mitigation plan.
- Complete the remaining geomorphic assessments as identified by LCPC and the Vermont Department of Environmental Conservation.
- Work with State partners, communities, and community partners to further refine and revise the statewide river corridors map to better reflect actual on-the-ground conditions.
- Assist municipalities in identifying funding and implementing wetland, river corridor, and riparian buffer protections to preserve these resources.
- Work with municipalities, developers, and regional partners to encourage land use practices that use appropriate erosion control techniques.
- Stabilization of eroded stream banks is encouraged in accordance with appropriate professionally accepted standards.
- Support State stream alteration regulations.

Policy: *For the safety and protection of human resources and infrastructure, new construction within floodplains should be avoided and measures should be taken to protect existing structures within the floodplain or pursue relocation of structures as appropriate.*

Action Items:

- Flood hazard mapping (Flood Insurance Rate Maps) should be updated.
- LCPC will provide technical assistance to communities wishing to explore or enroll in the National Flood Insurance Program (NFIP).
- Support flood mitigation projects such as flood proofing, property acquisitions, removal of floodplain encroachments, and the development of flood storage space to reduce damage to property in flood hazard areas.
- Compatible land use activities within floodplains, such as agriculture and recreation, are encouraged.

DRAFT

- Encourage communities to adopt bylaw standards above and beyond the minimum National Flood Insurance Program (NFIP) and river corridor standards, so as to encourage existing buildings in hazardous locations to be made safer from flood damage and less costly to insure.
- Encourage elevation of existing structures within the flood hazard areas at least 2 feet above the base flood elevation.
- LCPC will provide technical assistance to communities wishing to explore or enroll in the Community Rating System Program.
- In light of the high percentage of critical facilities located in the Special Flood Hazard Area (SFHA) or river corridor, LCPC encourages communities to either (a) relocate such facilities to less vulnerable areas or (b) elevate the lowest floor and attendant utilities to at least 2 feet above the base flood elevation.
- LCPC will assist municipalities in obtaining grant funding or other financing to relocate or flood proof critical facilities
- LCPC will assist municipalities in identifying suitable areas of development outside of flood hazard areas and river corridors. Foundational infrastructure (i.e., water/sewer) should be extended to suitable, safer areas to support long term recovery and resilience.

Policy: *Ditches and water control structures for transportation infrastructure such as roads, trails, culvert and bridges should be adequately designed, constructed, and maintained to reduce damage to public infrastructure during various sized flooding events.*

Action Items:

- Encourage municipalities to adopt and implement design standards for bridges and large stream culverts to accommodate a 500-year flood event.
- Ensure additional scrutiny for major transportation infrastructure investments near river confluences, as traditional hydrological modeling may not properly account for the complex water movements in these areas. LCPC will provide technical assistance related to resources for developing local standards, such as the Vermont Better Back Roads Handbook.
- Encourage and provide technical assistance for municipalities to develop inventories, geomorphic assessments of stream-crossing structures, and capital plans.

DRAFT

- Pursue funding to conduct road erosion assessments in all Lamoille County Towns.
- Regular maintenance of existing bridges and culverts, such as clearing debris, is strongly encouraged to ensure they are operating at full capacity.
- Work with communities to identify infrastructure at risk for and/or known for flood damage and review these for possible mitigation strategies; pursue HMGP and/or water quality grant funding opportunities to further scope out and implement potential flood mitigation projects.

Policy: *New development should have adequate stormwater treatment and control mechanisms.*

Action Items:

- Encourage the use of municipal stormwater ordinances to address projects under the threshold for state regulation; especially in conjunction with waste water management.
- Proposed development projects must conform to the latest Vermont Stormwater Management Handbook. LCPC strongly supports use of the voluntary stormwater management credits found in this manual.
- Encourage low-impact development techniques to minimize stormwater runoff impacts.
- Assist municipalities with the development of stormwater design guidelines for both new and existing development.
- Recognize and address impacts of stormwater runoff from both new and existing development.

Policy: *Ensure an efficient, coordinated regional response network exists during flooding emergencies.*

Action Items

- Assist LCPC staff, emergency responders, and municipal officials with proper training and equipment to respond to anticipated disasters. Partner with neighboring regions and communities to share resources when possible.
- Provide support for Citizen Corps Programs that bring emergency responders and volunteers together.

DRAFT

- Continue to provide support and assistance to local and regional emergency response organizations, committees, and individuals for trainings, coordination, drills, and exercises.
- Support efforts by municipalities to provide emergency response services for all residents.
- Communities are encouraged to develop emergency response plans and provide education to households about emergency preparedness activities. Response plans should be shared with LCPC and with the Vermont Division of Emergency Management and Homeland Security.
- Annually revisit priorities from the Lamoille River Watershed Flood Modeling and Recovery and Resiliency Plan for the Northern Vermont Economic Development District.
- Continue to foster information sharing and collaboration between municipalities and watershed partners in Lamoille County through the LCPC Lamoille Flood Resiliency and Recovery Working Group, and through Tactical Basin Planning efforts that connect watershed partners.
- Develop FEMA-approved mutual aid agreements, regional shelter agreements, and have in place with neighboring communities and businesses to help decrease response times.
- Stage equipment in advance of known flood events to avoid flood damage to equipment and allow for emergency response.

Policy 8: *Reduce the loss of life and damage to property from flooding hazards.*

Action Items

- Continue to map and track critical facilities, mitigation priorities, and vulnerable populations for use in local and regional emergency planning.
- Assist municipalities in adopting and updating all-hazard mitigation plans, emergency operations plans, flood hazard regulations, and providing opportunity to weigh in on other planning documents such as Tactical Basin Plans to strengthen community resiliency.
- Assist emergency responders with securing funding for preparedness equipment, such as advanced warning systems and USGS Stream Gages.
- Upgrades to local and regional public safety facilities, equipment, and transportation network infrastructure are supported and encouraged.

DRAFT

- Support new residential and commercial developments with development standards that incorporate disaster resistant designs, such as appropriate emergency response vehicle access, drainage systems, green infrastructure, siting, proximity to existing water resources, and flood proofing measures (e.g., free board of at least 2 feet; ballasted septic tanks).
- Critical local and regional emergency and governmental facilities should be built and located to be disaster resistant and able to continue to function during disasters.
- Work cooperatively with Emergency Management Directors and the Local Emergency Planning Committee to improve emergency planning.
- Implement action items under Policy 2 and 3 above to provide floodplain access, increase flood storage, and reduce flood damage primarily caused by fluvial erosion.

DRAFT

Flood Resilience: Background and Inventory

Mountainous geography influenced the settlement and historical development patterns of Vermont communities, so that many of our population centers and farms occupy valley floors where there is more gently sloping land with generally richer and less rocky soil. Many of the valley floors, whose gentle slopes, rich soils, and diverse ecological resources made them attractive for development, are actually floodplains formed by the meandering movement of streams eroding and re-depositing soil and organic matter. Consequently, our valleys surrounded by steep hills flood often (at least yearly in some locales) and stream channels frequently change position.

Most Vermont watersheds have been altered by human activities including deforestation and farming, channelization, stream bank retaining walls, filling, and construction of roads, bridges, dams, and buildings. When development encroaches or stream channels are altered, conditions in the flood erosion hazard zones become more unstable, exacerbating dangers to downstream occupants and structures.

For more than 200 years we have incurred significant, recurrent, and ever-increasing expenses to control and stabilize our moving rivers, creating a cycle of ever increasing safety risks and maintenance costs. Therefore, the most beneficial and least costly course over the long term lies in an approach that reduces flood and erosion hazards; minimizes the recurrent costs of trying to control streams and repairing/replacing community infrastructure; and allows us to keep valuable and irreplaceable soil resources while improving stream water quality and aquatic habitat. The goals of protecting our communities and natural resources are interdependent and mutually supportive.

DRAFT

What is Flood Resilience?

Resilience generally refers to "a capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment."[1] This section focuses specifically on resilience to flooding, including a community's capacity to plan for, respond to, and recover from floods.

Types of Flooding

1 National Research Council. *Adapting to the Impacts of Climate Change*. Washington, DC: The National Academies Press, 2010. http://www.nap.edu/openbook.php?record_id=12783.

There are generally two types of flooding: flooding caused by inundation and flooding caused by erosion. Inundation, or overbank flooding, occurs when a stream channel or waterbody receives a significant amount of rain or snow melt from its watershed, or when the stream channel is blocked by debris or ice jam. The excess water spills out onto or inundates the floodplain. This type of flooding can occur slowly or in a short duration; flood waters can cover a small or large area.

While inundation-related flood loss is a significant component of flood disasters, the more common mode of damage is associated with fluvial erosion – the dynamic, and often catastrophic, physical adjustment of stream channel dimensions and location during storm events. These adjustments are often due to bed and bank erosion, debris and ice jams, or structural failure or flow diversion by man-made structures.

Inundation (left) and erosion (right) flood hazards.

Causes of Flooding

Flooding in our region is caused by different weather-related events, and the severity and duration of flooding is influenced not only by the event itself but also by the condition of the surrounding landscape. By far the most common type of weather event to occur in our region is a severe storm, which may include thunder, lightning, hail, high winds, and precipitation. Severe storms with particularly heavy precipitation have the ability to create flash flood conditions. However, over an extended period of time, severe storms may cause inundation flooding due to the cumulative effects of continuous rain, saturated soils and high-water table/high aquifer levels.

Both severe storms and hurricanes/tropical storms occur during the summer and into the fall months, but ice jams and the combination of melting snow and rain leave our region vulnerable to the impacts of flooding in the winter and early spring. Ice jams typically occur during the spring when river ice begins to break up and move downstream, but may occur during a thaw period in the winter months. Sheets of ice become hung up on a

narrow portion of the stream or river, such as under a bridge, culvert or another obstruction, creating a "dam" and additional ice and water begin to back up behind the hung-up ice sheets. This creates inundation flooding immediately adjacent to the site of the "dam," and additional inundation flooding upstream.

Once the "dam" breaks free, flash flooding may occur downstream as well. Ice jams in our region typically cause minimal damage, but they can damage road infrastructure, and flood homes and businesses. The Lamoille mainstem and North Branch have experienced ice jams or are vulnerable to them. In winter of 2018 Johnson Village, located near the confluence of the Lamoille and Gihon Rivers, experienced ice jams and inundation flooding. In 2018 the Town of Wolcott also experienced flood damage from ice jams along the Wild Branch near North Wolcott Road. Finally, the combination of melting snow and rain can lead to flooding in the region. The communities of Cambridge Village, Jeffersonville, and Johnson were particularly hard hit by this combination during the spring of 2011, in which inundation flooding resulted in costly damages to infrastructure located in the floodplain, as illustrated below (Figure 4-10).

DRAFT

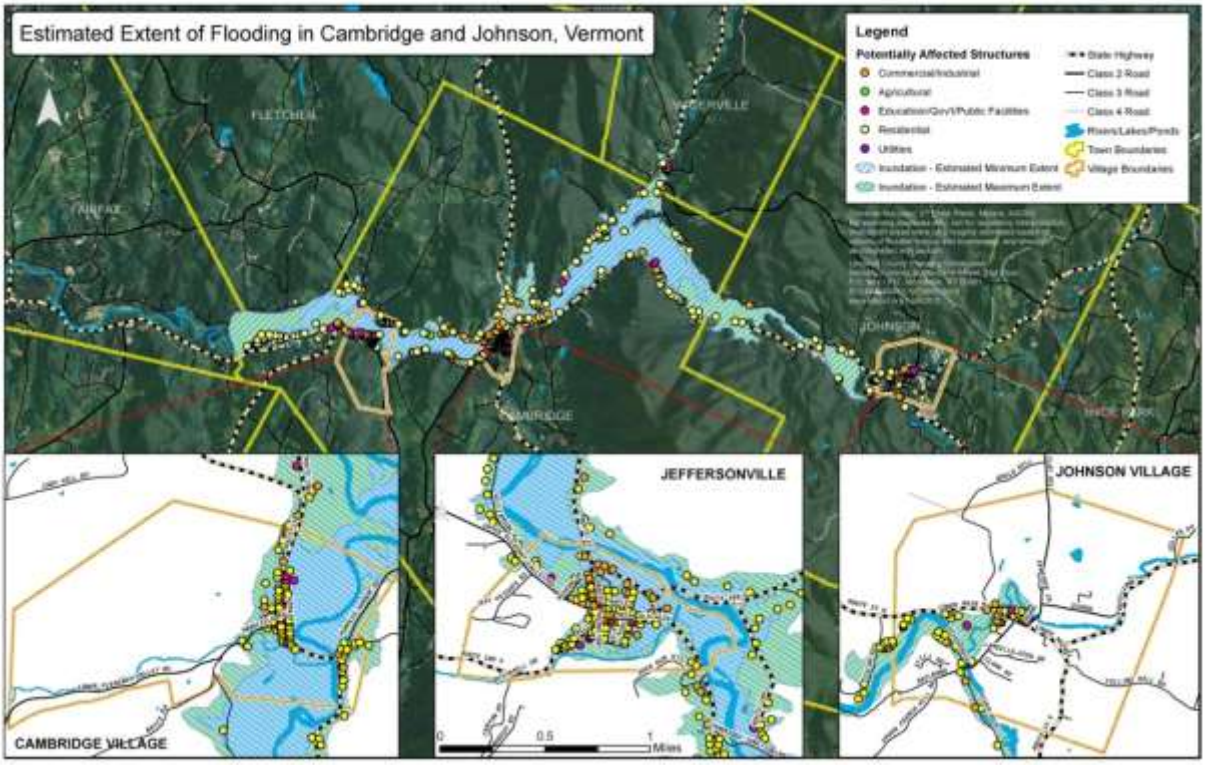


Figure 4-10. Approximate extent of 2011 Spring flooding in Cambridge Village, Jeffersonville and Johnson Village

Regional Impacts of Flooding

Flooding is a natural occurrence in a floodplain, the land adjoining a water body. If floodplain areas were left in their natural state, void of development, floods would cause significantly less damage. Flooding is worsened by land uses that create hard surfaces that lead to faster runoff, and past stream modifications that have straightened or dredged channels, creating channel instability. Furthermore, development in a floodplain can raise the floodwater height as the storage capacity of the floodplain is reduced. The July and December 2023 and July 2024 500-year flooding events demonstrated the significant impact flooding can have on Lamoille County's historic development patterns in the floodplain. These events emphasize the importance of this Regional Plan Amendment to reflect recent flooding events and update policies and recommendations to guide future development to safer less flood prone areas. Future growth areas in locations outside the floodplain are recognized in the update of the Reginal Plan Future Land Use Map per Act 181 in the Land Use Chapter of this plan.

Floods can damage or destroy public and private property, disable utilities, make roads and bridges impassable, destroy crops and agricultural lands, cause disruption to emergency services, and result in fatalities. People may be stranded in their homes for a time without power or heat or they may be unable to reach their homes. Long-term collateral dangers include the outbreak of disease, loss of livestock, broken sewer lines or wash out of septic systems causing water supply pollution, downed power lines, loss of fuel storage tanks, fires, and release of hazardous materials.

Of all types of natural hazards experienced in Vermont, flooding has historically caused the greatest magnitude of damage suffered by private property and public infrastructure. According to the State of Vermont, from 1990 to 2024, over $12.8 million dollars has been spent to repair the publicly-owned infrastructure (FEMA Public Assistance) in Lamoille County due to damage that has occurred during Presidentially Declared Disasters (see Table 4-7 for full list). Since 2000, Vermont has had more than one federally-declared disaster per year. Since 1990, Lamoille County has had 17 federally-declared disasters due to severe storms and/or flooding.

DRAFT

Table 4-7. Federally declared flood related disasters in Lamoille County, 1990 – 2024

Date	Disaster Number	Description	Damage Costs (Public Assistance County Wide)
August 22, 2024 – August 24, 2024	(DR-4816)	Severe Storms and Flooding	$1,212,669
July 9, 2024 – July 11, 2024	DR-4810-VT	Severe Storm, Flooding, Landslides, and Mudslides	$474,534
Dec 18, 2023 – December 19, 2023	DR-4762-VT	Severe Storms and Flooding	$140,622
July 7, 2023 – July 21,2023)	DR-4720-VT	Severe Storms, Flooding, Landslides, and Mudslides	$61,192,542(PA Statewide) Unavailable (PA Countywide)
December 22-24, 2022	DR4695	Severe Storm and Flooding	$421,866
June 2019	4445	Severe Storm and Flooding	$2,397,286
April 2014	4178	Severe Storms and Flooding	$350,000
July 2013	4140	Severe Storms and Flooding	$120,000
May 2013	4120	Severe Storms and Flooding	$200,000
May 2012	4066	Severe Storm, Tornado, and Flooding	$194,000
August 2011	4022	Tropical Storm Irene	$551,459
April 2011	1995	Severe Storms and Flooding	$1,124,558
August 2008	1790	Severe Storms and Flooding	$150,000
July 2008	1784	Severe Storm, Tornado, and Flooding	$300,000
April 2007	1698	Severe Storms and Flooding	$40,000
August 2004	1559	Severe Storms and Flooding	$40,000
June 2002	1428	Severe Storms and Flooding	Unknown
September 1999	1307	Tropical Storm Floyd	$187,930
June 1998	1228	Severe Storms and Flooding	$771,661
July 1997	1184	Severe Storms and Flooding	$1,606,517
January 1996	1101	Mid-winter Flooding	$35,555
August 1995	1063	Severe Storms and Flooding	1,870,692
June 1990	875	Severe Storms and Flooding	$658,555

Floods can have a potentially devastating impact on the regional economy. Tropical Storm Irene, arriving just prior to fall foliage season, caused road closures throughout Vermont and disrupted travel for many in-state residents and out-of-state tourists. For Lamoille County, which had minimal transportation impacts, even the perception of potential road damage hurt the region's economy.

DRAFT

Implications of Climate Change and Flooding

There is evidence of increasing frequency and severity of flooding. Whereas the 100-year flood, the standard basis for floodplain management, is by definition has a 1% chance of occurring in any given year, evidence suggests that actual flooding hazards are significantly underestimated. 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. Consequentially, the 500-year flood (by definition 0.2% chance of occurring in any given year but the chance of occurrence is actually much higher), may be a more appropriate level for floodplain management. Unfortunately given the age of flood hazard mapping in the county, many floodplains do not have the 500 year (0.2%) flood data delineated. A 500-year flood can occur multiple times within a given decade. In 2023, many areas in Vermont and Lamoille County along the Lamoille River and Wild Branch for example experienced a 500-year flood twice once in July of 2023, and again in December of 2023.

The greatest increases in severe floods are expected in the Northeast (and Pacific Northwest). 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 communities. A changing climate may bring about dramatic social, economic, and environmental change to the region. Accordingly, we should plan for ways to adapt to the changing climate and prevent or minimize the resulting hardships.

Assessing Risks and Vulnerabilities

The first step in becoming more flood resilient is to better understand the risks and vulnerabilities. Where are the areas prone to flooding and fluvial erosion? How many and what kinds of infrastructure are located in and near these areas? Are there suitable areas located outside the floodplain that could be targeted for future development without fragmenting or encroaching upon the forested areas that are valuable for flood attenuation?

Mapped Flood Plains and River Corridors

DRAFT

Two complementary flood hazard mitigation programs are: (1) the National Flood Insurance Program (NFIP) promoted by FEMA to address inundation hazards, and (2) the river corridor program developed by the Vermont ANR River Management Program to address fluvial erosion hazards.

The National Flood Insurance Program (NFIP) is a voluntary program that provides access to flood insurance to participating communities. These communities adopt and administer land use regulations in flood hazard areas, to reduce property damage from inundation. Residents of participating communities are then able to purchase NFIP flood insurance to protect their buildings and possessions. Flood insurance rates are based on Flood Insurance Rate Maps (FIRMs), which delineate areas of the floodplain likely to be inundated during a flood. Inundation areas are divided into zones according to flood risk and include the Special Flood Hazard Area and the FEMA regulatory floodway.

NFIP maps have been created nation-wide, and may be based on assorted data sources, such as studies of historical river flows, rainfall, community knowledge, floodplain topographic surveys, and hydrologic and hydraulic data. There is some degree of variability in how much detail and accuracy is captured in a given location's map. This variability is related in part to the extent of supporting data available. For example, elevation data for rural areas may be unavailable; as a result, many Vermont streams have more "approximate" floodplain delineations than streams mapped in more populated, developed areas. In 2019 FEMA began the process of updating Flood Insurance Rate maps. Existing FEMA floodplain maps can be viewed at the FEMA Flood Maps Service Center at https://msc.fema.gov/portal/home.

The NFIP maps focus on a *particular type of flood risk* to the low-lying lands next to the river channel. They show the areas that would be covered, or "inundated," by water as flood waters rise. Technically speaking, the Special Flood Hazard Area (or floodplain) includes the stream channel plus adjacent land inundated by river discharge during a "base flood". The base flood is sometimes referred to as the "100-year flood", which may give the false impression that a base flood can only occur once every 100 years. A more accurate way of describing the base flood is to say that in any given year, there is a 1% chance that a flood of this size will occur. Many Vermont rivers have experienced more than one "100-year flood" within a decade. For example, the upper Lamoille River and Wild Branch experienced flooding of that magnitude in both 1995 and 1997.

DRAFT

In order to enable property owners to be eligible for federal flood insurance though the NFIP, municipalities must adopt and enforce a floodplain management ordinance, often called "flood hazard bylaws," "flood hazard area regulations," or "flood hazard overlay districts" in Vermont. A community's flood hazard regulations must apply to at least the Special Flood Hazard Areas (SFHA) identified by FEMA. The regulations regulate new structures in the floodplain and place restrictions on other types of activities within the floodplain. They also specify land, area, and structural requirements to be adhered to within the SFHA. Paradoxically, using only the minimum required regulations can *increase* flood risk, as they allow filling in flood zones, potentially increasing velocities and/or flood elevations.

The Vermont ANR River Management Program has developed an additional program to supplement the NFIP called the river corridor program. The river corridor program maps a river corridor specially tailored to protect against the predominant form of flood damage in Vermont—fluvial erosion. Based on studies of each stream's geomorphic (or physical) condition and inherent sensitivity to erosion, river corridor maps provide towns with a powerful flood hazard planning tool. Once the river corridor map is created, towns have the option to adopt a river corridor overlay district, limiting development in the river corridor.

The river corridor is designed with the recognition that rivers are *not static*, and that flood damages in Vermont are often a result of fluvial erosion hazards. Considerable damage can occur when a flooding river dramatically enlarges or makes a catastrophic change in course, resulting in severe erosion of the river bed and banks. Typical and costly damage occurs when streams and rivers cannot flood and the power of the trapped water digs the channel deeper until the nearby roadbank fails, houses fall in, or culverts blow out.

A certain amount of erosion is natural in Vermont floods because of the region's relatively steep terrain and flashy, frequent storms. However, due to human encroachments and historical channel engineering (e.g., bank armoring, berming, and channel straightening), many Vermont rivers have become unstable and flood waters can no longer access the floodplain in many locations, leading to increasing stream power and damage.

DRAFT

The river corridor zone includes both the channel and the adjacent land. The purpose of the zone is to identify the space a river needs to re-establish and maintain stable "equilibrium" conditions. In other words, if the river has access to floodplain and meander area within this corridor, the dangers of flood erosion can be reduced over time. The river corridor is delineated based on scientific, location-specific assessment of the fluvial geomorphic (or physical) condition of a river.

Aerial photo showing a river's natural meander pattern.

Because the underlying methods of mapping differ significantly, it is not surprising the flood maps differ. In some situations, the river corridor is narrower than the FEMA floodplain, usually as a result of bedrock or elevated landforms that may not have been evaluated in the NFIP studies. In other areas, the river corridor may extend beyond the FEMA regulatory floodway or even the Special Flood Hazard Area boundaries. These locations are potentially hazardous, and under minimum NFIP guidelines alone, development and infrastructure in these areas may be susceptible to flood damage and/or may contribute to further instability and erosion hazard upstream or downstream. Moreover, on streams where FEMA has mapped "approximate" flood hazards (Zone A areas), river corridor maps provide communities with essential, and more detailed, flood risk data.

In 2024 Act 121 was passed by the Vermont legislature which included authorization of a statewide River Corridor regulation and municipal adoption of higher floodplain standards including adopting River Corridor bylaws. After July 1, 2027, municipal river corridor and floodplain permitting will be administered by the state by the Vermont Agency of Natural Resources for rivers/streams with a watershed of 2 square miles or greater. To learn more about Act 121 visit: https://legislature.vermont.gov/.

DRAFT

Mapping Vulnerable Locations

The maps below show the flood hazard areas and river corridors in Lamoille County and areas vulnerable to flooding. The flood hazard areas are derived from the most recent FEMA maps developed largely in the 1970s and 80s (with the exception of Wolcott and Stowe, both produced in 2006). The Vermont Department of Environmental Conservation completed a statewide map of river corridors in 2014, the results of which are shown below. The river corridors layer can be viewed on the ANR Natural Resources Atlas. Another map below depicts transportation infrastructure within the FEMA designated Special Flood Hazard Area (SFHA) or within the ANR designated river corridors. In Lamoille County there are 72.56 miles of road within a SFHA or river corridor. Of these, 14.8 miles are classified as State Highway and 43.53 miles are classified as Class 1, 2 or 3 Town Highway. The remaining road miles (14.23) in the SFHA or river corridor are Class 4 or considered legal trails.

Where geomorphic assessments have been conducted, the 'percent of bankfull width' has been calculated for bridge spans and culvert diameters to indicate how compatible the structure is by design. A percent of bankfull width less than 100% contributes to the likelihood of sediment buildup, requiring maintenance and leading to a higher risk of failure. This data can be found in River Corridor Plans. River Corridor Plans for Lamoille County are hosted on LCPC's website at www.lcpcvt.org.

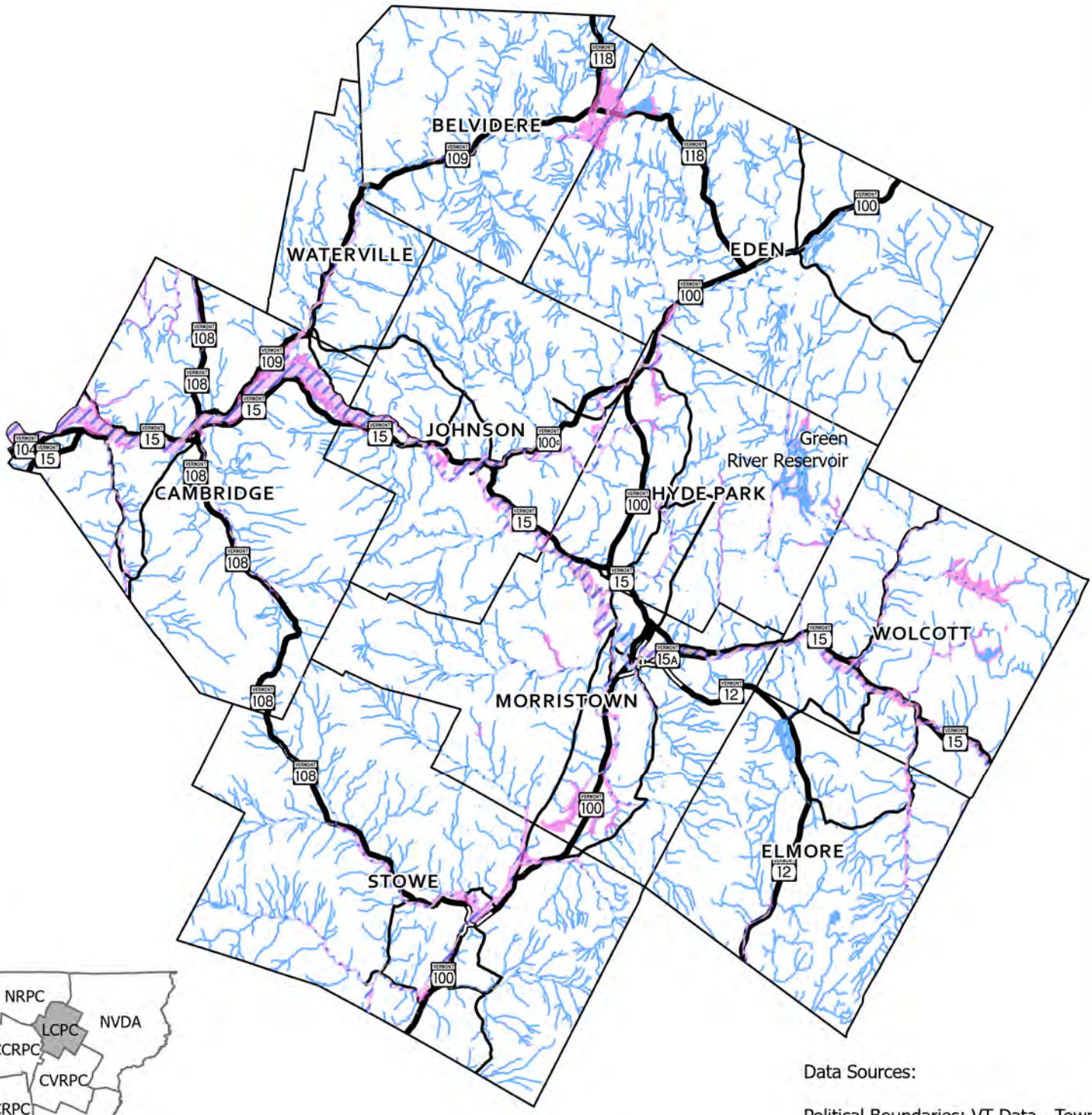
Structures at risk of damage from flood events are those structures that are within the FEMA designated Special Flood Hazard Area (SFHA) or within the ANR designated river corridors. The Structure Vulnerable to Flooding map below overlays the SFHA and river corridors with E911 structures. Structures were divided into the following categories:

Residential: Camp, mobile home, multi-family home, single family home, seasonal home, and other residential.
Commercial/Industrial: Industrial, commercial, commercial farm, commercial with residence, lodging, and other commercial.
Public/Critical Facilities: Cultural, educational, fire station, government, health clinic, house of worship, law enforcement, public gathering, and utility.
Other: Accessory building, abandoned, development site, gated without building, public telephone, other, unknown.

DRAFT

Special Flood Hazard Areas and River Corridors

Lamoille County, VT



N
W E
S

0 1.5 3 4.5 6

Miles

Legend

- Town Boundary
- Special Flood Hazard Areas
- River Corridor
- Pond/Lake
- Stream/River

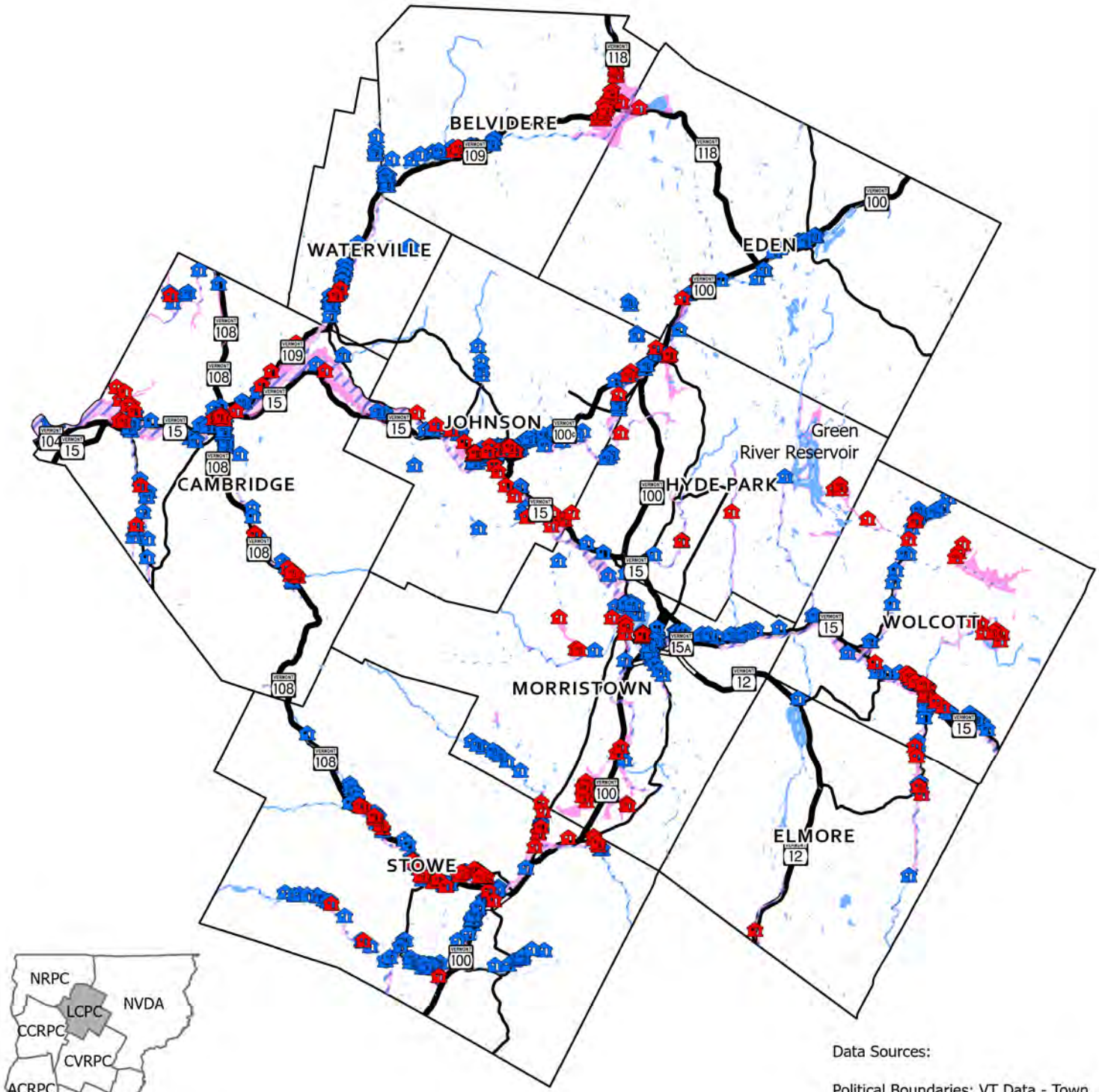
Data Sources:

Political Boundaries: VT Data - Town Boundaries, VCGI, 2025
Roads: VT Road Centerline, VTrans, VCGI, 2022
Surface Water: VCGI for VHD-USGS, 2001
Floodplains: Digitized from FEMA Flood Insurance Rate Maps. DEC, Water Quality Division, 1983
River Corridor: VT ANR, 2018

Created 8/4/25 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Structures Vulnerable to Flooding

Lamoille County, VT



N
W E
S

0 1.5 3 4.5 6

Miles

Legend

- Town Boundary
- Structures in SFHA
- Structures in River Corridors
- River Corridor
- Pond/Lake
- Special Flood Hazard Areas
- Stream/River

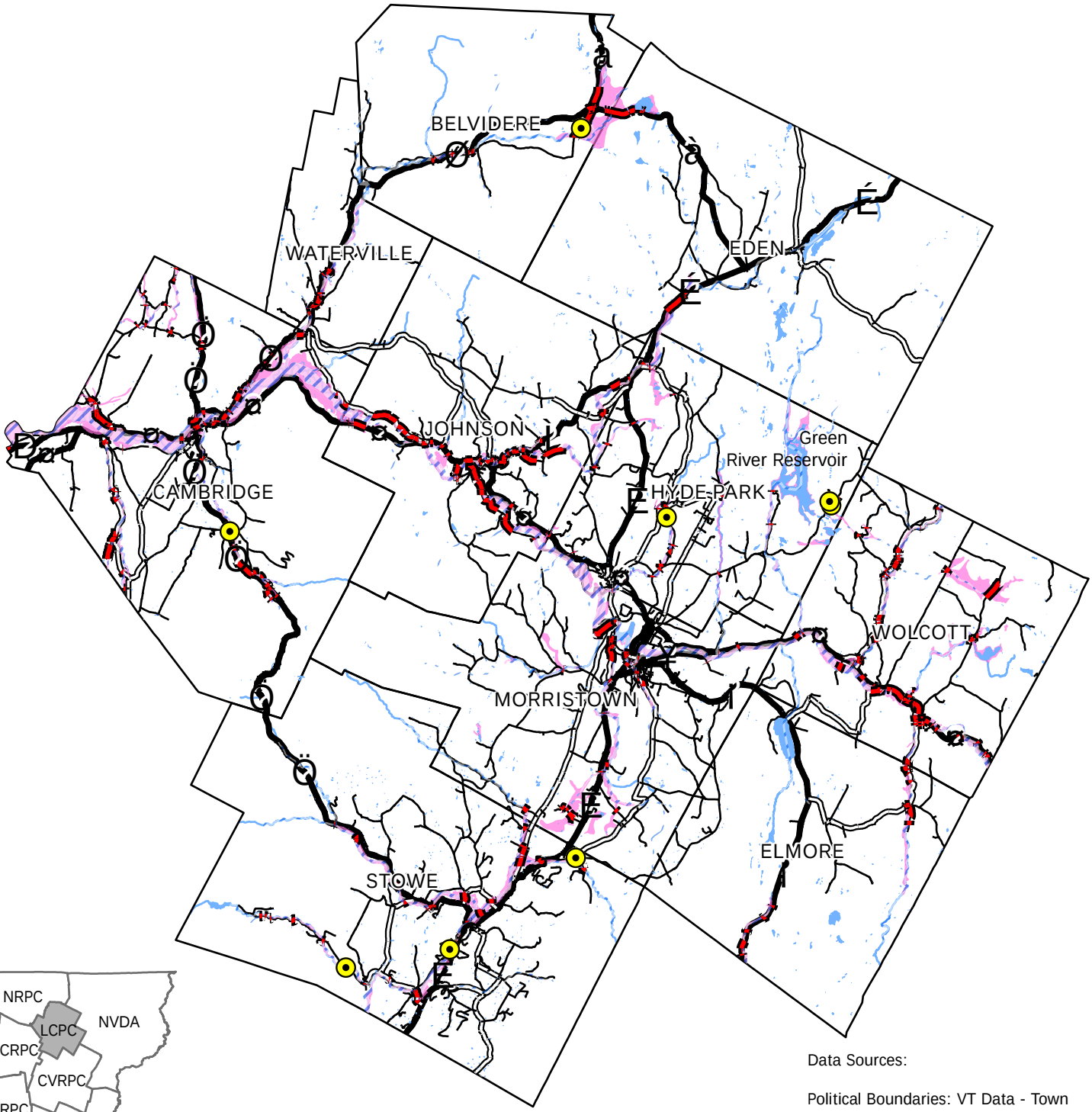
Data Sources:

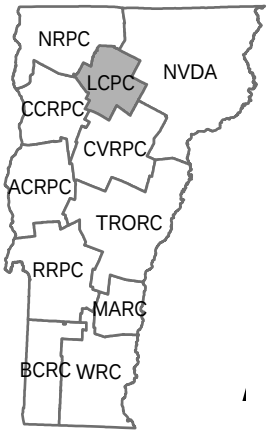
Political Boundaries: VT Data - Town Boundaries, VCGI, 2025
Roads: VT Road Centerline, VTrans, VCGI, 2022
Surface Water: VCGI for VHD-USGS, 2001
Floodplains: Digitized from FEMA Flood Insurance Rate Maps. DEC, Water Quality Division, 1983
River Corridor: VT ANR, 2018
Structures: VT Data - E911 Site Locations, VCGI, 2025

Created 8/5/25 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Transportation Infrastructure Vulnerable to Flooding

Lamoille County, VT





0 1.5 3 4.5 6

Miles

Legend

- Town Boundary
- Critical and Urgent Culverts in the SFHA
- River Corridor
- Pond/Lake
- Special Flood Hazard Areas
- Roads in SFHA

Road Class

- State Highway
- Town Highway Class 2
- Town Highway Class 3
- Stream/River

Data Sources:

Political Boundaries: VT Data - Town Boundaries, VCGI, 2025
Roads: VT Road Centerline, VTrans, VCGI, 2022
Surface Water: VCGI for VHD-USGS, 2001
Floodplains: Digitized from FEMA Flood Insurance Rate Maps. DEC, Water Quality Division, 1983
River Corridor: VT ANR, 2018
Structures: VT Data - E911 Site Locations, VCGI, 2025
Culverts: VT Culverts Public Data - Culverts and Bridges

Created 8/5/25 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

In Lamoille County 525 of 15,046 structures are within the SFHA. Notably, much of the flood related damage to public infrastructure in the Lamoille region has historically not occurred within the identified 100-year flood zone, but within the river corridors due to the persistent impacts of fluvial erosion.

National Flood Insurance Program

From 1978 to 2024, there have been 167 NFIP policy claims amounting to $ 5,088,398 in Lamoille County. There are 129 NFIP policies in effect. Towns in Lamoille County not participating in the NFIP are Eden and Waterville. Neither town participates due to a lack of perceived threat from flooding. LCPC will continue to support NFIP compliance in each of its local jurisdictions by working with municipalities on the review and update of floodplain management ordinances, as well as bylaws, floodplain identification, and mapping.

The NFIP was instituted in 1968 to make flood insurance available in those communities agreeing to regulate future floodplain development. As a participant in the NFIP, a community must adopt regulations that: 1) require any new residential construction within the 100 year floodplain to have the lowest floor, including the basement, elevated above the 100 year flood elevation; 2) allow non-residential structures to be elevated or dry flood proofed (the flood proofing must be certified by a registered professional engineer or architect); and 3) require anchoring of manufactured homes in flood prone areas. The community must also maintain a record of all lowest floor elevations or the elevations to which buildings in flood hazard areas have been flood proofed. In return for adopting floodplain management regulations, the federal government makes flood insurance available to the citizens of the community. In 1973, the NFIP was amended to mandate the purchase of flood insurance as a condition of any federally regulated, supervised, or insured loan on any construction or building within the 100-year floodplain.

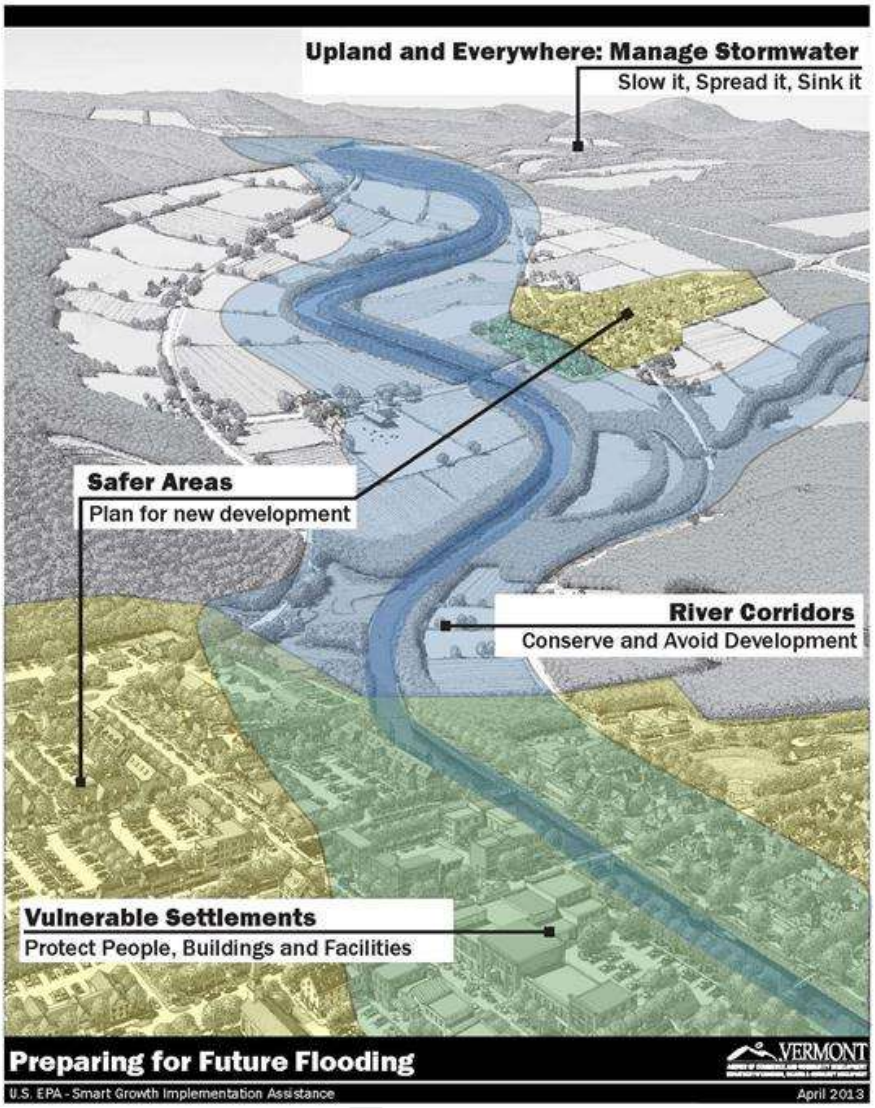
Communities with a large number of structures already in the flood hazard zone may benefit from participation in the FEMA Community Rating System (CRS) program. The CRS program provides a discount on premiums to flood insurance policy holders in towns that choose to participate. Participating towns accrue rating points by exceeding the minimum NFIP requirements, for example, by prohibiting the development of new structures within the SFHA and the river corridor, or through public outreach efforts, storm water maintenance, and other actions.

DRAFT

Becoming More Flood Resilient[2]

There are many steps that communities can take to reduce the risks of flooding, and the loss, disruption, and repetitive costs that may occur. Many towns are already taking these steps. Specific local land use policy options to improve flood resilience are organized into four categories, representing different geographic areas in a community:

- River Corridors: Conserve land and discourage development in particularly vulnerable areas along river corridors such as flood plains and wetlands.
- Vulnerable Settlements: Where development already exists in vulnerable areas, protect people, buildings, and facilities to reduce future flooding risk.
- Safer Areas: Plan for and encourage new development in areas that are less vulnerable to future floods.
- The Whole Watershed: Implement enhanced stormwater management techniques to slow, spread, and infiltrate floodwater.



Four categories of approaches to enhance resilience to future floods.

The policy options in these categories offer multiple and interrelated benefits. For example, directing development out of flood plains not only keeps people and property safe, it also protects the ability of flood plains to hold and slow down flood water before it reaches downstream settlements.

2 The information contained in this section was obtained and modified from the EPA authored report entitled Planning for Flood Recovery and Long-Term Resilience in Vermont: Smart Growth Approaches for Disaster-Resilient Communities.

Extending foundational infrastructure outside of floodplains will help transition and direct development into these areas.

River Corridors

Communities that wish to reduce future flood risk can consider conserving land and discouraging development in particularly vulnerable areas, such as flood plains along river corridors. Conserving land in river corridors, especially land that is in a natural, vegetated state, can reduce flood risk by absorbing and making room for water during floods. Moreover, discouraging development in these areas can reduce the risk that homes, businesses, and critical infrastructure will be damaged by floods. Some strategies for conserving land and discouraging development in flood-prone areas include:

1. Acquire or protect land in flood-prone locations, through such means as conservation or river corridor easements, property buyouts, Transfer of Development (TDR) programs, and restoration of riparian buffers. Numerous riparian buffer projects have been implemented within Lamoille County. Several Lamoille County communities including Jeffersonville, Johnson, Wolcott, and Stowe have purchased river conservation easements in the floodplain or river corridor, and those easements are managed as recreational green spaces. Stowe has developed a TDR program. Under a TDR program, sensitive or vulnerable lands, such as flood plains or land in a river corridor, are zoned to restrict development and designated as a "sending area." Communities then designate "receiving areas" where they wish to see additional development. Those "receiving areas" are zoned to allow additional density.

2. Encourage agricultural and other landowners to implement pre-disaster mitigation measures. Agricultural land in floodplains may be subject to erosion during floods, impacting farmers' ability to continue agricultural activities on their property. However, with planning and implementation of pre-disaster mitigation measures, agricultural land can be protected and can provide flood storage capacity during heavy rains, reducing flood-related damage and associated losses to both the farm and the community. Where farmers have access to upland fields they can have fall-back crops during flood years. Also, river corridor easements are available to help farmers manage fields in a way that is compatible with dynamic channel adjustments. Farm equipment and buildings should be elevated when possible.

DRAFT

Agricultural landowners could also implement specific flood mitigation measures, such as storing hay bales in areas less likely to be flooded, since these bales can be carried into the river during floods, clogging culverts and bridges, which can create a dam downstream and inadvertently contribute to increased flooding along the riverbanks. Farmers and forestland managers can also install ponds or swales to capture stormwater and plant vegetation that can tolerate occasional inundation. Utilizing such techniques can help reduce damage from flooding and can also help recharge aquifers. Assistance to develop stream buffers is available to eligible farms through the Vermont AAFM's Conservation Reserve Enhancement Program (CREP).

3. Implement flood plain development limits that exceed FEMA requirements. Paradoxically, using only the minimum required regulations can *increase* flood risk, as they allow filling in flood zones, potentially increasing velocities and/or flood elevations. The experiences of communities across the country demonstrate that simply adopting the NFIP minimum standards does not guarantee avoidance of flood damage and losses. The Community Rating System (CRS) is a part of the NFIP. The CRS reduces flood insurance premiums to reflect what a community does above and beyond the NFIP's minimum standards for floodplain management. The objective of the CRS is to reward communities for what they are doing, as well as to provide an incentive for new flood protection activities. The reduction in flood insurance premium rates is provided according to a community's CRS classification.

There are 10 CRS classification levels for communities. All NFIP communities start at Class 10 and begin to receive reduced premium rates at Class 9. Each time a community goes to a lower class, premiums for properties in the special flood hazard area are reduced by 5%. The maximum benefits under the program are at Class 1 with a 45% reduction. Only a handful of communities in Vermont are CRS communities.

To earn CRS credit involves such actions as preserving open space in the floodplain; enforcing higher standards for safer new development; maintaining drainage systems; and informing people about flood hazards, flood insurance, and how to reduce flood damage.

4. Protect River Corridors and Floodplain Functions. Development in river corridors can cause erosion and changes to the river channel. To further protect vulnerable land and avoid exacerbating downstream flooding, communities can adopt hazard area bylaws to protect river corridors and floodplain functions. Stowe has incorporated river

DRAFT

corridor protection regulations in its development codes, and other Lamoille County communities are considering adoption of river corridor protection area overlay districts. If communities choose to allow limited development in river corridor areas, they could require protecting alternative river corridor/floodplain areas to balance the loss of area for channel adjustments caused by that development and thereby offset impacts on existing structures and public safety. However, this strategy might not reduce flooding risk as effectively as limiting development and redevelopment in these areas altogether.

5. Adopt agricultural or open space zoning. Agricultural or open space zoning is another technique available to communities that wish to protect land to allow flood water to spread and soak in the soil. This type of land use policy can limit or prohibit development in agricultural or other natural areas by limiting the number of residential units allowed on a parcel. Increasing the agricultural or open space zoning to require a minimum lot size of 20 acres or more might more effectively preserve agricultural and open space uses and manage flood water.

Vulnerable Settlements

Many historic downtowns and village centers are located along rivers in vulnerable areas and in flood plains, which often contributes to their attractive character and to the town's or region's economy. These centers represent significant investments in infrastructure over generations, and many communities choose to repair and rebuild these areas after floods because of their economic, cultural, and social importance. If communities choose to rebuild in areas that are particularly susceptible to future flooding, they can take some steps to reduce the damage that might occur in future floods, although they cannot eliminate these risks entirely.

1. Adopt conservation or cluster subdivision ordinances. Some communities are adopting conservation or cluster subdivision ordinances that encourage or require new development to protect tracts of intact open space (including sensitive natural areas like river and stream corridors) while clustering development into a smaller section of the parcel. These types of ordinances might help conserve land that is important for retaining flood water.

2. Encourage natural protection methods. Conventional, engineered approaches to protect development in flood and erosion prone areas such as armoring riverbanks with rock riprap and channelizing rivers, while necessary in some cases, should be discouraged

DRAFT

or at least combined with non-structural techniques, such as planting trees and vegetation along riverbanks. One of the challenges of conventional, structural engineered approaches to flood resilience is their cost. Armoring riverbanks and rebuilding and elevating structures can be very expensive. Engineered approaches can also cause future unintended flood damage upstream and down. Riprap tends to increase the speed of water flow and can cause erosion downstream in some areas while contributing to siltation in other areas. As streams and rivers come into a fluvial geomorphic equilibrium slope, the need for engineered barriers will be reduced and vegetated streambanks should provide adequate resistance to the lower stream power and rates of erosion.

3. **Upgrade regulations to protect vulnerable structures.** Many communities control flood plain development through special flood plain or flood hazard area zoning overlay districts with associated development standards. Many of these standards require the lowest floor of any structure in these districts to be elevated at least 1 foot above the base flood elevation. Base flood elevation is the elevation to which flood water is expected to rise during a 100-year flood (a flood that has a 1% chance of being equaled or exceeded in any given year). Communities should consider increasing this requirement to a minimum of 2 or more feet above the base flood elevation to provide an extra margin of safety, although as noted above, this may not be sufficient in some places subject to fluvial erosion processes. Alternatively, towns could consider prohibiting development in the floodway or flood plain entirely to reduce risk further. Under Act 121 Towns will need to adopt River Corridor Protection regulations for streams/rivers with a 2 square mile watershed or greater.

4. **Address nonconforming uses.** Many areas of Lamoille County were developed before implementation of the National Flood Insurance Program. As a result, some communities have development that does not comply with current flood damage prevention requirements. Often these homes and businesses fail to comply with zoning-related requirements such as setbacks, off-street parking, or design-related provisions. Because modifications to these older structures would trigger the requirement for full compliance with all development standards, which can be cost-prohibitive, these nonconformities continue unchanged through the years. To address these problems, some communities are implementing nonconforming use regulations that recognize partial compliance with development standards and incorporate incentives for property owners to redevelop and/or reconstruct nonconforming structures using more hazard-resilient techniques, such as building elevation or flood-proofing of heating, ventilation, and air

DRAFT

conditioning (HVAC) equipment. Incentives for redeveloping nonconforming structures, when coupled with requirements for greater hazard resilience, can help development in flood-prone areas better withstand future floods. The home or business owner can increase the value of their property without incurring the expenditure of full code compliance, while the community benefits from a structure that is less likely to sustain serious damage during a future flood.

5. **Create new flood storage capacity through redevelopment.** When redevelopment opportunities arise in vulnerable areas next to rivers, communities can require developers to design projects to include additional flood storage capacity. New flood storage capacity could mean creating parks and other open spaces in flood-prone locations, replacing a vertical wall along a river bank with a more gradual slope to create more room in the river channel for rising water, creating a shallow depression in a lawn that can accommodate inundation, or designing buildings to enable the first floor or basement to flood (and then be readily repaired when the waters recede). Localities can encourage developers to create flood capacity in new development by providing density bonuses or reduced stormwater fees in exchange for creating flood capacity improvements on site and/or adding zoning overlays that indicate where new development must include additional flood capacity features.

6. **Develop a local flood model** – Given the age of many of the NFIP maps in the county, changes in the watersheds, and climate change considerations, communities may look to develop updated flood models to determine current and future risks. Federal flood maps often understate the flood risk in small communities. A local or regional flood model allows for better planning of current and future development needs while identifying opportunities for mitigation measures to reduce or eliminate flood risks. Also, an interactive, visual model is a very effective way to engage the local community. Jeffersonville incorporated watershed modeling into their current Hazard Mitigation Plan and is taking recommended actions to reduce flood risk and improve flood resiliency.

In 2018, the Lamoille County Planning Commission worked with SLR Consulting (formerly Milone and MacBroom) to develop a flood model along the Main Stem of the Lamoille River. This modeling effort identified several potential flood mitigation projects along the Lamoille River in the communities of Cambridge Town, Jeffersonville Village, Town/Village of Johnson, and in the Town of Wolcott. Some priority projects identified

DRAFT

during the development of this flood model have been implemented (Ex: Widening of Cambridge Greenway Trail Bridge, installation of a Route 15 bypass culvert) and are showing promising results in reducing flooding in Jeffersonville Village. This flood model has also been extended a few miles up the Wild Branch along North Wolcott Road, where the Town is working with partners to implement floodplain restoration projects. In 2025, the flood model was further extended upstream into Hardwick, downstream into Cambridge Village, Fairfax, and Georgia, and into key tributaries including Cooper Brook in Hardwick, Gihon River in Johnson, Seymour River in Cambridge, and Mill brook in Fairfax. The updated model can be used to assess alternatives and plan for long term resilience in communities along these rivers and streams.

7. Help people connect with the river. Opportunities to see and engage with the river could increase residents' consciousness of the river's presence and motivate them to engage in planning for future flooding and river protection. In vulnerable settlements, communities can consider creating parks, outdoor dining and vending, river-based recreation like fishing and kayaking, and other activities that can withstand flooding and bring people closer to the river during normal flows. Implementing these approaches can also provide important economic development opportunities for communities. Wolcott's School Street Park and Wild Branch Park, Morrisville's Oxbow Park, and Stowe's Mayo Farm are some examples of communities' efforts to highlight rivers as scenic and recreational assets while preserving the resource of the surrounding floodplain.

8. Relocate structures to less vulnerable areas. As certain structures are flooded time and again, some communities and property owners might determine that it would be preferable to relocate them or rebuild them in safer areas. When the community decides to relocate structures through extensive and thorough community outreach, local governments can make the process easier for those who choose to relocate by creating a coordinated package of relocation services and resources for residents, including financial and logistical assistance with relocation. Through the relocation process, local governments can also move critical facilities such as town halls, fire and safety facilities, and drinking water facilities to less vulnerable locations, if possible. Some communities have created funding mechanisms, such as sales tax or stormwater utility fees, to buy properties that are susceptible to future floods. In addition to local funding, there might be opportunities to leverage federal assistance, such as FEMA's Pre-Disaster Mitigation Grant program, Hazard Mitigation Grant Program, or Flood Mitigation Assistance Program; EDA Disaster Supplemental Funds; and HUD's Community Development Block Grant program.

DRAFT

Safer Areas

Communities seeking to enhance their resilience to future floods can identify areas within or near centers that are less vulnerable to flooding, where growth can occur more safely in the future. By encouraging development in these safer growth areas, communities can accommodate new growth while reducing flooding risk. After communities have identified *where* they can more safely grow in the future, they can then also shape *how* development is built in those locations by using the smart growth principles. Several approaches and policies can help communities' direct growth into safer locations.

1. Identify locations suitable for development and redevelopment that are safer from flooding. Communities that are interested in targeting growth in *safer* locations would need to ensure that their desired growth areas are also located in areas that can more safely accommodate growth. They can then identify these safer growth areas in the land use plan or comprehensive plan. To identify where growth can occur more safely in the future, communities will need information about where flooding has occurred in the past and, to the extent possible, projections for future flooding that take climate change into account. Foundational infrastructure should be extended to help direct development into these areas. The Vermont Agency of Natural Resources Flood Ready website has mapping resources that can be used for this purpose. Other planning tools that can help identify safer areas are the Lamoille River Flood Model, Municipal Vulnerability Indicators tool, and NVEDD Long Term Recovery and Resiliency Plan maps. The identification of safer areas for development needs to allow for the protection of natural areas like wetlands and upland forested areas, as these areas provide valuable flood attenuation and storage capacity, wildlife habitat, recreational and scenic value, and resources for forestry and forest products. Therefore, suitable safer areas for development should ideally be located within or in close proximity to downtowns and village centers.

2. Steer public policy and investments to support development to safer locations. Once communities have identified locations that are safer for development, they can adopt and implement policies and make public investments that will encourage development in those safer locations. Localities can update their zoning and subdivision regulations to remove barriers to development in safer areas. Localities can also direct public investments in new infrastructure, facilities, and schools into safer locations, which might help attract additional private investment in these areas. By prioritizing capital investments such as

DRAFT

sewer, water, and streetscape improvements in safer areas, communities can provide incentives for development to locate there.

The Whole Watershed

Communities can also implement policies to more effectively manage stormwater throughout the entire watershed. Adopting these policies can help slow stormwater, spread it out over a larger area, and allow it to infiltrate into the ground rather than running off into nearby streams and rivers.

1. **Explore watershed-wide stormwater management.** Flood damage mitigation measures, such as constructing levees or armoring banks, that are implemented in one jurisdiction in a watershed can have unintended consequences for other communities in that watershed by speeding the flow of floodwaters downstream. Recognizing this, some communities are joining together to take a regional, watershed-wide approach to stormwater management. To do this, communities can develop educational programs and stormwater master plans for their watersheds and use hydrologic data and watershed modeling to understand more clearly what actions to take to absorb and slow down stormwater across the watershed to reduce flooding risk.

The State of Vermont Department of Conservation recently completed a stormwater infrastructure mapping project for five Lamoille County towns. The primary goal of the project was to enhance the towns' capacities to develop stormwater management plans, while a secondary goal was to establish potential locations for Best Management Practice (BMP) stormwater retrofit sites. Final reports and data of the mapping project were provided to each municipality and are also available at: http://www.watershedmanagement.vt.gov/erp/htm/SW_IDDE_program.htm.

Some communities create stormwater utilities to address stormwater management across a wider geographic area. A stormwater utility is an entity established to generate and administer a dedicated source of funding for stormwater pollution prevention activities. Generally, users pay a fee to the utility based on land use and their contribution of runoff to the stormwater system. Stormwater utilities can oversee stormwater management regulation and can help prioritize, coordinate, and finance critical pre-disaster mitigation efforts such as streambank restoration projects.

DRAFT

2. Better manage stormwater from roads, driveways, and parking lots. Roads, driveways, and parking lots made of impervious surfaces do not allow stormwater to infiltrate back into the ground and can increase stormwater runoff volumes, especially during heavy rains. In addition, the runoff collects the debris, oils, and pollutants from these paved surfaces and carries them into surface waters. Communities could consider implementing policies that can reduce the effect that roads, driveways, and parking lots have on exacerbating flooding and degrading water quality. They could encourage the use of pervious material in new driveways and parking lots, and in new roads where feasible. In addition to green infrastructure practices (see paragraph below) such as pervious pavement and roadside swales that allow stormwater to infiltrate into the ground, communities could also require that culverts, which are often too small to adequately drain stormwater from large storms, be upgraded to protect roads from damage during flooding.

Communities can require techniques to slow the flow of water by spreading it into vegetated areas and infiltrating it in areas with pervious soils. Communities can also provide information about stormwater management techniques that private landowners could use for their driveways. Such techniques not only reduce flooding risk but can also improve water quality. LCPC recently conducted a stormwater analysis for the Town of Elmore. The analysis provided valuable information about the effect of impervious surfaces on stormwater runoff, and influenced the Town's decision not to increase the allowable lot coverage in the Lake Elmore Shoreland District.

3. Adopt local stormwater management regulations that allow the use of green infrastructure techniques. Green infrastructure, also known as Low Impact Development (LID), is an approach that uses vegetation and soil to manage rainwater where it falls. It can help retain and/or reuse stormwater near where it is generated and can be less costly and less environmentally damaging than conventional stormwater treatment, particularly when it is designed into development from the start. Some examples of green infrastructure include directing runoff into rain gardens or bioswales, where it can be absorbed; using pervious concrete for parking lots and driveways; using rain barrels to collect and reuse rain water; and constructing green (vegetated) roofs that can absorb stormwater. In Vermont, state stormwater permits are required for new developments with more than .5 acres of impervious surface and sites that disturb more than 1 acre through the stormwater program. Most developments in Lamoille County's rural jurisdictions fall beneath this threshold. Under the 3 Acre Rule, Vermont regulates stormwater management on existing developments with 3 acres or more of impervious

DRAFT

surface. Communities that want to improve stormwater management can consider requiring new developments to prepare stormwater management plans that use best management practices including green infrastructure. More information on green infrastructure practices can be found at http://www.vtwaterquality.org/stormwater/htm/sw_green_infrastructure.htm.

4. **Adopt tree protection measures.** Large trees can absorb significant amounts of rain and can reduce stormwater velocity. To protect trees, communities could start by preserving existing, undeveloped forested areas. Communities could also require that larger trees, such as those that are more than 8 inches in diameter, be preserved on a development site as much as possible. Or, if those trees must be removed, a community could require that they be replaced at a minimum one-to-one basis on site or mitigated through payment into a municipal tree protection fund.

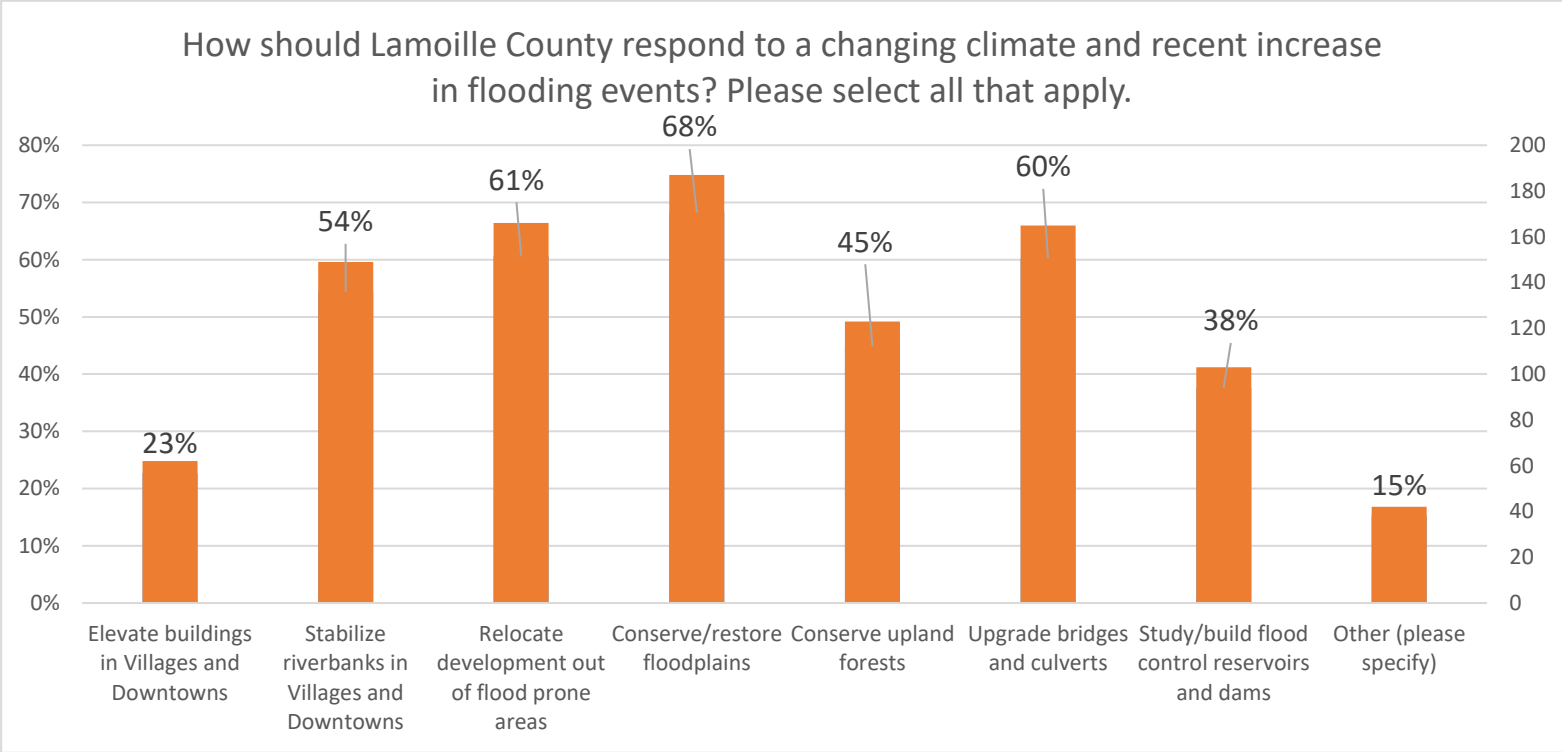
5. **Adopt steep slope development regulations.** Development on steep slopes can cause erosion and can increase stormwater volumes. Some communities recognize that development on steep slopes can affect stormwater volume and erosion and are adopting standards that discourage or prohibit development on very steep slopes. Several communities require conditional use review for any development on slopes greater than 15%, and prohibit development on slopes greater than 25%.

6. **Adopt riparian and wetland buffer requirements.** Stream and wetland buffer standards require development setbacks from rivers and other water bodies. These buffers can allow stormwater to infiltrate into the soil, reducing flood flows downstream in more developed areas of the community and reducing erosion by stabilizing riverbanks. Buffers can also remove some pollutants that would otherwise run off into local rivers. Studies show that in more rural areas, a buffer of 100 feet can significantly reduce stormwater runoff and improve water quality.

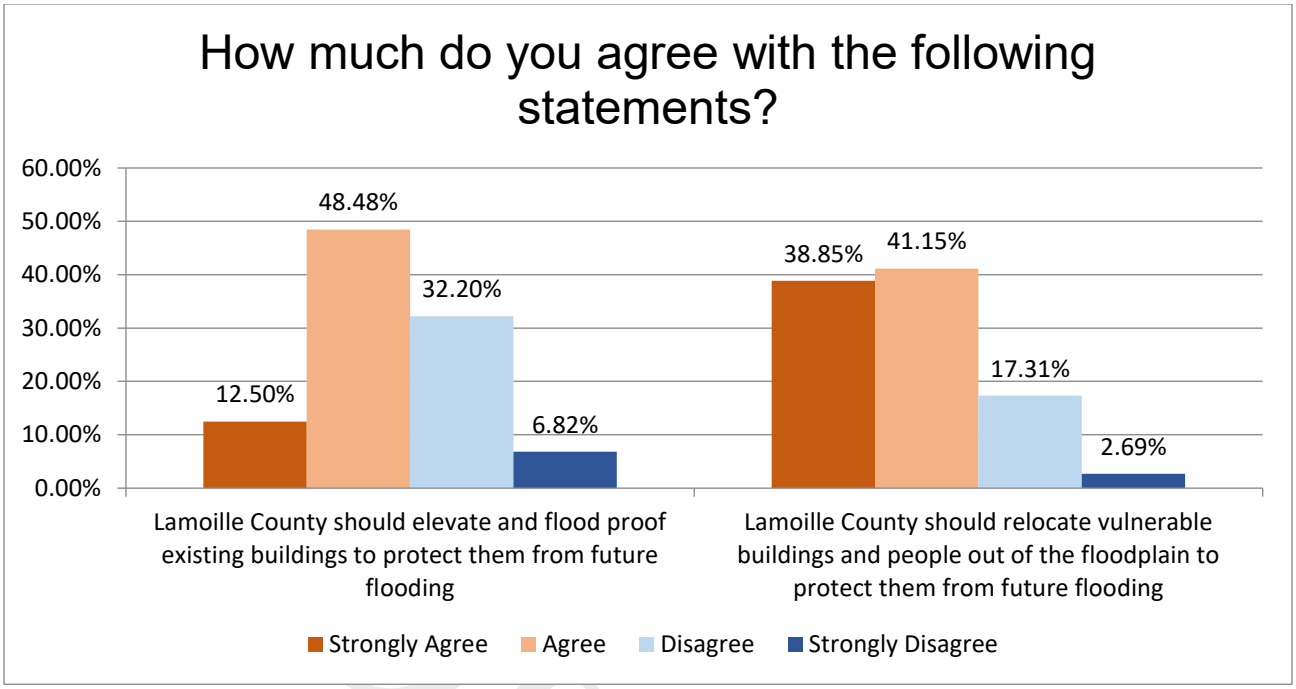
Results of 2025 Regional Plan Survey:

The 2025 Regional Survey asked Lamoille County residents numerous questions related to Flood Resiliency and can offer insight into what strategies and ideas appeal to the majority of the population. Question 10 asked respondents "How should Lamoille

County respond to a changing climate and recent increase in flooding events? The graph below shows the options that Lamoille residents selected:



Question 12 asks respondents to "Strongly Agree", "Agree", "Disagree" or "Strongly Disagree" to both of the following statements "Lamoille County should elevate and flood proof existing buildings to protect them from future flooding" and "Lamoille County should relocate vulnerable buildings and people out of the floodplain to protect them from future flooding" The graph below illustrates how Lamoille County residents responded to Question 12:



The responses to Question 10 and Question 12 provide insight into how Lamoille County residents would like to manage buildings in floodplains. 61% of respondents to Question 10 selected "Relocate development out of flood prone areas" while only 23% of respondents selected "Elevate buildings in Villages and Downtowns". It is important to note that respondents had the opportunity to select both options. Question 12 dives deeper into this issue by directly comparing resident's opinions on the two ideas. While relocation garnered more support than flood proofing in place, 48% of respondents did moderately support building elevations and flood proofing. A possible explanation for these results is that while Lamoille residents generally prefer relocation to hardening in place (flood proofing), there is reluctance to ignore the possible advantages to elevating and flood proofing buildings in certain circumstances. Overall, however, the survey data suggests a significant preference for moving buildings out of flood prone areas, rather than attempting to make these buildings flood resilient in place.

Section 5: Our Culture and Community

Public Safety, Culture and Community, and Public Facilities and Services

Public Safety: Strategy

Protecting public safety falls under the four phases of emergency management – Preparedness, Response, Recovery, and Mitigation. Preparedness is a continuous cycle of planning, training, and organizing activities to prepare for an emergency incident or natural hazard event. Response is action taken by first responders (fire, police, and emergency medical services) during an incident to save life and property. Recovery is what happens after a disaster strikes to resume basic operations and functions. Mitigation is action taken to reduce the loss of life and property from natural and/or human-caused disasters by avoiding or lessening the impact of a disaster. While the Response phase is a function of local responders, it takes regional collaboration to ensure communities are prepared for emergencies. Similarly, recovery often requires the generosity and assistance of neighboring communities. The LCPC is active in all four phases.

The ability to provide adequate public safety services is a concern among municipalities throughout the region. Many of these services are provided by volunteers. Public safety is a local concern but regional cooperation among public safety service providers is critical. One example is a mutual aid system. However, in order to keep up with increased demands, volatile weather patterns, and requirements from the state and federal governments, emergency response providers, municipalities, and regional entities must work together in emergency planning and preparedness, response, recovery, and mitigation.

Preparedness

Perhaps the most important part of ensuring public safety is preparedness. This is the act of planning for emergency incidents. LCPC is most active in preparedness activities at a local and regional level.

Preparedness activities include emergency operations planning, assisting communities with flood hazard regulations, mapping critical facilities and E-911 structures, and coordinating regional emergency response committees and activities.

Response

Emergency response is primarily a function of local government and local emergency responders. Given the capacity of local response organizations throughout Lamoille County, regional collaboration and mutual aid are critical to

DRAFT

respond to large-scale events. The LCPC works with local responders and municipalities to identify response capabilities and conduct trainings and exercises at a regional level. (see Table 5-1)

Recovery

LCPC acts as a liaison between federal, state, regional, and local partners to coordinate recovery activities after a disaster occurs.

Mitigation

Mitigation is any sustained action that reduces or eliminates long-term risk to people and property. Lamoille County municipalities have adopted single-jurisdiction *All-Hazards Mitigation Plans* where each Town has its own hazard mitigation plan. These hazard mitigation plans recognize hazards and their associated risks while prioritizing mitigation actions, projects, and programs.

The hazards most impacting Lamoille County are flood/flash flood, hazardous materials spills, winter storms, and shortages (power, food, water, fuel).

Table 5-1. Emergency response organizations in Lamoille County

Town	Fire	Police	Emergency Medical Services (EMS)
Belvidere	Johnson Fire Dept.	VT State Police	Northern Emergency Medical Service (NEMS)
Cambridge	Cambridge Fire Dept.	VT State Police	Cambridge Rescue
Eden	North Hyde Park / Eden Fire Dept.	VT State Police	NEMS Eden Fast Squad (no longer active)
Elmore	Elmore Fire Dept.	VT State Police	Elmore Fast Squad
Hyde Park	Hyde Park Fire Dept. North Hyde Park / Eden Fire Dept.	Lamoille County Sheriff	NEMS Hyde Park Fast Squad
Johnson	Johnson Fire Dept.	Lamoille County Sheriff	NEMS
Morristown	Morristown Fire Dept.	Morristown Police	Morristown EMS
Stowe	Stowe Fire Dept.	Stowe Police	Stowe EMS
Waterville	Johnson Fire Dept.	VT State Police	NEMS
Wolcott	Wolcott Fire Dept.	Lamoille County Sheriff	Hardwick Rescue

DRAFT

POLICIES AND ACTION ITEMS

Policy: *Reduce the loss of life and damage to property from all hazards.*

Action Items

- Continue to map critical facilities and vulnerable populations for use in local and regional emergency planning.
- Assist municipalities in adopting and updating all-hazard mitigation plans, emergency operations plans, flood hazard regulations, and other planning documents to strengthen emergency preparedness and community resiliency.
- Assist emergency responders with securing funding for preparedness equipment, such as advanced warning systems, USGS Stream Gages, and EOC (Emergency Operations Centers) equipment.
- Upgrades to local and regional public safety facilities and equipment are supported and encouraged.
- LCPC supports new residential and commercial developments that include development standards that incorporate disaster resistant designs, such as appropriate emergency response vehicle access, drainage systems, siting, proximity to existing water resources, firefighting infrastructure, and flood proofing measures.
- Critical local and regional emergency and governmental facilities should be built and located to be disaster resistant and able to continue to function during disasters.
- Work cooperatively with Emergency Management Directors and the Local Emergency Planning Committee to improve emergency planning.

Policy: *Ensure an efficient, coordinated regional response network exists during emergencies.*

Action Items

- Assist LCPC staff, emergency responders, and municipal officials with proper training and equipment to respond to anticipated disasters.
- Provide support for Citizen Corps Programs that bring emergency responders and volunteers together.

DRAFT

- Continue to provide support and assistance to local and regional emergency response organizations, committees, and individuals for trainings, coordination, drills, and exercises.
- Demand for service continues to increase as town populations increase, LCPC supports efforts by municipalities to provide emergency response services for all residents.
- Communities are encouraged to develop emergency response plans and provide education to households about emergency preparedness activities. Response plans should be shared with LCPC and with the State's Emergency Management Department.
- LCPC staff are an integral part of the Incident Command Team at the State Emergency Operations Center. To this end, LCPC supports continuing efforts for staff to provide regional and statewide response capability.

Policy: *Dry hydrants have proven effective in firefighting in rural communities. To this end, LCPC supports installation and continued maintenance of dry hydrants.*

Action Items

- Increase the total number of dry hydrants available in rural areas of the county.
- Assist communities in developing rural water supply plans.
- Assist communities with efforts to access, repair, and upgrade dry hydrants through grant funding and capital planning.
- Continue to assist municipalities in updating mapping of dry and wet hydrants.

Policy: *LCPC will provide staffing and assistance to municipalities, emergency responders, regional partners, and state agencies to assist with recovery efforts in the wake of regional or statewide emergencies.*

Action Items

- Encourage inter-agency communication between affected property owners, the State of Vermont, and the Federal Emergency Management Agency after a disaster.
- Assist property owners and municipalities with damage assessments and documentation in the event of a disaster.
- Encourage communities to develop documentation systems for recording damage to infrastructure and property for full realization of federal benefits resulting from a disaster.

DRAFT

Policy*: Lessen financial losses and property damage incurred by municipalities, businesses, and private citizens due to disasters.*

Policy: *Public safety services in Lamoille County should have the capacity to address the types and magnitudes of the region's predictable hazards as defined in municipal All-Hazard Mitigation Plans.*

Action Items

- Upon request, assist municipalities in revising bylaws to require a dry hydrant or fire pond at any new development more than one mile from the nearest rural water source.
- Assist municipalities with increasing the amount of fire suppression capabilities rated for the ISO, Insurance Services Office.
- Upon request, assist municipalities in revising bylaws so that new developments meet emergency response codes, including but not limited to, road upgrades, cul-de-sacs, dead-ends, and long, narrow driveways.
- Support the implementation of local and regional mitigation activities, projects, and programs that reduce impact to life and property.
- Support regional and local coordination to identify natural and human-made hazards and risks and develop mitigation actions to address these hazards.
- Work with interested applicants to apply for funding for mitigation activities.
- Municipalities participating in the National Flood Insurance Program are encouraged to strengthen flood hazard regulations above NFIP minimum standards.

DRAFT

Public Safety: Background and Inventory

Preparedness

Emergency preparedness is a broad category of emergency management. Preparedness includes emergency personnel acquiring suitable equipment and conducting training and exercises. Preparedness covers those actions that individuals, businesses, and communities take in order to prepare themselves for the effects of a disaster before it happens. The more prepared we all are at all levels, the less loss of life and damage to property will be when a disaster occurs. Preparedness is also a responsibility of residents, businesses, and government. Simple preparedness measures, like having disaster supplies on hand, installing smoke detectors, and knowing basic first aid will all help to lessen the impact of a disaster. Preparing for social adversities may also be considered a preparedness measure. Substance use prevention, treatment and recovery, and mental health support could help communities prepare for or avoid stressors on local communities, particularly youth. Preparing emergency plans is also a preparedness activity.

Preparedness can also avoid personal financial disasters that would have rippled throughout the community. Citizens Assistance Registry for Emergencies (CARE) is an opt-in E911 program created to support individuals who wish to have Emergency Services contact them proactively during disasters. Fire Safe 802 is another program created to build on statewide fire prevention efforts and prevent fires in high-risk single-family homes. Fire Safe 802 empowers local fire departments to conduct home safety surveys and provide resources such as free smoke detectors in residential properties. For more information on the CARE E911 program or Fire Safe 802, visit www.e911.vermont.gov/care or www.firesafety.vermont.gov/pubed/fire-safe-802-program.

Not only can a disaster affect individual residences but can also ruin business and commercial operations. While businesses can do their part to support their communities and employees in their own preparedness efforts, businesses can and should take proactive actions that will help them weather the strain of a disaster.

Governmental agencies and other quasi-public organizations that perform important governmental functions must also take care of themselves during an emergency, as well as perform their functions of assisting their constituents. This includes the standard emergency response agencies such as police, fire, and medical services, but it also includes sewer and water, health inspectors, and

DRAFT

elected officials. LCPC assists communities in developing and updating localized emergency operations plans to be used in advance of and during a disaster as well as coordinating and facilitating trainings and exercises. Training and exercising are vital to ensure emergency response is organized, coordinated, and efficient during an emergency. The adage "if you don't use it, you lose it" is most true in emergency response, so continual trainings in new equipment, exercising your emergency operations plan, and operating a functioning Emergency Operations Center is crucial. Other preparedness activities include education and outreach related to fire prevention, promoting the National Flood Insurance Program, updating flood hazard regulations, and supporting regional organizations such as the Local Emergency Planning Committee.

Emergency Management Directors

The role of the Local Emergency Management Director is of vital importance to the community. The Local Emergency Management Director is responsible to ensure that the community:

- Knows its vulnerabilities, hazards, and threats;
- Plans for any emergencies;
- Responds timely and effectively in any emergency; and
- Conducts recovery operations.

According to Vermont State Statute, if a Local Emergency Management Director is not appointed by the Selectboard or governing body of a community, the responsibility defaults to the Selectboard Chair or the Town Manager.

The Local Emergency Management Director is responsible for coordinating the various components of the emergency management system including fire, law enforcement, emergency medical services, public works, volunteer groups, and State resources. By incorporating the four phases of emergency management (mitigation, preparedness, response, and recovery) into municipal functions, the Local Emergency Management Director can effectively respond to all situations that might occur. There are several core functions a Local Emergency Management Director must perform, including updating the local emergency operations plan. LCPC works closely with Emergency Management Directors in many areas of preparedness, response, recovery, and mitigation.

Additionally, the Emergency Management Directors are the core membership of the Local Emergency Planning Committee.

DRAFT

Regional Emergency Management Committee

In July 2021, regional Local Emergency Planning Committees were replaced with one statewide Local Emergency Planning Committee. As noted in statute (Sec. 12. 20 V.S.A. § 6) the Emergency Management Division will establish Regional Emergency Management Committees which "*shall coordinate emergency planning and preparedness activities to improve their regions' ability to prepare for, respond to, and recover from all disasters." The Division of Emergency Management is charged with establishing "geographic boundaries and guidance documents for regional emergency planning committees in coordination with regional planning commissions and mutual aid associations."*

Lamoille County's REMC consists of representatives from businesses, local government, emergency responders, and citizen groups located in the County. Its mission is to provide emergency preparation, response and mitigation resources, and guidance to communities through education, coordination, and assistance. Members take an active role in all-hazard mitigation review, plan maintenance, preparedness, response and recovery planning, trainings, and exercises to assure public health and safety for Lamoille County residents. LCPC provides staff support for the Lamoille REMC.

The REMC is also the coordinating group for various federal Citizen Corps Programs, including the Community Emergency Response Team (also known as CERT) and the Medical Reserve Corps. CERT is a volunteer organization that brings together first responders, firefighters, law enforcement, EMS, emergency managers, and the volunteer community to involve all citizens in emergency preparedness, mitigation, response, crime prevention, and emergency medical training. CERT members are trained and are activated to assist with fires, vehicle accidents, severe storms, floods, and traffic control. Lamoille County's CERT is currently re-establishing its core membership and mission. The mission of the Medical Reserve Corps is to engage volunteers to strengthen public health, emergency response, and community resiliency. The Medical Reserve Corps is a newer program and falls under the reach of the Vermont Department of Health. The Medical Reserve Corps primarily utilizes trained health professionals. Other Citizen Corps Programs either active or being organized in Lamoille County include a Disaster Animal Response Team (DART), Radio Amateur Civil Emergency Services (RACES), FireCorps, Volunteers in Police Service (ViPS), and Neighborhood Watch.

DRAFT

Emergency Planning

As part of regional emergency planning efforts, the LCPC assists municipalities with planning for various hazards and coordinates with regional partners on emergency planning efforts. This means LCPC provides information to communities, such as E-911 structures mapping, or assists communities in identifying vulnerable populations, such as critical facilities mapping. Other times, LCPC provides technical assistance on localized emergency planning efforts. In 2021, LCPC worked with Elmore, Johnson, Belvidere, and Stowe to update their Local Hazard Mitigation Plans. These plans outline the natural hazards that each town experiences. They provide detailed explanations of each hazard as well as strategies the town can implement to mitigate their impacts to town infrastructure and residents. These plans open the opportunity for state and federal funding when a disaster is declared by the Governor or the President. The LCPC assists with the updates of the Local Hazard Mitigation Plans when requested by a town, assisting with data collection, mapping changes, and public process.

LCPC also works with communities to develop and modify flood hazard regulations. Flood resiliency is, indeed, a major factor for all of Lamoille County. For more information on flooding, fluvial erosion, riverine management, and flood resiliency protective measures, please see the Flood Resilience section.

Finally, emergency planning involves a multi-disciplinary approach. Emergencies and weather hazards affect every aspect of life from the individual home to the road network to the ability of a municipality to provide services to residents. LCPC's emergency planning program intersects with other planning areas such as transportation, natural resources, Geographic Information Services (GIS), municipal planning, regional planning, and energy. Two specific planning activities are detailed below.

Hazardous Materials Emergency Planning

The Statewide LEPC conducts Hazardous Materials Emergency Planning to strengthen preparedness for hazardous materials spills and releases. Hazardous materials have the ability to impact anyone, anywhere there is a road, pipeline, or fixed facility storing hazardous materials. Most accidents are small spills and leaks, but some result in injuries, property damage, environmental contamination, and other consequences. These materials can be poisonous, corrosive, flammable, and/or radioactive, or pose other hazards. A petroleum spill is the most likely potential hazardous materials incident to affect Lamoille County. Preparedness is key to containing the consequences of a spill or release.

DRAFT

Large volumes of hazardous materials are transported to and through the county daily. For this reason, LCPC assists with projects such as: Commodity Flow Studies, Extremely Hazardous Substances site visits, Green River Reservoir Dam breach exercises, and other studies, workshops, and exercises to prepare emergency responders and community officials for expedient response. The LCPC last assisted the REMC in updating a Commodity Flow Study in 2020.

Commodity Points of Distribution

In the event of a major catastrophe, a Commodity Point of Distribution (CPOD) may need to be activated. A CPOD is an established point where the general public will obtain life sustaining emergency relief supplies, such as water and food, until such time as power is restored and traditional facilities, such as retail establishments, re-open. The Health Department works closely with community partners, government agencies, health care sectors, and first responders to prepare for, respond to, and recover from, emergencies that threaten the health and safety of Vermonters. The Morrisville Local Health Office (Copley Service Area) works closely with local partners in these situations. For more information, please visit www.healthvermont.gov/local/morrisville/emergency- preparedness or www.healthvermont.gov/emergency/prepare/preparedness-communities.

At a CPOD location, relief commodities are offloaded and distributed to victims of the disaster. The locations need to be large, open, and allow for a continuous flow of traffic. Three locations have been identified in Lamoille County: the Waterville Elementary School, People's Academy in Morrisville, and the Elmore State Park in Elmore. Plans need to be updated annually and submitted to the Division of Emergency Management and Homeland Security. It is often the work of the Regional Emergency Management Committee to organize these locations and ensure proper communication is received when mobilizing and demobilizing a CPOD. As Lamoille County's population continues to grow, more CPOD locations may need to be designated.

Response

Response operations are greatly enhanced by proper preparedness. Most emergencies of any scale will require towns to work together, and often to work with state or federal agencies. In addition to governmental bodies, local organizations such as Capstone Community Action and Lamoille Health Collaborative Partners can help stand up an emergency operations center on an as-needed basis. These groups are equipped to assist in the coordination and implementation of local efforts during large-scale emergencies. Emergency Management Directors should be informed of this collaborative work during

DRAFT

large-scale, long-term emergencies. Practicing with all these partners before an actual emergency is critical to smooth emergency operations. Response is the immediate effort by emergency response agencies and the general public during and after a disaster to save lives and property. Proper equipment, training, and coordination among responder agencies, and a well-educated and resilient general public, will make response activities more effective when needed. Response is inherently a local issue but regional, state, and federal resources are available upon request if needed.

Law Enforcement

There are four types of entities that provide police coverage in the region: local constables, municipal police departments, the Lamoille County Sheriff's Department, and the Vermont State Police. In additional to regular police coverage, municipalities can contract with a local police department to provide security services during special events.

Local constables are elected in the municipality in which they serve. Constables in this region do not have any dedicated facilities or vehicles provided for their use. Only Eden has a constable. Constables are limited in their police powers according to 24 VSA §1936a, such as assisting health officers, or removing disorderly people from town meeting.

There are municipal police departments in Stowe and Morristown that provide law enforcement within the local jurisdiction. These services are funded by the municipality through appropriations from local tax revenues and are staffed by professionally trained law enforcement personnel. In addition to typical duties officers are trained for, the Morristown Police Department recently assumed responsibility of transporting severely intoxicated individuals to safe locations, as far as St. Johnsbury Correctional Facility. This activity was once covered by an emergency intoxication service through Lamoille County Mental Health Services, often helping individuals experiencing homelessness or referred from Copley Hospital. The program was discontinued after a lack of available funding to maintain the service. This new role has put a strain on officers who now respond to these situations, and funding needed for officers to transport individuals to distant locations. There is an opportunity to collaborate with regional health partners and explore opportunities to fill the gap in funding for this valuable service.

The Lamoille County Sheriff's Department is located in Hyde Park and its services are available to all towns in Lamoille County. In addition, the Sheriff's

DRAFT

Department provides more extensive coverage in the towns of Hyde Park, Johnson, and Wolcott with traffic enforcement in Elmore, based on individual contracts for police service. The Sheriff's Department provides back-up, as requested, to all public safety requests in the county. The Lamoille County Sheriff's Department (LCSD) also provides emergency dispatch service for the county (911 calls) and to some towns in Caledonia County.

The LCSD is located in facilities originally constructed in 1911-12. In 1989 and 1996, LCSD identified an existing need to expand their facilities, however, they did not have any specific plans for expansion or relocation.

The actual service area and the types of services covered by LCSD vary by town:

- For matters involving the civil process, LCSD serves the entire county.
- For the equivalent of full-time municipal police coverage, LCSD has contracts with Johnson, Hyde Park, and Wolcott.
- For transport of municipally arrested prisoners, LCSD covers its contract towns as well as Morristown and Stowe (State Police provide their own transport).
- For emergency dispatch service (911 calls) they cover the entire county.
- For fire dispatch service, they cover Cambridge, Stowe, Morristown, Elmore, Johnson, Wolcott, and Hyde Park Fire Departments.
- For rescue dispatch, they directly dispatch the Stowe and Morristown squads and the Eden and Cambridge Volunteer first response.

Other municipalities that do not have primary coverage by either their own municipal police department or by contract with the LCSD may be served by the Vermont State Police. The State Police provide routine patrol coverage in the towns of Belvidere, Cambridge, Eden, Elmore, and Waterville. They are also the primary responders to citizen complaints as requested by each town's constable and as requested by the Stowe and Morristown Police Departments. In Lamoille County, the Vermont State Police is part of Troop A, based out of the Williston Barracks. Troop A is home to the Vermont State Police Traffic Safety Unit, the Vermont State Police/Marine Snowmobile Enforcement Unit and the "A" Troop Communications Center. Many of the State Police Special Team's vehicles are located at the Williston Barracks.

In 2007, the Vermont State Legislature created the Lamoille County Special Investigations Unit (LCSIU) as a multi- disciplinary task force to conduct criminal investigations and provide victim services in response to reports of child sexual abuse, sexual offenses, domestic assault, serious child physical abuse, as

DRAFT

well as abuse of vulnerable adults and the elderly. The LCSIU consists of two full-time detectives (one assigned to LCSD and one assigned to VSP), a prosecutor with the Lamoille County State's Attorney's Office, a victim advocate, and administrative staff. LCSIU headquarters are co-located with the State's Attorney's Office in Hyde Park Village. LCSIU is funded in part through annual municipal appropriations.

Rescue

There are five rescue organizations providing emergency medical services in the region. Morristown EMS, a volunteer organization with five full-time staff and five part-time staff, and eight volunteer members. Morristown EMS provides service to Morristown and Elmore. Morristown EMS offers paramedic level care as well as specific trainings in other response and education areas, such as suicide prevention. Stowe Rescue, staffed by full and part-time employees, also provides paramedic level care as well as advanced care programs such as Advanced Life Support, airway management, medication administration, and defibrillation. Last year Morristown EMS responded to 940 9-1-1 calls, making 645 patient transports. Of those 940 calls, 151 were mutual requests or paramedic intercepts from other Lamoille County Towns. Morristown is designated as a "Heart Safe" community by the Vermont Department of Health, and additionally their service is a Pediatric Safe EMS agency approved by the Vermont Emergency Medical Services for Children (EMSC) program. Funding is taxpayer provided at approximately $800,000 a year, which is offset with approximately $300,000 in insurance reimbursement revenue to the town's general fund.

EMS District Four covers all of Lamoille County, and smaller areas of Orleans and Caledonia County, and its board is comprised of members of each service in the District. EMS Districts derive their authority from the State of Vermont EMS Rules which are part of Title 18, Chapter 17 of the Vermont State Statutes. There are 13 EMS Districts in Vermont. The District Board assists in providing medical control oversight to EMS agencies, coordinating both initial and continuing education programs within the District, and in our District, providing mutual aid agreements and a coordinated EMS Mutual Aid Dispatch Matrix to Lamoille County Sheriff's Dispatch Center. The Hardwick Emergency Rescue Squad provides service to Wolcott.

Northern Emergency Medical Services (NEMS), a division of Newport Ambulance Services, is a mutual aid organization providing service to Belvidere, Eden, Hyde Park, Johnson, and Waterville and is centrally located in Johnson. NEMS includes both paid staff and volunteers. NEMS offers a transfer service to

DRAFT

Copley Hospital.

Cambridge Rescue, located in Jeffersonville, has transformed from a "First Response Squad" to a full transport service ambulance squad, operating at the advanced life support level. Their response area includes the entire Town of Cambridge and one-third of the Town of Fletcher. They also assist with mutual aid in surrounding areas upon request. Cambridge Rescue has the capability of transporting sick and injured patients from the Town of Cambridge to one of the local hospitals. They also provide advanced care including intravenous therapy and semi-automatic defibrillation. Cambridge Rescue has discussed the possibility of a Community Paramedic Program (CPP). CPP is a voluntary program that expands the role of Emergency Medical Services professionals in underserved populations by allowing EMS workers to provide health services where access to physicians, clinics, and/or hospitals is difficult. CPP partners with primary care physicians to oversee the program. For older adults, CPP offers an alternative, affordable means of providing reliable home care based in the community.

Most rescue squads operate as a volunteer service and are funded through annual town tax support or fundraising. A nominal fee is often charged for transport services.

First Response Squads are supported with heavy rescue equipment by the Hyde Park, Stowe, Morristown, and Cambridge Fire Departments. Additionally, Stowe's Hazardous Terrain Team has evolved into Stowe Mountain Rescue, a branch of the Rescue Squad. Stowe Mountain Rescue has led the state in back-country rescue operations.

The LCSD has a state-of-the art Communications Center and receives 911 calls in Lamoille County. LCSD also dispatches and provides 911 service for Hardwick, Greensboro, and Barre.

Fire

Fire response is a truly regional effort. There are eight fire departments (including both municipal departments and private non-profit departments) providing primary service in Lamoille County, with Johnson Fire Department covering Johnson, Belvidere, and Waterville and the North Hyde Park/Eden Fire Department serving Eden and North Hyde Park. All the departments provide first response, upon notification, to fires in their service area. Most departments provide fire prevention and education services, maintenance of equipment and

DRAFT

structures, and member training. They also provide other emergency services such as search and rescue and help in times of flooding. The departments also provide first-response rescue service, equipment, and vehicles in support of the medical response services of the region's rescue squads. Additionally, Elmore, Johnson, and Stowe Fire Departments also have water rescue teams and equipment.

Lamoille County fire departments participate in a regional mutual aid agreement through the Lamoille County Mutual Aid Association. The member departments can be called upon to render help to, or may request help from, the other departments in the Association. Additionally, Cambridge Fire Department, through its mutual aid agreement, provides assistance to Fletcher as needed and Wolcott and Elmore share a fire response agreement. Stowe and Morristown also have a separate mutual aid agreements for emergency response and Stowe and Waterbury also have a mutual aid agreement. Wolcott is a member of the Capital Mutual Aid association to the east.

Calls in Lamoille County are serviced by the 911Communications Center at the Lamoille County Sheriff's Department. Enhanced 911 with locatable addressing is available for all commercial and residential properties.

Towns with municipal water systems are able to operate pressurized fire hydrants. In areas without pressurized hydrants, firefighters rely on tanker engines or "dry hydrants" located throughout towns. A dry hydrant is essentially a 4.5 to 6 inch diameter threaded pipe capable of drawing water from a nearby pond or stream using a pumper engine. The installation of these hydrants improves overall fire safety and provides an added benefit to property owners in the form of lower home insurance premiums. Dry hydrants are important in areas where access to a stable water source is limited.

Recovery

Recovery is the more long-term process of putting life back to normal, and includes many state and federal agencies, especially the Federal Emergency Management Agency (FEMA) in large disasters. As events like Hurricane Katrina and Tropical Storm Irene showed, recovery can take a long time and is hindered if a disaster is severe or widespread. Recovery also involves much less state and federal assistance than is commonly thought, so the best strategy is to avoid disaster-prone behavior in the first place.

There are a wide variety of programs and organizations to help people,

DRAFT

businesses, and governments recover from disasters. It is important to understand that none of these programs is intended to return everything to its pre-disaster state, but they can help the public and private sectors to not be overwhelmed by the effects of a disaster. Recovery will be least painful where mitigation and preparedness steps have already reduced the extent of damage and fast response has limited the toll on lives and property. Recovery efforts will be helped by having well-practiced regional coordination in place prior to the disaster so that towns can help each other and so that the local/state/federal administrative issues are handled smoothly. Thorough and prompt documentation of losses, good media outreach communicating the assistance that is available, and the interim provision of basic services will all enable communities to recover as fast and fully as possible.

LCPC works with communities after a disaster occurs to assist with the recovery phase by connecting other agencies with homeowners, business owners, and municipalities for funding assistance or basic services. LCPC also acts as a liaison between FEMA, DEMHS, and municipalities for FEMA's Public Assistance and Individual Assistance programs. During the recovery phase, which can span months or years, there are opportunities to implement mitigation activities, projects, and programs.

Mitigation

Hazard mitigation means any sustained action that reduces or eliminates long-term risk to people and property from natural or human-caused hazards and their effects. Mitigation planning begins with an assessment of likely hazards, and then targets activities to reduce the effects of these hazards. Given that the largest threat in Vermont is flood related, good mitigation measures include proper road and drainage construction, as well as limiting development in flood prone areas.

Local Hazard Mitigation Planning

The impact of expected yet unpredictable natural and human caused events can be reduced through community mitigation planning. Hazard mitigation is any sustained action that permanently reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. Based on the results of previous FEMA efforts in the early 2000s, FEMA and Vermont agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. Floods, winter storms, high winds, severe storms, and hazardous material spills are some of the hazards experienced by Vermont and communities of Lamoille County. Hazard

DRAFT

mitigation planning identifies specific hazards that are common to a jurisdiction and establishes a framework for the reduction of risks associated with those hazards.

A local hazard mitigation plan conducts a hazard identification and risk assessment, provides an overview of the jurisdiction, reviews recent disaster history, and identifies mitigation strategies, projects, and programs. Hazard mitigation strategies and measures **avoid** the hazard by stopping or limiting new exposures in known hazard areas, **alter** the hazard by eliminating or reducing the frequency of occurrence, **avert** the hazard by redirecting the impact by means of a structure or land treatment, and **adapt** to the hazard by modifying structures or standards.

Currently, each town in Lamoille County has an up-to-date and adopted Local Hazard Mitigation Plan. The Plan is used to assist local governments and the LCPC in identifying hazards facing the county and individual communities. It also identifies and outlines strategies to begin reducing risks from those identified hazards. The LCPC works with each town to update their plans every 5 years. Each *Local Hazard Mitigation Plan for Lamoille County* can be found on LCPC's website, www.lcpcvt.org.

As the State of Vermont strived to achieve a more disaster resilient state following devastation from the spring 2011 flooding and Tropical Storm Irene in August 2011, the importance of hazard mitigation planning was underscored through programs and financial incentives to encourage mitigation planning at the local level. For example, changes to the State's Emergency Relief Assistance Fund (ERAF) in 2014 provides for greater reimbursement from the State to the municipality if a municipality has a FEMA approved hazard mitigation plan. LCPC works closely with municipalities to develop and update hazard mitigation plans.

Hazards

Lamoille County is vulnerable to a variety of hazards. They range from natural to technological, to civil/political disorder. The Lamoille County hazard Inventory and Risk Assessment was developed by LCPC in consultation with regional and local emergency management volunteers and professionals. All hazards that could affect Lamoille County on a county-wide basis were considered. The *All-Hazards Mitigation Plan for Lamoille County* identified the following hazards in Table 5-2. Other potential threats are not included in the analysis as they were considered to occur infrequently and/or to not be a significant enough threat to

DRAFT

the County. The vulnerability of each community to the hazards identified throughout Lamoille County and others unique to that jurisdiction including any repetitive loss properties are identified in separate, individual community plans.

Table 5-2. Lamoille County Hazard Inventory and Risk Assessment

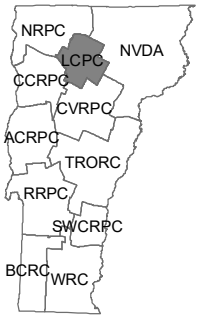
Possible Hazard	Frequency	Severity	Risk	Most vulnerable
Flood*	Frequent	Catastrophic	High	Roads, culverts, bridges, structures, public facilities
Flash Flood*	Frequent	Serious	High	Roads, structures, water source contamination, culverts, bridges, public facilities
Power Shortage Failure*	Frequent	Extensive	High	Special needs populations, critical facilities
Winter /Ice Storm*	Frequent	Extensive	High	Loss of access, loss of power, property damage
Hazardous Materials Release	Unusual	Extensive	High	Structures, environment, roads
Structure Fire	Likely	Serious	Moderate	High population centers, elderly housing, structures
Major Hailstorm	Unlikely	Minor	Low	Structures, property damage
Highway Accidents	Likely	Serious	Moderate	3 major intersections identified with a history of accidents including hazardous materials
High Wind	Likely	Serious	Moderate	Trees down, loss of power, limited road access, structures
Drought	Unlikely	Serious	Moderate	Private well failures, wildfires, springs drying up
Hurricane	Unlikely	Serious	Moderate	High winds, floods, power failure
Water Supply Contamination	Unlikely	Serious	Moderate	Wellhead protection areas, structures, businesses, public facilities
Tornado	Unusual	Serious	Moderate	Structures, power lines, public facilities
Wildfire/Forest Fire	Unlikely	Extensive	Moderate	Structures, public facilities, power infrastructure
Aircrash	Unlikely	Minor	Low	
Earthquake	Unlikely	Serious	Low	See VT Geological Survey HAZUS report (9/03 Tab)
Dam Failures	Likely	Serious	Low	Roads, structures
School safety issues	Unlikely	Minor	Low	Hazmat incidents, children
Landslide/Erosion	Unusual	Minor	Low	Roads, structures
Chemical and/or Biological Incident	Unlikely	Minor	Low	General population, environment
Radiological Incident	Rare	Serious	Low	UPS trucks: largest carrier of radiological materials, general population
Terrorism	Rare	Minor	Low	General population
Infectious Disease Outbreak	Unusual	Extensive	Moderate	Severe disruption to agriculture stock, strain on healthcare system, economic disruption, disruption to municipal operations, loss of life

*Hazards marked with an * indicate consistently significant hazards in Lamoille County

DRAFT

EMS and Rescue Services

Lamoille County



N

0 2.5 5 Miles

Ambulance Station

Rescue Service

EMS Service Areas

- CAMBRIDGE RESCUE
- HARDWICK RESCUE
- MORRISTOWN AMB
- NEMS
- STOWE RESCUE

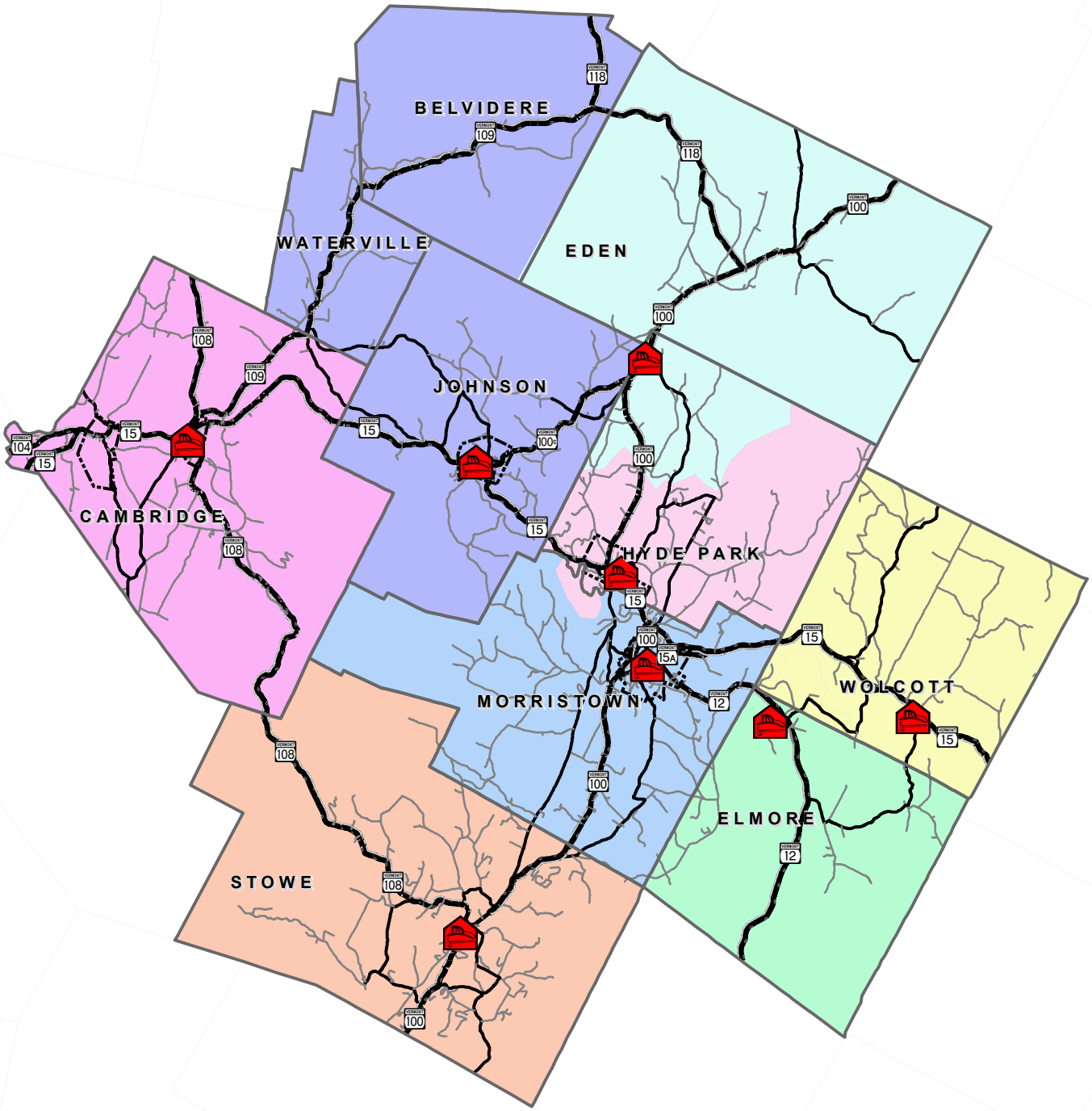
Data Sources:

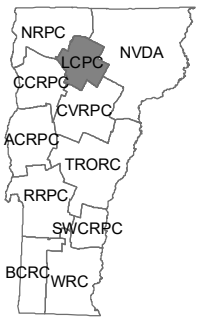
Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Emergency Service Areas: E911 Data, 2022.
Emergency Service Providers: E911 Data, 2022.

Created 3/15/23 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Fire Protection Services

Lamoille County





N

0 2.5 5 Miles

Fired Departments

Fire Service Area

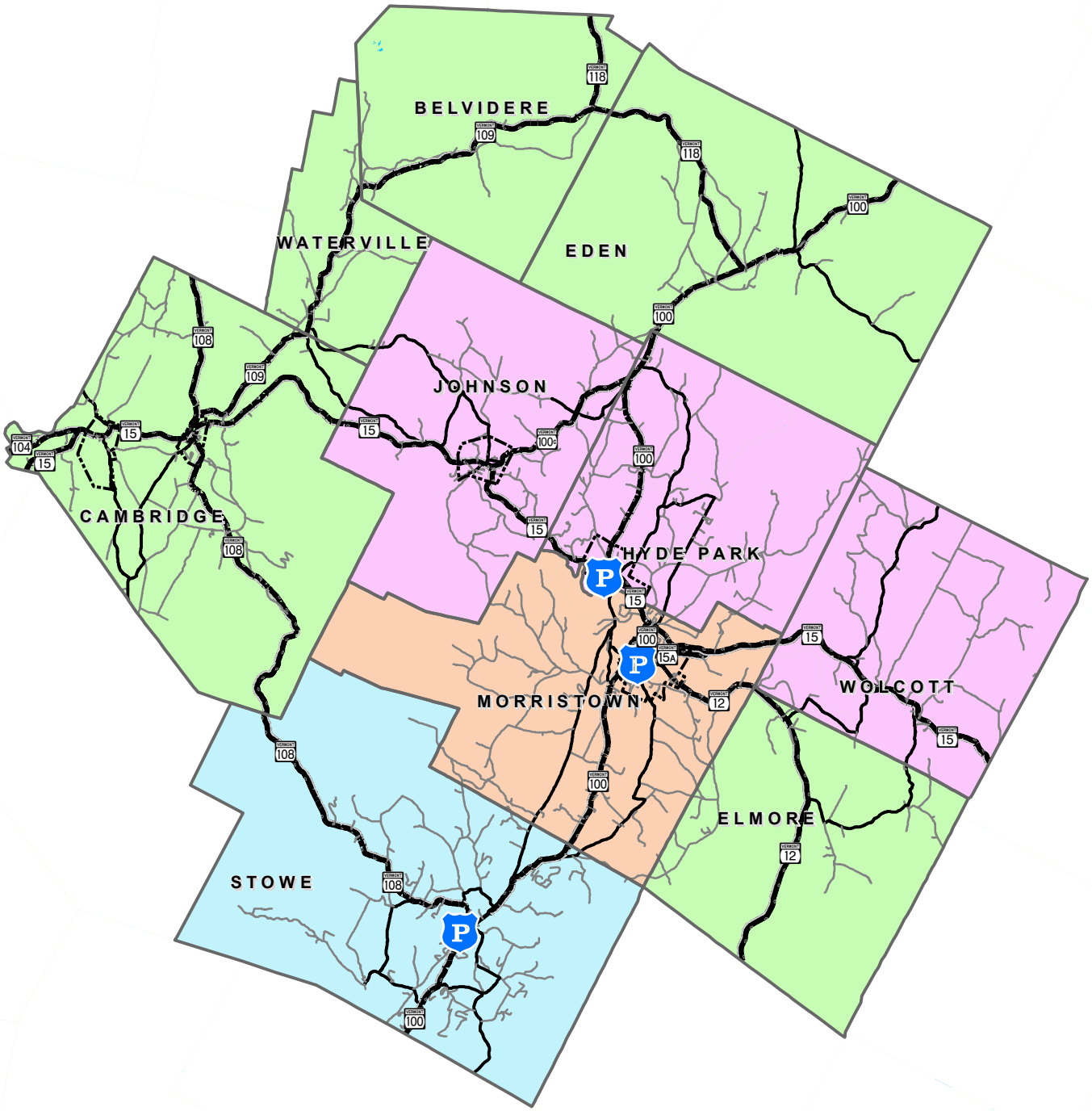
- CAMBRIDGE FD
- ELMORE FD
- HYDE PARK FD
- JOHNSON FD
- MORRISVILLE FD
- NORTH HYDE PARK/EDEN FD
- STOWE FD
- WOLCOTT FD

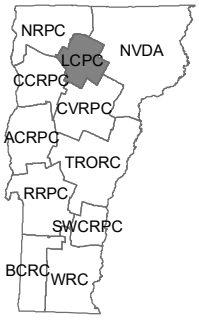
Data Sources:

Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Emergency Service Areas: E911 Data, 2021.
Emergency Service Providers: E911 Data, 2021.

Created 3/16/23 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Law Enforcement Facilities
Lamoille County





N

0 2.5 5 Miles

Police Station

Police Service Area

- LAMOILLE COUNTY SHERIFF
- MORRISTOWN PD
- STOWE PD
- VERMONT STATE POLICE

Data Sources:

Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Emergency Service Areas: E911 Data, 2023.
Emergency Service Providers: E911 Data, 2023.

Created 3/16/23 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Culture and Community: Strategy

The human connection is what makes a municipality a community: proper services, community engagement activities, recreational/community green space, infrastructure, and resources that are accessible to all can promote healthy community design. As communities develop over time, these resources may change, become threatened, or become essential services. Human services in this section include health services and health care, (e.g., mental health, substance treatment and recovery), childcare and youth programs, access to affordable food, recreation facilities, and cultural facilities such as museums and galleries. A map of resources discussed is found at the end of this chapter. The following policies must be considered to maintain or expand human services for a vibrant, thriving region, with the primary strategies:

All youth, young adults, and children deserve the opportunity to grow and develop in a safe, respected environment that normalizes healthy behaviors.

Children are an integral part of the development of Lamoille County. Examples of healthy behaviors that are important for children and youth include physical activity and balanced nutrition. Ensuring adequate support for children and families is important for LCPC.

Ensure health and wellness needs, services, and facilities are available, accessible, affordable, and sufficient for Lamoille County residents and visitors.

A healthy and educated workforce is vital for future growth and development of the region. Ensuring access to and support for wellness needs for the region's diverse populations will require inter-disciplinary partnership.

POLICIES & ACTION ITEMS

Policy: *Strategies for maintaining our quality of life and creating economically vibrant and socially connected communities are the same strategies needed for creating healthy communities: pedestrian-friendly environments, access to public transit, parks and recreation, substance-free public spaces, green space, clean air, access to healthy foods, and health care services.*

Action Items:

- Encourage more accessibility by social service providers and municipalities to parents and guardians, particularly in understanding the availability of services and State assistance.
- Continue to participate in regional discussions and initiatives aimed at encouraging implementation of the Regional Plan and municipal plans,

DRAFT

and by providing demographic information as needed.

- Work with municipalities and regional partners to identify ways of incorporating health and wellness into youth daily activities, such as providing safe walking routes to schools and expanding recreational opportunities and after school activities.
- Encourage communities to utilize healthy community design principles, such as walkable and bikeable communities, access to healthy food, services, parks and recreation, and mixed-use development.
- Encourage communities to allow Accessory Dwelling Units (ADU) in zoning bylaws.
- Support developing "healthy indicators" for Lamoille County towns and villages.
- Support substance free facilities, events, and spaces throughout the region.
- Encourage 3-4-50 commitments in collaboration with Healthy Lamoille Valley, focusing on physical activity, healthy nutrition, and decreasing tobacco use.
- Support efforts to create and expand access to mental health and substance prevention, treatment, and recovery in the region.
- As the region's elderly population grows, ensure "Choices for Care" are available to assist people with everyday activities at home, in residential care, or in nursing facilities.
- Support services, facilities, and opportunities for the aging population to remain active members of the community.
- Collaborate with regional and local partners to ensure a variety of healthy activities and health care services are available throughout the region, with an emphasis on mental health, substance misuse prevention, and treatment.

Policy: *LCPC supports promoting health equity to assist communities/community groups that experience health inequities.*

Action Items:

- Work with municipalities and underrepresented groups to ensure all community members are engaged in the town decision making process.
- Provide resources displaying how municipalities and organizations can approach policies/programs that emphasize meeting the needs of underrepresented residents.
- Provide municipal training opportunities on the importance of addressing health equity in municipal planning documents and community projects. This includes promoting the Health Equity and Planning Toolkit and

DRAFT

Healthy Lamoille Valley's Community Planning Toolkit.
- Encourage community engagement to increase feelings of inclusion and belonging, particularly among youth, young adults, and marginalized communities. This could be supported by expanded volunteerism and citizen participation in regional activities.

Policy: *LCPC supports the availability of high-quality, affordable childcare providers and facilities throughout Lamoille County to meet the needs of families and employers and provide an enriching environment for the Region's children and youth.*

Action Items:
- Work with municipalities to address identified needs for child care facilities or services.
- Conduct a needs assessment along with an evaluation of suitability and availability of space in public buildings to be used as child care and youth facilities.
- Assist employers and child care facility operators with access to financing for child care facilities.
- Support initiatives to develop child care and youth facilities where a need has been proven.
- Support initiatives for enriching after school programs for all youth, including youth sports.
- Offer free child care at LCPC sponsored events, which may attract wider participation by parents and guardians. Encourage municipalities and other partners to do the same at their meetings and events.

Policy: *LCPC supports cultivating an environment with a well-trained workforce that meets the needs of employers and employees for the present and future.*

Action Items
- Encourage local economic, social, and health assessments in an effort to determine how tourism and development can be better integrated as part of comprehensive economic strategies for residents and visitors in order to build awareness of and connections with existing programs that support these efforts.
- Work with strategic partners to ensure a range of services such as child and adult daycare and continuing education are available to support a productive, employable workforce.
- Collaborate with community partners, regional workforce organizations, educational facilities, local employers, and the business community to

DRAFT

evaluate workforce development needs, strategies, and trends. Efforts could include supporting healthy work environments.

Policy: *Increase access to, availability of, and affordability of, locally grown, healthy foods to residents of all income levels.*

Policy: *Regardless of age, ability, or income, ensure all Lamoille County residents and visitors will have access to healthy, affordable options for food that make the healthy choice the easy choice.*

Action Items:

- Encourage private and community gardening through volunteer organizations, Planned Unit Developments, and other regulatory and non-regulatory means.
- Assist farmers' markets in pursuing grant opportunities to participate in the EBT/Debit program.
- Assist municipalities with bylaw amendments that encourage, rather than prohibit, gardening opportunities.
- Support infrastructure and provide assistance to farmers' markets, healthy retailer initiatives, food co-operatives, and farm-to-school or farm-to-institution programs.
- Support food shelves, foodbanks, and organizations and facilities that offer free or reduced costs of food to residents in need.

Policy: *Cultural resources and facilities continue to be preserved, strengthened, and supported.*

Action Items:

- Continue to support and assist local and regional cultural facilities to exist and expand as necessary.
- Work with regional and local partners to identify types of and new locations for cultural facilities.
- Assist with grant opportunities to preserve, restore, and expand libraries, museums, and other cultural facilities.
- Assist libraries, museums, and historical societies with opportunities and resources to protect and preserve collections from theft, deterioration, damage, and "wear and tear".
- Libraries are critical in providing access to knowledge and information to the general public. To that end, LCPC supports efforts made by libraries to increase access to modern technology and equipment to be incorporated

DRAFT

into existing or new programs.
- Upon request, assist municipalities with identifying appropriate locations to support new cultural facilities and expanded amenities, such as parking, for existing facilities, while maintaining the historical character of buildings.
- Encourage communities to adopt age-friendly social inclusion initiatives.

Policy: *Efforts to grow the region's creative and arts-based economy are supported.*

Action Items:
- Develop measures to track and account for the impact of creative arts-based businesses and entrepreneurs in Lamoille County.
- As requested, assist municipalities with regulatory updates and planning to accommodate creative and arts-based businesses.
- Assist municipalities with improving cellular and broadband coverage to encourage creative arts-based businesses to locate in Lamoille County.

DRAFT

Culture and Community: Background and Inventory

Health and Wellness Facilities & Services
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. As Lamoille County's population continues to grow and change, factors that affect the quality-of-life residents have come to expect may change. It is important for residents to be able to access livable wage jobs, education and recreational resources, and health care options as a means to increase wellness.

Since the adoption of the 2015 Regional Plan the concept of health equity has gained greater attention and recognizes inequities in access to health and wellness opportunities in lower income/underrepresented communities. With this understanding, the Regional Planning Commissions partnered with the Vermont Department of Health on a health equity and planning toolkit that was finalized in January 2023. Health Equity is achieved when everyone has a fair and just opportunity to attain their highest level of health. This toolkit serves as a guide for communities to introduce the concept of health equity and incorporate it into municipal planning documents and bylaws. Within the toolkit, interested parties will find topics focused on transportation, housing, plans and bylaws,

quality of place, and recreation. The Accompanying Resources Guide allows individuals to pinpoint specific organizations/programs that can assist during a community's health equity journey. The Matrix Toolkit gives specific language that municipal officials can utilize in town plan development or consider while developing local bylaws.

As you read this chapter, please keep in mind that the Health Equity and Planning Toolkit offers additional information on upcoming subsections of this chapter. The toolkit and accompanying documents can be found at https://www.lcpcvt.org/healthequitytoolkit.

Health Providers

The primary healthcare providers servicing Lamoille County and the surrounding region are Copley Hospital and the Lamoille Health Partners, both headquartered in Morrisville. Copley Hospital is a 25-bed critical access facility that serves as an emergency care center, while providing in-patient and out-patient services, a family oriented birthing center, and physical therapy and rehabilitation services. Copley functions as part of the larger Vermont health care system, with the University of Vermont Medical Center in Burlington acting as the major tertiary referral hospital.

Copley also sponsors a Wellness Center for the community. The Wellness Center focuses on proactive prevention versus reactive treatment. Copley Hospital also operates Mansfield Orthopedics, the Health Center Building, the Women's Center, Copley Terrace, and Copley Woodlands (housing for elderly populations).

The Lamoille Health Partners, a federally qualified health center, also offers quality medical, dental, and behavioral health services to residents of Lamoille County, including the uninsured and under-insured. Their primary and specialty care practices include Morrisville Family Health Care, Stowe Family Practice, the Neurology Clinic, the Behavioral Health & Wellness Center, and the Community Dental Clinic. Lamoille Health Partners also offers Urgent Care Services in Morrisville and Stowe. Other local health service agencies include Lamoille Valley Mental Health Services, the Manor Nursing Home, the Lamoille Family Center, Johnson Health Center, Jenna's Promise, Diabetes Center of Lamoille County, Lamoille Home Health & Hospice, and the Vermont Department of Health (Morrisville District Office). For more information on health and human service providers within the community, residents are encouraged to dial 2-1-1 from their phones, or visit www.vermont211.org.

DRAFT

Local health and wellness services are available through the Cambridge offices of the Lamoille Health Partners, Tamarack Family Medicine, and many private practices and specialists in the region.

The Hardwick Area Health Center is a regional medical center which serves Wolcott and communities in Caledonia County. Staff at the Center include family practitioners, internists, and nurse practitioners. The Center provides an array of medical services, with the exception of obstetrics.

For more advanced medical care, the following hospitals are also visited by Lamoille County residents: UVM Medical Center (Burlington, VT), Central Vermont Medical Center (Berlin, VT), Dartmouth-Hitchcock Medical Center (Lebanon, NH), North Country Hospital (Newport, VT), Northeastern Vermont Regional Hospital (St. Johnsbury, VT), Northwestern Medical Center (St. Albans, VT).

Private practitioners can be found in many communities for medical, dental, and eye care, as well as mental health counselors and physical therapists. Many communities have identified additional needs for better access to health care services, such as federally qualified health centers or pharmacies in their communities.

Vermont 2-1-1

Vermont 2-1-1 is a simple three-digit telephone number to dial for information about health and human service organizations in one's community. By dialing 2-1-1, Vermonters receive free access to community resources through information and referral. This access includes personal assistance by telephone or is online at www.vermont211.org through a searchable database of services. United Way of Lamoille Valley also keeps related up-to-date resources on their website, found at www.uwlamoille.org/get-help/covid-19-resources.

Community Wellness and Social Services

A number of regional organizations are active throughout the county. Many municipalities choose to fund these organizations through appropriations. Many of these services are critical to families in meeting day-to-day needs. Some are social organizations that provide enrichment opportunities to a diverse audience. Lamoille Health Collaborative is a partnership that offers such services to meet countywide needs (www.lamoillehealthpartners.org/lamoille-health-collaborative/).They support and facilitate development of a seamless continuum

DRAFT

of care, which helps residents maximize their health status by receiving the right care, from the right partner, at the right time. At present, the Lamoille Health Collaborative is funded by Lamoille Health Partners.

Youth Wellness

The availability of safe, quality child-raising is vital to Lamoille County's economy, wellness initiatives, educational development, workforce, and future. As the next generation, it is important that children receive adequate opportunities to develop, learn, and thrive. It was projected that Lamoille County's population of 10-14 year olds could increase as much as 16% by 2020. Since the adoption of the 2015 Regional Plan, the 10-14 year old age group has decreased. The availability of services and assistance to parents, grandparents, and guardians is critical. The Agency of Health Service's Department for Children and Families provides a number of opportunities and services for guardians, including pre-natal education on parenting. Healthy Lamoille Valley (HLV) also provides support to caregivers, to prevent and reduce substance misuse and encourage youth to make substance-free, healthy choices. HLV is a program of the nonprofit Lamoille Family Center, one of 15 Parent Child Centers across the state providing a network of care for children, families, and youth. While this section focuses on the availability of childcare, it is important to understand all that goes into nurturing child development, from birth through high school and beyond. Please refer to each municipalities Recreation Departments/Committees for youth sports and programming. Municipalities may find it beneficial to inventory youth programs in their jurisdiction and make information about them easily accessible to the public.

Child Care

Quality childcare makes good economic sense in preparing young children for success later in life. Quality childcare benefits families by preparing children for schooling and social interaction while enabling parents to work and provide income. It benefits employers by expanding the workforce and creating more reliable, productive employees. Furthermore, child care facilities are commercial operations and their existence expands local and regional economies.

Despite the economic and social good created by childcare services, Vermont appears to have a shortage of affordable, quality providers. The Agency of Human Services estimates that only 50-60% of capacity of regulated facilities meets the State's need.

DRAFT

Child Care Programs

There are resources available to assist parents and guardians in finding available childcare. The Department for Children and Families, Child Development Division oversees the childcare industry and allows registered home care providers to serve 10 children: six children under the age of six and four children of school age during the school year. Legally Exempt Providers are those adults who care for the children of no more than two families in addition to their own (this does not mean per day, it means in total) on a regular or continuous basis for less than 24 hours per day. By law, if someone is providing regular or continuous care for children of more than two families, they are required to be a Registered Child Care Provider.

Building Bright Futures, a program of the Vermont Department of Children and Families, operates an online childcare directory (see www.brightfutures.dcf.state.vt.us).

Capstone Community Action (CCA) has an Early Learning Center in Morrisville, providing full day school year-long services to help pre-kindergarten age children and families. CCA also supports childcare partnerships and Early Head Start programs.

The Step Ahead Recognition System (STARS) is Vermont's quality recognition system for childcare, preschool, and afterschool programs. Programs that participate in STARS are stepping ahead – going above and beyond state regulations to provide professional services that meet the needs of children and families. Parents and guardians can look to STARS as one indicator of quality when choosing childcare. There are 47 Lamoille County childcare facilities rated on the online STARS database.

Lamoille Family Center (LFC) also offers a variety of childcare programs and services including the Birth to Three Project, resource development, care referral, financial assistance, the LFC Child Care Center, playgroups, and the Child and Adult Food Care Program. Programs may provide mentors for families or specialists that work with professional childcare providers. Other LFC opportunities include literacy and childcare visits as well as trainings on childhood development, positive learning environments, active listening, nutrition, and Vermont Early Learning Standards.

Availability

Given that many residents commute outside their towns for employment,

DRAFT

residents may also utilize childcare resources in neighboring communities. As Lamoille County continues to grow, additional home and center-based childcare facilities may be needed. In particular, there is additional need for off-hour childcare for working parents. There is an unknown number of unregistered at-home childcare facilities.

Table 5-3 Child Care Providers by Town

	Number of registered providers – home based	Number of registered providers – facility based
Belvidere		1
Cambridge	1	4
Eden	3	2
Elmore	0	0
Hyde Park	4	2
Johnson	3	3
Morristown	5	11
Stowe	0	7
Waterville	1	
Wolcott	0	0

Source: Bright Futures Child Care Information System, Retrieved 4/10/23

Workforce Development

Essentially, workforce development means providing opportunities for education and training for high-quality jobs for everyone. The Vermont Workforce Development Council, a statewide initiative, aims to provide the following to all Vermonters: a well-rounded education, innovation and creativity with a passion for lifelong learning, and to have the personal and social skills to succeed in collaborative workplaces. Competition for jobs occurs at the local, regional, state, and national levels.

Vermont is a state that is susceptible to the "brain drain": young adults are educated in Vermont but leave the state for higher salaries and more challenging employment opportunities. Retirees then move back to Vermont to enjoy the quieter life. This is noticeable in Vermont's changing population, where the population of older citizens is increasing but overall population growth is declining. Attracting new young talent and workers to the state of Vermont can also be a challenge with the rising cost of housing and limited housing options.

Organizations such as the Lamoille Workforce Investment Board, Lamoille Chamber of Commerce, and GMTCC are focused on workforce development and investment throughout the county. Their current focus is on education at all age levels. For example, through encouragement of the Workforce Investment Board,

DRAFT

GMTCC students are not only graded on academic performance but also on their life skills, such as how they perform in mock interviews, courses in finances, how they dress, and their demeanor. These grades stay on their permanent transcripts and have been requested by prospective employers. In this way, students learn both the "hard" and "soft" skills.

Workforce development is not the responsibility of one organization. Community collaboration can identify the needs and strategies to develop new strategies and improve upon workforce development strategies already in place, while encouraging adaptation to changing economic trends. The needs of employers and employees must be considered. The workforce and employment opportunities have changed in recent years with the development of remote work environments. Including the expertise of retirees in transferring skill development to the next generation is an unexplored avenue in Lamoille County. Regional discussions have identified the following workforce opportunities:

- There is a need for adequately trained workers currently residing in the Region or willing to move to Lamoille County
- Improve Lamoille County workforce basic skills knowledge, such as computer proficiency
- More competitive salaries in Lamoille County to compete with neighboring regions
- Inter-regional communication regarding available training and educational opportunities, for example connecting local resorts to the hospitality training program at Vermont State University, Johnson or expanding hospitality training opportunities
- Support Prevention and Recovery Friendly Workplaces

Volunteer Opportunities

Volunteers play integral roles in communities at all times, but particularly when resources are strained. Volunteers take part in schools, local boards, municipal committees, the arts, sports, organize local events, and other community or social causes. Volunteering is a way to connect retirees and seniors to the community and to youth. RSVP, once an acronym for "Retired and Senior Volunteer Program", maintains a list of prospective volunteers and matches them with available volunteering activities. RSVP volunteers can be found in elementary schools, hospitals, nursing homes, chambers of commerce, libraries and bookmobiles, meal sites, adult education, transportation programs, county law enforcement, and court systems. RSVP maintains an office in Morrisville with volunteering opportunities offered throughout Lamoille County and greater northeastern Vermont.

DRAFT

The same way that connecting retirees to youth can foster dialogue between the two sometimes conflicting populations, connecting youth to the broader community fosters greater inclusion. Often young people feel disenfranchised from the world. Providing youth with responsibilities for their community, school, church, or hobbies helps them develop into adults connected to their communities. AmeriCorps and Vermont's Medical Reserve Corps are two other community-based volunteer opportunities that can empower youth and foster inclusion. For more information, please visit www.servermont.vermont.gov/ and https://www.healthvermont.gov/emergency/volunteering/oncall-vermont.

Food Access

Food Security

The ability for people to access affordable food is referred to as "food access". Food access is influenced by travel time to shopping, availability of healthy food, product prices, and the relationship between food shopping, spending patterns, diet, and health. "Food security" is often tied to access. A community is food insecure when its residents do not have access to enough nutritious, quality, affordable food to lead an active, healthy life. It is important to consider food security and food access in order to increase the self-reliance of communities. According to the 2020 American Community Survey, 8.6% of Lamoille County households used the Supplemental Nutrition Assistance Program (SNAP, formerly known as "food stamps"), and 12.4% of people live under the poverty threshold. Given those statistics, there is a demonstrated need for a coordinated effort to increase food security throughout Lamoille County.

There is a range of policies and programs dedicated to addressing food security, which includes:

- Food availability and affordability
- Direct food marketing
- Diet-related health problems
- Participation in and access to Federal nutrition assistance programs
- Ecologically sustainable agricultural production
- Economic viability of rural communities
- Economic opportunity and job security
- Community development
- WIC Program

Some communities have large supermarkets and grocery stores. For other

communities, getting to major supermarkets can be a 20-40-minute drive. Small, local markets and grocery stores supply much of the food stock for rural residents. While residents support and value existing local markets, there may be a need and demand within the communities for a larger selection of food products.

Many of the County's farms benefit from open fields within the floodplain, which contain some of the best and most fertile agricultural lands. Some farms have a retail store or farmstand on-site. Some towns and villages have farmers' markets held weekly throughout the summer and fall. Farmers' markets bring together local food producers and artisans in a central location. Markets often feature a diversity of food products including conventional, organic, and chemical-free produce, bread, meats, eggs, and cheese. Some farmers' markets accept SNAP benefits through the Electronic Benefits Transfer (EBT) program. While this can be a major investment for a small farmers' market, it is worthwhile to increase access to the markets' offerings, especially given the high percentage of residents receiving SNAP benefits in some communities. Markets provide access to fresh food, provide a source of income for farmers and producers, and bring communities together. All of this contributes to the food security and health and wellbeing of Lamoille County towns and villages.

Food affordability and access to healthy food options

Integral to food security is food affordability. While there is no measure for how much a household should be spending on food like there is for housing, food affordability calculations are often based on how far a person has to go for food, size of the nearest grocery store(s), access to healthy food options, and household income. The USDA offers guides for spending using the thrifty plan based on family size. The current estimate for a family of four is $226 a week.

Farmers' markets and local retailers offer a selection of food, but some items are not necessarily affordable for all income types. It is important to recognize that not all residents live in areas of the County that are accessible to a farmers' market or grocery store. The sections below discuss ways to increase access to healthy food options.

There are a number of public and private programs for those who cannot afford food. Local food shelves are one of those programs. Food shelves offer limited hours weekly for eligible individuals to pick up food. They are often volunteer run. Some food shelves offer clothing for residents in need. Because they are volunteer run and often rely on donations, food shelves face tenuous

DRAFT

arrangements. Given the small size of communities and the social stigma attached to food shelf patrons, many residents will drive to neighboring communities to utilize a food shelf.

Many local churches and social groups offer free lunches to residents. Not only do lunches provide an option for residents in need, but they also provide a social gathering space for the community and are open to all. There are often no eligibility requirements to enjoy free lunches.

The Women, Infants, and Children (WIC) program provides access to healthy foods, nutrition education, and health care support for income-eligible residents. Parents, grandparents, and foster parents may apply for children in their care. The WIC office in Morrisville serves all towns and villages in Lamoille County. For more information, please visit www.healthvermont.gov/local/morrisville/wic-morrisville.

The Vermont food stamps program is called 3SquaresVT. This program, for those who are eligible, works with participants to increase their food budgets and ensure "three square meals" are available for every household participating. In 2013, it became a requirement that a community service component be added to receive the benefits. The Commodity Supplemental Food Program provides staple items and nutrition assistance to qualifying individuals and households.

The Vermont Foodbank also sponsors four fresh food initiatives. The "gleaning program" harvests excess or unmarketable produce from farms and redistributes it throughout the state. "Pick for your Neighbor" is a partnership with tree fruit growers that allows citizens and companies to visit participating orchards to pick and purchase extra apples for donation to the Foodbank. The Foodbank also operates its own farm in Warren to grow produce for local food shelves. Lastly, the Foodbank organizes the BackPack Program for school-age youth. During the school year, bags of kid-friendly nonperishable vitamin fortified food from all five food groups are packed and distributed to participating schools.

The Vermont Agency of Education administers two meal programs for school children during the summer. The Seamless Summer Option has a free meal service for participating school food providers. The Summer Food Service Program serves public or private non-profit schools, local, municipal, county, tribal or state government, private non-profits, public or private non-profit camps, and private or non-profit universities or colleges. The Agency of Education offers more information about eligibility and the operation of these

DRAFT

programs.

Healthy Retailers Practices
Ensuring farmers and local food and beverage producers are able to remain viable is a critical piece of food access. Financial, promotional, and distributional support are necessary for producers and institutions such as markets and stores. Having locally produced agricultural products available at local stores and grocers helps ensure local dollars stay in their communities and in Lamoille County. The Vermont Department of Health encourages retailers to incorporate healthy practices into their business models.

Voluntary healthy retailer practices focus on three key areas: tobacco, alcohol, and healthy foods. Practices include moving alcohol to the back of the store, separating it from sodas and other beverages, and reducing the amount of signage for tobacco and alcohol products. Raising signage to adult eye- level instead of at a child's eye level targets legal age drinkers rather than youth. Offering fruits and vegetables, and placing them in the front of the store, is another way to encourage healthier eating practices. Retailers can also work to promote the EBT program for qualifying products. The goal of these practices is to remind shoppers that healthy changes can be easy to make while allowing retailers to highlight healthy items they may already have in their store. Healthy Lamoille Valley (HLV) and Vermont Department of Health are poised to support voluntary healthy retailer practices. HLV has created resources available for retailers to use in their stores. For more information or support, please contact HLV or visit: www.healthylamoillevalley.org/hlv-coalition/.

Marketing Local Products
Direct marketing of locally produced food provides another option for increasing food access and security. Direct marketing occurs when local producers sell directly to the customer rather than going through a distributor or wholesaler. A farmers' market is an example of direct marketing. A Community Supported Agriculture model (CSA) is also a direct marketing tool. Under the CSA model, a customer purchases a "share" up front from a farm, and the farm then distributes a weekly box of produce to the customer. This model gives the farmer an assurance of income and ensures the customer receives a share of food throughout the growing season. CSAs have expanded to include winter shares, meat shares, egg shares, and shares of other food products. Salvation Farms based in Morrisville has a gleaning program that supports local farms and CSAs. Many farms offer a reduced rate for households under a certain income level.

DRAFT

Direct marketing is also found in the Farm to School and Farm to Institution model. These programs encourage farmers to sell products directly to schools or institutions, such as hospitals. Increasing the amount of locally grown produce available for sale at local retailers is also important. Efforts can be enhanced to achieve this by such organizations as the Healthy Retailers Initiative or the Lamoille Fit and Healthy Council.

Community and Backyard Gardening

While communities are limited in what they can do to influence dietary decisions by individual households, they can be instrumental in providing resources and opportunities to increase access to healthy, affordable food. One way is by encouraging the use of gardening, such as community gardening or "backyard" gardening. A community garden is simply a garden where two or more individuals grow plants. Community gardens can be located on private or public property and are often tied into existing organizations, such as schools, senior housing complexes, apartment or multi-family buildings, and religious organizations. Housing complexes may have small gardens for residents. Organizations such as food pantries and food shelves may use community gardening as both a learning tool and a food source. Farmers in some communities make space available for gardeners, for free or for a fee. Some barriers to community gardening include conflict with road crews, costs, and water access. Resources are available to communities through the Vermont Community Garden Network or American Community Gardening Association.

In rural farm communities, it is more common for households to each have their own garden or wild berry patch. Barriers to having a backyard garden include lack of space, lack of tools, and lack of knowledge about how to grow your own food. In villages, residential neighborhoods are generally densely compact, limiting yard space available for backyard gardens. Additionally, some villages have an increasing young, rental population who are often limited in terms of how they can use rental property. While some lots in these communities provide reasonable space for backyard gardens, other residents, especially those residing in the Village Core areas, may benefit from a local community garden plot. Currently, many towns in Lamoille County do not have a community garden. As towns and villages continue to explore green space opportunities, potential community garden space should be given consideration during the design and planning process of new residential developments and recreational facilities.

Organizations throughout the state, such as 4-H and the UVM Master Gardeners Program, provide training in growing and preserving food at home, which is one

DRAFT

way to improve food security and self-sufficiency. Similarly, a community tool set is an option for households, especially smaller households such as renters in the village, to share implements such as shovels, hoes, and rakes without a major investment. Gardening is a way to increase access to affordable, healthy foods.

Cultural Facilities

Cultural resources are those that develop, improve, and enrich the mind. Culture is manifested differently among people and regions. The wealth of cultural opportunities throughout Lamoille County continues to make it a tourist destination and a quality place to live and work. The region's culture is made up of the talented individuals who are artists, musicians, writers, designers, photographers, and crafters who have migrated here or cultivated their craft. Providing a fertile, supportive environment for cultural activities to flourish is crucial for Lamoille County. A multitude of festivals, galleries, museums, theaters, and patron organizations enable these activities to thrive.

Libraries

Libraries in the region are owned by either a municipality and operated by an elected or appointed board, or they are owned by private organizations. There are a total of 11 libraries in the region. Seven of those libraries are municipal, with two of those being "community libraries". Other libraries can be found at Copley Hospital, which houses a medical library, and two privately owned library facilities.

The county's libraries offer a variety of services including: normal circulation of materials (books, movies, audiobooks, CDs, periodicals, e-books), reference, selection and purchase of materials, culling of the collection, materials circulation, special programs, audio-visual equipment and collections, desktop and laptop computers, children's programming, and in some cases, housing of locally important historical artifacts. Some libraries also participate in the state's inter-library loan program, which allows patrons to borrow paper and digital media from other participating libraries across the state.

Libraries also serve as community gathering spaces, employment centers, and a place for creativity. Many local libraries offer recreational equipment like snowshoes and bikes. Many libraries also display artwork from local artists or

DRAFT

offer discount passes to education programs (such as ECHO, the Leahy Center for Lake Champlain in Burlington). Community space allows for physical activity, community meetings, or library special events. Libraries can also serve as community cooling centers during extreme heat events.

Additionally, as information technology and communications become ever more present in daily life, libraries provide services beyond the typical book. Computers at public libraries are used for daily life functions, often because they are Wi-Fi "hotspots". As trends continue towards "going paperless", everything from job applications to health care to access to basic resources now happens by using free computers at libraries.

Libraries in Lamoille County vary in accessibility. The Waterville Library is in the old elementary school where it is not ADA compliant nor is it open year-round. The Wolcott Library is located across from the Wolcott Town Office on Railroad Street. Centennial Library in Morristown and the Lanpher Library in Hyde Park both spent many years fundraising for improvements which have been completed in phased approaches as fundraising has allowed.

While specific funding varies in each town, it generally comes from investments of past endowments, annually from the municipality's budget, or through grants for which the libraries specifically apply. For libraries to be eligible to receive state or federal grant money, they must be financially supported, at least in part, by their municipality.

Because of the role that libraries play in filling needs for citizen access to information and resources, LCPC supports and encourages library expansions, ADA accessibility, and increased visibility.

Museums, Galleries, and Cultural Facilities

There are a number of cultural facilities in the region, including museums and galleries. Not all are listed below. Many of the county's eight historical societies operate their own facilities and many are non-profit organizations. Others, such as the Noyes House Museum, are owned by municipalities. They all care for their own collections. Historical societies often hold lectures and talks open to the public and preserve town history and photographs.

Some historical societies have adequate facilities to store and display artifacts while others are looking for ways to better preserve their collections.
The Ski and Snowboard Museum is housed in the 1818 Old Town Hall in Stowe.

DRAFT

The museum houses a collection of skis, snowboards, boots, bindings, memorabilia, photographs, art, and library and archive materials, more than 10,000 items chronicling the evolution of winter sports in Vermont.

River Arts is a community arts organization based in Morrisville, formed in 1999 as the result of a community planning forum that set creating an intergenerational community arts center as a top priority. At that time, there were no arts programs available to most residents of Lamoille County. River Arts offers classes, workshops, exhibits, concerts, and other special events to the residents of Lamoille County for free or at affordable costs. River Arts offers youth programs, adult programs, an Elder Art Program, events, and galleries. In the future, River Arts may consider expanding their programming. The benefit this non-profit organization provides to the region makes it an example of a collaborative partnership to be supported.

Founded by artists in 1984, the Vermont Studio Center in Johnson is the largest international artists' and writers' Residency Program in the United States. The Center is spread across 30 historic buildings in Johnson and provides invaluable resources to the region.

Dibden Center for the Arts houses a 500-seat theater and an incubator for the Vermont State University, Johnson Performing Arts Department. Events range from local to nationally known performers. Performances are open to the community. The Center also houses the Julian Scott Memorial Gallery that hosts student, faculty, and touring art exhibits.

Performing arts space is formalized, such as the Spruce Peak Performing Arts Center, a 420-seat center in Stowe and the Hyde Park Opera House, a non-profit organization dedicated to the arts, and informal, using available facilities like schools, parks, and senior centers.

Art galleries feature locally and nationally known artists. Art exhibits can be found in formal galleries, restaurants, and post offices.

Public art installations range from decorative banners on light posts to bike racks to sculptures in parks and on streets. Public art helps create an inviting community and showcases local talent.

Arts and the Creative Economy

The arts help to define many of Lamoille County's towns and villages. Not only

DRAFT

do they help define regional character, they also provide local employment and bring visitors to the region's village centers who may frequent other businesses. As the number of studios and art galleries grow, so will the demand for local sources of supplies.

In addition to the arts, the "Creative Economy" includes film and new media, software and game development, publishing, advertising and marketing, and high-tech manufacturing arts. The creative economy provides clean, well-paying, skilled jobs. Provided high-speed internet is available, many Creative Economy firms can "locate anywhere". In a 2013 survey conducted by the Vermont Office of the Creative Economy, 65% of businesses in the sector stated that Vermont's "clean, natural environment and working landscape" was a key factor in determining where to locate. Other important factors included Vermont being an "environmentally conscious state", a past history and residence in Vermont, and proximity to family and friends. One-third of businesses also indicated a desire to locate in a compact, walkable, "authentic" community or downtown. Lamoille County's natural beauty, authentic historic character, wealth of recreational assets, growing art community, and proximity to the Burlington and Montpelier areas place Lamoille County in an attractive location for businesses operating in the Creative Economy.

Creative Economy firms in Lamoille County range in size from one person advertising studies to a publishing company with several dozen employees. Locating additional firms in Village Centers represents opportunities to create "economic anchors" for other businesses that rely on a local customer base (such as local retailers and restaurants). Larger Creative Economy firms (and other professional offices) may be able to locate in larger Victorian homes located in Village Centers, providing property owners with an alternative to conversion of these properties into multi-unit rental housing. Still other Creative Economy endeavors require little infrastructure. Some arts-based industries may be appropriate uses for properties going through a brownfields remediation.

DRAFT

Public Facilities and Services: Strategy

Access to quality education is necessary for Lamoille County's economy. Public services provided to the community include education, cemeteries, and solid waste management. Electrical utilities can be found in the Energy Chapter while Land Use outlines municipal wastewater and water systems. Other public services are found in the Human Services and Public Safety Chapters. The educational needs of Lamoille County should support a highly skilled regional workforce that meets the needs of existing employers and supports new ones, while growing healthy, active, and engaged young people ready to face the next decades.

The following strategy is intended to guide policies and action items related to public facilities and services: ***Community investments such as educational, cultural, recreational, healthcare, and municipal services will aid in attracting economic development opportunities.*** Many people who choose to settle in Lamoille County do so because of the quality of life they find here. People who grow up here may choose to stay for many of the same reasons. Maintaining and strengthening community investments and public services will stimulate local and regional economies to encourage growth.

DRAFT

POLICIES & ACTION ITEMS

Policy: *Encourage efforts to develop a safe, stimulating, and inclusive region that offers good schools and opportunity for its young people, and respects the region's values, natural beauty, and resources (including both the natural and constructed).*

Action Items

- Upon request, assist municipalities with amendments to ordinances and zoning that promote crime prevention and reduce substance misuse in licensed establishments, retail outlets, and public spaces.
- Assist municipalities with identifying non-regulatory tools to strengthen healthy communities.
- Collaborate with regional and local partners to improve and identify new parks, recreation, and green spaces as well as strategies to build vibrancy throughout the region.
- Support projects that reinforce the value of youth in the community.
- Prioritize infrastructure investments that promote environmentally safe and healthy lifestyles.

Policy: *Support broad access to enriching educational opportunities for residents of all*

ages.

Action Items

- Support the expansion of educational offerings for all levels of education.
- Assist school boards and communities with tracking population changes to ensure enrollment needs and capacities are met.
- Support inter-municipal coordination in planning for changes in school capacity, class sizes, and programs.
- Support schools and parent/teacher groups with grant writing and research to expand, improve, or develop facilities, resources, services, and programs.
- Foster connections between Farm-to-School organizations and schools in Lamoille County to increase access to healthy foods and support local food producers.
- Encourage schools and educational institutions to work with retirees in transferring skills to the next generation through volunteering, mentoring, or other partnerships.
- Work with schools, municipalities, parents, and other organizations, to find creative ways to improve safe walking routes to school and reduce student time on busses.
- Upon request, assist communities and schools with utilizing facilities during off hours and vacations.
- Aid organizations and schools with linking and developing trail systems, community green space, and recreation in the region.
- Encourage public facilities to upgrade HVAC systems to improve air quality.
- Encourage schools and school facilities to be disaster resilient. Many schools also serve as local emergency shelters so equipping them with generators and increasing flood resiliency is important.
- Encourage emergency preparedness education in the classroom by collaborating with emergency responders.

Policy: *An adequate supply of public facilities is encouraged in downtowns and village centers.*

Action Items

- LCPC supports locating community "anchors", such as municipal offices, schools, libraries, community gathering/green space and churches in downtowns and village centers.
- Infrastructure extensions should be focused in designated growth centers

DRAFT

and in municipalities that have current Capital Budgets in place.
- The location of State of Vermont agencies, departments, divisions, and programs are encouraged in Lamoille County communities.
- Encourage municipalities to plant shade trees and install public drinking water fountains in public outdoor spaces.
- Work with municipalities to identify abandoned or underutilized public facilities and explore opportunities for reuse.

Policy: *An adequate supply of materials/needle collection facilities should be made available throughout the region for all residents.*

Policy: *Lamoille County businesses, residents, and public facilities should be equipped to enact and follow Act 148, Vermont's Universal Recycling law.*

Action Items

- LCPC supports working closely with public facilities and solid waste management organizations in the appropriate siting for new facilities for waste collection. Enterprise Areas may be most appropriate for new waste facilities, provided siting criteria are met.
- Infrastructure is encouraged to support implementation of Vermont's Universal Recycling law, including increased accessibility to composting sites for organics diversion.
- LCPC is committed to working with public facilities, such as schools, and large businesses to reduce the amount of waste created or sent to a landfill.
- Work to ensure local and state regulations allow and encourage agricultural operations to continue composting organics to increase diversification of operations, support on-farm activities, and increase the number of locations that accept organic waste.
- Support Lamoille Regional Solid Waste Management District with enacting Universal Recycling changes as requested.

DRAFT

Public Facilities and Services: Background and Inventory

Education

Access to a system of quality education is necessary to achieve social and economic goals. Sustained regional and economic development will be impossible in the region unless financial and geographic access to education is affordable and geographically convenient. Without a well-educated work force, the region, like the rest of Vermont, will be unable to compete with other states for well-paying jobs.

Throughout the late 1980s and 1990s, recessions emphasized the relationship between economic development and an educated work force. Economic restructuring has resulted in a shift away from jobs in manufacturing to service sector employment. Many of these new jobs are at lower wage levels. Personal income levels increase with gains in educational attainment. The earning gap between college graduates and high school graduates remains significant, with college graduates earning 70% more. Poverty decreases with educational attainment.

In particular, workforce development needs to start at an early age. Ensuring the systems, partnerships, and support networks are in place for a coordinated and appropriate education system across the county is one of the roles of LCPC.

Early Education

Early education has been shown to be critical to the future success of children in school. There are a variety of early care and educational opportunities available to residents of Lamoille County. Several private, pre-kindergarten educational programs are located within many communities' elementary schools. The Lamoille Family Center (LFC) 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 developmental delays.

Primary School

There are 8 public elementary schools in the region, one in each of the local school districts associated with the 10 towns in the region. These schools range in size from a one-room school house in Elmore to the Hyde Park Elementary School, which is almost at capacity.

DRAFT

In addition, a private Mennonite School in Wolcott provides education to members of their community. All Saints School in Morristown, is an independent Catholic school for children in pre-kindergarten through eighth grade. Home schooling in most of the school districts in the region is monitored through the Vermont Department of Education.

Secondary Education

There are three public high schools (Lamoille Union, Peoples Academy, and Stowe High School), as well as the Green Mountain Technology and Career Center, serving the secondary educational needs of the county. Some students also attend Hazen Union or Craftsbury Academy.

Peoples Academy

Peoples Academy, located on Copley Avenue overlooking Morrisville, serves the secondary educational needs of the community of Morristown. Peoples Academy also serves students from the neighboring communities of Elmore and Wolcott.

Stowe Middle/ High School

Stowe Middle/High School, located on Barrows Road in Stowe, serves the educational needs of students from grades 6 through 12. Stowe Middle/High School also serves students from the nearby communities of Elmore and Wolcott.

Lamoille Union High School

Lamoille Union High School is located in Hyde Park, Vermont. It is part of the Lamoille North Supervisory Union which serves the six towns of Belvidere, Cambridge, Eden, Hyde Park, Johnson, and Waterville. The High School shares a campus with the Lamoille Union Middle School and the Green Mountain Technology and Career Center.

DRAFT

Table 5-4. School Enrollment Trends (K-12)

	Enrollment 2021-2022	Enrollment 2023-2024	Supervisory Union	Capacity Concerns?(The current concern is possible closure rather than capacity)
Belvidere Elementary	*Attend Waterville Elementary*	Attend Waterville Elementary	Lamoille North	No. May re-open if population trends change.
Cambridge Elementary	315	345	Lamoille North	Potentially if capacity surpasses 400.
Eden Elementary	116	135	Lamoille North	No concerns.
Elmore Elementary	18	17	Lamoille South	No concerns.
Hyde Park Elementary	205	209	Lamoille North	Yes. Concerns about capacity; renovated in 2015.
Johnson Elementary	226	235	Lamoille North	No. Renovation in 1997 has capacity for 350.
Morristown Elementary	353	344	Lamoille South	Yes. Concerns about capacity.
Stowe Elementary	409	415	Lamoille South	No. Expansion in 1991
Waterville Elementary	74 *(includes Belvidere students)*	86 *(includes Belvidere students)*	Lamoille North	No. New facility opened in 1996.
Wolcott Elementary	113	121	Orleans Southwest	Yes. Monitoring enrollment and population trends.
Lamoille Union Middle School	274	267	Lamoille North	No. Expansion in 2002.
Lamoille Union High School	507	506	Lamoille North	No. Expansion in 2002 has capacity for 640.
People's Academy Middle	266	236	Lamoille South	Unsure due to changing enrollment.
People's Academy High	272	308	Lamoille South	Unsure due to changing enrollment.
Stowe Middle/High	449	452	Lamoille South	No. Expansion in 1991.

Source: Vermont Agency of Education District Enrollment Reports

DRAFT

Green Mountain Technology and Career Center

The Green Mountain Technology and Career Center (GMTCC) has a close association with, but is separate from, the Lamoille Union High School. It shares the same physical location and the same Board of Directors on matters concerning finances. GMTCC falls under the Lamoille North Supervisory Union.

GMTCC provides technical education to area high school students and adults. GMTCC offers programs in 13 different areas to students from Lamoille Union High School, Hazen Union High School (Hardwick), Stowe High School, People's Academy (Morrisville), and Craftsbury Academy. Many of the programs have agreements with colleges and universities that allow students to earn college credit. Students who are interested in attending a full-day technical program are

selected based on an application process that includes academic record, interest, attendance record, credit status for graduation, and potential for success. Part-day opportunities exist on an individual basis.

GMTCC students participate in activities at their home high school. Academic coursework is available to all students during the day. College preparatory classes are offered in addition to classes that support students who plan to enter the workforce immediately after high school graduation. Noteworthy and award-winning programs include forestry and land management, automotive technology, culinary arts, and heating, ventilation, and air conditioning (HVAC).

School Choice

Vermont's statutes allow for school choice. Towns that do not maintain secondary grades may tuition students to a school determined by the parent or guardian of the student. Parents may choose from public or approved independent schools. The school board will pay full tuition to any public school, or any school deemed by law to be a public school. The school board will pay full tuition for an approved independent school or the state average tuition for union high schools, whichever is less. The electorate may authorize a higher payment to independent schools.

Wolcott "tuitions" its 7th – 12th grade students to regional schools of their choice. Most students attend Lamoille Union Middle and High School, Hazen Union High School in Hardwick, Craftsbury Academy in Craftsbury Common, People's Academy in Morrisville, or Stowe Middle and High School in Stowe. Elmore also "tuitions" its middle and high school students outside the town. Elmore students can enter a lottery to attend a school of their choice outside their School District. Elmore students go to Peoples Academy by default. Since bus transportation is provided to Morrisville, the majority of Elmore's middle and high school students attend People's Academy in Morrisville but other students attend surrounding schools within the Lamoille Valley.

School Boards and Supervisory Unions

Each Vermont town is a School District with a governing School Board. School Districts are grouped together to form Supervisory Unions, governed by a Board with representatives from each member School District and employing a Superintendent and staff. The Supervisory Union budget is voted annually.

Supervisory Unions are statutory creations to coordinate educational efforts, increase economies of scale, enhance cost efficiencies, and expand educational

DRAFT

opportunities for students. The Supervisory Unions, through their superintendents, administratively oversee the member towns' schools. The Unions also provide special educational, financial, and planning services. The supervisory unions do not own any of their own facilities. Lamoille County is part of three Supervisory Unions.

Schools and Health

Much can be done to maintain and enhance the educational and nutritional programs at schools throughout the region in order to improve health and wellness among children, including:

- Educating students on healthy eating habits
- Providing ample recreation and physical activity opportunities
- Increasing access to healthy and locally produced food

Schools may have gardens, which can serve as a teaching tool, source of food for the school's lunch program, offer physical activity for students, and increase exposure to new foods for kids. Some schools in the region implement tenets of the farm-to-school movement. For example, the Green Mountain Farm-to-School Network, based out of northern Vermont, provides resources, education, and assistance to schools for fresh food in cafeterias, to support local farms, and to provide education programs, events, and activities for students and the community.

Providing recreational facilities, such as playgrounds, fields, or gyms, encourages students to be more active. Nurturing partnerships with existing athletic facilities or ski resorts, nearby trails, and recreation areas provides kids with exposure to routine physical activities. Schools may choose to adopt wellness policies and utilize resource tools to promote wellness among children while building on existing curricula. Afterschool programs may offer classes that promote fitness and wellness.

Additionally, schools can encourage healthy practices such as walking and biking to school by coordinating safe school routes and identifying improvements made to the transportation network. Many parents will drive their children to school because of unsafe or inadequate routes due to poor sidewalks, lack of crosswalks, dangerous traffic situations, or long travel times on busses. This is time children could spend on school work, recreation, or social interaction.

Ensuring schools stay current with changes in dietary needs, food system advancements, transportation needs, and educational tools is a collaborative

DRAFT

effort for school officials, parent/teacher organizations, supervisory unions, farmers, and other partners.

In 2015, Act 46 was adopted, aimed at encouraging and eventually requiring school districts to merge into one another over the course of 4 years. The aim of the Act is to create a a more streamlined education system in the county.

Post- Secondary Education

Vermont State University, Johnson
Founded in 1828 and later designated as a college dedicated to teacher training, Vermont State University, Johnson (VSUJ) is in the Vermont State College system. Today VSUJ offers more than three dozen undergraduate programs, three master's degrees, and associate's and certificate offerings. In addition to education, notable programs include the sciences and the fine and performing arts. In the summer of 2023, Johnson State College joined the Vermont State University school system.

VSU Johnson encourages area residents to take advantage of campus facilities and programming. The VSU Johnson Library is open to residents year-round. During the academic year, VSU Johnson offers an array of cultural, educational, and athletic events that are free and open to the public. These include music and theater performances, guest lectures, readings and exhibits by visiting writers and artists, and home games for 13 varsity sports.

One of the campus facilities most widely used by area residents is the VSU Johnson SHAPE Center. Features include an Olympic-sized indoor swimming pool, modern fitness center and weight rooms, an indoor rock-climbing wall, and a spinning studio. Group fitness classes are offered throughout the academic year. VSU Johnson also offers an 18-hole disc golf course to area residents.

Other, less tangible services provided by VSU Johnson are the volunteer efforts of its students and employees; serving the greater community is a core value of VSU Johnson. In 2013, VSU Johnson became an outpost of the South Burlington Vet Center, providing counseling and advice to area veterans and military-connected students on Fridays. Previously, veterans and their families had to travel to South Burlington or even farther to meet with a veterans' representative to discuss such issues as benefits, readjusting to civilian life, or personal concerns. In 2014, VSU Johnson explored a partnership with the Veterans Administration in order to further increase the campus-based services available

DRAFT

to area veterans.

Public service permeates the culture at VSU Johnson in numerous other ways as well. The "SERVE Local" program provides weekly opportunities for students to volunteer with regional organizations. Activities include cleaning up the Lamoille River, serving lunch at the weekly Johnson CommUNITY Lunch program (and raising funds for the Johnson Food Shelf in the process), hosting blood drives for the American Red Cross, stacking firewood and helping to weatherize the homes of low-income residents, and collecting food for Thanksgiving dinner baskets distributed by the Johnson Food Shelf. VSU Johnson students also serve as mentors to local youth.

In addition to participating in many student-led service programs, VSU Johnson faculty and staff hold leadership positions with a number of civic, educational, and charitable organizations. In 2013, a survey showed they served as board members and representatives of at least 19 local organizations.

Since 1971, VSU Johnson has housed Vermont's longest running Upward Bound program, a federally funded program that serves high school students from families with modest incomes who show academic potential to succeed in college. It consists of a six-week campus-based residential program in the summer and academic support and programming throughout the school year. Over 100 high school students from seven area high schools in Lamoille and surrounding counties participate annually.

The VSU Johnson campus encompasses 350 acres that extend into both the Town and the Village of Johnson. The College also owns and manages the Babcock Nature Preserve in Eden.

VSU Johnson is one of the largest employers in Lamoille County, with more than 250 full- and part-time employees. The College generates an estimated $23 million in economic activity for the region annually.

Community College of Vermont
The Community College of Vermont (CCV) is an accredited member of the Vermont State College System. CCV offers programs for students seeking an Associate's Degree and those interested in a Certificate Degree in a particular field. Many CCV students are adults returning to college for higher educational opportunities in order to improve their earning ability.

DRAFT

CCV has 12 field offices across the state, including one in Morrisville. The Morrisville office has an enrollment each semester of 200 to 250 students. Classes are offered five days a week and four evenings a week. The Morrisville office is looking to expand their facilities in the near future. Classes are currently held at the CCV office and at two local high schools.

Other Educational Opportunities

Vermont Studio Center
The Vermont Studio Center is a private, not-for-profit institution located in the Village of Johnson offering advanced study for established artists, many of whom have advanced degrees. The Center owns and/or leases facilities throughout the village that provide residential housing and space for studios, galleries, and Center administration. Throughout the year, the Studio Center offers exhibitions, public lectures, and readings for the community.

The Studio Center offers a free summer art program for children, teenagers, and adults. In addition, the Center's Community Arts Director teaches art classes at the Johnson Elementary School.

Central Vermont Adult Basic Education
CVABE offers free literacy instruction for adults and out-of-school youth in Morrisville. CVABE helps students in reading, writing, math, computer literacy, and/or English as another language. CVABE helps students achieve a high school credential and prepare for employment and/or further education. CVABE has six learning centers through Lamoille, Orange, and Washington Counties. Paid and volunteer staff deliver the free instruction.

Laraway Youth and Family Services
Laraway Youth and Family Services, located in Johnson, is a private non-profit organization employing over 100 people. Laraway's two main programmatic components include the Laraway School and Substitute Care program. Laraway is a licensed independent school, approved for special education. The School serves 4^{th} – 12^{th} grade students who have special emotional and behavioral circumstances that keep them from being successful in their own schools and who want to return to their own schools once they get their behavior under control. Laraway Substitute Care is a behavioral treatment program that serves youth who experience problems that make it difficult for them to live in their own communities. Laraway provides services designed to support children, adolescents, and their families as they identify effective ways to address those

DRAFT

problems.

Laraway is also a Licensed Child Placing Agency administering a statewide Foster Care program that provides daily care, intensive care management, treatment, and crisis intervention services.

Learning Together
The Lamoille Family Center's Learning Together program is a Vermont-recognized independent school for adolescent girls who are pregnant, parenting, or are at-risk of becoming pregnant.

Athletic Academies
The Mt. Mansfield Winter Academy (MA) is an independent winter sports academy that provides a quality academic program for alpine and snowboard student athletes in grades 7 through 12. Since 1993, students from New England and beyond have come to MMWA for a highly individualized winter program in Stowe.

Other ski and recreation-based schools are located throughout northern Vermont. These private institutions offer a targeted education curriculum combining recreation and skills-based learning opportunities.

Non-formal Education Opportunities
Vermont Interactive Technologies (VIT) is available at Vermont State University, Johnson. VIT allows participants to engage in classes or meetings that are held off-site. UVM Extension, for example, offers Master Gardener courses through VIT. This technology allows for greater exposure to educational opportunities offered close to home.

Numerous groups exist throughout the county which support and enrich the educational opportunities of all Lamoille County residents of all ages and abilities. These groups, organizations, and activities should be supported as they provide non-formal educational opportunities. Further, schools that work with special populations or focus areas provide targeted educational opportunities for diverse audiences. Examples include therapeutic horse farms, charter schools, and art-based curricula.

Workforce Development
Essentially, workforce development means providing opportunities for education and training for high-quality jobs for everyone. The Vermont

DRAFT

Workforce Development Council, a statewide initiative, aims to provide the following to all Vermonters: a well-rounded education, innovation and creativity with a passion for lifelong learning, and the personal and social skills needed to succeed in collaborative workplaces. Competition for jobs occurs at the local, regional, state, and national levels.

Vermont is a state that is susceptible to the "brain drain": young adults are educated in Vermont but leave the state for higher salaries and more challenging employment opportunities. Retirees then move back to Vermont to enjoy the quieter life. This is noticeable in Vermont's changing population, where the population of older citizens is increasing but overall population growth is declining.

Organizations such as the Lamoille Workforce Investment Board, Lamoille Chamber of Commerce, and GMTCC are focused on workforce development and investment throughout the county. Their current focus is on education at all age levels. For example, through encouragement of the Workforce Investment Board, GMTCC students are not only graded on academic performance but also on their life skills, such as how they perform in mock interviews, courses in finances, how they dress, and their demeanor. These grades stay on their permanent transcripts and have been requested by prospective employers. In this way, students learn both the "hard" and "soft" skills.

Workforce development is not the responsibility of one organization. Community collaboration can identify the needs and strategies to develop new and improve upon workforce development strategies already in place, while encouraging adaptation to changing economic trends. The needs of employers and employees must be considered, including the expertise of retirees in transferring skill development to the next generation. This is an unexplored avenue in Lamoille County.

Regional discussions have identified the following workforce opportunities:

- A need for adequately trained workers residing in the Region or willing to move to Lamoille County
- Improve Lamoille County workforce basic skills knowledge, such as computer proficiency
- More competitive salaries in Lamoille County to compete with neighboring regions
- Affordably priced workforce housing
- Inter-regional communication regarding available training and education

DRAFT

opportunities, for example connecting local resorts to the hospitality training program at Vermont State University, Johnson or expanding hospitality training opportunities

Public Facilities

Municipalities in Lamoille County have town and village offices. For information on the condition, capacity, and prospective use of those facilities, please contact the municipality.

As the Shire Town, Hyde Park hosts a branch of the State's Court System, including the Lamoille Superior Court, which includes the Lamoille Probate Court, Lamoille Family Court, and Lamoille District Court.

The Department of Health has a district office located in Morrisville. This office offers the following programs: Breastfeeding & Mother-to-Mother Support; Children's Integrated Services (through the Department of Children and Families); Early Periodic Screening, Diagnosis, and Treatment Program; Eligibility Screenings for 3SquaresVT, Reach UP, and Medicaid; Ladies First, and Vermont WIC: Women, Infants, and Children. The District Office includes all of Lamoille County plus Craftsbury, Greensboro, Hardwick, Stannard, and Woodbury.

The Agriculture Building in Morristown offers branches of the federal Natural Resources Conservation Service and Farm Services Agency as well as the UVM Extension. The VTrans has district garages located in Cambridge, Eden, and Morrisville. All towns have a post office with varying levels of service provided. State offices are encouraged to locate in Lamoille County.

Cemeteries

There are approximately 121 acres of cemetery in Lamoille County.

In Vermont, authority to manage public cemeteries is vested with the local legislative body. The day-to-day maintenance and care of cemeteries in the region falls to three types of entities: cemetery associations, cemetery commissions, and interested individuals. Cemetery associations are private, non-

DRAFT

profit corporations that exist to own property and act on a regular basis to take care of the cemeteries under their purview. Cemetery commissions also act routinely to care for the cemeteries; however, their authority to act in this capacity is a delegation of the authority granted to the Selectboard.

The cemetery commissioners and the cemetery associations are responsible for laying out the cemeteries, selling lots, and securing on-going care and maintenance of the cemeteries, as well as maintaining records of the cemetery. Local commissions are responsible for assessing cemetery need.

There are no crematory facilities in Lamoille County. Those seeking cremation are serviced out of South Burlington or St. Johnsbury. There are three operating mortuaries in the county. Alternative options to traditional forms of burial have become more popular in Vermont. Lamoille County residents should reach out to the appropriate businesses if they would like to inquire about alt-burial services.

Solid Waste and Materials Management

Under Vermont law (10 VSA §6602), solid waste is defined as any discarded garbage, whether solid or liquid, including hazardous waste. Excluded from this definition is animal manure. Solid waste management is any activity resulting in the storage, transportation, treatment, or disposal of the wastes. Historically, refuse in Vermont has been trucked to two state-controlled landfills or recycling facilities, private landfills or recycling centers, composted, or trucked out of state to landfills. With the passage of Act 148 (Universal Recycling Law) in 2012, and the closing of one of Vermont's state landfills, Vermont's waste management system is undergoing a change.

DRAFT

All towns in Lamoille County, plus Craftsbury and Worcester, belong to the Lamoille Regional Solid Waste Management District (LRSWMD). The LRSWMD is one of 15 solid waste management districts established by the State of Vermont. Lamoille County has eight transfer stations, with six maintained by LRSWMD and two privately owned (see map below). Seven private facilities accept refuse.

Universal Recycling Law (Act 148)

Act 148 is the nation's first ever statewide Universal Recycling Law. Starting in July 2015, it became illegal to throw away mandated recyclables. In 2016, leaf and yard debris and clean wood scraps were made illegal to dispose of in a landfill. In 2020, food scraps were banned from landfills. The law was phased in over time by material and generator type to allow for the services and infrastructure to be developed.

LRSWMD, private facilities and collectors who offer trash or curbside services, must also provide services for mandated recyclables, leaf and yard debris, and food scraps. The type and location of services needed for rural areas of Vermont is regulated by ANR. The fee structure for these services is controlled to protect ratepayers and provide incentives for higher diversion of valuable materials. Public buildings and public lands with garbage and/or recycling containers will be required to offer separate bins for trash, recyclables, and organic materials (i.e. food scraps).

Compost

The move to composting organics may be the biggest change. Everyone, from private residences to large institutions such as hospitals and schools, are required to divert organic residuals from landfills. Residential organic residuals are almost 1/3 of all residential waste! As organics decompose in landfills, they emit methane gas, which is a greenhouse gas that is 20 times more harmful than carbon dioxide. The Food Recovery Hierarchy offers ways to reduce, divert, and recover organics (at right).

The law provides new opportunities for residents and businesses. Currently, facilities are limited in Lamoille County to receive organic materials for composting (the apple core image on the map below). It is best to check for available facilities regularly. Some unregistered facilities also accept organic materials. Anything above a "backyard" level of composting is regulated under Vermont law, with certain exemptions offered for qualified agricultural

operations. In recent years, composting has gained traction and interest as the "food renaissance" has blossomed.

The green and red nodules shown on the map below demonstrate where food producers or distributors (including restaurants and stores) are located.

Consider:

- Composting reduces greenhouse gas emissions (some people estimate that composting a 5 gallon bucket of food scraps equals 1 gallon of gasoline that is not burned)[1]
- Composting reduces costs and energy associated with managing waste
- Compost is a better use of organic matter and nutrients than sending food scraps to the landfill
- Compost creates a rich, healthy fertilizer for gardens and landscaping
- A dearth of composting facilities in Vermont is an opportunity waiting to happen
- Composting improves water quality by building healthier soil to retain water and control erosion and strengthen our resilience to climate change
- Using compost instead of fertilizer not only saves farmers and gardeners money, it helps their nutrient management plans by improving soil quality

[1] Vermont Agency of Natural Resources, Department of Environmental Conservation, Waste Management & Prevention Division, http://www.anr.state.vt.us/dec/wastediv/compost/main2.htm

Hazardous and Other Wastes

Hazardous wastes have properties or contain chemicals which make them dangerous or capable of having harmful effects on public health or on the environment. A waste is considered to have been "generated" when it is put into a container for disposal or a determination has been made that the material is no longer useable. Hazardous wastes managed in the course of running a business – this includes wastes from municipalities and from businesses operated out of a home – are regulated by the State. Household hazardous wastes are common household products that

DRAFT

exhibit characteristics of hazardous waste, such as being toxic, corrosive, ignitable, or reactive. As a result, these products may be harmful to human health and/or the environment. These products include household cleaners, automotive products, and lawn and garden products.

LRSWMD offers hazardous waste collection periodically throughout the year. Contact the LRSWMD for more information. Paint can often by recycled through PaintCare, a program that allows leftover paint to be returned anytime of the year at no cost to registered collectors. More information is available at www.paintcare.org.

Vermont offers a free "e-cycle" program: computers, monitors, televisions, printers, and computer peripherals, regardless of age or condition, can be recycled at registered facilities for free. Check with the LRSWMD for more information and locations. Fluorescent bulbs containing mercury, a substance banned from landfills in Vermont, can also be recycled through various retailers in the area, or can be dropped off at any of the LRSWMD stations.

Unwanted pharmaceuticals also pose safety, health, and environmental threats. Unwanted medications can pose environmental risks when flushed or discarded in the trash as their residue may ultimately end up in ground or surface water. As a result, consumers are encouraged to use year-round collection locations such as police departments and pharmacies or one-day collection events for proper disposal, so that unwanted pharmaceuticals can be collected and then incinerated. Information on where to properly dispose of unwanted pharmaceuticals is available through Healthy Lamoille Valley.

Needs Assessment

When the State landfill in Moretown closed in 2012, landfill traffic was consolidated at the state-owned landfill in Coventry, most easily accessible by driving up Route 100 through Eden, with trucks traveling the length and width of Lamoille County. While ANR estimates sufficient landfill capacity in Vermont, the increased truck traffic hauling waste to Coventry through Lamoille County has caused negative impacts on the transportation network and community fabric of Lamoille County. To address these issues, expanding facilities capable of receiving solid waste are needed across the state to remove undue burden from Lamoille County. Ultimately, no solid waste solutions are complete unless the amount of waste created and landfilled is reduced. The Universal Recycling Law is a step towards addressing waste that cannot be reclaimed.

To meet the intent of Universal Recycling, registered composting facilities in the region have increased capacity with mobile compost services being offered. Transfer stations are still limited in the rural reaches of the region. Appropriate trucks are used to haul the different types of residuals. The LRSWMD and private haulers have adapted to the changes and

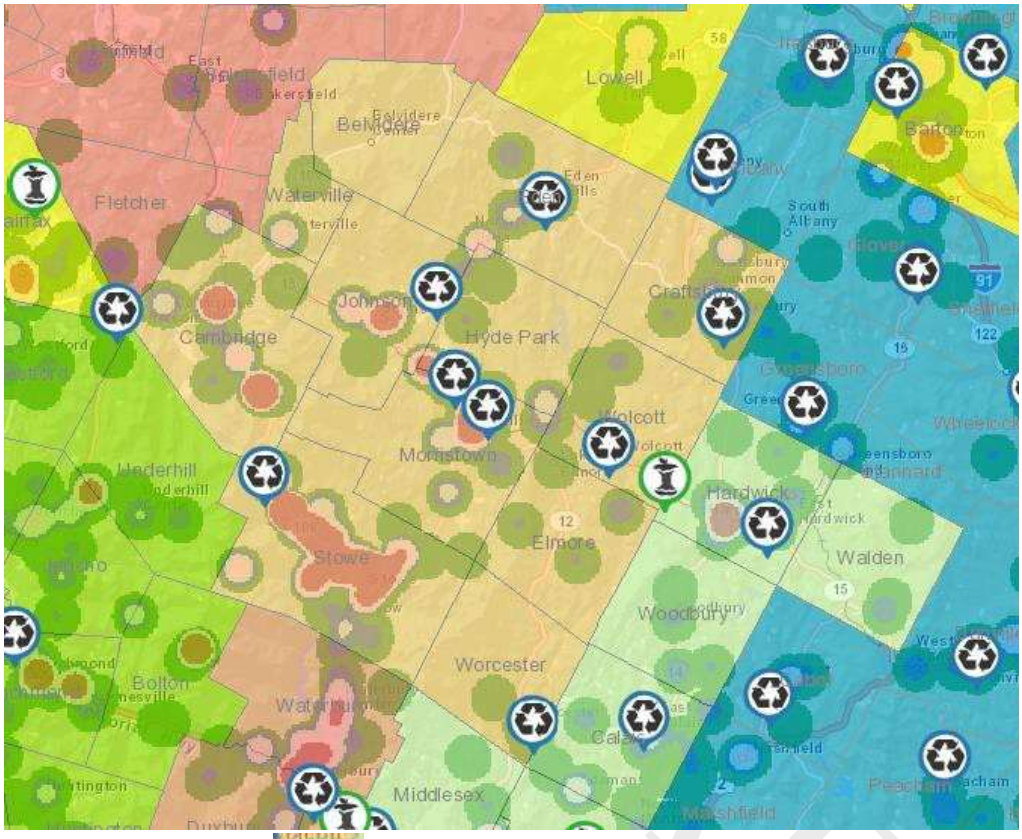
DRAFT

finished the process of charting future opportunities. All Vermont residents, businesses, and public facilities have adapted to the Universal Recycling law. Convenient and consistent materials management across Vermont is a goal of the new law, and ensuring all residents and business owners understand the law is integral to its success.

With the implementation of Universal Recycling, some municipalities have begun discussing how to meet the law. Schools, hospitals, and other large or public buildings will need to install equipment and enact new systems for collecting and sorting refuse, including food scraps and organics. These upgrades come at a capital cost. LCPC is available to provide assistance with meeting the new regulations. The Agricultural Land Use Planning Modules also provide guidance in how to plan for composting facilities. It is available at www.vtfarmtoplate.com.

DRAFT

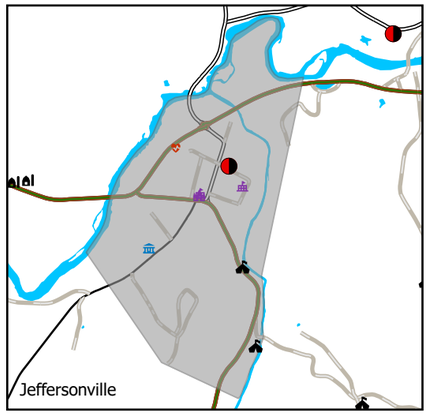
Universal Recycling Materials Management Map, LRSWMD highlight (NEED TO UPDATE)

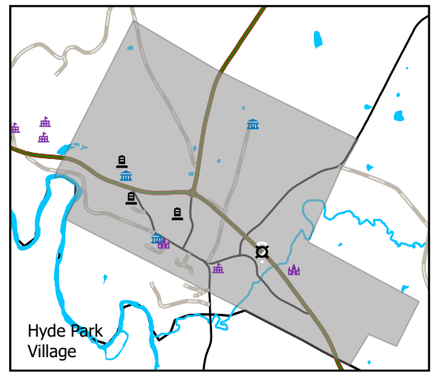


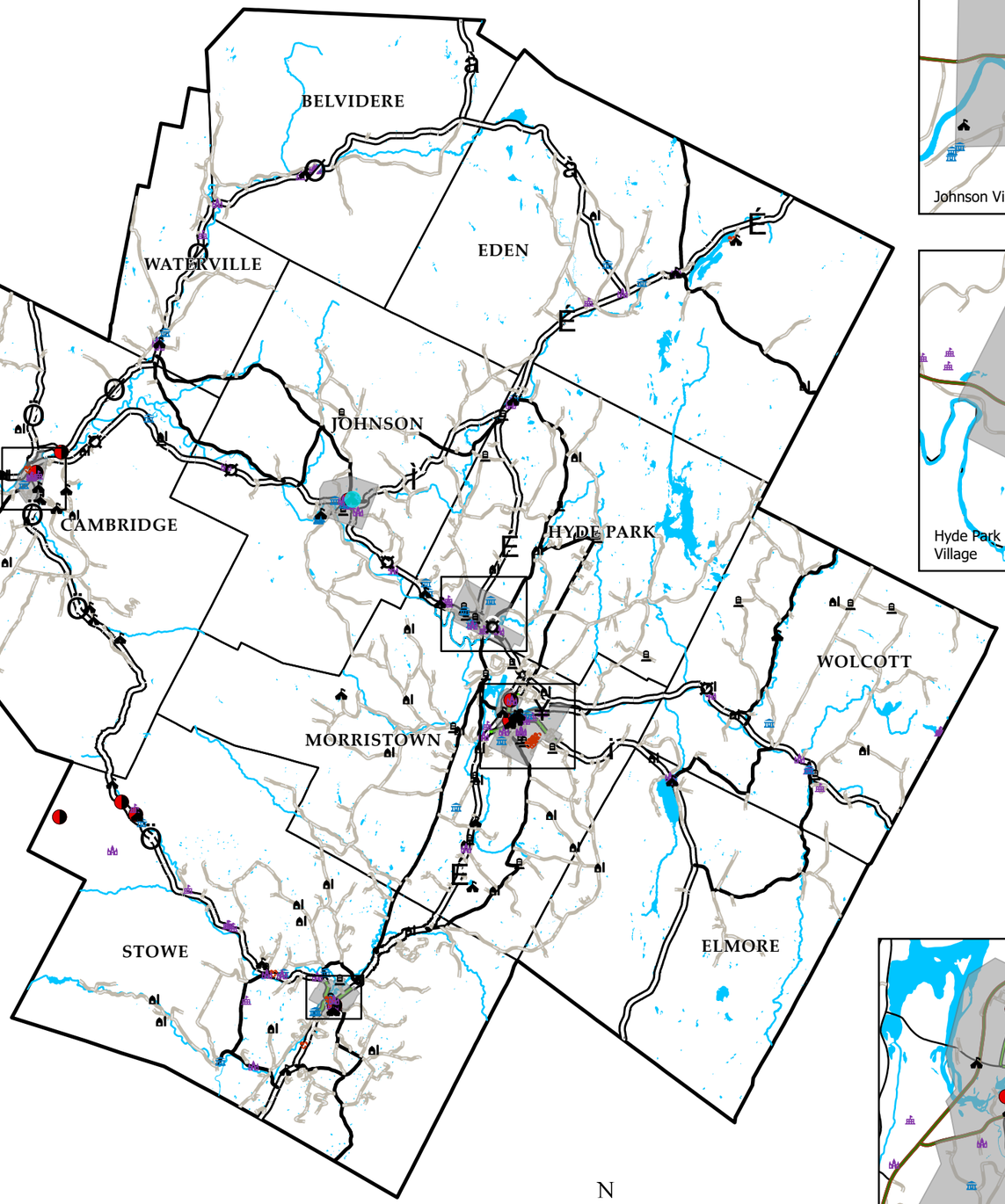
= Transfer station = Compost facility

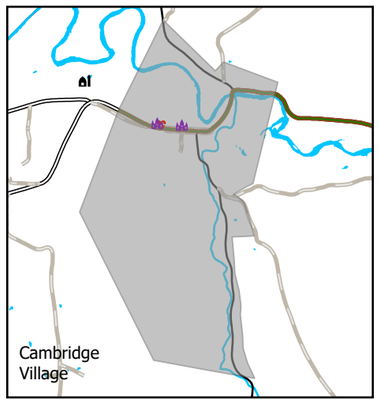
DRAFT

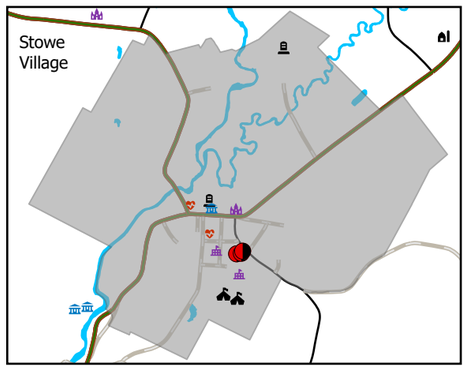
Community Resources
Lamoille County

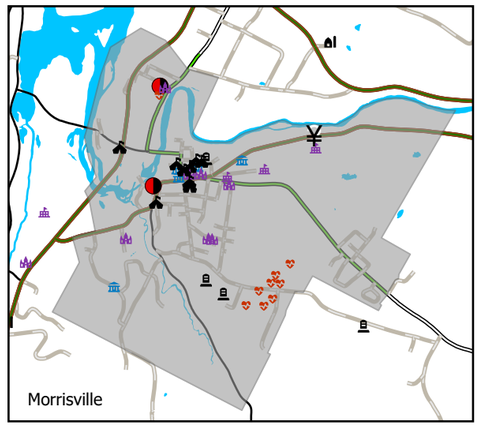








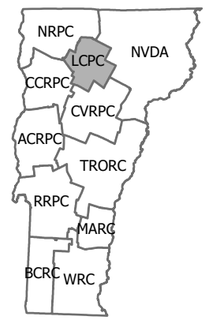




Legend

Community Facilities
- Cemetery
- Commercial Farm
- Cultural
- Educational
- Governmental
- Health Clinic
- House of Worship
- Public Gathering
- Village Boundary

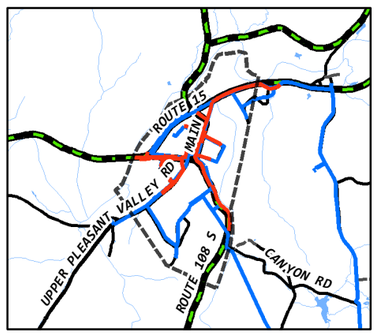
Road Class
- State Highway
- Town Highway Class 1
- Town Highway Class 2
- Town Highway Class 3
- Stream/River
- Lake/Pond



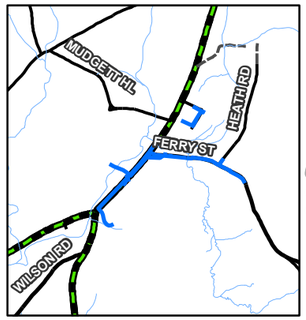
Data Sources
Facilities: VT Data - E911 Site Locations (address points), VCGI, 2025
Political Boundaries: VT Data - Town and Village Boundaries, VCGI, 2025
Roads: VT Road Centerline, VTrans, VCGI, 2022
Water Bodies: VHD-USGS, VCGI, 2001

Municipal Water & Wastewater

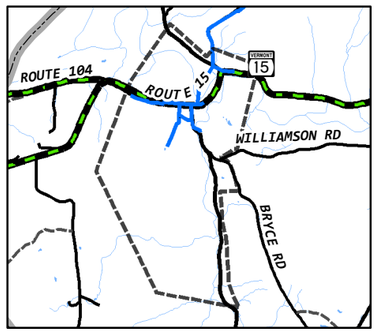
Lamoille County



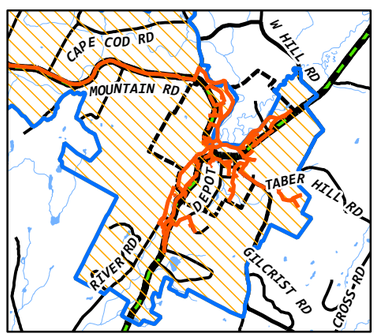
Jeffersonville



North Hyde Park



Cambridge Village



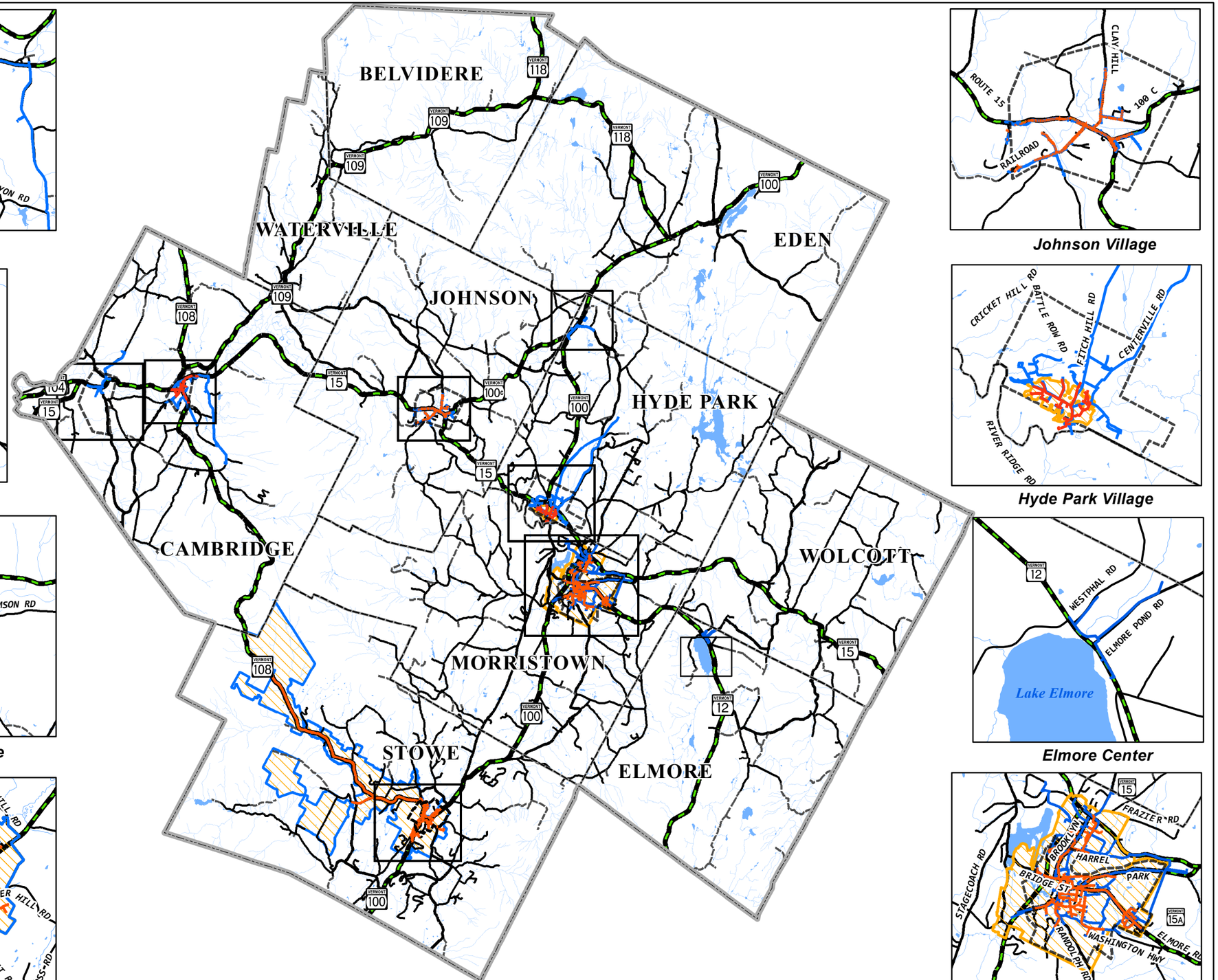
Stowe Village

Johnson Village

Hyde Park Village

Elmore Center

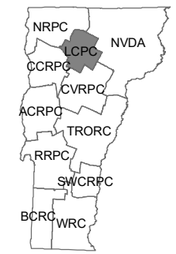
Morrisville



Sewer Lines
Water Lines
Sewer District
Water District
Village Boundary
Lake / Pond
River / Stream
Class 2 Roads
Class 3 Roads
Class 4 Roads
State Highway

N

0 1.25 2.5 5 Miles



Data Sources:

Political Boundaries: VCGI, 1991.
Roads: 1:5000 E-911 Road Data, 2021.
Surface Water: VCGI for VHD-USGS, 2001.
Hyde Park Water/Sewer Lines:Digitized by LCPC, 2014.
Elmore Water Lines: Digitized by LCPC, 2015
Stowe/Morristown Water/Sewer Lines: Town of Stowe, 2008.
Cambridge/Jeffersonville Water/Sewer Lines: Village ofJeffersonville, Cambridge Village, 2005.
Morrisville Water/Sewer Lines: Morrisville Water and Light, 2011.
Johnson Water/Sewer Lines: Johnson Town and Village, 2014.

Created5/9/2023 by LCPC. Map is for planning purposes only, not for regulatory interpretation.

Appendix A: Act 181 Regional Plan Review Checklist

SUMMARY: REGIONAL PLAN APPROVAL CRITERIA FOR [LCPC]

This summary and the pages that follow document how the [**LCPC**] plan dated [**01/15/26**] meets the requirements for approval by the Land Use Review Board. Per 24 V.S.A. § 4348(h)(4), the Land Use Review Board (LURB) will approve the regional plan upon finding that the regional plan meets the following requirements:

(A) Consistency with the **State planning goals** as described in Section 4302 of Chapter 117 with consistency determined in the manner described under subdivision 4302(f)(1) of this chapter.
(B) Consistency with the **purposes of the regional plan** established in section 4347 of chapter.
(C) Consistency with the **regional plan elements** as described in section 4348a of this chapter, except that the requirements of section 4352 of this chapter related to enhanced energy planning shall be the under the sole authority of the Department of Public Service.
(D) Compatibility with **adjacent regional planning areas** in the manner described under subdivision 4302(f)(2) of this chapter.

In addition, the LURB conducts **regional plan map review** following the requirements of 10 V.S.A. § 6033. This approval may happen separately from regional plan approval.

Plan Consistency & Compatibility
As used in Chapter 117, *""consistent with the goals" requires substantial progress toward attainment of the goals established in this section, unless the planning body determines that a particular goal is not relevant or attainable. If such a determination is made, the planning body shall identify the goal in the plan and describe the situation, explain why the goal is not relevant or attainable, and indicate what measures should be taken to mitigate any adverse effects of not making substantial progress toward that goal. The determination of relevance or attainability shall be subject to review as part of a consistency determination under this chapter."* 24 V.S.A. § 4302(f)(1).

"…for one plan to be "compatible with" another, the plan in question, as implemented, will not significantly reduce the desired effect of the implementation of the other plan. If a plan, as implemented, will significantly reduce the desired effect of the other plan, the plan may be considered compatible if" it meets certain criteria listed in 24 V.S.A. § 4302(f)(2).

The following checklists summarize how the [RPC name]'s plan meets the requirements above. Further details regarding how the plan and map meet the various requirements are on the following pages.

	A. Consistency - State Planning Goals: § 4302	Met	Not Met
1	Development Pattern	☒	☐
2	Economy	☒	☐
3	Education	☒	☐
4	Transportation	☒	☐
5	Natural and Historic Resources	☒	☐
6	Quality of Resources	☒	☐
7	Energy	☒	☐
8	Recreation	☒	☐
9	Agriculture and Forest Industries	☒	☐

10	Use of Resources	☒	☐
11	Housing	☒	☐
12	Public Facilities	☒	☐
13	Child Care	☒	☐
14	Flood Resilience	☒	☐
15	Environmental Benefits and Burdens	☒	☐

B. Consistency – Regional Plan Purposes § 4347	Met	Not Met
Is the plan consistent with the purposes of the Regional Plan?	☒	☐

C. Consistency - Required Elements § 4348a	Met	Not Met
1 Statement of Policies to Guide Development	☒	☐
2 Natural Resources and Working Lands	☒	☐
3 Energy	☒	☐
4 Transportation	☒	☐
5 Utility and Facility	☒	☐
6 Implementation Program	☒	☐
7 Development Trends	☒	☐
8 Housing Element	☒	☐
9 Economic Development	☒	☐
10 Flood Resilience	☒	☐
11 Future Land Use	☒	☐

D. Compatibility – Adjacent Regional Planning Areas § 4302(f)(2)	Met	Not Met
Is the plan consistent with the plans of adjacent regional planning areas?	☒	☐

Mapping – Future Land Use Areas	Met	Not Met
Does the plan's Future Land Use Map delineate areas following the required mapping process and standards?	☒	☐

PLAN AND PLANNING PROCESS OVERVIEW

OUTREACH AND NOTIFICATION

The following summarizes outreach and notice as required by 24 V.S.A. § 4348, Adoption of a Regional Plan.

Outreach and Notification Timelines	Complete	Actual or anticipated date(s)
Throughout the planning process, the RPC has solicited the input of member municipalities, local residents, and organizations (24 V.S.A. § 4348(a))	☒	LCPC's meaningful community engagement process outlined on pages 7-13 in the Introduction "Our Planning Process" section. Public engagement process took place March 2025-December 2025. Additional outreach during public hearings process will take place from February, 2026 to June, 2026.
60 days before first RPC hearing: Send draft regional plan to LURB (24 V.S.A. § 4348(b))	☒	LCPC sent Draft Regional Plan Amendment to VT LURB for preliminary review on January 15, 2026.
At least 30 days before first RPC hearing, plan and accompanying documentation sent to state and regional partners ((24 V.S.A. § 4348(d)(1))	☒	First LCPC Public Hearing will be warned by 02/20/2026
At least 30 days before first RPC hearing, RPC provides member municipalities with description of map changes, Tier 1B info, designation info (24 V.S.A. § 4348(d)(2))	☒	By 02/20/2026
RPC holds at least two public hearings (24 V.S.A. § 4348(c))	☒	03/24/26, 05/26/2026
Regional Plan adoption by regional planning commission (24 V.S.A. § 4348(g))	☒	05/26/2026
Within 15 days following adoption, RPC submits regionally adopted plan to LURB for determination compliance (24 V.S.A. § 4348(h)(1))	☒	06/10/26
	☐	

See 24 V.S.A. § 4348(f) for information on amendments to the plan during this process.

COMMUNITY OUTREACH AND MEANINGFUL PARTICIPATION IN PLAN DEVELOPMENT

24 V.S.A. § 4348 calls on Regional Planning Commissions to "allow for meaningful participation" in the adoption and amendment of a regional plan. Meaningful participation is defined in 3 V.S.A. § 6002. This section reports on the community outreach efforts undertaken for this plan's development that advance meaningful participation, including information about engagement of Environmental Justice Focus populations, also defined in 3 V.S.A. § 6002. Document outreach efforts in this section. Please include information about the outreach strategy, how the

RPC sought to reach Environmental Justice Focus populations, and the results of these efforts. This section may include a list or table summarizing outreach activities undertaken in the development of this plan.

LCPC's meaningful community engagement process is outlined on pages 7-13 in the Introduction "Our Planning Process" section of the 2025 Lamoille County Regional Plan Amendment. The community engagement and outreach process took place March 2025-December 2025. Additional outreach will be conducted per statute during the public hearings process from February 2026 through June 2026. An outline of meaningful community engagement that took place from March-December 2026 is listed below.

2025 Regional Plan Amendment and Meaningful Public Engagement

In accordance with Act 181 in early March 2025 the Lamoille County Planning Commission began public outreach for the 2026 Amendment of the Lamoille County Regional Plan to comply with Act 181 and Act 47 statutory requirements. In addition to the stakeholder outreach noted above, in 2025 the Lamoille County Planning Commission conducted meaningful public engagement through the following means to inform the 2026 Regional Plan Amendment and the vision for Lamoille County:

- Conducted a Regional Plan Survey receiving 278 responses representing all 10 towns across the County
- Posted flyers about the survey and value of the Regional Plan as a visioning tool at Town Clerks Offices around the County
- Distributed hard copies of the Regional Plan Survey to local Clerk's Offices in all 10 Towns
- Posted Regional Plan flyers at local grocery stores, hardware stores, and other local businesses
- Distributed the Regional Plan Survey on online forums (Front Porch Forum, via email, LCPC's website, Facebook page)
- Tabled in 3 communities across the County (Cambridge, Stowe, Wolcott) at 2025 Town Meeting Day and distributed flyers for Town Meeting Day in other Lamoille County communities.
- Distributed flyers about the Regional Plan and Survey at local Planning Commission, Selectboard, and Village Trustee Meetings.
- Conducted municipal trainings and information sessions on Act 181 and Act 47 hosted at LCPC Board of Directors meetings open to the public
- Met with local Planning Commissions, Selectboards, Village Trustees, municipal planning staff to outreach about Act 181, Act 47, the Lamoille County Housing targets, and the proposed changes to the Regional Plan Future Land Use map and how it informs statewide designation programs
- Hosted check-ins with the Lamoille County Board of Directors throughout the Regional Plan Amendment process. The LCPC's Board of Directors represents the 15 municipalities (towns/ villages) in Lamoille County.
- Hosted Regional public forums on Lamoille River and tributary hydraulic modeling and flood mitigation projects
- Conducted targeted outreach for visioning of sites pursuing property buyouts as a result of the 2023 and 2024 floods
- Coordinated Regional Plan outreach and strategies with the development of the Regional Flood Recovery and Resiliency Plan, Municipal Plan updates, and other Local Hazard Mitigation Plan updates
- Hosted public hearings in accordance with statute

The 2025 Regional Plan Survey yielded 278 responses representing participants from all 10 towns in Lamoille County. The purpose of this survey was to address the following objectives:

- To promote meaningful public engagement
- To inform the Regional Plan goals, policies, and vision statement
- To inform how we think about future development and the vision for Lamoille County

The Regional Plan Amendment was also informed by LCPC's direct work with communities' flood recovery efforts. Devastating flooding that occurs on a regular basis in Lamoille County hits marginalized and low-income households the hardest. This occurrence highlights how environmental burdens related to flooding and natural hazards are impacting low income and marginalized communities the most in Lamoille County. Since the July 2023 flood, the LCPC has worked closely with LeARN (Lamoille Area Recovery Network) to conduct direct outreach to flood victims who were displaced during recent flooding events. This collaborative with LeARN involves both outreach regarding individual assistance, navigating buyout programs and funding sources, and planning for future flood mitigation projects in flood impacted areas such as Cambridge Village, Jeffersonville, Johnson Village, Wolcott Village, and along the Wild Branch in Wolcott

The LCPC also completed a substantial update to the Regional Plan in 2023 that included direct outreach to the Lamoille Area Racial Equity Alliance, and prevention planning health partners such as Healthy Lamoille Valley, Morrisville Health District, and VT Department of Health.

NEW TIER 1B REQUESTS

With this application, Lamoille County Planning Commission is requesting Tier 1B area approvals for portions of the following municipalities: Hyde Park (North Hyde Park), and Stowe. These Tier 1B area requests are documented in the attached memo. Morristown and Wolcott may be included in the final submittal, pending a decision of the Selectboard.

PART A – CONSISTENCY WITH STATE PLANNING GOALS

Per 24 V.S.A. § 4348(h)(4), for the Land Use Review Board to issue a determination of plan compliance, it must find that the plan is consistent with the State planning goals as established in 24 V.S.A. § 4302. Describe plan compliance below.

In this section, please provide detailed information about how the plan meets the general and specific goals outlined in 24 V.S.A. § 4302(b) and § 4302(c).

4302(b) – GENERAL GOALS

(1) To establish a coordinated, comprehensive planning process and policy framework to guide decisions by municipalities, regional planning commissions, and State agencies.
(2) To encourage citizen participation at all levels of the planning process, and to assure that decisions shall be made at the most local level possible commensurate with their impact.
(3) To consider the use of resources and the consequences of growth and development for the region and the State, as well as the community in which it takes place.
(4) To encourage and assist municipalities to work creatively together to develop and implement plans.

Page numbers:10-12 (Introduction-Our Planning Process), 231-286 (Land Use), 312-346 (Working Lands), 347-373 (Water Resources), 374-409 (Flood Resilience)

Narrative:

The coordinated comprehensive planning process is highlighted in the Regional Plan Introduction under the "Our Planning Process" section. This meaningful community engagement section outlines how participation from the community and citizen participation was encouraged at all levels of the planning process.

The Plan establishes a clear policy framework and implementation strategy to guide municipal, regional, and State decision-making. Each chapter identifies goals, policies, actions that align with State priorities while reflecting regional conditions and municipal priorities in Lamoille County.

Each chapter evaluates the environmental, economic, and social consequences of development as it pertains to that chapter. Policies guide intensive development to designated growth and planned growth areas, protecting natural resources and managing municipal costs. Policies and actions throughout the Plan especially in the Land Use and Flood Resilience chapters (6 and 10), recognize the impact of development on past and future flooding events. This Plan acknowledges how future development needs to shift out of the floodplain/flood hazard area or on a case-by-case basis be elevated if building out of the floodplain is not feasible. Wise use of resources is especially addressed in chapters 6 (Land Use), 8, (Working Lands), and 9 (Water Resources).

The Plan's policies support collaboration among municipalities through encouraging participation and/or collaboration with regional advisory committees/ regional partners and organizations, exploring shared services, and promoting coordinated regional planning discussions around regional priorities (ex: flood mitigation/ flood recovery, emergency response, protecting floodplains/upland forest) and development trends (ex: regional traffic impacts and promoting an efficient transportation system). Plan actions provide resources, guidance, and data that facilitate joint problem-solving and consistent application of policies across municipal boundaries.

4302(c) – SPECIFIC GOALS

***Goal 1*: To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.**

(A) Intensive residential development should be encouraged primarily in downtown centers, village centers, planned growth areas, and village areas as described in section 4348a of this title, and strip development along highways should be avoided. These areas should be planned so as to accommodate a substantial majority of housing needed to reach the housing targets developed for each region pursuant to subdivision 4348a(a)(9) of this title.

(B) Economic growth should be encouraged in locally and regionally designated growth areas, employed to revitalize existing village and urban centers, or both.

(C) Public investments, including the construction or expansion of infrastructure, should reinforce the planned growth patterns of the area.

(D) Development should be undertaken in accordance with smart growth principles as defined in subdivision 2791(13) of this title.

Page numbers:35-44 (Economic Development Strategy), 231-286 (Land Use), 374-409 (Flood Resilience)

Narrative:
The Land Use chapter per the Act 181 mapping methodology guides intensive residential development primarily in downtown centers, village centers, planned growth areas, and village areas as described in section 4348a. The Land Use (chapter 6) and Economic Development Strategy (Introduction section) of the Regional Plan encourage growth in legacy and new designated areas and planned growth areas. The Land Use and Flood Resilience chapter (chapters 6 and 10) policies encourage investment in public infrastructure in or near downtown centers and Village Centers. Key strategies found in the Land Use chapter (6) that support maintaining the historic settlement pattern of compact village and urban centers separated by rural countryside include the following:

- *To guide growth into and near Center Areas and Enterprise Areas outside the floodplain.*
- *To protect the region's natural and working landscapes.*
- *To guide growth that promotes sustainability of the region's natural systems and valuable agricultural and forestry resources.*

Key policies in the Land Use chapter that support this goal include but are not limited to:

- *Infrastructure investments, transportation improvements, and location of public buildings should reinforce the objectives of the Regional Plan. Future development should be directed to areas served by water and wastewater and other public infrastructure.*
- *Land use and development should reflect site specific environmental limitations. The density and intensity of development should conform to the limitations of the land and available public services. Higher densities and more intensive uses should be located in Center Areas, Enterprise Areas, and Resource Based Recreation Areas in conformance with Act 47 and Act 250 legislative reform, while lower densities and less intensive uses should be located in Rural and Working Land Areas.*
- *Encourage future growth within Center and Enterprise Areas while discouraging strip development along transportation corridors.*

Goal 2: **To provide a strong and diverse economy that provides satisfying and rewarding job opportunities and that maintains high environmental standards, and to expand economic opportunities in areas with high unemployment or low per capita incomes.**

Page numbers: 35-44 (Economic Development Strategy), 231-286 (Land Use)

Narrative:
The Economic Development Strategy (Introduction section) promotes a diverse local and regional economy and supports enhancement of local employment opportunities. The Plan supports growth of local existing employment centers. The Land Use chapter (6) supports growth of local businesses and housing to support employees in designated growth areas and planned growth areas. The Regional Plan Economic Development Strategies that support this goal include but are not limited to:

- ***Technological innovation:*** To remain competitive in a changing economic environment, LCPC recognizes the value of technological advancement through mobile communication, high speed internet, and fast paced expansion of new technological trends.
- ***Invest in vital infrastructure*****:** Today, infrastructure is more than water, wastewater, and electricity. It requires phone, data, and internet accessibility, parking, road network infrastructure (bridges and culverts), renewable energy, innovative wastewater treatment, universal recycling, and stormwater management. New developments planned around existing infrastructure can lower costs while re-thinking site design can lower new development costs. Infrastructure is framed in the Transportation, Land Use, and Energy chapters.
- ***Tourism is an economic engine for Lamoille County.*** Recreation, agriculture, arts and culture, historic resources, scenic landscapes, and food and beverages are vital components to attract visitors to Lamoille County from throughout Vermont, the northeast, the United States, and even across

international borders. This Plan recognizes the importance of sustainable growth and development of the tourism industry to the region's economy. More information can be found in the Recreation and Working Lands chapters.

Key policies in the Economic Development Strategy section of the Regional Plan that support this goal include but are not limited to:

- *LCPC strives to create an environment that encourages business expansion, creation, and relocation, employing Lamoille County residents in jobs that pay livable wages and benefits.*
- *LCPC encourages economic development which prioritizes diversification of the Region's economic base through the expansion of existing companies and/or the addition of new companies, including value-added industries.*
- *The economy of Lamoille County should continue to encourage and enhance recreation and related recreational activities, organizations, and industries to ensure the vitality of the Region's tourism industry and quality of life.*
- *The LCPC supports implementation of the Comprehensive Economic Development Strategy adopted by the Northern Vermont Economic Development District of which LCPC is a member. The CEDS is a roadmap toward achieving economic prosperity and resiliency in Northern Vermont and includes the following:*
- *Goal 1: Build Economic Resilience in the Northern Vermont region*
- *Goal 2: Cultivate Business Growth*
- *Goal 3: Improve and Expand Infrastructure*
- *Goal 4: Develop the Workforce*
- *Goal 5: Promote Quality of Life in Communities*
- *Goal 6: Disaster Recovery.*
- The *LCPC Supports the manufacturing and marketing of value-added agriculture and forest products and new opportunities that allow working lands enterprises to remain viable.*
- *The LCPC supports efforts to coordinate the development of business incubation in the region to support entrepreneurial activity and new business development, in cooperation with strategic partners.*

Goal 3: **To broaden access to educational and vocational training opportunities sufficient to ensure the full realization of the abilities of all Vermonters.**

Page numbers: 217-220 (Telecommunications and Broadband Strategy), 452-473 (Public Facilities)

Narrative:

The education section in the Public Facilities Chapter (13) supports broadening access to educational and vocational training opportunities in the region. Access to quality education is necessary for Lamoille County's economy. The following strategy is intended to guide policies and action items related to public facilities and services: *Community investments such as educational, cultural, recreational, healthcare, and municipal services will aid in attracting economic development opportunities.* Related policies in this chapter that support access to educational opportunities include but are not limited to:

- *Encourage efforts to develop a safe, stimulating, and inclusive region that offers good schools and opportunities for its young people, and respects the region's values, natural beauty, and resources (including both the natural and constructed).*

- *Support broad access to enriching educational opportunities for residents of all ages.*
- *An adequate supply of public facilities is encouraged in downtown and village centers.*

Since the 2023 update, the Lamoille Fibernet Communications Union District has completed buildout of high-speed fiber technology to most of the Region. The Telecommunications and Broadband chapter of the Regional Plan outlines how expansion of high-speed internet coverage throughout Lamoille County can expand educational access in rural areas of the region. Policies in the Telecommunications and Broadband chapter that support providing high-speed internet access for educational services include:

- *LCPC encourages efforts that assess and coordinate educational and employment needs for ensuring a highly skilled workforce that will meet the needs of local businesses and emerging technologies.*
- *All Lamoille County residents should have access to robust, reliable affordable broadband in order to enjoy the benefits provided by digital services.*

Goal 4: **To provide for safe, convenient, economic, and energy efficient transportation systems that respect the integrity of the natural environment, including public transit options and paths for pedestrians and bicyclers.**

A) Highways, air, rail, and other means of transportation should be mutually supportive, balanced, and integrated.

Page numbers:116-154 (Transportation)

Narrative:

The Transportation chapter (3) policies and content promote a safe, convenient, economic, and energy efficient transportation system. The chapter emphasizes promoting Public Transit/ Micro-Transit services and enhancing bike/pedestrian infrastructure and local trail networks to promote alternative modes of transportation. Considerations around transportation energy burden were also included while amending this chapter in 2025. The Transportation chapter of the Regional Plan includes the following key strategies that support this goal:

- ***Address Safety Issues***: Priority should be given to transportation projects or programs that address identified safety issues.
- ***Enhance Mobility by Providing Transportation Alternatives***: In order to provide meaningful transportation choices to children, seniors, residents, visitors, and businesses, creative effort must be focused on alternatives to single occupancy vehicle travel whenever feasible. Such alternatives should incorporate healthy community design and be enhanced by a land use pattern where the everyday needs of residents can be satisfied within concentrated, mixed use developments served by a network of bicycle and pedestrian routes and connected by public transportation.
- ***Promote an energy efficient transportation network that reduces energy demand:***
  In order to provide an energy efficient transportation network the LCPC and Lamoille County municipalities will continue to coordinate with local utility providers and regional partners to promote incentives for electric vehicle options. Working with municipalities to update zoning to allow charging stations can help with the transition away from gas powered vehicles. Promoting walkable transportation networks such as enhancing trail networks and improving

bike/pedestrian infrastructure (sidewalks, bike lanes) helps reduce the energy demand throughout the county.

Related policies in the Transportation Chapter that support this goal include but are not limited to:

- *Promote an energy efficient transportation network that reduces energy demand.* Additional related policies and action items are included in the Lamoille County Enhanced Energy Plan.
- *Improve safety on Lamoille County roads.*
- *Foster efficient and convenient public transit service that addresses local and regional needs.*
- *Improve the connectivity of the bicycle and pedestrian network in Lamoille County to reduce energy demand and ensure regional bicycle and pedestrian needs are met.*
- *Support regional efforts to make air travel a safe, attractive, efficient, and competitive mode of shipping and transportation.*
- *Support statewide upgrades to existing rail infrastructure for freight and passenger service.*
- *Support regional multi-modal opportunities.*

Goal 5: **To identify, protect, and preserve important natural and historic features of the Vermont landscape, including:**

A) significant natural and fragile areas;
B) outstanding water resources, including lakes, rivers, aquifers, shorelands, and wetlands;

C) significant scenic roads, waterways, and views;
D) important historic structures, sites, or districts, archaeological sites, and archaeologically sensitive areas.

Page numbers: 45-50 (History, Section 2), 312-346 (Working Lands), 347-373 (Water Resources)

Narrative:

Identification and protection of natural areas, water resources, and scenic and historic resources are addressed in the History section (Section 2), Working Lands (8), and Water Resources (9) chapters of the Regional Plan. Strategies found in these chapters to support this goal include but are not limited to:

- ***Private property owners are the primary stewards of the County's working landscape***. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic, and the importance of traditional activities, such as agriculture, hunting/fishing, and forestry in order to minimize conflicts over use of land.

- ***Public Lands contribute to the County's working landscape.*** Public lands may range from small, community owned parks to large State Forests. Some towns have invested local resources to create "Town Forests" or operate local Land Trusts. Acquisition of new public land should occur in consultation with the host community, and public lands should be open to diverse public uses.

- ***Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat.*** Wildlife based activities such as hunting and fishing are an important component of the Region's culture and economy. Sound management of the working landscape can enhance these resources, while fragmentation of habitat can undermine its quality.
- ***Lamoille County has abundant high quality water resources that support a variety of recreational, ecological, and economic uses.*** At the heart of recreational Vermont are Lamoille County's water resources. Water resources take on a variety of forms and functions. They include rivers and lakes that support many important recreational uses including boating, fishing, swimming, wildlife observation, hunting, and the enjoyment of aesthetic values; water for snow-making; groundwater for private and public water supply; and wetlands to store flood waters and filter natural and man-made contaminants. Surface waters and wetlands provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic and recreational activities.
- ***Healthy riparian areas are restored and maintained.*** Maintaining vegetated buffers along our rivers and streams will help to stabilize the stream banks and thereby improve flood resilience, will benefit fisheries and wildlife by providing natural shade and cover, and will enhance scenic and recreational uses.
- ***Water resources that provide public recreational opportunities or are areas of significant historical, scenic, and recreational value are protected.*** A coordinated planning effort at the local and regional level ensures that current and future development retains rather than impairs the value of our water resources.
- ***Wetlands and floodplains are restored and protected.*** Rivers should have access to floodplains wherever possible to establish and maintain stability. Wetlands and floodplains serve valuable functions including flood water storage, sediment trapping, nutrient filtering, and aquifer recharge. These functions benefit flood resilience as well as fish and wildlife.
- ***Lamoille County's groundwater and surface waters are uniformly of high-quality.*** A coordinated regional and local effort to monitor water quality and address impairments, to develop and implement appropriate wastewater treatment systems, and to implement green stormwater infrastructure wherever possible, will improve and protect

the water quality in Lamoille County watersheds as well as in the Lake Champlain Basin.

Key policies that also support this goal found in the Working Lands and Water Resources Chapters include but are not limited to:

- *The LCPC supports locally initiated efforts to conserve farm and forestland. Once conserved, plans for management of such lands shall be developed in consultation with the host community.*
- *Regionally significant ridgelines, such as Mount Elmore and the Worcester Range, Mount Mansfield and the Sterling Range, the Woodbury Range, Butternut Mountain, and Belvidere Mountain, should be protected from major development.*
- *Fragmentation of core forest areas and other important wildlife habitat is strongly discouraged.*
- *State transportation and infrastructure projects shall consider impacts on wildlife connectivity.*
- *Preserve the quality of the region's lakes and rivers as a resource for human recreation and wildlife.*
- *Healthy riparian areas are critical to stream bank stabilization and fisheries and wildlife habitats; therefore, riparian areas should be restored and protected.*
- *Future growth should not significantly impair the public recreational opportunities of waters or destroy or threaten areas of significant historical, scenic, or recreational value.*
- *Wetlands play an invaluable role in storing large volumes of water during flood events and by filtering and purifying surface waters as they make their way to other water bodies and therefore need to be protected.*
- *Rivers should have access to floodplains wherever possible to establish and maintain stability in order to minimize stream bank erosion and avoid conflicts with human infrastructure.*
- *Water quality in Lamoille County should meet Vermont Water Quality Standards. Efforts should be made to reduce point and non-point sources of water pollution.*

Goal 6: **To maintain and improve the quality of air, water, wildlife, forests, and other land resources.**

- **A) Vermont's air, water, wildlife, mineral, and land resources should be planned for use and development according to the principles set forth in 10 V.S.A. § 6086(a).**
- **B) Vermont's water quality should be maintained and improved according to the policies and actions developed in the basin plans established by the Secretary of Natural Resources under 10 V.S.A. § 1253.**
- C) **Vermont's forestlands should be managed so as to maintain and improve forest blocks and habitat connectors.**

Page numbers: 312-346 (Working Lands), 347-373 (Water Resources)

Narrative:

Goal 6 to maintain and improve the quality of air, water, wildlife, forests, and other land resources is addressed in the Working Lands (8), and Water Resources (9) chapters of the Regional Plan. Strategies found in these chapters to support this goal include but are not limited to:

- ***Private property owners are the primary stewards of the County's working landscape***. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic, and the importance of traditional activities, such as agriculture, hunting/fishing, and forestry in order to minimize conflicts over use of land.

- ***Public Lands contribute to the County's working landscape.*** Public lands may range from small, community owned parks to large State Forests. Some towns have invested local resources to create

"Town Forests" or operate local Land Trusts. Acquisition of new public land should occur in consultation with the host community, and public lands should be open to diverse public uses.

- ***Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat.*** Wildlife based activities such as hunting and fishing are an important component of the Region's culture and economy. Sound management of the working landscape can enhance these resources, while fragmentation of habitat can undermine its quality.
- ***Lamoille County has abundant high quality water resources that support a variety of recreational, ecological, and economic uses.*** At the heart of recreational Vermont are Lamoille County's water resources. Water resources take on a variety of forms and functions. They include rivers and lakes that support many important recreational uses including boating, fishing, swimming, wildlife observation, hunting, and the enjoyment of aesthetic values; water for snow-making; groundwater for private and public water supply; and wetlands to store flood waters and filter natural and man-made contaminants. Surface waters and wetlands provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic and recreational activities.
- ***Healthy riparian areas are restored and maintained.*** Maintaining vegetated buffers along our rivers and streams will help to stabilize the stream banks and thereby improve flood resilience, will benefit fisheries and wildlife by providing natural shade and cover, and will enhance scenic and recreational uses.
- ***Wetlands and floodplains are restored and protected.*** Rivers should have access to floodplains wherever possible to establish and maintain stability. Wetlands and floodplains serve valuable functions including flood water storage, sediment trapping, nutrient filtering, and aquifer recharge. These functions benefit flood resilience as well as fish and wildlife.

- ***Lamoille County's groundwater and surface waters are uniformly of high-quality.*** A coordinated regional and local effort to monitor water quality and address impairments, to develop and implement appropriate wastewater treatment systems, and to implement green stormwater infrastructure wherever possible, will improve and protect the water quality in Lamoille County watersheds as well as in the Lake Champlain Basin.

Key policies that also support this goal found in the Working Lands and Water Resources Chapters include but are not limited to:

- *The LCPC supports locally initiated efforts to conserve farm and forestland. Once conserved, plans for management of such lands shall be developed in consultation with the host community.*
- *Regionally significant ridgelines, such as Mount Elmore and the Worcester Range, Mount Mansfield and the Sterling Range, the Woodbury Range, Butternut Mountain, and Belvidere Mountain, should be protected from major development.*
- *Fragmentation of core forest areas and other important wildlife habitat is strongly discouraged.*
- *State transportation and infrastructure projects shall consider impacts on wildlife connectivity.*
- *Preserve the quality of the region's lakes and rivers as a resource for human recreation and wildlife.*
- *Healthy riparian areas are critical to stream bank stabilization and fisheries and wildlife habitats; therefore, riparian areas should be restored and protected.*
- *Wetlands play an invaluable role in storing large volumes of water during flood events and by filtering and purifying surface waters as they make their way to other water bodies and therefore need to be protected.*
- *Rivers should have access to floodplains wherever possible to establish and maintain stability in order to minimize stream bank erosion and avoid conflicts with human infrastructure.*
- *Water quality in Lamoille County should meet Vermont Water Quality Standards. Efforts should be made to reduce point and non-point sources of water pollution.*

Goal 7: **To make efficient use of energy, provide for the development of renewable energy resources, and reduce emissions of greenhouse gases.**

A) General strategies for achieving these goals include increasing the energy efficiency of new and existing buildings; identifying areas suitable for renewable energy generation; encouraging the use and development of renewable or lower emission energy sources for electricity, heat, and transportation; and reducing transportation energy demand and single occupancy vehicle use.

B) **Specific strategies and recommendations for achieving these goals are identified in the State energy plans prepared under 30 V.S.A. §§ 202 and 202b.**

Page numbers:155-215 (Enhanced Energy Plan)

Narrative:

Goal 7 is addressed extensively in the Enhanced Energy Plan (chapter 4) of the Regional Plan. In 2024 the LCPC amended the Lamoille County Enhanced Energy Plan to meet the latest Act 174 standards and received an updated Determination of Energy Compliance" from the Vermont Public Service Department. The 2026 Regional Plan amendment did not involve updating the Energy chapter as an extensive amendment to this chapter and corresponding Plan references were completed in 2024. The only change in the Energy chapter included updated references to land use categories per Act 18. The Strategy section in the Enhanced Energy chapter and other cross-referenced chapters in the Enhanced Energy Plan including Land Use and Transportation align with efforts to contribute towards meeting Green House Gas emission reduction targets identified in the Global Warming Solutions Act and the 2022 Vermont Comprehensive Energy Plan. Policies outlined in the Enhanced Energy Plan strategy section that support this statewide planning Goal include but are not limited to:

- *Encourage efficient use of energy and energy conservation.*
- *Support development of renewable energy generation with solar, small-scale wind, hydro, biomass, and geothermal resources. All energy projects must adhere to a high environmental standard that includes avoiding or mitigating negative impacts to the natural resources listed in this plan and the plans of the host municipality.*
- *Encourage locating energy generation facilities at the preferred locations, areas where there is electric demand, and at locations where the land has already been built and impacted. Preferred and potentially suitable areas are listed in section 5 "Siting of Renewable Energy Facilities" and shown on energy maps. LCPC will work with interested municipalities to explore additional preferred areas for energy generation.*
- *Promote a diversity of renewable energy and electric options for meeting electricity and heating/cooling needs in Lamoille County.*
- *Promote opportunities to make renewable energy more cost efficient and affordable for residents, traditionally disadvantaged communities business owners, and municipalities.*
- *Share information regarding funding opportunities to support local utility grid system upgrades or safety measures.*
- *Encourage municipalities, local businesses, and residents to shift away from gas powered vehicles and adopt electric vehicle infrastructure and vehicles when applicable.*
- *Improve the connectivity of the bicycle and pedestrian network in Lamoille County and ensure regional bicycle and pedestrian needs are met (Policy cross-referenced in Transportation Strategy section).*
- *Support regional multi-modal opportunities (Policy cross-referenced in Transportation Strategy section).*
- *Ensure transportation projects are compatible with regional land use planning goals (Policy cross-referenced in Transportation Strategy section.)*

Goal 8: **To maintain and enhance recreational opportunities for Vermont residents and visitors.**

A) Growth should not significantly diminish the value and availability of outdoor recreational activities.

B) Public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails, should be identified, provided, and protected wherever appropriate.

Page numbers: 287-311 (Recreation chapter), 116-154 (Transportation chapter)

Narrative:

Goal 8 is addressed in the Recreation chapter (7) of the Regional Plan. Lamoille County, being a popular tourism destination strongly supports maintaining existing and enhancing recreational amenities in the county including amenities along the Lamoille Valley Rail Trail (which is also addressed in the Transportation chapter). The Regional Plan recognizes recreational opportunities as an integral part of Lamoille County's local economy. Strategies from the Recreation chapter that support this goal include:

- ***Ensure Lamoille County integrates recreation into the daily functions of the built environment.*** Nationally, Vermont has one of the lowest obesity rates in the United States, due in large part to a culture that encourages and values recreation. Incorporating recreation into daily life, such as providing sidewalks, footpaths, inter-municipal trails, and bike lanes as major travel corridors, is important to keeping Lamoille County healthy. With abundant access to recreation, the health and well-being of Vermont's population, including Lamoille County, will continue to ensure Vermont remains rated as one of the healthiest states in the country.
- ***Lamoille County's recreation network requires public landowners, private landowners, and user groups to thrive.*** Some towns have invested local resources to create Town Forests, build recreation paths, or provide parking for trailhead access. User groups need to work together to build a coordinated regional approach to recreation and marketing of resources. Recreation is a powerful way to connect communities to one another, such as the multi-town Lamoille Valley Rail Trail, and most require joint partnerships.
- ***Private property owners are the primary stewards of the County's recreational opportunities.*** Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic and the importance of traditional activities, such as hunting and fishing, and working with recreation groups to minimize conflicts over use of land. At the same time, new residents must also be educated on respectful use and appropriate etiquette for using private land for recreation.
- ***Recreation is pivotal to Lamoille County's economy.*** The ski industry brings thousands of visitors to Lamoille County each year and employs a significant portion of the workforce. Wildlife based activities such as hunting, fishing, boating, and camping are an important component of the Region's culture and economy. Sound management of the working landscape can enhance and protect these resources while maintaining a diversity of year-round recreation and ensuring the County's economy can adapt to changing recreation trends and a warmer climate pattern. Cycling, especially mountain biking, has continued to increase in popularity in the region. Vermont Highways should incorporate wider road shoulders for both biking and walking. Municipalities should also continue to emphasize the importance of cycling in the community and economy, monitoring the social, economic, and ecological impacts where possible.
- ***The working landscape provides diverse outdoor recreational opportunities***, which also contribute to the regional economy. Recreation includes traditional activities such as hunting and fishing, as well as newer activities such as mountain biking, back country skiing, and dog sledding. With sound land management and cooperative planning, diverse recreational opportunities can coexist with each other and with agriculture and forestry operations while preserving these resources into the future.

Key policies from the Recreation chapter that support this statewide planning goal include but are not limited to:

- *Support and strongly encourage creating and maintaining recreational facilities and opportunities for all community users – with special attention to the needs of people with disabilities, youth, elders, those with low incomes, and people from a variety of ethnic groups who may not be current users.*
- *Encourage new residential and mixed-use developments to include sidewalks/walking and biking paths or trails, outdoor open space, recreational facilities, and community gardens.*

- *Support efforts to incorporate shared-use trails and bike lanes in development planning to connect communities, schools, and other facilities, and to increase residents' options for physical activity.*
- *The economy of Lamoille County should continue to encourage and enhance recreation and related recreational activities, organizations, and industries to ensure the vitality of the Region's tourism industry and quality of life.*
- *This plan recognizes that climate change may impact the tourism industry, particularly winter recreational activities. LCPC is committed to providing year-round economic and recreational opportunities in order to sustain economic vitality.*

Goal 9: **To encourage and strengthen agricultural and forest industries.**

A) Strategies to protect long-term viability of agricultural and forestlands should be encouraged and should include maintaining low overall density.
B) The manufacture and marketing of value-added agricultural and forest products should be encouraged.
C) The use of locally-grown food products should be encouraged.
D) Sound forest and agricultural management practices should be encouraged.
E) **Public investment should be planned so as to minimize development pressure on agricultural and forest land.**

Page numbers: 312-346 (Working Lands)

Narrative:

Goal 9 is addressed in the Working Lands chapter (8) of the Regional Plan. The plan policies support agricultural and forestry industries as an important part of Lamoille County's local economy. Protection of these resources and working lands is encouraged in the Plans policies and actions. Strategies found in the Working Lands chapter (8) that support this goal include:

- ***Ensure the viability of diverse agricultural and forest-based enterprises as a key component to maintaining the County's working landscape***. Without agriculture and forestry, much of the working landscape would be lost. Agricultural and forest-based enterprises, including agritourism, must be provided with the flexibility to adapt to changing conditions.
- ***Private property owners are the primary stewards of the County's working landscape***. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic, and the importance of traditional activities, such as agriculture, hunting/fishing, and forestry in order to minimize conflicts over use of land.
- ***Public Lands contribute to the County's working landscape***. Public lands may range from small, community owned parks to large State Forests. Some towns have invested local resources to create "Town Forests" or operate local Land Trusts. Acquisition of new public land should occur in consultation with the host community, and public lands should be open to diverse public uses.
- ***Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat.*** Wildlife based activities such as hunting and fishing are an important component of the Region's culture and economy. Sound management of the working landscape can enhance these resources, while fragmentation of habitat can undermine its quality.

Policies included in the Working Lands chapter that support this statewide planning goal include but are not limited to:

- *Support and strongly encourage the continued diversification of the agricultural and forest products produced in Lamoille County.*
- *Encourage development of the secondary industries needed to support the working landscape, such as food processers, saw/lumber mills, storage/warehousing facilities, and incubators (such as the Vermont Food Venture Center).*
- *Support efforts to increase access to local foods and other locally produced agricultural and forest products.*
- *This Plan recognizes that much of Lamoille County's working landscape is the result of private property owners*

acting as stewards of the land. LCPC supports State and local efforts to ensure the viability of the agricultural and forestry industries.

- *LCPC supports locally initiated efforts to conserve farm and forestland. Once conserved, plans for management of such lands shall be developed in consultation with the host community.*
- *Given the large amount of State-owned land within Lamoille County, public use of this land for recreation, wildlife management (including hunting), timber management, and maple sugar production should be allowed and encouraged.*

Goal 10: **To provide for the wise and efficient use of Vermont's natural resources and to facilitate the appropriate extraction of earth resources and the proper restoration and preservation of the aesthetic qualities of the area.**

Page numbers: 231-286 (Land Use), 312-346 (Working Lands), 347-373 (Water Resources)

Narrative:

Goal 10 is addressed in the Working Lands (8) and Water Resources (9) chapters of the Regional Plan. This goal is also discussed in the Land Use (6) chapter Objectives and in the Rural and Working Lands discussion. Lamoille County already meets the Vermont Conservation Goals of meeting 30% conserved land by 2030 (does not include Current Use parcels) and 50% conserved lands by 2050 (this does include Current Use parcels). The Lamoille County Conserved Lands map at the end of the Land Use chapter demonstrates the total area in Conservation or Current Use accounts for 86.7% of the County (258,946 Acres). 42.5% of those acres are land in Current Use, and 44.2% are conserved land.

Strategies in the Working Lands, Water Resources, and Land Use chapters that support this goal include but are not limited to:

- ***To guide growth that promotes sustainability of the region's natural systems and valuable agricultural and forestry resources:*** As discussed elsewhere in this Plan, Lamoille County's natural environment and diverse agricultural and silvicultural resources are among the assets that distinguish the region from other areas of the country and neighboring regions of Vermont. Protection of these resources will likely take a variety of forms – from stewardship by private landowners, to purchase of easements by conservation organizations, to fee simple ownership by municipal or State entities. In light of limited public resources, public conservation funds and mitigation efforts should be targeted toward those areas that best support the goals of local and regional plans.
- ***Ensure the viability of diverse agricultural and forest-based enterprises*** as a key component to maintaining the County's working landscape. Without agriculture and forestry, much of the working landscape would be lost. Agricultural and forest-based enterprises, including agritourism, must be provided with the flexibility to adapt to changing conditions.
- ***Lamoille County is home to diverse wildlife resources, including large blocks of unfragmented core forest habitat***. Wildlife based activities such as hunting and fishing are an important component of the Region's culture and economy. Sound management of the working landscape can enhance these resources, while fragmentation of habitat can undermine its quality.
- ***Private property owners are the primary stewards of the County's working landscape***. Private property must be respected, and education is a more effective tool for encouraging sound stewardship of the environment than regulation. As new residents move to the region, it will be important to educate these residents about the Lamoille County land ethic, and the importance of traditional activities, such as agriculture, hunting/fishing, and forestry in order to minimize conflicts over use of land.
- ***Water resources that provide public recreational opportunities or are areas of significant historical, scenic, and recreational value are protected.*** A coordinated planning effort at the local and regional level ensures that current and future development retains rather than impairs the value of our water resources.
- ***Lamoille County has abundant high quality water resources that support a variety of recreational, ecological,***

and economic uses. At the heart of recreational Vermont are Lamoille County's water resources. Water resources take on a variety of forms and functions. They include rivers and lakes that support many important recreational uses including boating, fishing, swimming, wildlife observation, hunting, and the enjoyment of aesthetic values; water for snow-making; groundwater for private and public water supply; and wetlands to store flood waters and filter natural and man made contaminants. Surface waters and wetlands provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic and recreational activities.

- Key policies noted under goals 5 and 6 in this checklist also address wise use of natural resources in Lamoille County.

Goal 11: **To ensure the availability of safe and affordable housing for all Vermonters.**

(A) Housing should be encouraged to meet the needs of a diversity of social and income groups in each Vermont community, particularly for those citizens of low and moderate income, and consistent with housing targets provided for in subdivision 4348a(a)(9) of this title.

(B) New and rehabilitated housing should be safe, sanitary, located conveniently to employment and commercial centers, and coordinated with the provision of necessary public facilities and utilities.

(C) Sites for multi-family and manufactured housing should be readily available in locations similar to those generally used for single-family dwellings.

(D) **Accessory dwelling units within or attached to single-family residences that provide affordable housing in close proximity to cost-effective care and supervision for relatives, elders, or persons who have a disability should be allowed.**

Page numbers:70-115 (Housing Chapter)

Narrative:

Goal 11 "To ensure the availability of safe and affordable housing for all Vermonters" is addressed in the Housing chapter (2) of the Regional Plan. This chapter was amended per Act 181 and Act 47. A housing targets section was added per Act 47 and Act 181. The LCPC explored other options and formulas to create town level housing targets. Dividing the regional target based on current population distribution proved to be the most rational and equitable approach. The LCPC explored dividing the targets based on current housing unit distribution, but this produced skewed results due to the high volume of 2nd homes in Lamoille County -- especially in Stowe. The LCPC also considered developing a formula-based on infrastructure service areas. The LCPC decided against that method due to limitations of existing water and sewer infrastructure in the County.

Policies and action items were enhanced and added to further promote safe, affordable and a diversity of housing options including "missing middle housing" and ADU's. Policies, actions, and a section was added regarding promoting safe and adequate housing options (healthy homes). New Housing Assessment Report data (County, State Assessments, and reference to the 2025 Stowe Housing Report) and relevant 2025 Regional Plan Survey information was also incorporated into the Housing chapter amendment. Key strategies that support this statewide planning goal found in the Housing Chapter include:

- ***Provide for the full housing continuum:*** There is more to the County's housing picture than simple supply. The housing needs of various segments of the population vary greatly. Affordability for young families, renters, and first-time homebuyers is a major workforce housing concern. There is a growing need for "missing middle" options for homeownership throughout the Region. At the same time, an aging population creates future needs for more housing options for senior and disabled residents.
- ***Ensure a diverse and affordable housing stock:*** With the diversity of communities in Lamoille County, from rural communities without traditional village centers or commercial cores to towns that are the workforce center of the region, to communities with heavy seasonal housing stock, the housing needs of each community vary. Further, each community has different water and wastewater availability, development pressures, and priority needs that must be addressed. A diversity of housing options should be encouraged to meet the County's housing needs, including development of additional multi-family, Accessory Dwelling Units, single-family, and senior housing units. The 2025 Regional Plan Survey demonstrated support for renovating vacant and underused housing units to assist in providing additional housing stock in the County.
- ***Consider the costs of housing plus transportation:*** As the cost of transportation rises, the costs of housing plus transportation may begin to factor into where housing is built or re-developed. Encouraging growth in and near Village and Downtown Centers by locating centers of employment, services, and housing more compactly, helps alleviate additional transportation costs. The 2025 Regional Plan Survey demonstrated that rising housing costs continues to be the greatest challenge for Lamoille County residents in terms of affordability.
- ***Expand housing options in "safer areas" outside the floodplain within and near village centers and downtown centers:*** Many of Lamoille County's traditional village centers and downtowns are located close to rivers and other waterbodies. As a result, significant portions of the Region's most "naturally affordable" housing stock are located in flood prone areas. Recent flood events have had devastating impacts on these neighborhoods and highlighted the vulnerability of these centers. New housing outside of the floodplain is a critical element of local and regional flood recovery.
- ***Promote Safe and Adequate Housing Options ("Healthy Homes"):*** Several health and environmental factors play a role in ensuring housing options are safe and adequate for Lamoille County residents. Locating more affordable housing options outside flood prone areas promotes housing stock in safer locations less susceptible to future flooding events. Housing stock and neighborhoods that support health and well-being are predictors of

overall wellness. The Lamoille County Planning Commission recognizes that everyone deserves to live in a healthy, safe home. Health and wellness should be considered when locating new housing development and services in Lamoille County. Wellness can take many forms including promoting walkable safe environments, enhancing access to green space and parks, ensuring access to healthy foods, health services, and alternative modes of transportation as well as providing opportunities for social engagement. Ensuring prospective and existing homeowners are aware of other health factors and potential hazards such as high radon levels, contaminants in drinking water, and the presence of lead paint also plays a role in providing healthy homes.

Policies in the Housing chapter that support this goal include but are not limited to:

- *Affordable housing is a regional challenge. When applicable, regional solutions should be promoted to further increase housing stock.*
- *LCPC, along with municipalities and regional housing organizations, should promote and support efforts that allow and encourage clustering for the purpose of providing affordable housing, building multi- family units, providing lots for single family homes, and mixed-use development projects.*
- *LCPC shall assist municipalities in preparing capital programs and capital budgets to fund improvements to community infrastructure and services needed to support housing development, particularly within Village/Downtown Centers, Village Areas, Planned Growth Areas, and Transition Infill Areas.*
- *LCPC supports residential development that is compatible with objective standards defined in municipal plans and bylaws. An increase in the total number of dwelling units and/or housing density in comparison to neighboring properties shall not be considered detrimental to the character of the neighborhood. The need to shift development patterns away from flood prone areas may result in an increase in housing density in some currently lower-density areas of the Region.*
- *Development standards should permit a wide variety of housing (including single-family, multi-family, accessory, and mobile homes). Municipalities should use alternatives to minimum lot size to regulate use and intensity of development, especially in Village/Downtown Centers.*
- *LCPC supports promoting "Healthy Homes" and safe and adequate housing options in Lamoille County.*

Goal 12: **To plan for, finance, and provide an efficient system of public facilities and services to meet future needs.**

(A) Public facilities and services should include fire and police protection, emergency medical services, schools, water supply, and sewage and solid waste disposal.

(B) **The rate of growth should not exceed the ability of the community and the area to provide facilities and services.**

Page numbers: 231-286 (Land Use), 432-451 (Culture and Community), 452-473 (Public Facilities)

Narrative:

Goal 12 regarding public facilities and services is addressed in the Public Facilities chapter (13) of the Regional Plan. Public facilities and expansion of services such as water and sewer are encouraged in designated growth and planned growth areas. Strategy section of this chapter was amended to promote re-use of abandoned or under-utilized public facilities. The following strategy is intended to guide policies and action items related to public facilities and services: ***Community investments such as educational, cultural, recreational, healthcare, and municipal services will aid in attracting economic development opportunities***. Many people who choose to settle in Lamoille County do so because of the quality of life they find here. People who grow up here may choose to stay for many of the same reasons. Maintaining and strengthening community investments and public services will stimulate local and regional economies to encourage growth. Policies in the Public Facilities chapter that support this goal include but are not limited to:

- *Encourage efforts to develop a safe, stimulating, and inclusive region that offers good schools and opportunity for its young people, and respects the region's values, natural beauty, and resources (including both the natural and constructed).*
- *An adequate supply of public facilities is encouraged in downtowns and village centers.*
- *An adequate supply of materials/ needle collection facilities should be made available throughout the region for all residents.*

The Regional Plan Land Use chapter (6) also contains strategies to support water and sewer service infrastructure and alternative community wastewater systems. The following policies from the Land Use chapter support this statewide planning goal:

- *Infrastructure investments, transportation improvements, and location of public buildings should reinforce the objectives of the Regional Plan. Future development should be directed to areas served by water and wastewater and other public infrastructure.*
- *Support Lamoille County municipalities' planning efforts to protect/expand existing drinking water systems and develop infrastructure for an alternative municipal drinking water source.*

A strategy that also supports this goal from the Culture and Community chapter (12) includes:

- ***Ensure health and wellness needs, services, and facilities are available, accessible, affordable, and sufficient for Lamoille County residents and visitors.*** A healthy and educated workforce is vital for future growth and development of the region. Ensuring access to and support for wellness needs for the region's diverse populations will require inter-disciplinary partnership.

A policy from chapter 12 that also support this statewide planning goal includes:

- *Cultural resources and facilities continue to be preserved, strengthened, and supported.*

Goal 13: **To ensure the availability of safe and affordable child care and to integrate child care issues into the planning process, including child care financing, infrastructure, business assistance for child care providers, and child care work force development.**

Page numbers: 432-451 (Culture and Community)

Narrative:

Goal 13 ensuring safe and affordable childcare is addressed in the Culture and Community chapter (12) of the Regional Plan. A key strategy from chapter 12 that supports this goal includes:

- ***All youth, young adults, and children deserve the opportunity to grow and develop in a safe, respected environment that normalizes healthy behaviors.*** Children are an integral part of the development of Lamoille County. Examples of healthy behaviors that are important for children and youth include physical activity and balanced nutrition. Ensuring adequate support for children and families is important for LCPC.

A key policy from chapter 12 that supports this goal includes:

- *LCPC supports the availability of high-quality, affordable childcare providers and facilities throughout Lamoille County to meet the needs of families and employers and provide an enriching environment for the Region's children and youth.*

** **Goal 14:** **(14) To encourage flood resilient communities.***

- ***(A) New development in identified flood hazard and river corridor protection areas should be avoided. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.***
- ***(B) The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.***
- ***(C) Flood emergency preparedness and response planning should be encouraged.***

**This goal is effective until 1/1/28, after which it is replaced with updated language accounting for the forthcoming statewide minimum flood hazard area standards established by rule by the Agency of Natural Resources*

Page numbers: 374-409 (Flood Resilience)

Narrative:

Goal 14 "To encourage flood resilient communities" is addressed in the Flood Resilience Chapter (10) of the Regional Plan. This chapter was amended to update the policies/actions section to support infrastructure upgrades to reduce flooding impacts (upsize culverts/bridges), to help guide future development outside the floodplain, to reflect strategies from the 2025 Long-term Recovery and Resiliency Plan for the Northern Vermont Economic Development District such as promoting equipment/resource sharing with neighboring communities, to reflect flood resiliency results from the 2025 Regional Plan Survey, to reference Act 121, and to update data on recent flooding events.

Strategies from the Flood Resiliency chapter that support this goal include:

- ***Communities are flood resilient*** when they are able to anticipate, prepare for, respond to, and recover from, significant floods with minimum damage to social well-being, the economy, and the environment. In the last 50 years, severe storms have gotten more common in Vermont and across the Northeast. While the future is not fully predictable, current models of climate change suggest this trend will continue. We need to take careful steps to ensure that our communities are prepared for and resilient to increasingly frequent floods.
- ***Development is concentrated in areas safe from flooding.*** As of April 2025 in Lamoille County, there were 354 residential structures, 72 commercial facilities, and 41 critical facilities in the flood hazard area. Locating new development outside of hazardous areas is one way to reduce future losses. Moving existing buildings, especially critical facilities, out of hazardous locations may be prudent in some cases. Extending foundational infrastructure (water/sewer) will help transition communities and critical facilities into safer areas. Communities need to examine their public and critical facilities to be sure they are accessible, safe, and functional when needed.
- ***Development in flood prone areas is protected from flooding damages and does not cause an adverse impact to downstream areas***. For those buildings and other infrastructure that can't be moved, steps can be taken to help them experience less damage in the next flood. Some measures include elevating the bottom floor of the building, elevating utilities, changing a below-ground basement into an above-grade level crawl space, and providing vents for flood water to enter and leave the crawl space. Conversely, filling in a floodplain area will only exacerbate flooding downstream and should be avoided.
- ***Floodplains and upland forested areas are protected.*** Protecting our intact floodplains and river corridors is the single most cost effective way to prevent future flood damage**.** When we protect these critical areas we give rivers more room to spill over their banks and release their energy when severe storms occur. Over time, rivers connected to their floodplains become rivers less prone to catastrophic flooding. Likewise, forested areas provide multiple watershed benefits including capacity to retain precipitation and moderate flows. Forests in the watershed and even individual trees can help temper peak flows from small storms and larger events. Forests, particularly on higher and steeper locations, provide self-renewing areas that retain and delay water and reduce sediment loading. Branches and trees in the stream channel slow waters, and trap sediment appropriate to an equilibrium condition. Protecting forested lands in the watershed is an important strategy to prevent damaging peak flows. If water is not intercepted, retained, and delayed in forest cover then more water may come sooner and quicker, exacerbating flash-flooding and erosive impact.
- ***Ditches and water control structures for transportation infrastructure such as roads, trails, culverts and bridges are adequately designed, constructed, and maintained***. Currently, most road crossing structures are undersized, leaving the transportation infrastructure ripe for injury, loss of emergency services, and economic disruption. In the event of a disaster, the loss of services can be devastating and the unbudgeted costs for repairs can be formidable. On the other hand, a transportation network with appropriately sized culverts, bridges, and ditches can withstand flooding events. Culverts, bridges, ditches, roads and trail networks should

be adequately sized/designed to withstand a range of flooding events. In light of recent flooding events, bridges and large stream culverts are being designed to reduce damage in flooding events up to a 500-year flood. Municipal bridge and culvert upgrades should comply with the latest VTrans Road and Bridge Standards. Improvements to municipal road drainage and ditching should comply with the Municipal Roads General Permit. To establish and maintain a reliable transportation network requires an assessment of needs, prioritization of infrastructure upgrades, and budgeting for future upgrades. There are state and federal funding sources available to help Towns fund repairs and replacements to safe and resilient standards.

- ***Local communities are well-prepared for flooding emergencies. Communities that are well-prepared greatly reduce the loss of life and property damage when a disaster occurs.*** Preparedness is a responsibility of residents, business, and government and includes emergency personnel acquiring suitable equipment and conducting training and exercises, developing and updating local emergency operations plans, and establishing evacuation procedures and communication protocols for disasters. Even simple preparedness measures like having disaster supplies on hand, maps of emergency shelters and available resources, installing smoke detectors, and knowing basic first aid, help to lessen the impact of a disaster.

Policies from chapter 10 that support this goal and creating flood resilient communities include:

- *Discourage new development in flood hazard areas and river corridors.*
- *Protect areas that help to attenuate flooding, such as wetlands, floodplains, river corridors, and upland forests.*
- *Rivers should have access to floodplains wherever possible to establish and maintain stability in order to minimize stream bank erosion and avoid conflicts with human infrastructure.*
- *For the safety and protection of human resources and infrastructure, new construction within floodplains should be avoided and measures should be taken to protect existing structures within the floodplain or pursue relocation of structures as appropriate.*
- *Ditches and water control structures for transportation infrastructure such as roads, trails, culvert and bridges should be adequately designed, constructed, and maintained to reduce damage to public infrastructure during various sized flooding events.*
- *Ensure an efficient, coordinated regional response network exists during flooding emergencies.*
- *Reduce the loss of life and damage to property from flooding hazards.*

Goal 15: **To equitably distribute environmental benefits and burdens as described in 3 V.S.A. chapter 72**

Page numbers: 7-9 (Introduction – Health Equity and Environmental Justice; Equity Analysis), 70-76 (Housing Strategy), Energy (162-168),141-142(Transportation), and throughout the Plan

Narrative:

The Introduction of the Plan includes a discussion of equity and environmental justice and a detailed Equity Analysis. environmental justice is incorporated throughout the Regional Plan and considered in the policies and actions of this plan. Additions to promoting Health Equity and environmental justice in the Regional Plan were further emphasized by referencing Act 154 (VT Environmental Justice Law) on page 6 of the Plan Introduction, adding a "healthy homes" section and policies/actions in the Housing chapter (2), and further emphasizing energy burden in chapters beyond the Enhanced Energy Plan such as in the Transportation chapter (3) amendment. During the 2024 Amendment to the Lamoille County Enhanced Energy Plan at that time the LCPC included an equity and energy planning section in chapter 4 to comply with the latest Act 174 standards.

This builds on prior work during the 2023 Regional Plan Update. During the 2023 Regional Plan update the LCPC worked

with local health partners to incorporate Health Equity throughout the Lamoille County Regional Plan and in the Plan's policies and actions items throughout the Plan. Some example equity and environmental justice related policies found throughout the Regional Plan are highlighted below.

Equity and Environmental Justice Policy Examples in the Regional Plan:

Housing Chapter

- *LCPC supports promoting "Healthy Homes" and safe and adequate housing options in Lamoille County.*

Energy Chapter:

- *Consider equity when conducting outreach for siting of renewable energy.*
- *Consider equity when supporting planning efforts for electric vehicle infrastructure, with particular focus on enhancing access in traditionally underserved communities.*

Land Use Chapter:

- *Future development and growth should be located outside the floodplain and consider the impacts on underserved and marginalized communities in terms of providing access and /or connectivity to public services, community recreation/green space, and public transportation networks.*

Flood Resilience Chapter:

- *For the safety and protection of human resources and infrastructure, new construction within floodplains should be avoided and measures should be taken to protect existing structures within the floodplain or pursue relocation of structures as appropriate.*

Culture and Community Chapter:

- *LCPC supports promoting health equity to assist communities/community groups that experience health inequities*.
- *Increase access to, availability of, and affordability of, locally grown, healthy foods to residents of all income levels.*
- *Regardless of age, ability, or income, ensure all Lamoille County residents and visitors will have access to healthy, affordable options for food that make the healthy choice the easy choice.*

PART B – CONSISTENCY WITH THE PURPOSES OF A REGIONAL PLAN

Per 24 V.S.A. § 4348(h)(4), for the Land Use Review Board to issue a determination of plan compliance, it must find that the plan is consistent with the purposes of a regional plan as established in 24 V.S.A. § 4347. "Consistency" is defined in 24 V.S.A. § 4302(f)(1), and above.

Please provide detailed information describing how the plan is consistent with the purposes of a regional plan.

24 V.S.A. § 4347 – PURPOSES OF A REGIONAL PLAN

A regional plan shall be made with the general purpose of guiding and accomplishing a coordinated, efficient, equitable, and economic development of the region that will, in accordance with the present and future needs and resources, best promote the health, safety, order, convenience, prosperity, and welfare of current and future inhabitants as well as efficiency and economy in the process of development. This general purpose includes recommending a distribution of population and of the uses of the land for urbanization, trade, industry, habitation, recreation, agriculture, forestry, and other uses as will tend to:

(1) create conditions favorable to transportation, health, safety, civic activities, and educational and cultural opportunities;
(2) reduce the wastes of financial, energy, and human resources that result from either excessive congestion or excessive scattering of population;
(3) promote an efficient and economic utilization of drainage, energy, sanitary, and other facilities and resources;
(4) promote the conservation of the supply of food, water, energy, and minerals;
(5) promote the production of food and fiber resources and the reasonable use of mineral, water, and renewable energy resources;
(6) promote the development of housing suitable to the needs of the region and its communities; and
(7) help communities equitably build resilience to address the effects of climate change through mitigation and adaptation consistent with the Vermont Climate Action Plan adopted pursuant to 10 V.S.A. § 592 and 3 V.S.A. chapter 72.

Page numbers: 1-10 (Introduction)

Narrative: The information presented in Section 1: Introduction demonstrates how the Plan is consistent with the purposes of a regional plan.

On pages 1-2, there is discussion of what the Lamoille County Planning Commission is and the purposes of a Regional Plan. The Plan is discussed as a source of information and resources, policies and actions towards meeting regional and municipal goals and objectives. This is done to allow the region to grow demographically and economically while maintaining critical recreational, scenic, and natural resources.

Pages 6-7 cover the vision for the region being a welcoming and inclusive place that embodies stewardship of the land, accessible recreation, public services, the arts, local food access, historic preservation, and health equity. The region strives to encourage collaboration, support sustainable growth, and independence of the region's unique communities.

Pages 9-10 cover primary regional plan goals and objectives that speak to the overall purposes of a regional plan. The primary objectives of the plan is to guide growth into and near compact settlements, protect the region's natural and working landscapes, encourage affordable and diverse housing options, promote an efficiency transportation system, investing in public infrastructure, promoting energy efficiency and conservation, and consider environmental benefits and burdens in regional planning efforts. Themes of health equity and environmental justice are incorporated throughout the plan.

PART C – REQUIRED ELEMENTS OF A REGIONAL PLAN

Per 24 V.S.A. § 4348(h)(4), for the Land Use Review Board to issue a determination of plan compliance, it must find that the plan is consistent with the regional plan elements as described in 24 V.S.A. § 4348a, except that the requirements of 24 V.S.A. § 4352 related to enhanced energy planning are under the sole authority of the Department of Public Service.

Please provide details about how the regional plan is consistent with the regional plan elements listed below.

(1) A statement of basic policies of the region to guide the future growth and development of land and of public services and facilities, and to protect the environment

Page numbers: 2-10; 231-249 (Land Use Strategy), 287-294 (Recreation Strategy), 312-316 (Working Lands Strategy), 347-352 (Water Resources Strategy), 374-381 (Flood Resilience Strategy)

Narrative: Policies of the region to guide future growth and development, public services and facilities, and environmental protection are included throughout the Plan. The introduction includes an overview of key objectives and policies, and an implementation plan of proposed actions guided by the Plan's overall objectives is included on pages 9-10.

The Land Use chapter (6) supports guiding growth and development of land in compact areas with associated policies (p. 231-249), and public facilities and services have dedicated policies and actions starting on p. 452. Environmental protection with associated policies is covered at length in Section 4: Our Sense of Place, including policies supporting the protection and quality of rivers, streams, wetlands, forests, fisheries, wildlife, and other natural resources throughout Recreation, Water Resources, Working Lands, and Flood Resiliency chapters.

(2) A natural resources and working lands element, which shall consist of a map or maps and policies, based on ecosystem function, consistent with Vermont Conservation Design, support compact centers surrounded by rural and working lands, and that:

(A) Indicates those areas of significant natural resources, including existing and proposed for forests, wetlands, vernal pools, rare and irreplaceable natural areas, floodplains, river corridors, recreation, agriculture using the agricultural lands identification process established in 6 V.S.A. § 8, residence, commerce, industry, public, and semipublic uses, open spaces, areas reserved for flood plain, forest blocks, habitat connectors, recreation areas and recreational trails, and areas identified by the State, regional planning commissions, or municipalities that require special consideration for aquifer protection; for wetland protection; for the maintenance of forest blocks, wildlife habitat, and habitat connectors; or for other conservation purposes.

(B) Indicates those areas that have the potential to sustain agriculture and recommendations for maintaining them that may include transfer of development rights, acquisition of development rights, or farmer assistance programs.

(C) Indicates those areas that are important as forest blocks and habitat connectors and plans for land development in those areas to minimize forest fragmentation and promote the health, viability, and ecological function of forests. A plan may include specific policies to encourage the active management of those areas for wildlife habitat, water quality, timber production, recreation, or other values or functions identified by the regional planning commission.

(D) Encourages preservation of rare and irreplaceable natural areas, scenic and historic features and resources.

(E) Encourages protection and improvement of the quality of waters of the State to be used in the development and furtherance of the applicable basin plans established by the Secretary of Natural Resources under 10 V.S.A. § 1253.

Page numbers: 286 (Land Use chapter, see Conserved Lands map), 312-316 (Working Lands Strategy), 347-352 (Water Resources Strategy), 374-381 (Flood Resilience Strategy)

Narrative: In the narrative, please describe how the plan's policies, actions, and future land use areas support the intent of 10 VSA 2802 (i.e., 30x30 and 50x50 conservation goals).

Lamoille County already meets the Vermont Conservation Goals of meeting 30% conserved land by 2030 (does not include Current Use parcels) and 50% conserved lands by 2050 (this does include Current Use parcels). The Lamoille County Conserved Lands map at the end of the Land Use chapter (page 286) demonstrates the total area in Conservation or Current Use accounts for 86.7% of the County (258,946 Acres). 42.5% of those acres are land in Current Use, and 44.2% are conserved land.

Section 4: Our Sense of Place in the LCPC Regional Plan covers required elements for natural resources and working lands. Each chapter begins with policies and actions that help protect and preserve ecological functions of forests, waters, and natural areas for wildlife habitat, water quality, recreation, and other regional values.

The Working Lands chapter (8) demonstrates how the Plan is consistent with the working lands element. This chapter begins with an overall look at how the working landscape is central to the character of the region and recognizing key strategies and policies including ensuring the viability of diverse agricultural and forest-based enterprises, recognizing that the county is home to diverse wildlife resources and large, unfragmented core forest habitat, and supporting efforts to conserve farm and forestland. The narrative discusses agriculture and the changing nature of the industry, with fluctuations of farm size, demographics, and recommends supporting agricultural enterprises with availability of appropriate infrastructure (e.g., roads, utilities, processing and storage capacity). Forestry is also discussed and the multifaceted benefits of forests, including ecological benefits for water quality, air quality, and serving as core habitat for a diversity of wildlife, and economic benefits from tourism and the ability to manufacture forest-based products. Fragile and natural forest areas are discussed and regional partners are identified that the LCPC supports to help protect and preserve these significant natural resources. Maps are included at the end for Priority Forest Blocks, Habitat Blocks, Natural Communities, and Wildlife Resources.

The Water Resources chapter (9) demonstrates how the Plan is consistent with the natural resources element and speaks to protection and improvement of quality waters of the state. Strategies are proposed for continued enjoyment and protection of water resources including restoring and maintaining riparian areas, protecting wetlands and floodplains, and monitoring and addressing impairments to groundwater and surface waters. Connections to community resources and infrastructure are made in the policies section by avoiding or mitigating new construction within floodplains, working with developers and municipalities to protect regionally significant waters and links to resources of historic, scenic, and recreational value, and avoiding conflicts with infrastructure. Water resources are mapped throughout the chapter. The Flood Resiliency chapter (10) also discusses the value of floodplains and river corridors, and discusses strategies for conserving land and discouraging development in these vulnerable areas to the benefit of both natural resources and the region's communities and economy.

(3) An energy element, including an analysis of resources, needs, scarcities, costs, and problems within the region across all energy sectors, including electric, thermal, and transportation; a statement of policy on the conservation and efficient use of energy and the development and siting of renewable energy resources; a statement of policy on patterns and densities of land use likely to result in conservation of energy; and an identification of potential areas for the development and siting of renewable energy resources and areas that are unsuitable for siting those resources or particular categories or sizes of those resources.

Page numbers: 155-215 (Energy Chapter)

Narrative: The enhanced energy chapter (4) demonstrates how the Plan is consistent with the energy element.

The chapter begins with policies and actions that encourage the efficient use of energy and energy conservation. Future growth is encouraged within Village/Downtown Centers, Village areas, and others while strip development is discouraged, to help encourage the conservation of energy in walkable communities. Equity in energy planning is discussed early in the chapter and links to discussion of "energy justice" in the 2022 VT Comprehensive Energy Plan as it relates to thermal, transportation, and electric sectors of the region. Weatherization is identified as a key means to conserving energy and reducing energy burden in vulnerable communities with aging housing stock. Supporting alternative transit opportunities, supporting EV charging, and developing walkable and bikeable communities is

discussed, which could help address significant energy burdens in the transportation sector while also reducing emissions and improving health equity. This is followed by a narrative analysis of energy use across thermal, transportation, and electric sectors, offering targets for reducing energy use, greenhouse gas emissions, and increasing renewable energy generation to meet goals set in the Global Warming Solutions Act and Climate Action Plan. Limitations in the regional electric grid will hinder the ability to meet regional renewable energy generation targets. The chapter concludes with an analysis of renewable energy generation potential and land area needed, as well as areas preferred or potentially suitable for renewable energy development, such as parking lots, brownfields, landfills, rooftop installations, gravel pits, and other areas. Unsuitable areas for renewable energy development include FEMA identified floodways, river corridors, class 1 and 2 wetlands, vernal pools, significant natural communities and wilderness areas. There areas are also mapped at the end of the chapter.

(4) A transportation element consisting of a statement of present and prospective transportation and circulation facilities, and a map showing existing and proposed highways, including limited access highways, and streets by type and character of improvement, and where pertinent, anticipated points of congestion, parking facilities, transit routes, terminals, bicycle paths and trails, scenic roads, airports, railroads and port facilities, and other similar facilities or uses, and recommendations to meet future needs for such facilities, with indications of priorities of need, costs, and method of financing.

Page numbers: 116-154 (Transportation chapter)

Narrative: The Transportation Chapter (3) demonstrates how the Plan is consistent with the transportation element.

The chapter begins with goals, policies and actions that support safe, accessible, regional multi-modal opportunities, rail, and air travel, and ensuring that roadway projects enhance scenic and environmental resources. A background of the region's highway system is provided, which serves as a freight network but also often serving as the "Main Street" in many village areas. Other scenic transportation resources such as the Smugglers' Notch Scenic Highway and Green Mountain Byway are highlighted. Transportation Demand Management and Multi-Modal Connectivity are discussed as ways to create a connected transportation system supporting cars, bicycles, pedestrians, rail, aviation, and public transit in a comprehensive way. Alternative modes of transportation are also discussed such as ride sharing and services like Rural Community Transit. Bike and pedestrian networks are highlighted, like the Stowe Recreation Path and the Lamoille Valley Rail Trail, which can be used as alternative transportation networks but also recreation with associated economic and health benefits. Healthy Community Design, Traffic Calming and Streetscaping are other tools highlighted to help improve function and safety for all types of users. The chapter ends with identification of major routes (Route 100, 15, 12, 108) and highway classifications and designations. Facilities and functional classes are also mapped at the end of the chapter.

(5) A utility and facility element, consisting of a map and statement of present and prospective local and regional community facilities and public utilities, whether publicly or privately owned, showing existing and proposed educational, recreational and other public sites, buildings and facilities, including public schools, State office buildings, hospitals, libraries, power generating plants and transmission lines, wireless telecommunications facilities and ancillary improvements, water supply, sewage disposal, refuse disposal, storm drainage, and other similar facilities and activities, and recommendations to meet future needs for those facilities, with indications of priority of need.

Page numbers: 216-230 (Telecommunications Chapter), 452-473 (Public Facilities)

Narrative: The Telecommunications chapter (5) and the Public Facilities and Services chapter (13) demonstrate how the Plan is consistent with the utility and facility element.

The Telecommunications chapter discusses progress Lamoille County has made with advancing wireline broadband and some improvements to cellular coverage. Significant gaps still remain with cellular coverage, though both are important for use by visitors, businesses, residents, emergency responders, community service and municipal organizations. Regional

objectives for future coverage include providing universal broadband and cellular coverage. Regional fiber internet providers are listed and coverage is discussed. Communications are also discussed at the end of the chapter as being essential in disaster events. Maps of telecommunication facilities are included at the end of the chapter.

The Public Facilities chapter begins with policies and action items supporting the development of safe and inclusive schools and educational opportunities, supporting location of community anchors in village centers, and supporting communities in reusing abandoned or underutilized facilities. An inventory of primary, secondary, and post-secondary school options are included as well as general trends in enrollment and whether facilities have capacity concerns. Elementary schools with capacity concerns include Hyde Park and Morristown. Lamoille North Union Middle and High School have no capacity concerns but Lamoille South has changing enrollment trends that should be monitored. Other educational opportunities include Central Vermont Adult Basic Education and Laraway Youth and Family Services. Other public facilities highlighted include cemeteries, hazardous and solid waste management facilities, and information on the universal recycling and composting law. Maps of regional community facilities and public utilities are included at the end of the chapter.

A specific section for the LCPC participation in the Section 248 process for review and issuance of a Certificate of Public Good is also included.

(7) A program for the implementation of the regional plan's objectives, including a recommended investment strategy for regional facilities and services based on a capacity study of the elements in this section.

Page numbers: 9-10, 19-27 (Introduction) and Throughout the Plan

Narrative: The Introduction includes an implementation plan summary table and action items with associated timeframes for each section of the plan. Additional action items are also included throughout the Regional Plan at the beginning of each chapter in the Strategy section. Guiding Regional Plan Objectives updated during this 2026 Regional Plan Amendment are also found on pages 9-10. These objectives include:

1.To guide growth into and near compact settlements outside the floodplain, whether historic or new, for efficient land use and development.

2. To protect the region's natural and working landscapes by promoting thriving, compact village centers and new growth centers near existing infrastructure, services, and compact housing development, while preserving the scenic character of the surrounding rural countryside.

To encourage affordable housing options and a diversity of housing options in Lamoille County including "missing middle" housing development to support Lamoille County's growing and aging population and to support first-time homebuyers.

4. To guide growth that promotes sustainability of the region's natural systems, valuable agricultural and forestry resources including working lands, support access to local food options, and enhance recreational amenities.

5. To promote healthy, thriving communities where residents and visitors feel welcomed.

6. To promote an efficient transportation system that serves the needs of Lamoille County residents and visitors.

7. To promote a diverse and thriving local economy that does not degrade the scenic and rural character of Lamoille County's working lands and historic settlement patterns.

8. To support investment in public infrastructure to support a thriving economy in Lamoille County and new local businesses and housing development.

9. To collaborate with local utilities, municipalities, and state agencies to promote energy efficiency and conservation in the thermal, transportation, and electrical sectors.

10. To consider environmental benefits and burdens on underserved communities in Lamoille County in regional and local planning efforts.

(8) A statement indicating how the regional plan relates to development trends, needs, and plans and regional plans for adjacent municipalities and regions.

Page numbers: 32-34 (Introduction)

Narrative:

The Introduction to the Plan includes a compatibility statement discussing how the Plan was developed and its compatibility with adjacent regions. The needs and trends of neighboring regions are recognized by region. Compatibility statements are included throughout other sections of the plan as well.

(9) A housing element that identifies the regional and community-level need for housing that will result in an adequate supply of building code and energy code compliant homes where most households spend not more than 30 percent of their income on housing and not more than 15 percent on transportation. To establish housing needs, the Department of Housing and Community Development shall publish statewide and regional housing targets or ranges as part of the Statewide Housing Needs Assessment. The regional planning commission shall consult the Statewide Housing Needs Assessment; current and expected demographic data; the current location, quality, types, and cost of housing; other local studies related to housing needs; and data gathered pursuant to subsection 4382(c) of this title. If no such data has been gathered, the regional planning commission shall gather it. The regional planning commission's assessment shall estimate the total needed housing investments in terms of price, quality, unit size or type, and zoning district as applicable and shall disaggregate regional housing targets or ranges by municipality. The housing element shall include a set of recommended actions to satisfy the established needs.

Page numbers: 70-115 (Housing Chapter)

Narrative: The Housing Chapter (2) and associated appendix demonstrates how the Plan is consistent with the housing element.

The chapter begins with an overall discussion on the regional strategy to provide for a full housing continuum, ensuring a diverse and affordable housing stock. The chapter was developed based on available U.S. Census and American Community Survey Data, the 2024 Lamoille County Housing Study and Needs assessment, 2025 Vermont Housing Needs Assessment (HNA), and other reports and RPC regional plans. Policies and actions are outlined to support development of affordable and diverse housing, including the foundational infrastructure needed to support housing (water/sewer). Community-level needs are discussed, with consideration for demographic trends and household characteristics from Census and HNA data. Regional housing targets were disaggregated from statewide targets and regional targets for 2030 and 2050 were included. This is followed by a discussion of regional housing needs and costs, with estimates for the number of cost-burdened households. Consideration for transportation costs and burdens are further discussed, as well as specific needs outlined for seniors, families, children, and seniors in poverty, homelessness, student housing, seasonal workers, and veterans.

(10) 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.

Page numbers: 35-44 (Economic Development Strategy) and throughout the Plan

Narrative: During the drafting of 2016 Regional Plan– which began when the Region was still recovering from of the Great Recession and disruptions of the Spring 2011 Floods and Tropical Storm Irene, LCPC elected to incorporate economic development throughout the plan, with a grounding Economic Development Strategy in in the Introduction. This section states the following:

"This Plan takes a new approach to economic development. The Strategy provides an overview of the economic structure and vision for Lamoille County. Throughout the Plan, economic development opportunities, challenges, policies, and programs are discussed in individual chapters. It is LCPC's vision to integrate economic development priorities into a holistic planning approach. For our regional economy to grow and thrive, we need stable infrastructure that includes high speed internet access, transportation, parking, and water/wastewater; an educated, healthy, and skilled workforce; natural resources; sound land use policies, and a vision for future development; a diversity of energy sources; affordable housing; access to affordable food, recreation, and cultural activities; and the amenities that make Lamoille County a desirable place to live. Economic development is achieved through investment in all aspects of planning."

The Economic Development section within the Introduction demonstrates how the Plan is consistent with the economic development element.

The section begins with a discussion of what is needed to develop a sustainable regional economy, by balancing human, natural, and capital resources to provide a strong safety net, environmental protection, and high-quality facilities and services. Key objectives include adapting to changing demographics, investing in vital infrastructure, encouraging and protecting the working landscape, and maintaining a high quality of life to attract and keep residents and visitors. The narrative also acknowledges trends in jobs and wages, particularly when considering the effects of the COVID-19 pandemic. Policies and actions are identified at the end that speak to the goals of growing and maintaining the region's economy, including creating an environment that encourages business expansion and relocation to the region, supporting outdoor recreation and tourism, and coordinating and implementing strategies in the NVEDD Comprehensive Economic Development Strategy.

(11)(A) A flood resilience element that:

- **(i) identifies flood hazard and fluvial erosion hazard areas, based on river corridor maps provided by the Secretary of Natural Resources pursuant to 10 V.S.A. § 1428(a) or maps recommended by the Secretary, and designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property; and**
- **(ii) recommends policies and strategies to protect the areas identified and designated under this subdivision (A) and to mitigate risks to public safety, critical infrastructure, historic structures, and public investments.**

(B) A flood resilience element may reference an existing regional hazard mitigation plan approved under 44 C.F.R. § 201.6.

Page numbers: 374-409

Narrative: The Flood Resiliency chapter (10) demonstrates how the Plan is consistent with the flood resiliency element.

The chapter begins with an outline of policies and action items that protect areas wetlands, floodplains, river corridors, and upland forests. Additional policies and actions also recommend mitigating impacts to critical infrastructure to reduce flood damages, loss of life, and property. New development is discouraged in flood hazard areas and river corridors and relocation of structures as appropriate is encouraged to mitigate impacts to critical infrastructure and facilities. The narrative discusses types and causes of flooding, including severe storms, ice jams, and climate change. Historic development patterns along rivers have left present-day communities in vulnerable locations, with most damages occurring in river corridors. Recommendations are made for communities to become more flood resilient with recommendations such as acquiring land in flood-prone locations, relocating structures to less vulnerable areas, increasing flood storage capacity, and taking a watershed approach. In the middle of the chapter, special flood hazard areas and river corridors are mapped, as well as transportation infrastructure and structures.

Future growth areas in locations outside the floodplain to mitigate flood risks are also recognized in the Land Use Chapter.

(12) A future land use element, based upon the elements in this section, that sets forth the present and prospective location, amount, intensity, and character of such land uses in relation to the provision of necessary community facilities and services and that consists of a map delineating future land use area boundaries for the land uses in subdivisions (A)–(J) of this subdivision (12) as appropriate and any other special land use category the regional planning commission deems necessary; descriptions of intended future land uses; and policies intended to support the implementation of the future land use element using the land use categories as defined by 24 V.S.A. § 4348a(a)(12)

Use the following mapping checklist to demonstrate conformance with this required element of the Regional Plan. In the General Narrative, please describe the process by which the RPC determined how the areas proposed for growth (Downtown and Village Centers, Planned Growth Areas, Village Areas, and Transition Areas) can accommodate the region's housing targets.

In future plan reviews, the "Boundary Note" column below will allow the Land Use Review Board to easily compare changes between Future Land Use Areas on maps completed using the Act 181 land use categories.

For this review, where this comparison is not possible, the boundary note is optional. In this column, note each center or neighborhood as "contraction," "expansion," "no change," or "n/a – new center/neighborhood."

Definitions for each land use category can be found in 24 V.S.A. § 4348a(a)(12). In addition, Mapping Process and Standards v 3.0 summarizes the methodology and planning considerations followed by RPCs in developing the future land use map.

Page numbers: 231-286 (Land Use Chapter)

General Narrative:

The LCPC reviewed and mapped the Future Land Use Category boundaries in accordance with the mapping process and standards for Act 181. Designated growth areas are already developed, and in proximity to water/sewer service areas where applicable. The LCPC assumed that housing growth could be supported in these areas, and through adaptive reuse of existing structures, through infill, or greenfield projects. Mapped areas are anticipated to accommodate a substantial majority of the Region's housing targets between 3,359 – 6,621 additional units by 2050. All the mapped boundaries were reviewed and edited by Selectboards and Trustees, Planning and Zoning Coordinators, and other town staff in communities across the region. Due to many of Lamoille County Center Areas being located in flood risk areas, Transition Infill Areas as mapped in accordance with the Act 181 mapping methodology will also play a role in meeting the County's housing targets. State statute includes a goal to locate at least fifty percent of new housing within Downtown and Village Centers, Village Areas, and Planned Growth Areas. Lamoille County faces significant barriers to meeting this goal based on current land use trends and existing infrastructure capacity. Many of Lamoille County's existing Downtowns and Village Centers are located in flood-prone areas and therefore unsuitable for significant new housing development. Additionally, many of the existing Downtown and Village Centers face significant infrastructure limitations. Even those with water and/or sewer infrastructure face constraints such as capacity, pressure, or critical components in vulnerable, locations. In order to make substantial progress toward meeting housing goals, the Region and its municipalities must consider strategic investment in infrastructure and land use tools to shift development patterns to safer, more suitable areas. As a result,

Due to these factors, the Regional Plan includes Transition/Infill Areas in the broad description of Centers to facilitate investment in infrastructure and land use policies needed to support development in safer areas less at risk to flooding. The Town's of Johnson and Cambridge include Transition Infill Areas adjacent and between existing Village Centers. These areas depict areas where the Towns or Villages may consider land use bylaws, partner with housing organizations/ developers and/or invest in infrastructure to support housing development outside the floodplain. Planning in these Transition Infill Areas is especially important due to the devastating impacts of the 2023 flood in Johnson Village, Cambridge Village and Jeffersonville.

The mapped Transition Infill Area in Belvidere is depicts an area along Route 118 that is one of the few areas of the community where housing development may occur that is not located on a steep slope, in conflict with a water resource, or subject to conservation protections. The corner Route 109 and Route 118 is depicted as a hamlet, though the historic farmstead once located at this corner has been lost.

In addition to the standard mapped boundaries, an additional mapping boundary was added to map a unique case in our region – the Asbestos Mine in Eden. This Land Use was not consistent with any of the predetermined categories and required it's own mapping and recognition due to the local and regional context.

The Flood Hazard Area and River Corridor have been mapped as an overlay. The area under that overlay has been mapped as the most appropriate land use category per the Act 181 Future Land Use Mapping Guidance. Much of the

floodplain and river corridor run through existing working lands and villages. Those areas have been mapped to stay consistent with the surrounding mapped area.

Downtown Center		
Municipality	Downtown Center Name	Boundary Note (optional)
Stowe	Stowe Downtown Center	
Morrisville	Morrisville Downtown Center	

☐ RPC mapped this area consistent with the mapping process and standards.

X RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

LCPC also took into consideration existing zoning and water and sewer service areas. Boundaries were further modified based on local input that LCPC felt was consistent with Act 181. This approach ensures the Plan is more closely aligned with municipal intent and maintains regional consistency.

Village Center		
Municipality	Village Center Name	Boundary Note (optional)
Stowe	Stowe Moscow Village Center	
Stowe	Stowe Upper Mountain Road Village Center	
Stowe	Stowe Mountain Road Crossroads Village Center	
Morristown	Morristown Corners Village Center	
Morristown	Morristown Cadys Falls Village Center	
Cambridge	Jeffersonville Village Center	
Cambridge	Upper Mountain Village	
Cambridge	Cambridge Village Center	
Wolcott	Wolcott Village Center	
Wolcott	North Wolcott Village Center	
Hyde Park	Hyde Park Village Center	
Hyde Park	North Hyde Park Village Center	
Johnson	Johnson Village Center	
Belvidere	Belvidere Center Village Center	
Belvidere	Belvidere Corners Village Center	
Waterville	Waterville Village Center	
Elmore	Elmore Village Center	

☐	RPC mapped this area consistent with the mapping process and standards.
X	RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

LCPC also took into consideration existing zoning and water and sewer service areas. Boundaries were further modified based on local input that LCPC felt was consistent with Act 181. This approach ensures the Plan is more closely aligned with municipal intent and maintains regional consistency.

Planned Growth Area		
Municipality	PGA Name/Description	Boundary Note (optional)
Stowe	Stowe Planned Growth Area	
Morristown	Morristown Planned Growth Area	

☐ RPC mapped this area consistent with the mapping process and standards.
X RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

LCPC also took into consideration existing zoning and water and sewer service areas. Boundaries were further modified based on local input that LCPC felt was consistent with Act 181. This approach ensures the Plan is more closely aligned with municipal intent and maintains regional consistency.

Village Area		
Municipality	Village Area Name/Description	Boundary Note (optional)
North Hyde Park	North Hyde Park Village Area	

☐ RPC mapped this area consistent with the mapping process and standards.
X RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

LCPC also took into consideration existing zoning and water and sewer service areas. Boundaries were further modified based on local input that LCPC felt was consistent with Act 181. This approach ensures the Plan is more closely aligned with municipal intent and maintains regional consistency.

Enterprise Areas

X RPC mapped this area consistent with the mapping process and standards.
☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

Transition Areas

☐ RPC mapped this area consistent with the mapping process and standards.
X RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

LCPC took into consideration existing zoning, water and sewer service areas, floodplains and river corridors. Boundaries were further modified based on local input that LCPC felt was consistent with Act 181. This approach ensures the Plan is more closely aligned with municipal intent and maintains regional consistency.

State statute includes a goal to locate at least fifty percent of new housing within Downtown and Village Centers, Village Areas, and Planned Growth Areas. Lamoille County faces significant barriers to meeting this goal based on current land use trends and existing infrastructure capacity. Many of Lamoille County's existing Downtowns and Village Centers are located in floodprone areas and therefore unsuitable for significant new housing

development. Additionally, many of the existing Downtown and Village Centers face significant infrastructure limitations. Even those with water and/or sewer infrastructure face constraints such as capacity, pressure, or critical components in vulnerable locations. In order to make substantial progress toward meeting housing goals, the Region and its municipalities must consider strategic investment in infrastructure and land use tools to shift development patterns to safer, more suitable areas. Due to these factors, the Regional Plan includes Transition/Infill Areas in the broad description of Centers to facilitate investment in infrastructure and land use policies needed to support development in safer areas less at risk to flooding. The Towns of Johnson and Cambridge include Transition Infill Areas adjacent to and between existing Village Centers. These areas depict areas where the Towns or Villages may consider land use bylaws, partner with housing organizations/developers and/or invest in infrastructure to support housing development outside the floodplain. Planning in these Transition Infill Areas is especially important due to the devastating impacts of the 2023 flood in Johnson Village, Cambridge Village, and Jeffersonville.

The mapped Transition Infill Area in Belvidere depicts an area along Route 118 that is one of the few areas of the community where housing development may occur that is not located on a steep slope, in conflict with a water resource, or subject to conservation protections. The corner of Route 109 and Route 118 is depicted as a hamlet, though the historic farmstead once located at this corner has been lost.

Resource-based Recreation Areas

X RPC mapped this area consistent with the mapping process and standards.

☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

Hamlets

X RPC mapped this area consistent with the mapping process and standards. ☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:
Rural Areas: General X RPC mapped this area consistent with the mapping process and standards. ☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:
Rural Areas: Agriculture and Forestry X RPC mapped this area consistent with the mapping process and standards. ☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:
Rural Areas: Conservation X RPC mapped this area consistent with the mapping process and standards. ☐ RPC mapped this area consistent with the mapping process and standards with the following modifications to address local and regional context:

PART D – COMPATIBILITY WITH ADJACENT REGIONAL PLANNING AREAS

Per 24 V.S.A. § 4348(h)(4), for the Land Use Review Board to issue a determination of plan compliance, it must find that the plan is compatible with adjacent regional planning areas. 24 V.S.A. § 4302(f)(2) defines "compatibility" as follows:

(2) As used in this chapter, for one plan to be "compatible with" another, the plan in question, as implemented, will not significantly reduce the desired effect of the implementation of the other plan. If a plan, as implemented, will significantly reduce the desired effect of the other plan, the plan may be considered compatible if it includes the following:

(A) a statement that identifies the ways that it will significantly reduce the desired effect of the other plan;

(B) an explanation of why any incompatible portion of the plan in question is essential to the desired effect of the plan as a whole;

(C) an explanation of why, with respect to any incompatible portion of the plan in question, there is no reasonable alternative way to achieve the desired effect of the plan; and

(D) an explanation of how any incompatible portion of the plan in question has been structured to mitigate its detrimental effects on the implementation of the other plan.

Page numbers: 32-34 (Introduction)

Narrative:

The Introduction to the Plan includes a compatibility statement discussing how the Plan was developed and its compatibility with adjacent regions. The needs and trends of neighboring regions are recognized by region. Compatibility statements are included throughout other sections of the plan as well.

Version log

- Version 1 – original draft
- Version 2 – incorporating LURB feedback to ask more specifically about how the process promoted "meaningful engagement.
- Version 3 – Corrected typos. Changed "comments – optional" to "narrative." Added text prompting explanation of how each section's requirements were met. Finalized text about describing how meaningful engagement was undertaken.
- Version 3.1 – Corrected typos, edited all statutory references to ensure consistent format, corrected one inaccurate statutory reference on page 15; made very minor wording changes to "New Tier 1B Requests" and "Part B" headings. Added instructions to address Act 59 goals and how areas planned for growth can accommodate housing targets.
- Version 4 – Expanded Future Land Use Element table with additional columns to describe specific downtown centers, village centers, etc. by municipality.

Appendix B

Lamoille County Planning Commission Regional Plan Survey

278 Total responses

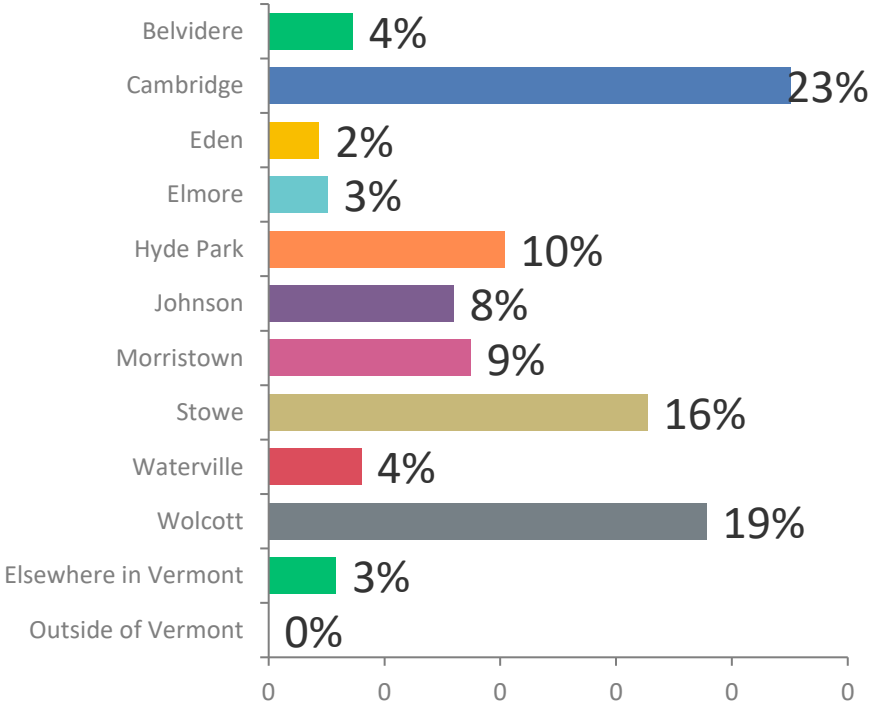
Purpose of the Survey:

-To promote meaningful public engagement
-To inform Regional Plan goals, policies, and the visioning statement
-To inform how we think about future development and the vision for Lamoille County

Q1: Where do you live in Lamoille County?

Answered: 275 Skipped: 3

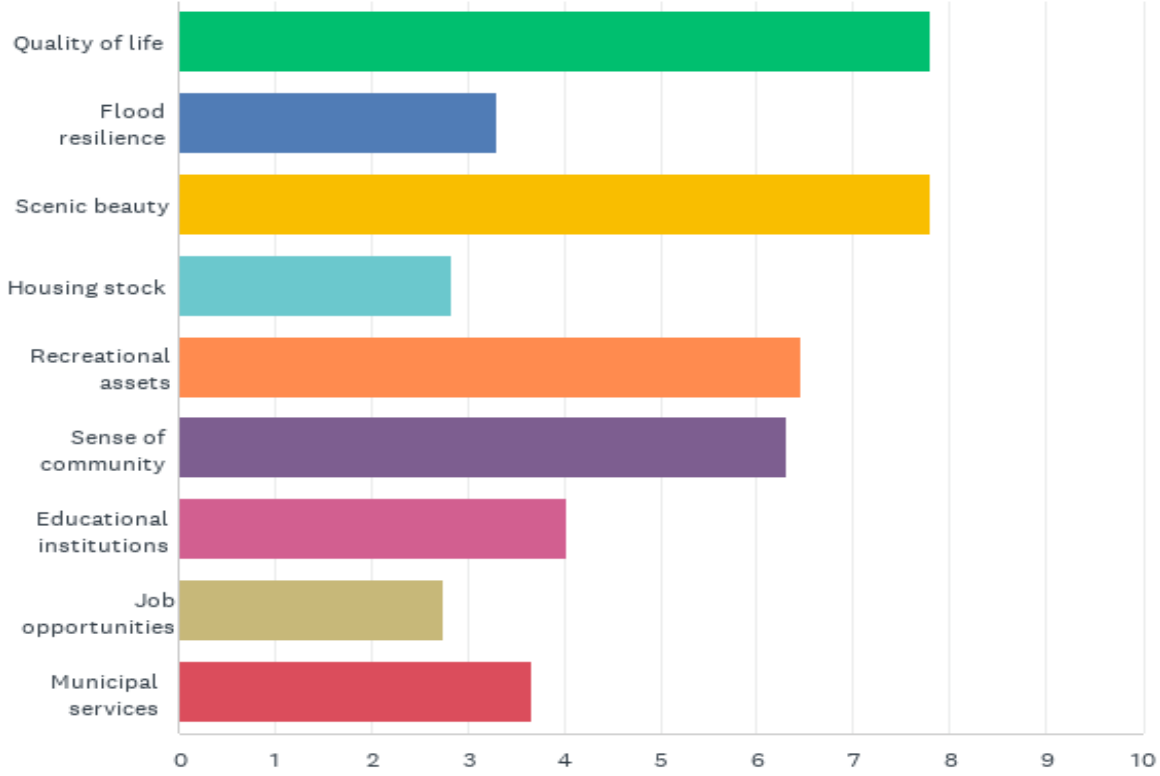
Over Represented
Under Represented
Proprotionate



Town	% of Population	% of Survey Respondents
Belvidere	1%	4%
Cambridge	15%	23%
Eden	5%	2%
Elmore	3%	3%
Hyde Park	12%	10%
Johnson	13%	8%
Morristown	21%	9%
Stowe	20%	16%
Waterville	3%	4%
Wolcott	6%	19%
Elsewhere in Vermont	N/A	2.91%

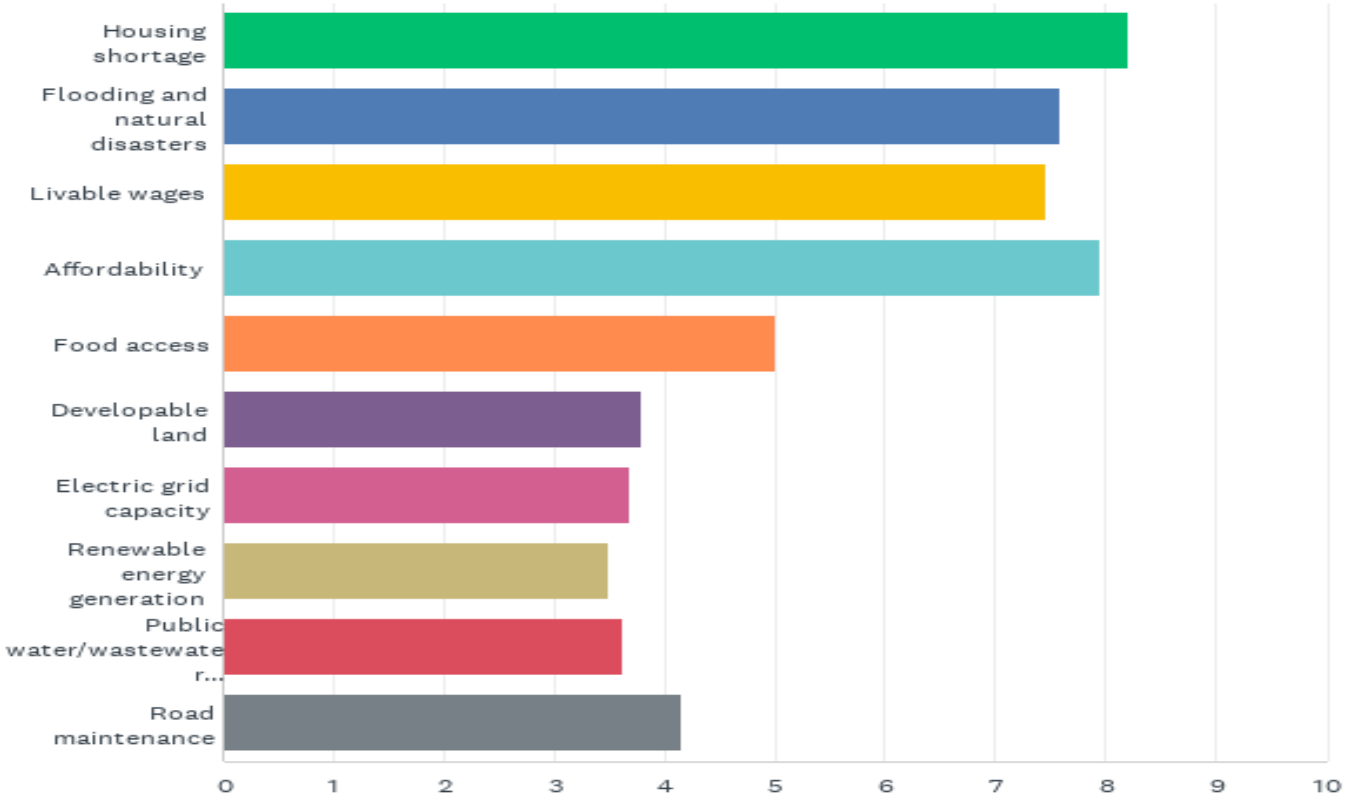
Q2: What are Lamoille County's greatest strengths? Please rank 1-9 by writing each number in the provided space or by clicking the up and down arrows until the options are ranked in your preferred order.

Answered: 274 Skipped: 4



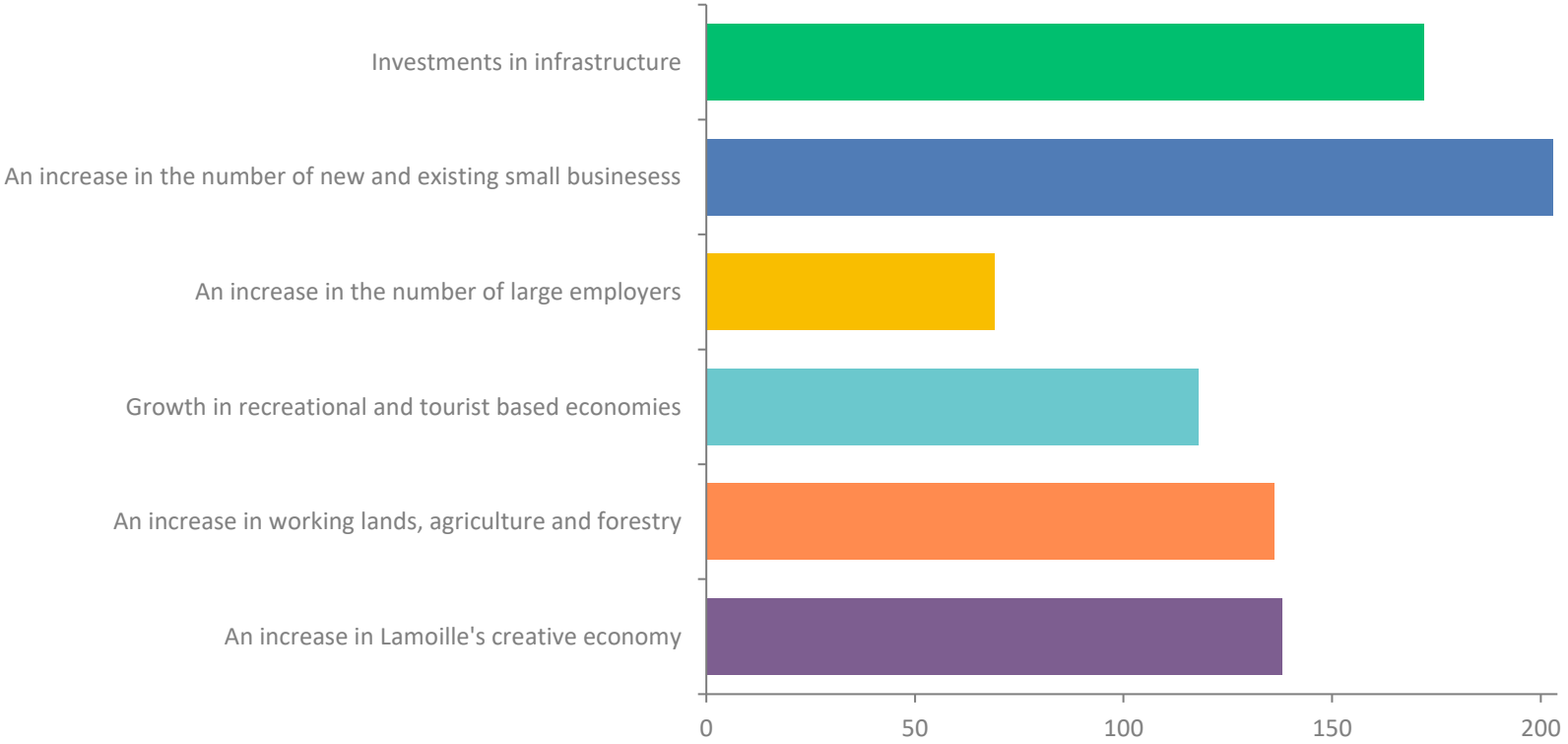
Q3: What are the top need and challenges facing Lamoille County ? Please rank 1-10 by writing each number in the provided space or by clicking the up and down arrows until the options are ranked in your preferred order.

Answered: 269 Skipped: 9



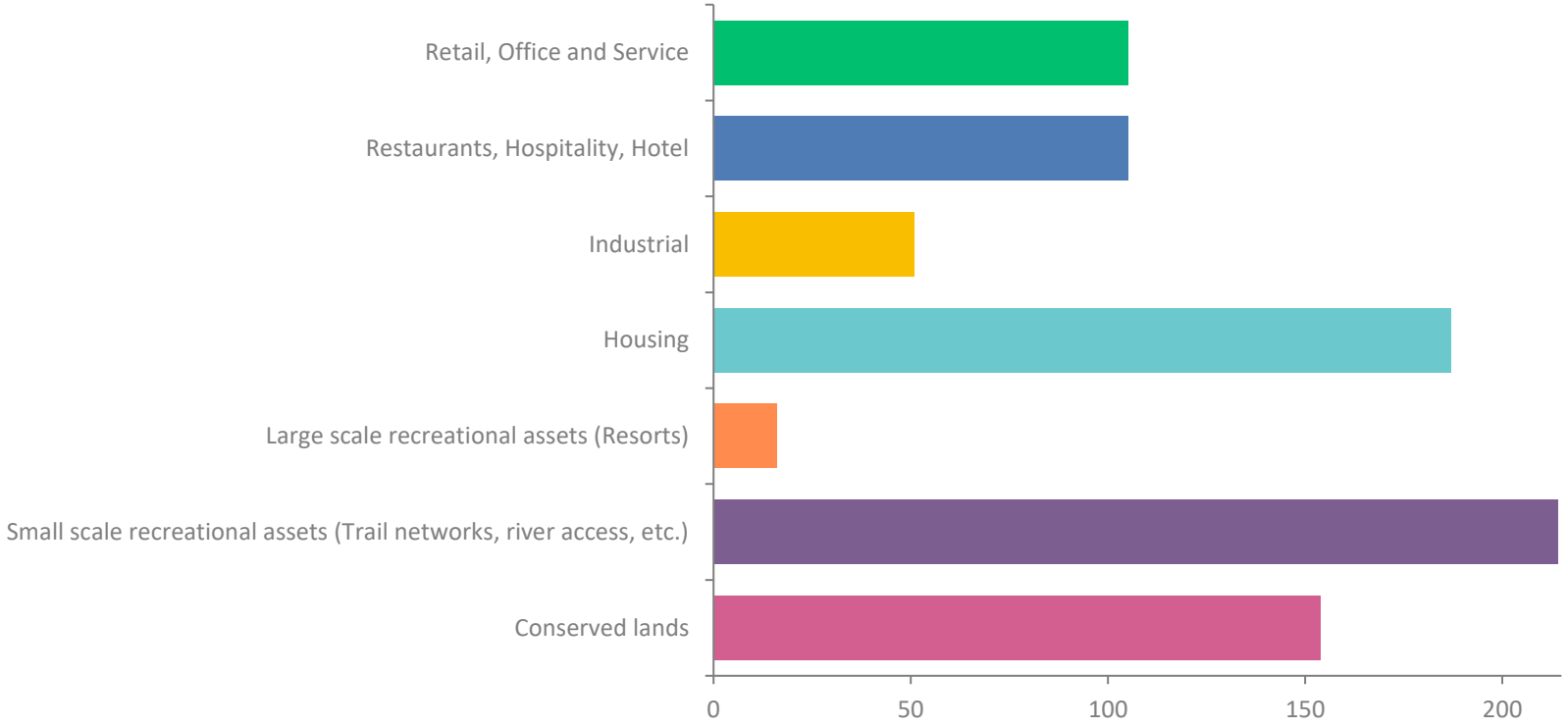
Q4: How would you like to see Lamoille County's economy grow? Please select all that apply.

Answered: 275 Skipped: 3



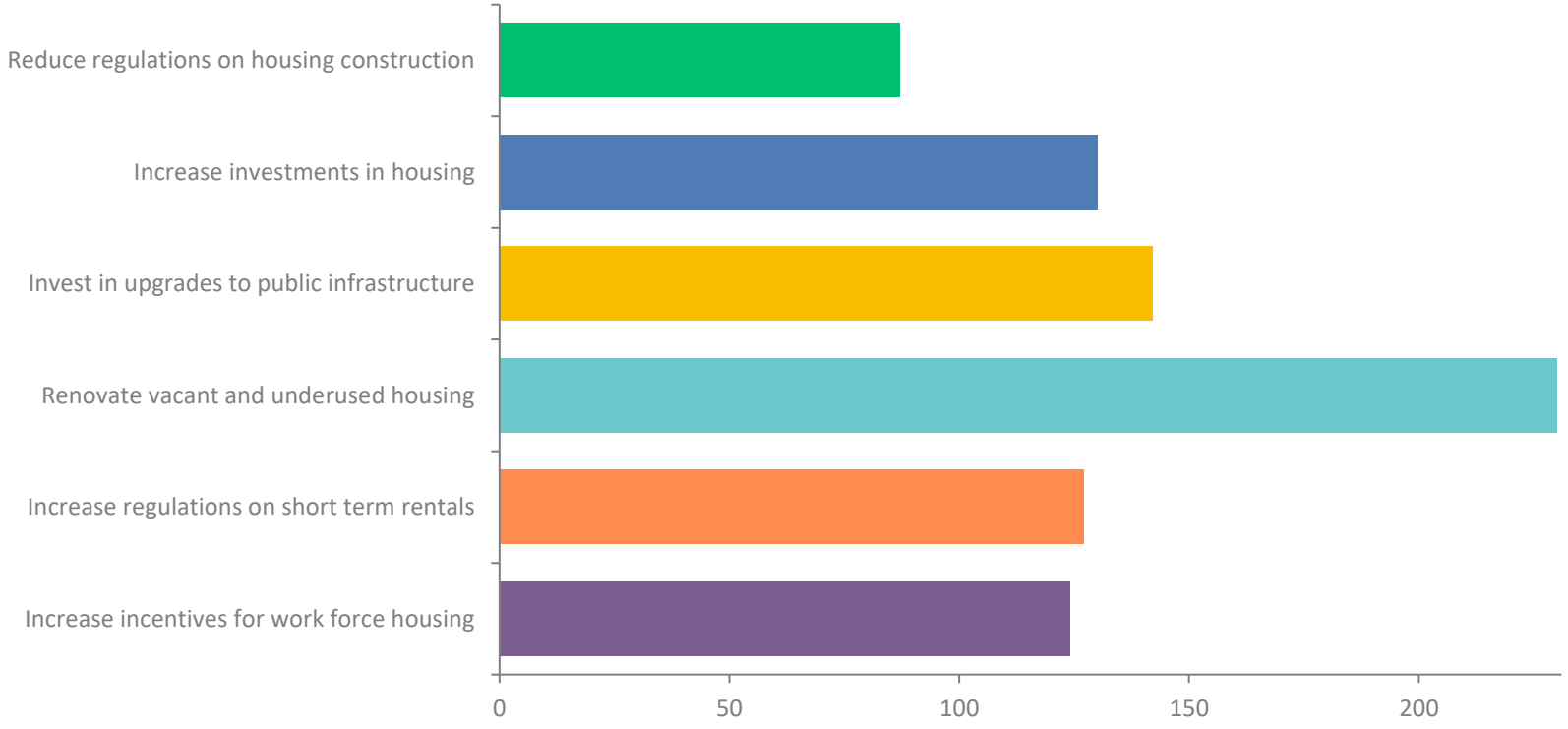
Q5: From the options below, what types of land use would you like to see more of in Lamoille County's future? Please select all that apply.

Answered: 276 Skipped: 2



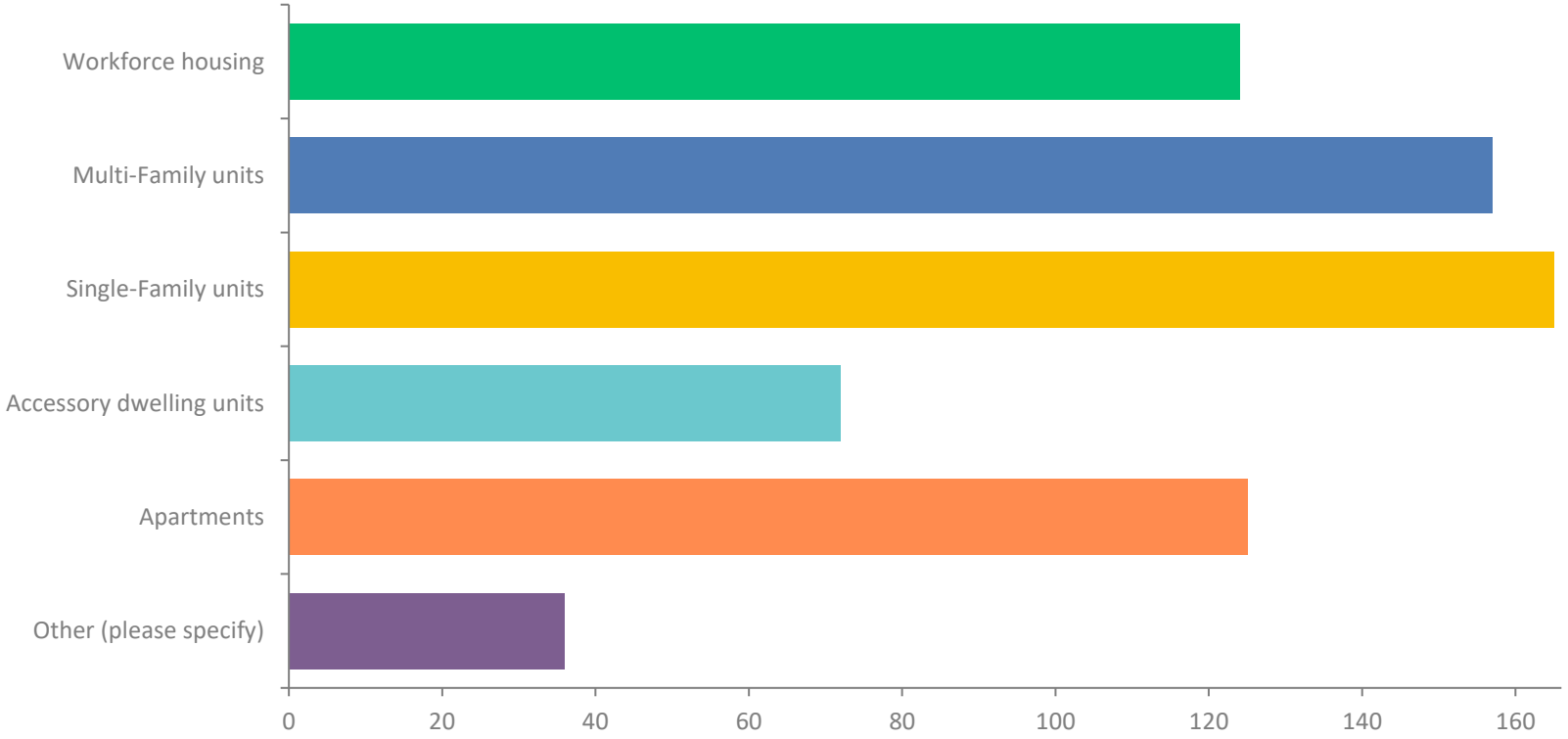
Q6: What policies should Lamoille County pursue to meet its housing needs? Please select all that apply.

Answered: 273 Skipped: 5



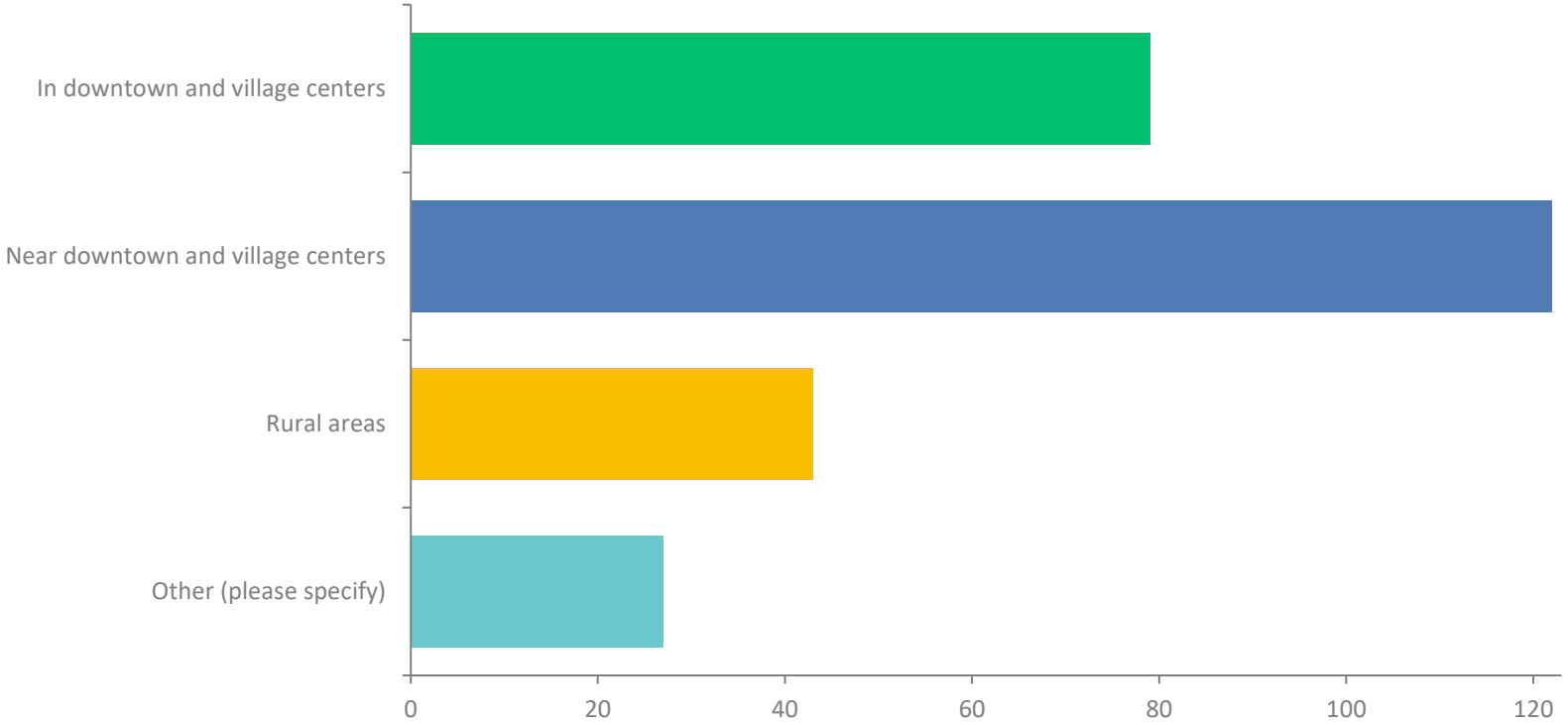
Q7: What types of housing would you like to see built? Please select all that apply.

Answered: 266 Skipped: 12



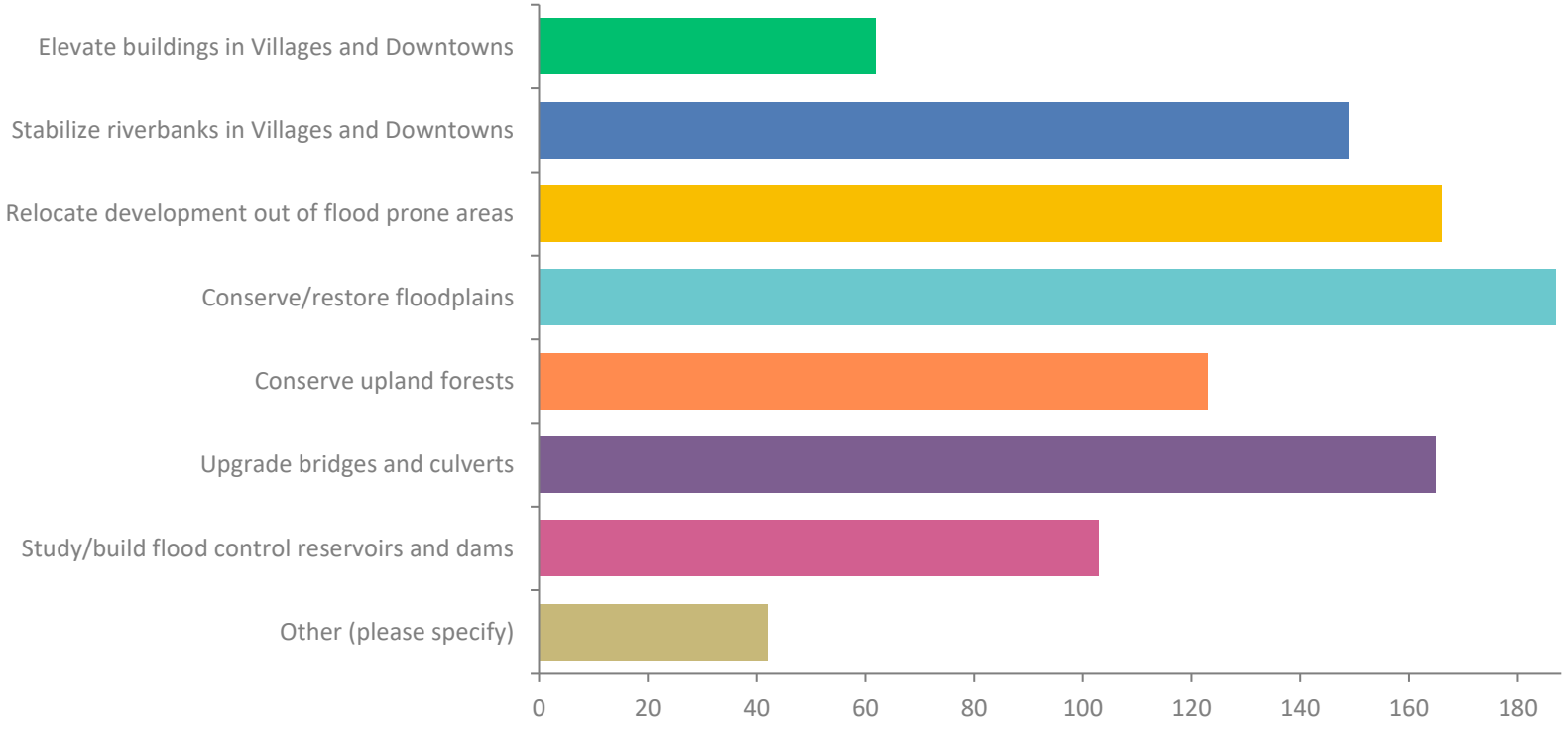
Q9: Where would you like to see the majority of new homes be built? Please select one.

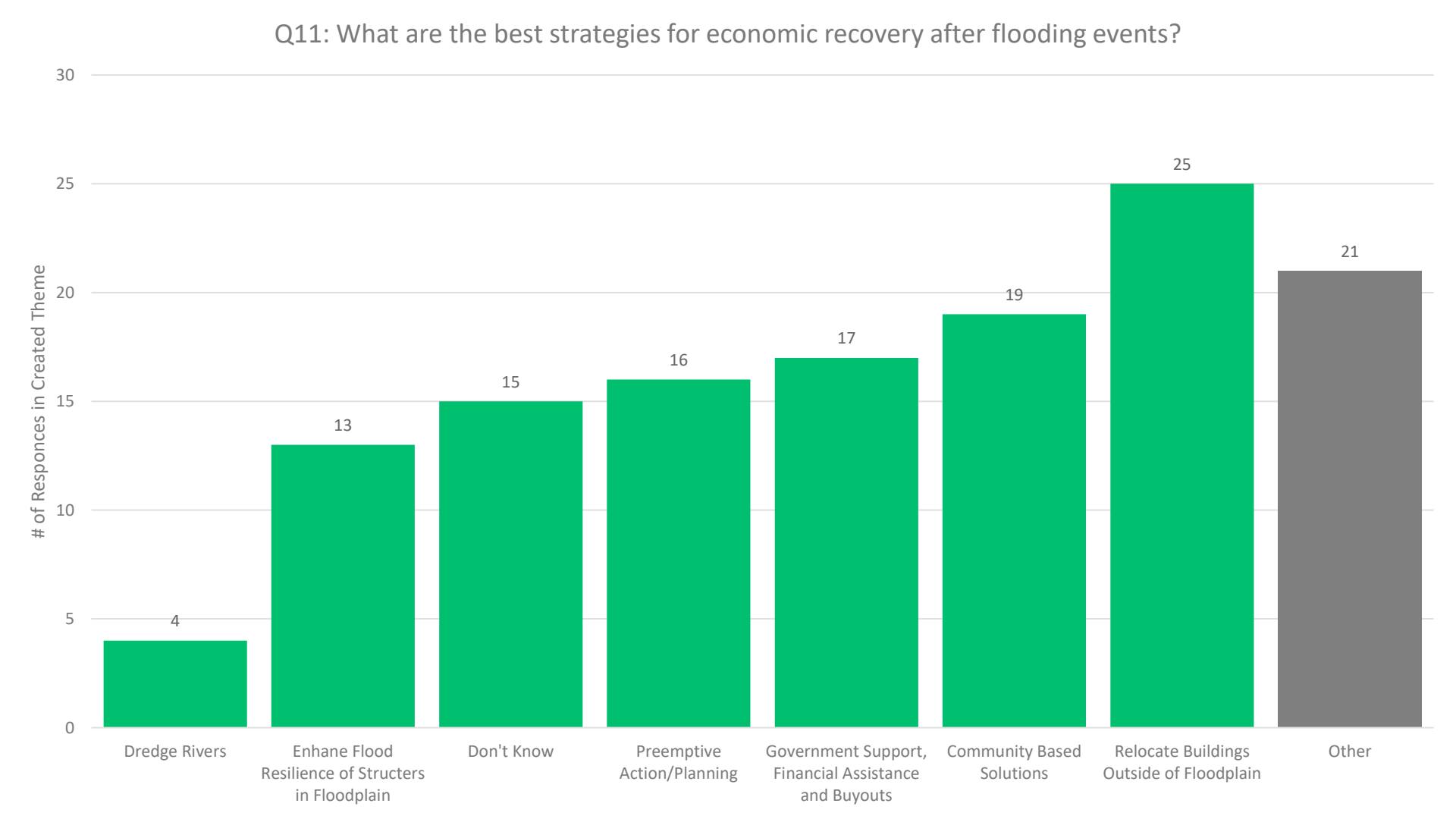
Answered: 271 Skipped: 7



Q10: How should Lamoille County respond to a changing climate and recent increase in flooding events? Please select all that apply.

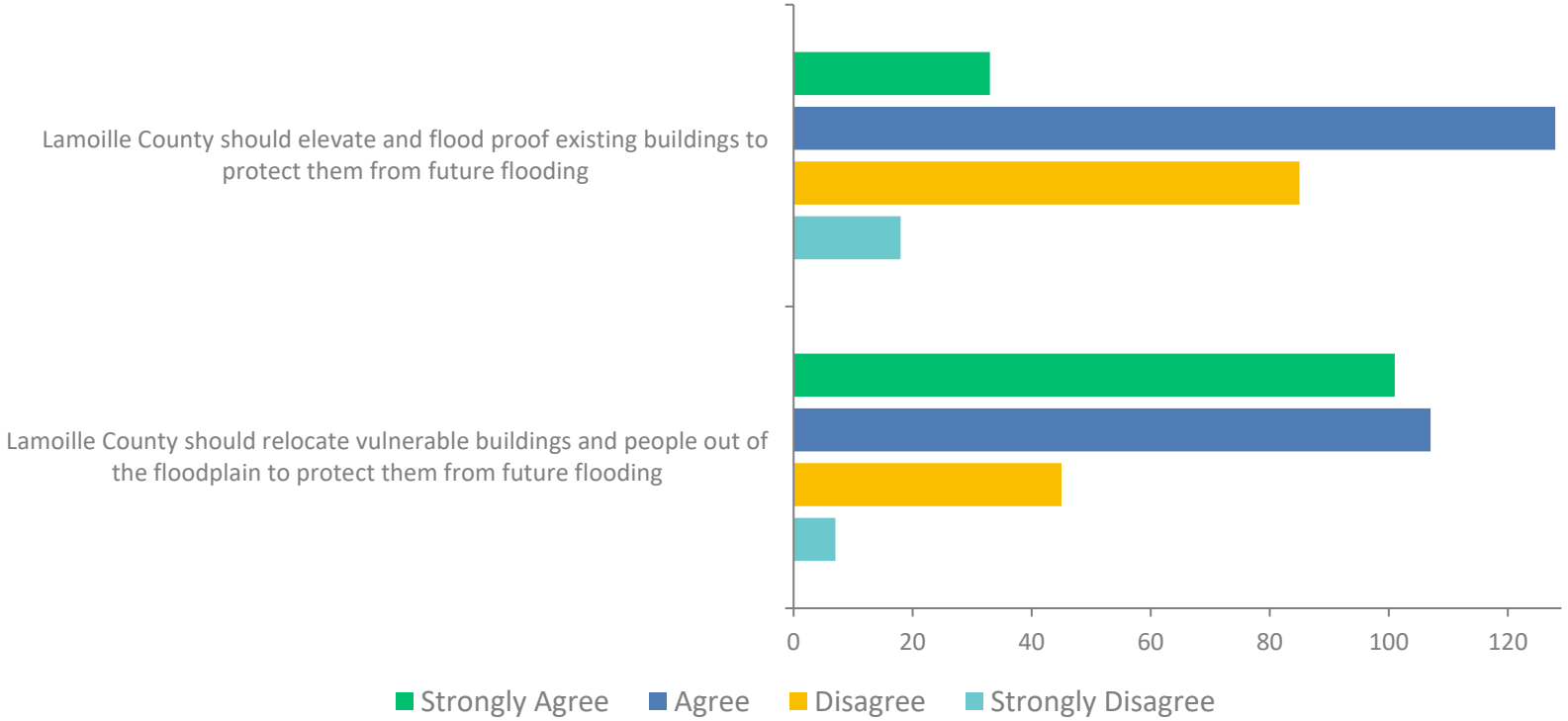
Answered: 274 Skipped: 4




Q11: What are the best strategies for economic recovery after flooding events?
# of Responces in Created Theme
30
25
20
15
10
5
0
4
13
15
16
17
19
25
21
Dredge Rivers
Enhane Flood Resilience of Structers in Floodplain
Don't Know
Preemptive Action/Planning
Government Support, Financial Assistance and Buyouts
Community Based Solutions
Relocate Buildings Outside of Floodplain
Other

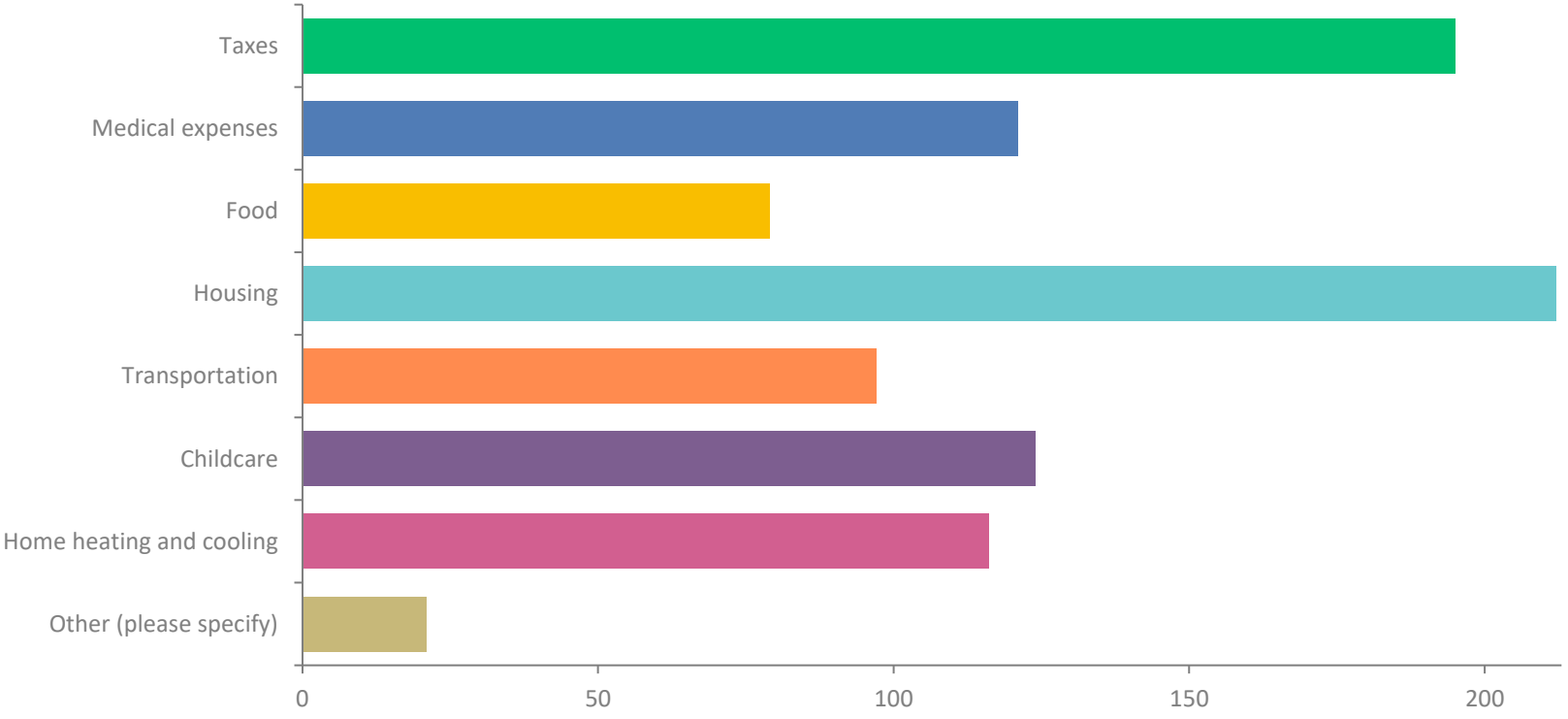
Q12: How much do you agree with the following statements?

Answered: 266 Skipped: 12



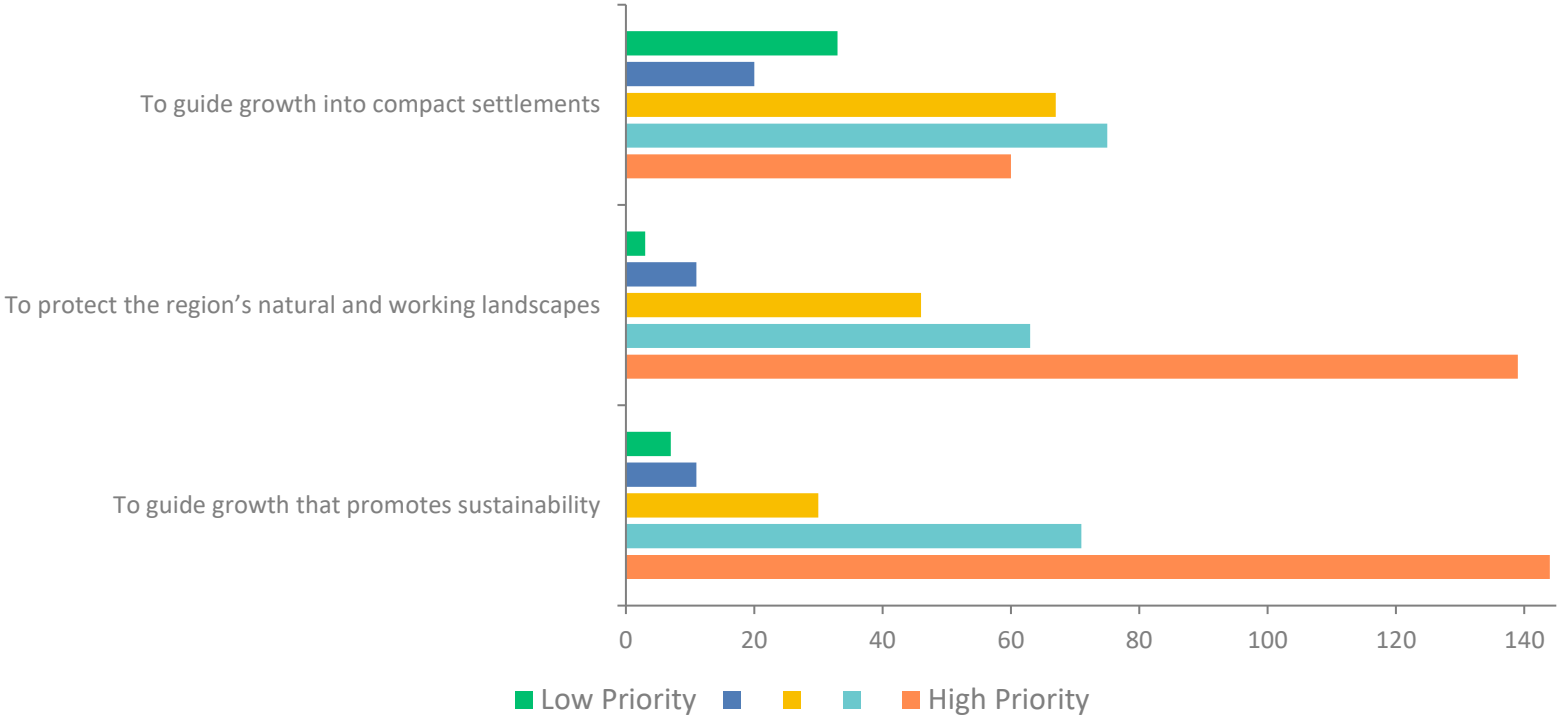
Q13: What do you see as the main affordability challenges for Lamoille County? Please select all that apply.

Answered: 275 Skipped: 3



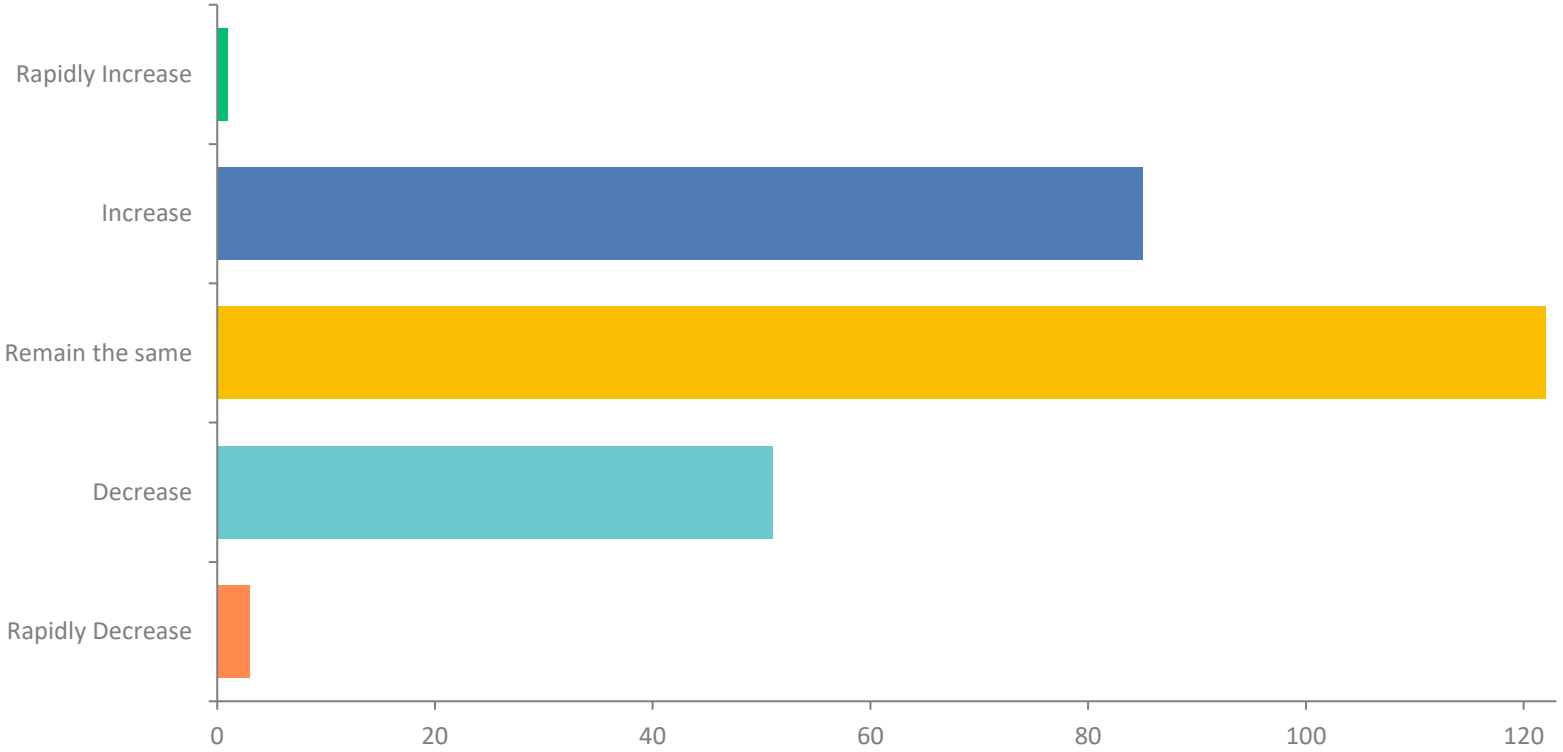
Q14: How do you feel about the current regional plan themes?

Answered: 265 Skipped: 13



Q16: From 2010 to 2020 Lamoille County grew by 6%, ranking second only behind Chittenden County (7.5%) and well above the State average (2.8%). How would you like to see Lamoille County's growth rate change?

Answered: 262 Skipped: 16



Q17: How long have you lived in Lamoille County (Optional)

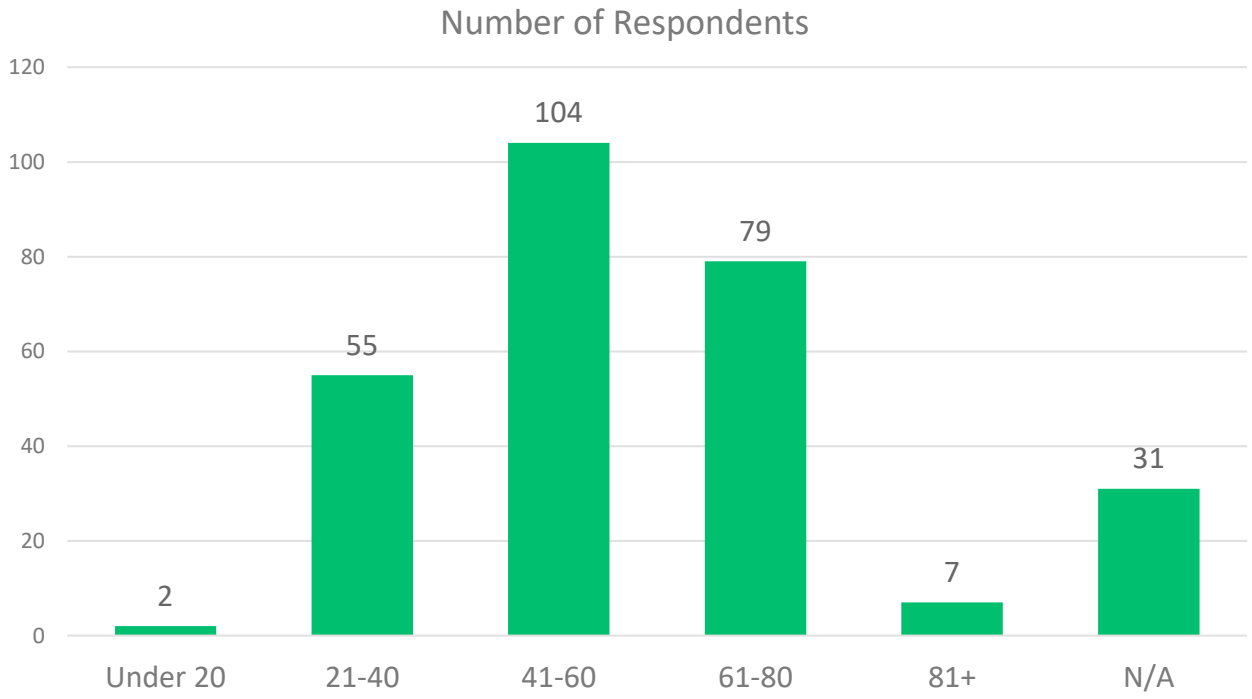
Answered: 254 Skipped: 24

Average Number of Years Lived in Lamoille County	26

Q18: What is your age (Optional)

Answered: 247 Skipped: 31

Average Age of Respondent	54
Mediam Age in Lamoille County	41
Oldest Respondent	92
Youngest Respondent	17



APPENDIX C: Renewable Energy Generation and Land Area Conversion Table

Resource	Acres/MW	Capacity Factor	MWh/MW
Solar	7	15.0%	1314
Rooftop Solar	1.5	14.5%	1270
Wind	40	22.5%	1971
Large Wind	10	30.0%	2628
Natural Gas	0.343	75.0%	6570
Biomass	6.375	70.0%	6132
Hydro	1	50.0%	4380

Source: Vermont Public Service Department Generation Scenario Tool